



**SERVICESCAPES AND VALUE CO-CREATION TOWARDS CUSTOMER
SATISFACTION AND CUSTOMER CITIZENSHIP BEHAVIOR AMONG
DOMESTIC GUESTS OF FOUR- AND FIVE-STAR HOTELS IN
MALAYSIA**

By

SABRINA BINTI TARMUDI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

May 2024

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment
of the requirement for the degree of Doctor of Philosophy

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Customer Citizenship Behavior (CCB) has become an important topic of study due to its role in enhancing service quality. CCB involves customers giving feedback, making suggestions, and helping other customers, which enhances the overall service experience and indirectly helps the hotel operation. This is especially important for luxury hotels, where the experience and value provided are crucial. Negative feedback from hotel guests regarding the physical, social, and smart environment of the hotel has impacted luxury hotels. With the added challenges of rising costs, reduced workforce and complaints regarding hotel servicescape due to the pandemic, hotels increasingly depend on guests for support.

The integration of digital technology has changed customer experiences and expectations, so hotels need to keep their services up-to-date. Although previous research has focused on aspects like purchase intentions and customer loyalty towards CCB, there is a gap in understanding how different parts of the hotel servicescape

influence CCB. This study aims to fill that gap by examining how physical, social, and smart aspects of the hotel's servicescape affect value creation, guest satisfaction, and CCB in luxury hotels in Malaysia.

The study highlighted six key elements which consist of Physical Servicescape (PS), Social Servicescape (SS), Smart Servicescape (SMS), Value Co-Creation (VCC), Guest Satisfaction (GS), and Customer Citizenship Behavior (CCB). The data collection was conducted through an online survey of 315 guests of a luxury hotel in Malaysia. PLS-SEM was used to analyze the data.

The results showed that twelve out of fifteen proposed relationships were significant. Mediation effects were also observed. This study builds on previous research and highlights the importance of managing physical, social and digital aspects of the hotel environment to improve guest value and satisfaction. It also shows that to remain competitive, luxury hotels need to balance traditional services with new technology. This research contributes to understanding how a holistic approach to the servicescape, including both human interaction and technology, can benefit hotel management and enhance guest experiences.

Keywords: Customer Citizenship Behavior, Customer Satisfaction, Servicescape, Value Co-Creation,

SDG: GOAL 9: Industry, Innovation and Infrastructure

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**SERVICESCAPE DAN NILAI CIPTAAN BERSAMA TERHADAP
KEPUASAN PELANGGAN DAN TINGKAH LAKU KEWARGAAN
PELANGGAN DI KALANGAN TETAMU DOMESTIK HOTEL EMPAT
DAN LIMA BINTANG DI MALAYSIA**

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Perilaku Kewargaan Pelanggan (CCB) telah menjadi topik penting dalam kajian kerana peranannya dalam meningkatkan kualiti perkhidmatan. CCB melibatkan pelanggan yang memberikan maklum balas, membuat cadangan, dan membantu pelanggan lain, yang memperbaiki keseluruhan pengalaman perkhidmatan dan secara tidak langsung membantu operasi hotel. Ini adalah amat penting bagi hotel mewah, di mana pengalaman dan nilai yang diberikan adalah faktor yang sangat penting. Maklumbalas negatif dari tetamu hotel berkenaan dengan persekitaran fizikal, sosial dan pintar hotel telah memberikan impak kepada hotel mewah. Dengan cabaran masakini seperti peningkatan kos, pengurangan tenaga kerja, dan aduan mengenai perkhidmatan hotel akibat pandemik, hotel semakin bergantung kepada sokongan penuh dari tetamu hotel.

Integrasi teknologi digital telah mengubah pengalaman dan jangkaan pelanggan, jadi hotel perlu memastikan perkhidmatan yang mereka berikan adalah yang terkini.

Walaupun penyelidikan sebelumnya telah memberi tumpuan kepada aspek seperti niat pembelian dan kesetiaan pelanggan terhadap CCB, terdapat jurang dalam memahami bagaimana bahagian-bahagian berbeza dari persekitaran perkhidmatan hotel mempengaruhi CCB. Kajian ini bertujuan untuk mengisi jurang tersebut dengan mengkaji bagaimana aspek fizikal, sosial, dan pintar dari persekitaran perkhidmatan hotel mempengaruhi penciptaan nilai, kepuasan tetamu, dan CCB di hotel mewah di Malaysia.

Kajian ini menekankan enam elemen utama yang terdiri daripada Persekitaran Perkhidmatan Fizikal (PS), Persekitaran Perkhidmatan Sosial (SS), Persekitaran Perkhidmatan Pintar (SMS), Penciptaan Nilai Bersama (VCC), Kepuasan Tetamu (GS), dan Perilaku Kewarganegaraan Pelanggan (CCB). Pengumpulan data dilakukan melalui tinjauan dalam talian terhadap 315 tetamu yang mempunyai pengalaman menginap di hotel mewah di Malaysia. PLS-SEM digunakan untuk menganalisis data.

Hasil kajian menunjukkan bahawa dua belas daripada lima belas hubungan yang dicadangkan adalah signifikan. Kesan perantaraan juga diperhatikan. Kajian ini membina kajian sebelumnya dan menekankan kepentingan menguruskan aspek fizikal, sosial, dan digital persekitaran hotel untuk meningkatkan nilai dan kepuasan tetamu. Kajian ini juga menunjukkan bahawa untuk kekal berdaya saing, hotel mewah perlu menyeimbangkan perkhidmatan tradisional dengan teknologi baharu. Penyelidikan ini menyumbang kepada pemahaman tentang bagaimana pendekatan holistik terhadap persekitaran perkhidmatan, termasuk interaksi manusia dan teknologi, dapat memberi manfaat kepada pengurusan hotel dan meningkatkan

pengalaman tetamu. Ini turut menyumbang kepada kemahuan tetamu untuk secara langsung terlibat dengan Perilaku Kewargaan Pelanggan (CCB).

Kata Kunci: Nilai Ciptaan Bersama, Kepuasan Pelanggan, Perilaku Kewargaan Pelanggan, Persekitaran

SDG: MATLAMAT 9: Industri, Inovasi dan Infrastruktur



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LIST OF ABBREVIATIONS

CCB	Customer Citizenship Behavior
VCC	Value Co-Creation



CHAPTER 1

INTRODUCTION

1.1 Introduction

This study aims to understand customer citizenship behavior (CCB), guest satisfaction, and value co-creation among hotel guests. This is performed by looking at the physical, social, and smart servicescapes relating to the industry. The background is first explained, followed by the problem statement and purpose of the study. The research objectives, questions, and significance are then discussed. This first chapter also highlights the definition of variables at the end.

1.2 Overview of Study

Customer citizenship behavior (CCB) delineates customers' voluntary and discretionary behaviors towards a brand or firm. It can also be considered as additional behavior shown towards other customers, services, employees, or organizations (Dewalska-Opitek & Mitreęa, 2019; Gong & Choi, 2016; Gong & Yi, 2019; Ru & Jantan, 2023). This is crucial for service providers, as positive behavior can significantly benefit organizations and other customers, besides adding value to the customers' experience by improving their sense of belonging and usefulness (Assiouras et al., 2019). Traditionally, CCB is recognized as a source of competitive advantage, improved profitability and business sustainability (Gong & Wang, 2022; Islam & Loureiro, 2023; Shulga & Busser, 2020). As CCB is derived from organizational citizenship behavior (OCB), therefore, the service industry must consider customers as a part of their organization (Chan et al., 2017; Mohammad Shafiee & Tabaeian, 2021). The role of the customer has become important in

marketing and business operations. The same goes for tourism, which is considered a complex industry in which various sectors are intertwined. They include mobility, construction, investment, distribution, and consumption activities, which involve many layers of customers (Ma et al., 2013; Miguez et al., 2023). Customers contribute to a firm's performance, effectiveness and quality by assuming active roles in service delivery (Al Halbusi et al., 2020). Over time, they can be considered "partial employees" (Hur et al., 2018), and their participation should be carefully planned and managed. Ali et al. (2021) mentioned that the hospitality industry, which is mostly customer-oriented, will survive as it meets customers' needs, requirements and expectations as its image undergoes enhancement.

The study of CCB has been highlighted in a few areas involving customers and organizations. Surveys have been conducted to highlight its elements in retail (Gorji et al., 2021), universities (Nagy & Marzouk, 2018), the banking system (Hur et al., 2018; van Tonder & Petzer, 2018), the tourism industry (Al Halbusi et al., 2020; Arica & Çorbaci, 2020), the airline industry (Hwang & Lyu, 2020), sporting events (K. Kim et al., 2020), construction (Dewalska-Opitek & Mitreğa, 2019), healthcare (Ulucayli et al., 2023) and short-term rental (STHR) servicescape from a Chinese customer's perspective (Xu & Gursoy, 2021). However, in the literature, there seem to be limited studies on CCB in the hotel industry, specifically in Malaysia.

Figure 1.1 highlights the hospitality ecosystem and sub-system. Hotel direct stakeholders form the core of the hospitality ecosystem, and they comprise the owners and investors, managers and employees, destination management offices, online travel agencies (OTAs), material suppliers, airlines and event organizers (Leung, 2019).

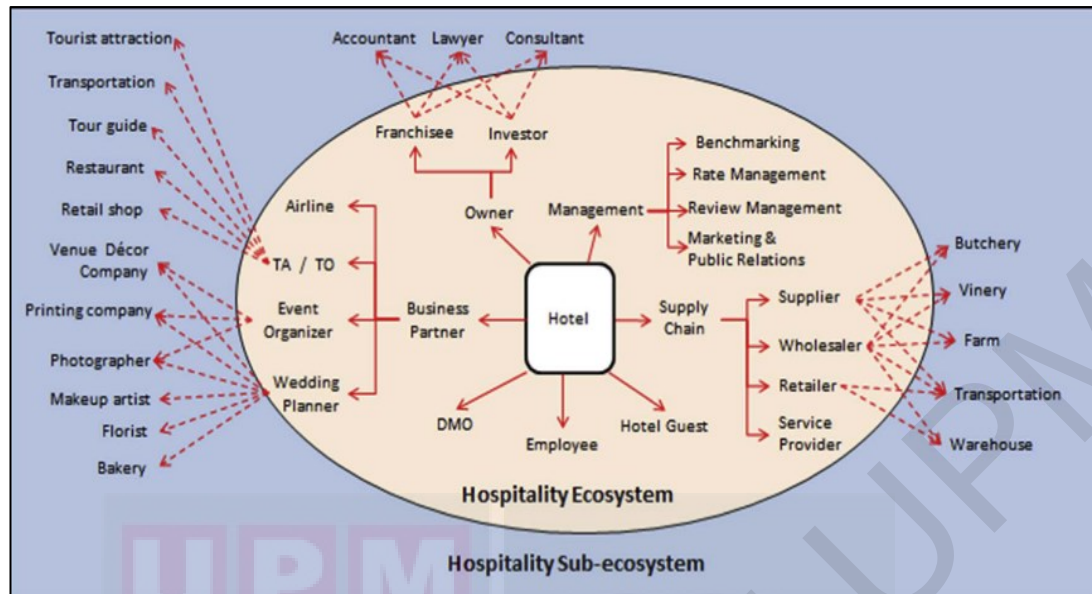


Figure 1.1 : Key Members in the Hospitality Ecosystem and Sub-Ecosystem (Buhalis & Leung, 2018)

However, the most important player in the hospitality system is the hotel guests (Ásványi & Chaker, 2023). Hotel guests may range from travelers or tourists looking for an overnight bed-and-breakfast (B&B) stay to business people on an extended stay due to long-term work and assignments. In this industry, there is a difference between customers and guests. A customer buys goods or services that directly contribute to the company's revenue. On the other hand, guests contribute to revenue and also bring intangible results that drive even more revenue to the company. Therefore, a guest is always invited to participate in something important in the business. Hence, even though the term "customer" may be utilized in the study of hotel operations and tourism (Hossain et al., 2020), the researcher has chosen to use the word "hotel guests" in this study when referring to clients of the hospitality industry. A good relationship between employees (Bove et al., 2009), organization (Chan et al., 2017; Yi & Gong, 2008), and guests (Kim & Choi, 2016) will allow input on what services consumers want or expect to receive from the industry. CCB is developed from the positive

rapport between stakeholders in the hospitality ecosystem (Gong & Yi, 2019). As the industry becomes more competitive, businesses must strive to connect with their guests (Eisingerich et al., 2014) by engaging them through CCB. It will be essential to determine CCB from a value perspective. A study by Xu et al. (2021) revealed that CCB, also known as the different roles of guests, can affect different value dimensions. Value co-creation happens in three circumstances, namely business-to-consumer interactions, business-to-business interactions and consumer-to-consumer interactions (or, to make it short, actor-to-actor interactions). The study focuses on the first interaction to determine the demands and expectations of stakeholders, guests and hotel operators that lead to the development of CCB in the industry.

CCB is among the most promising areas in marketing theory and practice, whereby it is perceived as non-obligatory consumer action that creates value for the company (Dewalska-Opitek & Mitreğa, 2019; Gong & Wang, 2022). Chan et al. (2017) further state that citizenship behaviors are profitable but challenging to attain. In business practice, CCB is most welcome, and guests are encouraged to engage with other stakeholders to ensure their satisfaction. In addition, regarding employee-related outcomes, it has also been observed that CCB could increase employee performance, satisfaction and commitment, besides reducing turnover (Yi et al., 2011). Thus, CCB impacts not only the hospitality guests but also the performance of the company or organization as a whole.

Furthermore, Siguaw et al. (2021) argued that servicescape may act as a form of “packaging” that involves sharing a physical environment among guests (Miao et al., 2022), which will provide them with a first impression before experiencing the service

in full. Hence, servicescape should not be presented with inappropriate facilities, poor communications and incompetent employees that may hinder marketing efforts. With the market-oriented business (building and matching demand with guests' needs) implemented in the service industry, servicescape can be an essential tool in ensuring that the role of the guests is indeed significant and changes from value receivers to producers, along with the emergence of a value co-creation concept in the service environment (Baderisang & Damanhuri, 2021; Xu et al., 2021).

Therefore, due to the importance of servicescape (physical, social and smart aspects), it is crucial to examine the model further and its other variables, namely value co-creation and guest satisfaction, which determines CCB (Gong & Yi, 2019) when staying in Malaysia.

1.3 Background of Study

Malaysia is a country that has been blessed with many natural resources, beautiful attractions, and a rich history, as well as diversity in terms of race and culture. The growth of its tourism industry has always revolved around those features (Sangaran & Selvanayagam, 2021). Tourism and hospitality are essential as they contribute significantly to the country's economic growth (Chong et al., 2023). With a population of more than 32 million, Malaysia relies heavily on tourism products (Corbet et al., 2021). In 2019 alone, before the onset of the COVID-19 pandemic, the industry had raked in RM86.14 billion for the country's economy, besides creating many job opportunities for the people (Tourism Malaysia, 2020).

The Malaysian Association of Hotels (MAH) is a key industry body representing the hotel sector in Malaysia. Established to serve and support hotels throughout the country, MAH plays a crucial role in the hospitality industry. During the COVID-19 pandemic, the Malaysian Association of Hotels (MAH) took several key actions to support the hotel industry in Malaysia and ensure its sustainability (Yen-San et al., 2023). MAH provided hotels with guidelines and best practices to adapt to the new health and safety requirements. This included protocols for sanitation, social distancing, and guest health checks to ensure that hotels could operate safely and comply with government regulations. Besides that, MAH is actively engaged with government bodies to advocate for financial assistance and relief measures for the hotel industry. This included pushing for stimulus packages, grants, and tax relief to help hotels manage the economic impact of the pandemic.

In addition, MAH organized training sessions and webinars on topics such as hygiene practices, crisis management, and adapting business strategies to help hotels adjust to the changing environment. This ensured that hotel staff were well-prepared to handle new challenges and maintain high standards of service. They also served as a central source of information, disseminating updates on government policies, travel restrictions, and industry developments. This helped hotels stay informed and make strategic decisions based on the latest data. To promote Domestic Tourism, with international travel restrictions in place, MAH encouraged domestic tourism as a way to support the industry. This included promoting staycations and local travel to help boost occupancy rates and generate revenue for hotels.

Furthermore, MAH worked to develop and promote health and safety certification programs, such as the “Clean and Safe” certification. This assured guests that hotels were adhering to stringent hygiene and safety protocols. They facilitate communication and collaboration among hotels, enabling them to share experiences and strategies for overcoming challenges. This collective approach helped hotels find innovative solutions and support each other through the crisis. MAH helps hotels in terms of financial planning and management advice by offering advice on financial planning and management to help hotels navigate cash flow issues and other financial challenges brought on by the pandemic. This included guidance on cost-cutting measures and restructuring. By taking these actions, MAH played a crucial role in helping the hotel industry in Malaysia adapt to the challenges posed by the COVID-19 pandemic, ensuring that hotels could continue to operate safely and work towards recovery and sustainability.

According to the World Travel and Tourism Council (WTTC), travel and tourism have contributed 5.2 % (RM73.9 billion) to Malaysia’s total economy and provided 272 million job opportunities globally. Recently, the country’s Culture, Arts and Tourism Ministry (MOTAC) has devised a strategic plan to aid the recovery of the industry after the pandemic. This includes attracting 3.21 million tourists with an expected revenue of RM9.35 billion from January to July 2022. The initiatives by MOTAC have been successful since the country’s borders were reopened on April 1, 2022. As the situation improved, tourist arrivals have been revised to 9.2 million with RM26.8 billion in expected income (Tourism Malaysia, 2022). As the industry gained importance and recognition, the government has focused on the development of

accommodation services, shopping, and food and beverage (F&B) sectors (Ghani et al., 2023).

Accommodation and F&B are important services offered by hotels in support of events, business and other tourism needs (Sangaran & Selvanayagam, 2021; Veloso & Gomez-Suarez, 2023). According to the Malaysia Tourism Satellite Account (2019), among the tourism products in the country, accommodation comprised the highest percentage at 92.6 %, followed by travel agency tours (81.4 %) and transport (55.6 %). Hence, it may be deduced that accommodation has the highest demand in the industry. This is supported by data on the expenditure components of tourists when they travel to Malaysia. It was found that accommodation (24.7 %) was the second highest expenditure of tourists after shopping (33.4 %), followed by F&B (13.4 %) (Malay Tourist Profile, 2018). Hence, the hotel industry is one of the most significant contributors to the hospitality industry (Chong et al., 2023).

Hotels can be divided into several categories depending on their products and services. One example is luxury hotels, which, in recent years, have been mushrooming in the Asian market (Lin & Choe, 2022). Luxury hotels are built in strategic locations, besides providing guests with expansive space and facilities, 24-hour room service, the best dining experience, elegant aesthetics, security, privacy and other highly customized services (Davidson et al., 2006; Kucukusta et al., 2014). The growth of the luxury hotel market is expected to reach around 5 % between 2018 and 2023 (Lin & Choe, 2022). With the popularity of such hotels, guests will be expecting higher levels of service and facilities than what is usually seen and provided at regular hotels (Chang et al., 2020). Hence, the management of luxury hotels needs to be creative

enough to realize the importance of their guests' engagement and evaluations of their experiences from staying in the hotel and their future behavior as a result of these experiences (Lin & Choe, 2022).

Fierce competition between these establishments has caused industry players to re-examine the value of their customer's experience as an essential factor in inculcating loyalty to their respective businesses (Chathoth et al., 2016; Chang & Teng, 2017). It is observed that providing a personalized experience will increase the willingness of guests to stay in a luxury hotel by 14 %, and the hotel will also gain 5.7 times more revenue by providing excellent service (Roy et al., 2019). Therefore, in the context of luxury hotels, there is a need to examine the cognitive component (i.e., experience) and the relationship between guests and the establishment. This is even more essential in understanding guest behavior after their stay (Lin & Choe, 2022), such as in CCB development. Previous studies on luxury hotels have identified staff training, cleanliness and location as factors that improve customer satisfaction (Chang et al., 2020).

Recently, the hospitality industry experienced a challenging period when COVID-19 afflicted the world, which caused travel disruptions and the closing of international borders (WTTC, 2021). The hotel industry was the first to be adversely affected and the last to recover, highlighting its vulnerability compared with other industries (American Hotel & Lodging Association, 2020). The Malaysian hotel industry is facing job insecurity challenges and struggling with low demand (Chong et al., 2023). This was expected with the decrease in the country's gross domestic product (GDP) from 11.7 % in 2019 to 5.2 % in 2020 (WTTC, 2021). The local hotel sector was

projected to incur a loss of RM3.3 billion in June 2020 because of the Movement Control Order (MCO) imposed by the government to curb the spread of the pandemic (Foo et al., 2020). When the country transitioned into the endemic phase with the introduction of vaccines and lowered the burden on the healthcare system, the government began introducing initiatives to promote domestic tourism to get locals to support the country's hospitality industry (Sharma, 2021). However, the country's borders were still not immediately reopened due to fears of COVID-19 transmission by international travelers. Hence, this was one of the reasons why the Malaysian hospitality industry was slow to recover because, like other countries in the region, it strongly depended on foreign tourist arrivals to make a profit (Cao et al., 2022; Keita et al., 2023). This was in contrast with Thailand, which took a risk by opening up its destinations like Phuket to foreign tourists because the industry in the kingdom was becoming unsustainable with prolonged closures (Kuai & Ser, 2021; Pongsakornrunsilp et al., 2021).

The industry keeps improving and updating its product offerings to cater to the demand of tourists. The hospitality industry consumer has become more mature and familiar with tourism services and products (Ali & Amin, 2014). Hence, hotels need to provide something that makes their guest want to return and look forward to repeat their stay. Guests nowadays have vast options for the best services and environment from the hotel servicescape. More attention is now being paid to the "smartness element" of hotels besides their essential physical and social environments. For hotels to co-create value with their guests, the usage and integration of technology and human resources are crucial (Balasubramanian & Ragavan, 2019; Seyitoğlu & Ivanov, 2020).

This has become an issue of great importance recently due to the increased usage of technology in the services industry, including hotels (Han et al., 2021; Kim & Montes, 2021). The American Hotel & Lodging Association (2023) predicts that in 2023, technology will be the main tool in assisting the industry forward. It will be the turning point for hotels to consider the use of artificial intelligence (AI) and robotics in their environment. Even so, the service orientations will still be personalized, and the “human touch” has to be maintained as industry systems support the transformation to AI (Sangaran & Selvanayagam, 2021). Under certain circumstances, hotel guests will co-create and become satisfied with the servicescape offered, which leads to future behavior such as CCB (Roy et al., 2019). CCB may benefit organizations by enhancing organizational efficiency (Kim & Choi, 2016), increasing service quality and efficient service firms (Hossain et al., 2020). Previous literature showed that servicescape and value co-creation could impact customer satisfaction and CCB.

With the importance of the hotel’s physical and social environment, the rise of technology has made new techniques available, which will allow hotel guests to give feedback and help other customers. This phenomenon is further interpreted and regulated by the stimulus-organism-response (SOR) and service-dominant logic (SDL) theories. The following section will highlight and elucidate the problem statement of the study.

1.4 Problem Statement

The Malaysian hotel industry has seen notable expansion in recent years due to rising tourist demand (Ghani et al., 2023; Ahmad et al., 2023; Sharma et al., 2021) and increased luxury spending driven by changing consumer preferences (Padma & Ahn,

2020). Despite this growth, the industry is grappling with significant challenges. Intense global competition (Ali et al., 2021; Olorunsola et al., 2022; Razli et al., 2022) and the increasing role of technology in shaping guest decisions (Osei & Cheng, 2023) has highlighted a critical issue of frequent neglect of guest feedback in citizenship behavior, which traditionally focuses on employees, namely Organizational Citizenship Behavior (OCB) (Al Halbusi et al., 2020).

This gap underscores the need to better integrate guest perspectives into the industry's approach to service quality. For instance, while guests may choose hotels based on superior environments and experiences, the hotel environment in Malaysia ranks as a major source of dissatisfaction among luxury hotel guests (Razli et al., 2022). Complaints regarding luxury hotels reported on online travel agents (OTAs) from 2020 to 2021 included unsatisfactory conditions of guest rooms and bathrooms (physical servicescape), poor customer service (social servicescape), and unreliable internet connectivity (smart servicescape) (see Appendices 1.1 to 1.6). Additionally, challenges such as a lack of personalization (Baloglu & Bai, 2023), manpower shortages (Chong et al., 2023), rising operational costs (Fotiadis et al., 2021; Quan et al., 2022; Ugurlu et al., 2022), and decreased customer engagement (Miao et al., 2022) have been exacerbated by the COVID-19 pandemic.

Current research in Malaysia has explored various aspects of guest satisfaction and service quality (Padma & Ahn, 2020; Shridhar, 2023), but there is a noticeable gap in understanding how the servicescape—encompassing physical, social, and smart elements—affects customer citizenship behavior (CCB). While studies have addressed related topics such as sustainability (Ahmad et al., 2023), staffing (Ahmad

& Scott, 2014, 2019; Alreahi et al., 2023; Kele et al., 2017), and technology (Osei & Cheng, 2023), there is limited research on how a well-managed servicescape contributes to CCB and overall guest satisfaction.

This oversight points to a pressing need for further investigation into how the holistic servicescape which integrates physical, social, and smart dimensions can enhance value co-creation and positively influence future guest behavior. The engagement of Service-Dominant Logic (SDL) and Service Organism Response (SOR) enhances the relationship. Despite the recognized importance of luxury services and co-creation, understanding the impact of the servicescape on CCB remains underexplored. Future research should focus on this critical area to better align hotel practices with guest expectations and improve industry outcomes.

1.5 Motivation of Study

The motivation for this study is derived from the concern about the importance of hotel customers as essential stakeholders in the industry (Li et al., 2021). With the understanding of limitations in hotel operations due to the pandemic, such as financial capacity, manpower and operating costs, luxury hotels need to maximize their primary resources for the betterment of operations. Furthermore, as the government announces its plans to host the Visit Malaysia Year in 2025 (VMY2025), it has become essential for hotels to look at the behavior of tourists and other customers to strategize their operations and service delivery to maximize benefits from the upcoming campaign.

The first motivation is to resolve the lack of customer behavior studies, specifically on CCB in the hotel industry, especially in Malaysia. CCB is of interest as there is a

gap between customers in employee-focused OCB studies (Al Halbusi et al., 2020). Knowing that the physical and social servicescapes are primary resources of hotels, it is essential to look at their role towards CCB. Additionally, with the digitalization of business operations, including the hotel industry, there is a need to explore the smart servicescape in Malaysia's four- and five-star hotels.

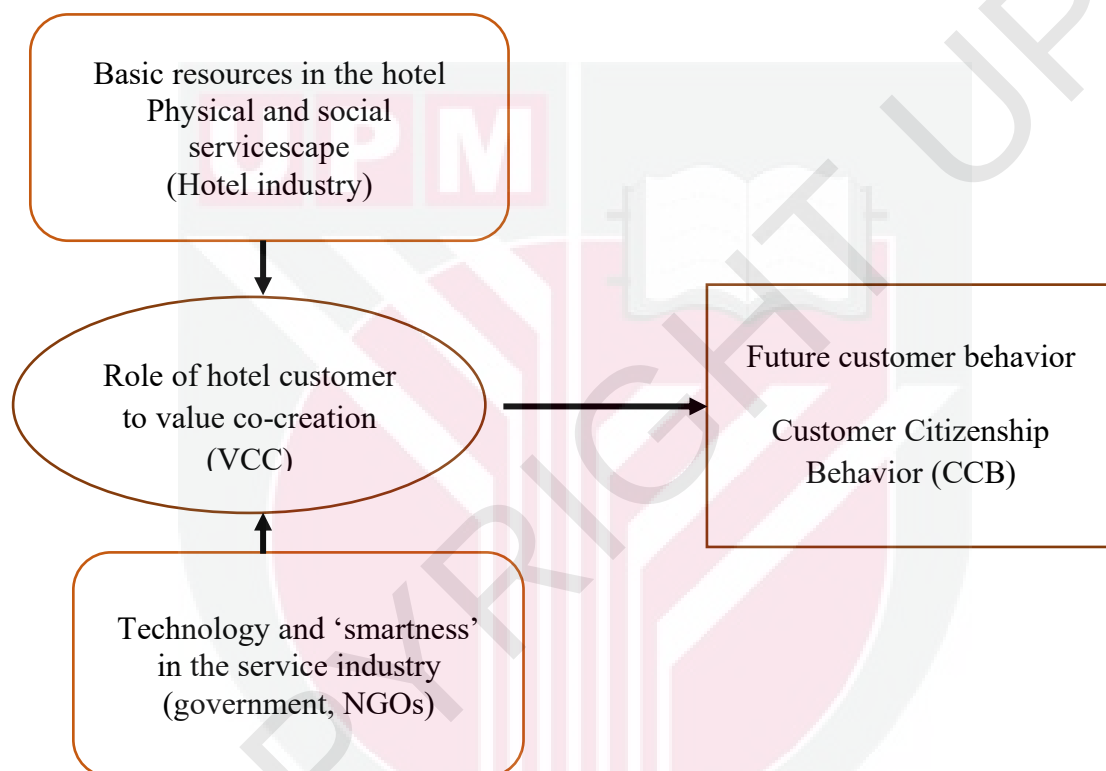


Figure 1.2 : The Motivation for Research in the Servicescapes of Malaysia's Hotel Industry

1.6 Research Questions

Several research questions have been elucidated for this study. Below are the research questions:

1. What is the relationship between servicescapes (physical, social and smart servicescapes), value co-creation and CCB?

2. What is the relationship between servicescapes (physical, social and smart servicescapes), customer satisfaction and CCB?
3. Does value co-creation mediate the relationship between servicescapes (physical, social and smart servicescapes), and CCB?

1.7 Research Objectives

This research aimed to study the impact of servicescapes, value co-creation and customer satisfaction towards CCB among hotel guests in Malaysia. Based on the questions above, the objectives are as below:

1. To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.
2. To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.
3. To investigate the mediation effect of value co-creation between servicescapes (physical, social and smart servicescapes), and CCB.

1.8 Significance of Study

The study aims to contribute to the existing literature through its investigative results. It creates many opportunities and brings significance in both theoretical and managerial aspects. The contributions will be deliberated in the following subsections.

1.8.1 Theoretical Significance

This study illustrates the contribution of theoretical values in three distinct ways. First, it explores the direct relationship between physical, social and smart servicescape and CCB in four- and five-star hotels, as research in this area is limited, specifically in

Malaysia. The study examines mediating role of value co-creation in the relationship between antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB) within the hotel industry. The study uses the SOR model (Mehrabian & Russell, 1974). The SOR theory was used once by Zhu et al. (2016) to study CCB in Chinese hotels (Gong & Yi, 2019). This study attempts to extend the theory by examining the role of “organism” in the path.

Second, the study extends the servicescape knowledge as reviewed by Bitner (1992), which adds value to the existing literature. With the emergence of technology and “smartness” in business operations, smart servicescape is crucial in the hotel industry. The extension concerns the knowledge of servicescape, including the role and its consequences. Smart servicescape has been highlighted as an essential variable for the service industry, just as it is emphasized in retail (Kang et al., 2017; Kang et al., 2019; Sanjit et al., 2019). Hence, a physical, social and smart servicescape is the independent variable in the conceptual framework of this study.

Third, this study contributes to the literature on behavior citizenship by integrating the holistic servicescape (physical, social and smart servicescapes) into a single framework as the antecedents of CCB (Roy et al., 2019). In addition, it will also add to the CCB literature, which the element of the customer is missing in OCB (Al Halbusi et al., 2020). In summary, exploring CCB and other variables will assist academics and researchers on the issue of servicescape and other consumer behaviors. The expected findings will help the industry to co-create and predict the servicescape preferred by hotel guests so that they will be encouraged to perform extra-role behavior in the future.

1.8.2 Managerial Significance

This study aims to provide suggestions to stakeholders, such as the Ministry of Tourism, Arts and Culture, hotel managers and employees, guests, tour operators, suppliers, and other actors directly or indirectly involved in the hotel industry. The findings will provide input for the management of hotels on the importance of guests. The hotels may benefit from the guests' role as partial employees (Hur et al., 2018) in helping the hotel to market, promote and convince local tourists to visit and use their facilities after the pandemic.

First, the Malaysia Budget Hotel Association (MyBHA) national deputy president has highlighted that the government is not friendly enough to the hotel industry, and it was even worse when banks and financial institutions began to avoid giving loans to hotel operators because they regarded the industry as "high-risk" business (Chin, 2020). Hence, the study will contain proposals that may help hotels maximize profits and minimize costs through CCB (Assiouras et al., 2019) by using all the primary resources that the hotel owns.

Second, apart from financial restrictions, hotels need to gain the trust of their guests (by developing value co-creation and CCB) to promote and market their existing products and services. Hotel guests will act as "salespersons" by sharing their experiences while staying at the establishments (Hur et al., 2018). This will increase the hotel's productivity by delivering services expected by guests while providing the opportunity to improve the quality of their products. This is very important, especially during the post-pandemic period, as most hotels are trying to survive by wooing customers. Hotel managers must pay attention to the guests who exhibit CCB so that

it will be reciprocated and extended to other guests in the service encounter (Yi et al., 2013). Hence, it is essential to gain CCB from customers as it will benefit the return on investment (ROI) and reduce operating costs.

Third, the study will create awareness among hotel management on the importance of servicescape. It will help managers to understand which servicescape leads to customer satisfaction and CCB. For instance, if smart servicescape plays a significant role, then the hotel management needs to pay attention to its budget allocations to enhance that servicescape. Even though servicescape is the primary model that every service organization has to take care of, it also needs to be strengthened occasionally. The servicescape is the first thing that hotel guests want to experience (Triana et al., 2018), which will result in various behaviors, such as work performance and social interaction (Muzamil & Munir, 2011). Most luxury hotels invest heavily in their servicescapes, for example, the lobby and system used for hotel operations. Furthermore, the hotel image from the servicescapes may leave a positive or negative impression on guest satisfaction (Lee, 2019).

Fourth, this study will support Tourism Malaysia's initiatives to boost local attractions as MOTAC tries to highlight local tourism products for quick conversion. The recovery plan for tourism in 2021 emphasized three central cores to boost the tourism campaign, namely restoring confidence in travel, reviving domestic tourism, and maximizing resources (Tourism Malaysia, 2020). In addition, the announcement of the Recovery Movement Control Order (RMCO) on June 10, 2020, provided a massive relief for the industry that had been suffering under the pandemic. One of the essential elements for the hotel to operate during the pandemic is local lekker

(domestic market dominates) (Rossmann, 2021). Hence, the study will focus on the local hotels and guests on the servicescape towards value co-creation behavior, customer satisfaction and CCB.

Fifth, the study's findings are aligned with the United Nations' Sustainable Development Goal (SDG) No. 8, which highlights inclusiveness, sustainable economic growth, productive employment and decent work. The related SDG targets are stated in sub-section 8.2: "Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including a focus on high value-added and labor-intensive sectors" and sub-section 8.9: "By 2030, devise and implement policies to promote sustainable tourism, which creates jobs, promotes local culture and products" of the goal. This is in line with the selection of the study's samples, which include guests and luxury hotels in Malaysia. In addition, the study is also looking at AI and human factors in the servicescape.

Lastly, the study will benefit the hospitality community by increasing the guests' quality of life as they co-create, share good information and help each other when planning a trip. It will contribute to shaping new patterns of service and consumption, business operations and visiting intentions. Guests will co-create with each other and other stakeholders in the future. It will enhance the life quality of the customer as they will disseminate positive information to other customers. This will also happen to the negative news; they can amend mistakes by informing the hotel employees of the expected data. Based on the preceding discussion, Table 1.1 outlines the mapping of research problems, gaps in existing literature in related marketing areas, research objectives, questions and hypotheses.

Table 1.1 : Mapping of Research Problems, Gaps, Objectives, Significance and Hypotheses

Research Problem	Research Gap	Research Objectives	Research Significance	Main & Sub Hypothesis
The role of servicescape needs attention from hotel management, especially with the emergence of the pandemic (Bonfanti et al., 2021).	Value co-creation behavior, which is new in the industry, has received little research attention, especially in the hotel industry (Roy et al., 2019).	RO1: To examine the relationship between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	This study highlights the smart servicescape for the service industry, specifically the hotel industry, as suggested by Kang et al. (2017), Kang et al. (2019) and Roy et al. (2019). It is also applicable to the retail industry.	H1: There is a significant relationship between antecedents (physical, social, and smart servicescape) and value co-creation. H1a: There is a relationship between physical servicescape and value co-creation. H1b: There is a positive relationship between social servicescape and value co-creation. H1c: There is a positive relationship between smart servicescape and value co-creation.
It is proposed that if hotel guests do not spread good information about the servicescape, the hotel may lose around US\$100,000.00 in business opportunities (Keshavarz & Ali, 2015).	There is still a lack of research to examine value co-creation and its impact on customer satisfaction (Jin & Chen, 2021). In general, the outcomes of value co-creation remain	RO1: To examine the relationship between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	The study will provide input for the management of hotels on how they can benefit from customers' roles as a "partial employee".	H2: There is a significant relationship between value co-creation and customer satisfaction.

Table 1.1 : Continued

Value co-creation does not necessarily lead to customer satisfaction, as the relationship has a dark side (Gligor & Maloni, 2021).	unclear (Busser & Shulga, 2018). An increase of 2 % in positive guest reviews may enhance the hotel's profitability by 10 % (Keshavarz & Ali, 2015).			
Customer citizenship behaviors (CCB) are profitable but challenging to attain (Chan et al., 2017)	There is a need to investigate the causal relationship between value co-creation and CCB as it is underexplored (Assiouras et al., 2019; Sugathan & Ranjan, 2019) There is a missing link between the customer and value co-creation as a previous study focused on an OCB (organization behavior citizenship) study (Al Halbusi et al., 2020).	RO1: To examine the relationship between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	Hotel management needs to appreciate and have good relationships (working together) with hotel guests to get future benefits.	H3: There is a significant relationship between value co-creation and customer citizenship behavior (CCB).
While recovering from the pandemic, gaining the trust and satisfaction of hotel guests is a big challenge. It is suggested that future studies	Satisfaction will generally result in the guests offering to play an extra role or behavior (Al-Halbusi, 2020), for instance, CCB. Hence,	RO2: To examine the interrelationships between servicescapes, (physical, social and smart	Hotel management needs to focus on satisfying their guests' demands as it positively influences CCB.	H4: There is a significant relationship between customer satisfaction and customer citizenship behavior (CCB).

Table 1.1 : Continued

on guest satisfaction are needed in Malaysia (Aminudin & Jamal, 2021).	the study aims to examine the relationship between customer satisfaction and CCB.	servicescapes), customer satisfaction and CCB.		
To promote satisfaction among guests at the hotel level, the need to develop a good relationship with guests is essential. Sharing and utilizing knowledge is the critical dimension for the hotel to identify the attributes that generate the highest level of satisfaction among the customers related to the activities of the hotel industry in Malaysia (Aminudin & Jamal, 2021). Hence, it is vital to have a good rapport with the customer. Nevertheless, common complaints regarding servicescapes offered to hotel guests include false advertising of the hotel rooms (Agoda, 2021).	It is being emphasized that good servicescape will result in high guest satisfaction (Lin, 2016) The hotel industry is becoming customer-orientated as it aims to develop a positive and satisfying relationship with guests (Hassan et al., 2013)	RO2: To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	Hotel management needs to enhance their servicescape as it is the primary resource for guests. The study will benefit the hotels' return on investment (ROI). Productivity and quality will increase by delivering services expected by guests. This is very important, especially during the post-pandemic period, as most hotels would want to recover their business and attract guests. The hotel industry can improve its servicescape efficiently by focusing on the most critical aspects that suit its operation and the demand of guests.	H5: There is a significant relationship between antecedents (physical, social, and smart servicescape) and customer satisfaction. H5a: There is a significant relationship between physical servicescape and customer satisfaction. H5b: There is a significant relationship between social servicescape and customer satisfaction. H5c: There is a significant relationship between smart servicescape and customer satisfaction.

Table 1.1 : Continued

In marketing, practitioners and academics look at factors promoting CCB as a notable driver of business success (Abdelmoety et al., 2022). During the pandemic, the hotel management must focus on servicescape (Bonfanti et al., 2021) because it has been highlighted as one of the antecedents contributing to the CCB (Gong & Yi, 2019). Integrating robots and service automation into the hotel's service delivery process is critical in gaining a competitive advantage. However, the human touch is still required for a more personalized guest experience (Davari et al., 2021). Hence, there is a need to identify the role of smart servicescape (high-tech and high-touch) in CCB.	Gong & Yi (2019) suggested that one future research direction is to consider the servicescape element as the potential CCB antecedent. Xu et al. (2021) mentioned that servicescape's effects on CCBs of helping other customers and providing feedback to an organization are completely neglected. The antecedents of CCB studied by previous researchers were focused on perceptions of the relationship between organizations (Bettencourt, 1997; Bove et al., 2009), good social support (Zhu et al., 2016), corporate social responsibility (CSR) (Abdelmoety et al., 2022; Aljarah, 2020) and customer love (Hossain et al., 2020). But the element of servicescape, which is one of the primary resources of the hotel, is still unexplored.	RO2: To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	In addition, it is suggested that hotel management pay attention to customers who display CCB so that the behaviors may be reciprocated and extended to other guests in the service encounter (Yi et al., 2014). Hence, the hotel will benefit from this consumer behavior. This study further explores the direct relationship between physical, social and smart servicescape and CCB in four- and five-star hotels, as research in this area is limited.	H6: There is a significant relationship between antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB). H6a: There is a significant relationship between physical servicescape and customer citizenship behavior (CCB). H6b: There is a significant relationship between social servicescape and customer citizenship behavior (CCB). H6c: There is a significant relationship between smart servicescape and customer citizenship behavior (CCB).
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Table 1.1 : Continued

Limited knowledge and lack of understanding of the role of servicescape towards CCB. Moreover, understanding value co-creation between servicescape and CCB has largely been ignored. Hotel management does not care about their guests' feedback. They fail to appreciate their guests' contributions in giving feedback and complaints that may help the hotel improve its services.	There are limited studies investigating the role of servicescape in influencing CCB (Li & Wei, 2021). Studies on value co-creation and servicescape have drawn attention mainly to retail stores, restaurants, theme parks, and hotels (Al Halbusi et al., 2020). Unfortunately, the study on hotel guests of 4 and 5-star in Malaysia is receiving scant attention.	RO3: To investigate the mediation effect of value co-creation between physical, social and smart servicescapes (physical, social servicescapes), and CCB.	The study will provide input for hotel management on how they can benefit from guest roles. For instance, operating costs in promotions may be reduced when guest co-creation and CCB take place. The happy guests will act as hotel "salespersons" in sharing their experiences with other people (Hur et al., 2018).	H7: Value co-creation mediates the relationship between the antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB). H7a: Value co-creation mediates the relationship between physical servicescape and customer citizenship behavior (CCB). H7b: Value co-creation mediates the relationship between social servicescape and customer citizenship behavior (CCB). H7c: Value co-creation mediates the relationship between smart servicescape and customer citizenship behavior (CCB).
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1.9 Scope of Study

The concept of servicescape has been identified and applied in the study and serves as the antecedent for the tourist experience. Indeed, the dimensions of servicescape have mainly focused on human-made settings (Bitner, 1992) designed to attract tourists to a destination. For this study, servicescape is suggested to be one of the potential antecedents of CCB (Gong & Yi, 2021). The emergence of the smart servicescape in the retail industry (Roy, Singh, et al., 2019), has inspired the hotel industry to adopt together with physical, social servicescape (Line & Hanks, 2020) and value co-creation (Roy, Balaji, et al., 2019) to make it holistic.

Targeted samples for the study are domestic hotel guests who have checked in at four- and five-star hotels in Malaysia for at least one night and experienced the facilities and services between 2019 to 2022 (3 years). Domestic tourism is important to the economy (Shaliza et al., 2023), stated in the Tourism Malaysia Strategic Plan (2022-2026) and has been proven to be the industry's savior in times of crisis (Wickramasinghe & Naranpanawa, 2023) specifically Covid-19.

This study focuses on four and five-star hotels in Malaysia. This is due to researching the luxury hotel environment in Malaysia can contribute to global benchmarks specifically on the servicescape, positioning Malaysia as a leader in hospitality excellence. It is believed that the study can inform policymakers and industry stakeholders on the need to engage hotel guests to ensure the growth and sustainability of the luxury hotel industry specifically after the pandemic which has affected the industry so much.

Given the constraints of the pandemic, data collection was conducted online. The survey was disseminated through selected social media platforms, allowing guests of four- and five-star hotels to participate and provide feedback. Respondents are required to answer the screening question before proceeding with the survey.

1.10 Definition of Terms

This section states and defines the terminologies used in this study. The main objective of explaining the terms is to avoid ambiguity and misunderstanding. This is vital as each word is associated with the conceptual framework in Chapter 3. The keywords are as below:

1. Customer citizenship behavior (CCB)

Customer citizenship behaviors pertain to extra-role behaviors shown by hotel guests, including actions toward other customers, employees and firms (Assiouras et al., 2019).

2. Customer satisfaction

Customer satisfaction is the hotel guests' perspective in which their needs, wants, and expectations are met throughout the product or service life cycle, which leads to the intention to repurchase the products and services in the future (Aminudin & Jamal, 2021).

3. Value co-creation

Value co-creation can be defined as the actions of multiple actors, often unaware of each other, that contribute to each other's well-being (Vargo & Lusch, 2016).

4. Servicescape

Servicescape is related to service encounters in a physical and social environment (Bitner, 1992).

5. Physical servicescape

Physical servicescape describes the surroundings where businesses deliver services to their customers (Bitner, 1992).

6. Social servicescape

Social servicescape accounts for the effects of other social actors (e.g., employees) in the service environment (Tombs & McColl-Kennedy, 2003).

7. Smart servicescape

The smart servicescape consists of the direct and indirect interactions between consumers, smart devices and service firms, and other elements in the service environment (Sanjit et al., 2019).

1.11 Organization of Thesis

The thesis is currently divided into six chapters, and each chapter describes and discusses the whole research process following a brief introduction in Chapter 1. Chapter 2 contains the literature review, a general overview of customer CCB and the antecedents studied. Chapter 3 explains the framework and hypothesis development. The methodology of the research is discussed in Chapter 4. Chapter 5 consists of the data analysis and discussion. Last but not least, Chapter 6 comprises the thesis's discussion and conclusion.

Chapter 1 describes the overview of the research and briefly describes the background of the study. The study's research problems, questions, and objectives are outlined to be known on the CCB and the antecedents studied. Theoretical and practical significance is later explained. The study's scope and limitations are outlined with the definition of terms end of the chapter.

Chapter 2 reviews the literature on CCB and the basic introductions of the variable in the hotel industry with the theories underpinned explained. The variables studied are physical servicescape, social servicescape, smart servicescape, value co-creation, customer satisfaction, and CCB.

Chapter 3 covers the conceptual framework and proposed hypotheses for the present study. The conceptual framework is essential as it will guide the researcher to examine the study flow with all variables mentioned earlier.

Chapter 4 examines the research methodology to be carried out for the researcher to get the results. This study adopts quantitative research methods. A discussion of the sampling, development of measures and instruments, and data analysis techniques are presented.

Chapter 5 explains the data analysis and discusses the analysis. The chapter begins with the analysis strategy, divided into phase I (preliminary data analysis) and phase II (structural equation modeling). The analysis includes the empirical result of the hypotheses (support or not support).

Chapter 6 is the last chapter of the thesis. It comprises the discussion and conclusion of the study. The key findings are discussed, and the recommendations are provided for future research. The results are associated with the research objectives developed in Chapter 1. Furthermore, the implications from theoretical and managerial perspectives is being discussed. The research limitations are discussed alongside future recommendations.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter begins with a general perspective and discussion of the tourism and hospitality industries. The debate highlights the Malaysian tourism industry, followed by the hotel industry and the issue addressed in the present study. The study constructs consists of servicescape, value co-creation (VCC), guest satisfaction and customer citizenship behaviour (CCB) are reviewed. Based on previous research, each construct has been further reviewed based on the conceptualization and appropriate measurement dimensions. This study intends to determine the relationship between variables mentioned in Chapter 1. The literature examines the variables and answers the research question. The general objective of this chapter is to discuss the underpinning theory. A discussion on the underpinning theories and models used to support the conceptual framework is reviewed and the theories are discussed in this chapter. Any gaps in the research have also been highlighted and presented in this chapter.

2.2 Overview of the Tourism Industry

In general, the tourism industry is an essential and influential driver of economic growth in both developing and developed countries. This industry provides goods or services to facilitate business and leisure activities away from home. It includes hotels, restaurants, travel, events and entertainment. For instance, the industry cares for travellers, accommodation, and food and beverage needs. Besides the excitement and dynamism of the tourism industry, providing services constantly evolving and

adapting to changing customer needs and trends are some of the challenges that must be faced (Hossain et al., 2023).

International tourist arrivals have improved to 80 per cent of pre-pandemic levels for the first quarter of 2023. In the first three months of 2023, 235 million tourists travelled internationally, more than double the same period in 2022 (UNWTO, 2023). Hence, the industry is considered one of the fastest-developing economic sectors in the world. The global international tourist arrival is displayed in Table 2.1.

Table 2.1 : Global International Tourists Arrivals

Year	Global International Tourists Arrival
1950	25 million
1980	278 million
1995	528 million
2012	1.035 billion
2015	1.186 billion
2017	1.235 billion
2018	1.414 billion
2019	1.464 billion
2020	406.89 million
2021	458.39 million
2022	969.49 million
Q1 2023	833.76 million

(Source: UNWTO 2023)

According to UNWTO (2023), there has been a tremendous increase in tourists since 1950. The above table states the global international tourist arrivals from 1950 to quarter one of 2023. In 1950, there were 25 million global international tourist arrivals worldwide. The arrivals increased sharply to 278 million in 1980. It increased by another 250 million to 528 million in 1995, and by 2012, global tourist arrivals had hit the one-billion mark. In 2015 and 2017, global tourist arrivals continued to grow to 1.186 billion and 1.235 billion, respectively.

Furthermore, 1.414 billion international tourists were travelling in 2018, peaking at 1.464 billion in 2019, just before the onset of the Covid-19 pandemic. The following year, 2020, showed a tremendous fall in tourist arrivals to 406.89 million worldwide due to the pandemic, accounting for only 28 per cent of 2019 arrivals. International tourist arrivals began increasing by 102 per cent in 2022 compared with 2021 but remained 37 per cent below 2019. International tourist arrivals grew by 86 per cent in the first quarter of 2023.

According to Vu & Hartley (2021), the growth of tourism as the world adapts to the pandemic may be due to several factors: the optimisation of the tourism structure, the effect of income, foreign exchange, employment effect and the industrial linkage effect. The tourism structure consists of a few components in the industry: tourist boards, tourism services, travel services, accommodation services, conferences and events, and attractions. Hence, it can be seen that accommodation services are an essential component and the highest revenue contributor in the hotel industry.

2.3 Tourism Industry in Malaysia

Malaysia has a land area of 329,847 square km, with Thailand, Singapore, Brunei and Indonesia as its neighbours. Malaysia consists of two regions: the peninsula and the Bornean states of Sabah and Sarawak. It has 13 states and three Federal Territories — Kuala Lumpur, Putrajaya and Labuan. Currently, the country has a population of 33.2 million, comprising 70.1 per cent Malay & Bumiputeras, 22.6 per cent Chinese, 6.6 per cent Indians and others (DOSM, 2023; Statista, 2023).

Tourism is one of the primary industries and service sectors in Malaysia and the world (Ahmad et al., 2023). It is one of the most important and significant contributors to the country's economy (Ghani et al., 2023) due to its fastest-growing sectors (Ahmad & Scott, 2019; Cheng et al., 2019). Malaysia has been categorised as one of the world's most exciting countries (Hossain et al., 2023). Foreign tourists choose to visit Malaysia mainly for the warm hospitality and friendly communications of its people (Ulfy, 2020).

However, the pandemic affected the industry's growth in 2020 and 2021 (Sharma et al., 2021). In 2020, the sector faced global headwinds (Ahmad et al., 2023) with the implementation of various movement control orders (MCO) to curb the spread of Covid-19. Kunjuran (2022) highlighted that it was difficult to predict the time of future recovery or stability due to the impacts of the pandemic on the Malaysian tourism industry. It has been shown that international tourism is on track to return to pre-pandemic levels. In the first quarter of 2023, twice as many people travelled as in 2022. Malaysia aims to welcome 16.1 million international tourists, particularly 300,000 tourists from West Asia, a 60 per cent increase from last year. This will generate revenues of approximately RM49.2 trillion. Local tourist arrivals from 2013 to 2022 are given in Table 2.2.

Table 2.2 : Tourists Arrival in Malaysia

Year	Tourists Arrival in Malaysia
2013	25.72 million
2014	27.44 million
2015	25.72 million
2016	26.76 million
2017	25.95 million
2018	25.83 million
2019	26.1 million
2020	4.33 million
2021	130,000
2022	10.07 million

(Source: Statista, 2023)

With the significant increase in the number of tourists, the role of the hospitality industry is becoming increasingly critical. Hospitality means more than just being hospitable. It involves more than having friendly interactions with guests or tourists. It is about emotions, trust, and treatments. It means being kind and helpful, welcoming and considerate, understanding tourist needs and expectations, and responding to them quickly and respectfully. As an industry, hospitality is based on a human-centred philosophy influenced by religions and cultural traditions (Ali et al., 2021). It is further defined as a special relationship between a traveller and a host (Ali et al., 2021). Hence, it is important to mention that hospitality is an essential element of tourism.

These facts justify the essential role of the hospitality industry in the economic growth of developing and developed countries (Hao & Chon, 2022; Hossain et al., 2023). Hospitality has been identified as a highly influential add-on service that can effectively add value to a core service (Kandampully, 2006; Lovelock & Gummesson, 2004; Wang, 2011). The industry is considered a service industry as it delivers services regardless of whether it is managed and executed by humans or high-tech machines.

From the general viewpoint, the tourism and hotel industry are two sub-industries under hospitality besides food and beverage. The hospitality industry comprises five sectors: hotel (lodging), tourism (travel, assembly, event management, and recreation), and food and beverage (restaurant and management services) (Gallan et al., 2021). The existing hospitality market is highly competitive, and hotel customers search for options if fewer services are offered (Hossain et al., 2023). Hence, the hotel industry must ensure the facilities and services are in good condition. It is even more critical as hotels have a unique system that provides services to complement their customers' products, which are people-oriented (Sangaran & Selvanayagam, 2021). According to the Economic Transformation Programme (ETP), improving rates, mix, and quality of the hotel is considered one of the components of tourism, which accounted for RM5,528.7 million of the gross national income (GNI) in 2020 and 64,424 jobs (Pemandu, 2010). Therefore, the hotel industry is one of the vital service industries in Malaysia.

2.4 The Hotel Industry in Malaysia

The hotel industry has grown exponentially to become one of the most significant contributors to the tourism industry (Cheng et al., 2019) and a demanding sector within hospitality (Esposito, 2023). It is also considered one of the largest global industries (Alreahi et al., 2023). There are 5,340 hotels in Malaysia, ranging from 5-star, 4-star, and 3-star to budget hotels, compared to 2,373 in 2008 (mytourismdata, 2020). The total number of rated tourist accommodation premises is 505, which consists of 103 five-star, 137 four-star, 159 three-star, 73 two-star, and 33 one-star accommodations (Motac, 2021). It portrayed a two-fold increase (55.56 per cent) within 12 years in the number of hotels in Malaysia (Hirschmann, 2020).

In recent years, the updated 2023 hotel forecast, the projected average daily rate is 1.5 per cent from the previous projection, updated in January 2023. The projected revenue per room increased to 1.3 per cent of the prior forecast to RM443.32 for 2023, a five per cent increase from 2022. The occupancy showed a 0.2 per cent decrease from the last estimates to 63.5 per cent (Smith Travel Research, Inc., 2023).

Since the tourism industry has grown after the pandemic, its contribution to the hotel industry has been enormous. Due to that, domestic tourism increased to 48.6 million visitors for the first quarter of 2023 (1Q23); there is no doubt that the demand for hotel services continues to escalate in parallel with the country's tourism industry (DOSM, 2022). According to the Domestic Tourism Statistics (2021), most tourists (58.6 per cent) would stay in relatives' houses, 29.5 per cent stay at hotels, 4.5 per cent stay at homestays, 3.1 per cent at chalets, 2.6 per cent at apartments and 1.7 per cent at rest houses. The data shows that tourists prefer to stay at hotels or with relatives. It shows that the hotel still attracts tourists to stay and experience the facilities and services. The hotel has its speciality and uniqueness that got the attention of the tourists.

The hotels were classified according to the rates given in the industry. The Tourism and Culture Ministry leads the classification authority in Malaysia. The authority comprises the ministry and non-governmental organisations, such as hotel associations (eg. Malaysian Association of Hotels (MAH), Malaysian Association of Hotel Owners (MAHO), Malaysia Budget Hotel Association (MyBHA), tour operator associations, and other relevant government agencies. It is well known that the star rating system is the benchmark for the hotel's overall quality, where more stars lead to a better hotel. Since there is no international standard for the star rating system, it

can be pretty tricky. In Malaysia, the rating system of the hotel is set by the Tourism, Arts, and Culture Ministry based on six criteria: aesthetic requirements, the common area, guest rooms, service, safety and hygiene, and employees (Khoo, 2019). Generally, luxury hotels are a group of four-star and five-star hotels since they share common characteristics regarding facilities and services. In contrast, the three-star, two-star and one-star hotels are grouped as mid-scale or economy sectors.

Recently, Ghani et al. (2023) identified that accommodation is one of the dimensions of destination service quality besides health and hygiene, shopping, and information facilities. Hence, accommodation is an essential product of the hotel industry. Therefore, the present study includes a hotel room or accommodation as the study setting. There are several classifications of hotels in the tourism industry.

2.5 Luxury Hotels in Malaysia

In recent years, luxury hotels in Malaysia have significantly grown, leading to increased competition in the hospitality industry (Li, 2020). The luxury hotel industry has developed into a significant segment of the general hotel industry and is experiencing rapid expansion (Chu et al., 2016). The global market size was valued at US\$128.54 billion in 2022. It is expected to grow from US \$140.28 billion in 2023 to US\$293.61 billion by 2030, highlighting a compound annual growth rate (CAGR) of 11.1 per cent from 2023-2030 (Fortune Business Insights, 2023). To attract guests, luxury hotels aim to provide the highest quality services, from interior design to food offerings and additional services such as spas, gyms, and swimming pools. In addition, the luxury hotels provide excellent ambiance, exceptional service, strategic location,

exquisitely designed rooms, and complete heritage value. The fantastic products and services attract guests who expect the best service from the stay.

To ensure the highest quality services, there are six criteria in determining the luxury hotel based on the star rating. The first criterion is the qualitative and aesthetic requirements that accounts for 10 per cent of the score. The luxury hotel should have adequate and aesthetically pleasing decoration in the common areas like the hotel lobby and guest rooms. The safety element, functionality, and quality must be well-maintained, including the fixtures, fittings, and decoration. The second criterion is the common area that accounts for 20 per cent of the score. To score well here, there should be a spacious reception area, a fine dining or restaurant with private dining rooms, a bar, a banquet hall, prayer rooms, a swimming pool, a recreation room or gymnasium, an outdoor garden or terrace and public restrooms. The facilities should feature high-quality features and optimum levels of comfort. For instance, the Pangkor Laut Resort has a swimming pool and private relaxing sanctuary. The third criterion is the bedrooms that account for another 20 per cent of the score. The bedroom must come with Wi-Fi coverage, complimentary drinking water and glasses, six entertainment channels, a telephone with IDD facilities and comfortable air-conditioning and cooling systems — for example, the spacious bedrooms at the Rainforest Deluxe Room at the Ritz-Carlton in Langkawi.

The fourth criterion is the service which makes up 25 percent of the score. In this area, the hotel must provide guests with a 24-hour front desk, F&B options and other relevant services, such as a tourist concierge. For instance, St Regis Langkawi offers butler services. The fifth criterion is safety and hygiene which is 15 percent pf the total

score — things like standby generators, emergency lifts and tip-top hygiene are critical conditions here. The final criterion are the employees that are 15 per cent of the final tally. The human touch is vital to the luxury hotel service. The hotel employees should be proficient in English and other languages to cater to foreign guests. The image of the staff is also essential (Khoo, 2019). A general guideline provided by major travel sites for star-rated hotels is illustrated in Appendix 2.1.

However, the emergence of the pandemic has led the luxury industries to shift their traditional way of doing business to digital platforms and touchless services. For instance, in February 2021, Marriott International officially released another version of its mobile app, Marriott Bonvoy, with new booking system features, enhanced personalised experiences, and customisation in earning and redeeming points (Fortune Business Insights, 2023). Hence, the luxury hotel industry is rapidly expanding and increase in numbers (Chu et al., 2016). The hotel management needs to ensure good servicescape provided to the hotel guests, especially luxury hotels. This has been shown by the Ritz Carlton Hotel, where they present themselves as an “experience and memory creator”. The same goes with other luxury hotels where hotel guests go after “experiences” rather than simply accommodation and food and beverages (Choi & Kandampully, 2019; Jani & Han, 2015).

2.6 Hotel Industry Key Players

Hotel guests are seen as one of the leading key players in the hotel industry. Their role is significant to the marketing strategy and financial performance of the business and the industry. According to Juttner & Wehrli (1994), customers can increase organisational productivity by providing mental and physical inputs, such as giving

new ideas, helping other customers, and sharing experiences with managers. It is highlighted that a great experience from the hotel increases guest satisfaction and the tendency for them to have positive behaviour towards the hotel, such as CCB. For instance, a sincere and courteous welcome from the hotel makes them feel invited and that good decisions and choices have been made. They will share positive experiences with others, treat employees nicely, and inform employees of their problems (Bettencourt, 1997).

The study on consumer behaviour topic has gotten the attention of researchers in hospitality and tourism (Cohen et al., 2014). Consumer behaviour includes ideas, activities, or experiences that satisfy consumers' needs and demands (Rawal et al., 2022). Research has shown that it is challenging to predict consumers' behaviour, even the experts in the field (Armstrong, 1991; Rehman et al., 2021). It is due to the different backgrounds, variety of hotel guests (Dewalska-Opitek & Mitreğa, 2019), advanced environment, globalisation, and technology usage in the business's daily operation, including the service industry (Rajesh et al., 2022). It is believed that hotels that improve service quality and access their customer perceptions can enhance their competitive advantage. Hence, consumer behaviour is quite complex as it involves many forces that will drive and shape their behaviour and decision-making.

Generally, consumer choices vary as they depend on several factors divided into internal and external (Miao & Wei, 2013). Initially, the consumer is considered the leading actor in the business environment. They will then experience and value the products and services offered, leading to satisfaction and other consumer behaviour. It is regarded as an internal factor. Furthermore, consumers usually interact with the

employees and other consumers to get information and share experiences. It is known as the social influences which generally occur in the business. Thus, understanding the consumer is never simple in the business environment. It is even harder to get their participation to give feedback and comment. Comments are well known for the negative experience rather than good experience. The business must provide the culture and attract its consumers to reward those who provide supportive feedback regarding the organisation (Berezan et al., 2014; Cetin & Dincer, 2014; Magno et al., 2018).

It is essential to view the consumer role from the VCC perspective as the present study examines the VCC as the mediating variable. There are eleven roles of the customer; as a co-producer, co-distributor, co-promoter, co-manufacturer, co-consumer, experience creator, co-innovator, co-ideate, co-evaluator, co-designer and co-tester (Dewalska-Opitek & Mitreğa, 2019). The role of consumer in the VCC process is illustrated in Figure 2.1.

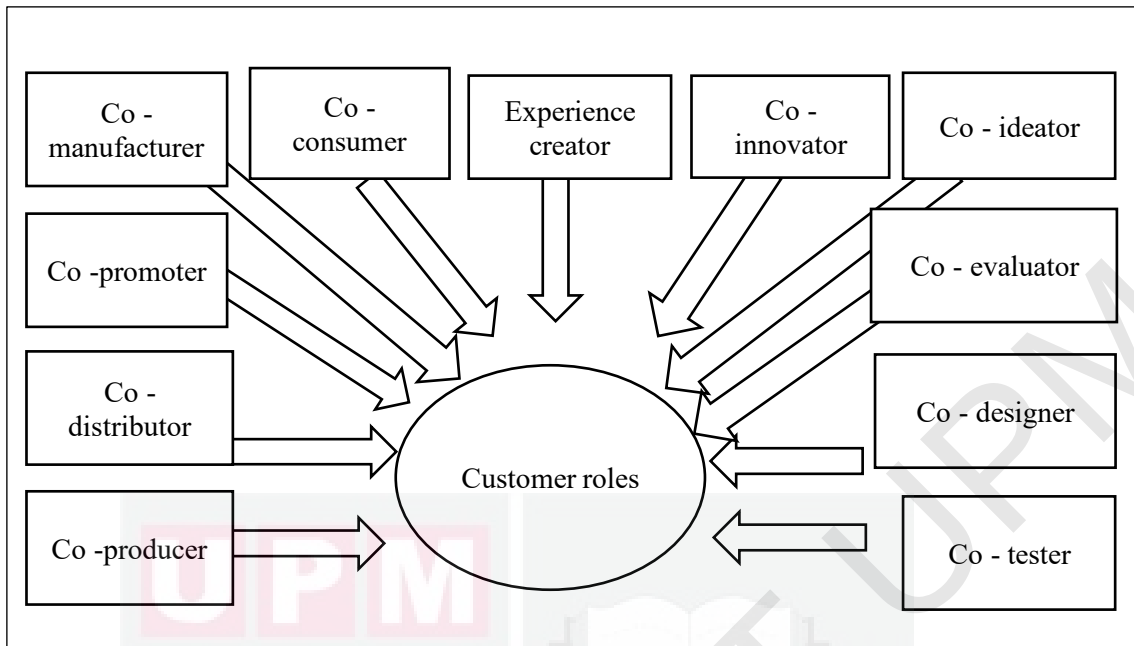


Figure 2.1 : Classification of Customer Roles in Value Co-Creation

(Source: elaborated by the authors on Agrawal & Rahman, 2015 Dewalska, 2019)

Due to the diversion of hotels towards its traditional business approach towards focusing on the relationship with guests to develop positive relationships (Hassan et al., 2013), guests' behaviour in helping and providing feedback to the hotel is meaningful, but it is sometimes quite tricky. In recent times, due to the tight financial condition of the hotel during the post-pandemic, hotels need positive feedback from the guests as a marketing tool to promote and attract others to experience the products and services offered by the hotel. With technology, it is believed that providing comments is much easier, for instance, through social media such as Twitter, Facebook, and TikTok. Some positive comments would be "The employees were helpful," "The room was clean, and the room service was on time." Technology has helped hotels lower operational costs, increase operating profit, and value the guests' time (Hassan et al., 2013). The management has to ensure the products and services offered to the guests are updated following the latest trends and needs of the

hotel guests. For instance, guests require a speedy Internet connection while staying at the hotel.

Overall, hotel guests are vital players in the hotel industry. Their engagement and satisfaction are crucial to the success of the hotel. The digitalisation of the sector has had an impact on hotel guests as well as hotel operation. Thus, understanding the industry's key stakeholders and integrating the hotel environment (physical, social, and smart) and their citizenship behaviour will provide guidelines for understanding the problems faced by the industry. The following section elaborates on the concept of "smartness" in hotel operations.

2.7 Smartness in Hotel Industry Operation

In the hotel industry, "smartness" refers to using technologies to improve operations and customer satisfaction. The conceptualisation of "smart" begins with "smart tourism", which is famous in the tourism and hospitality literature (Chang et al., 2020; Li et al., 2017). The hotel industry faces the issue of "smartness" in daily operations and service delivery to guests. The term "smartness" derives from the digitalisation and usage of technology in the hotel and tourism industry. However, the concept of "smartness" in the tourism industry not only involves pure technology elements (e.g., Industry 4.0 technology) (Buhalis et al., 2023), but what matters are the interactions, experiences and benefits between the tourism and hospitality stakeholders (Buhalis, 2020). Hence, the suitability of the technology used is most important before the hotel decides to consider being part of the technology to ensure the hotel provides guests with a highly personalised experience (Petrevska et al., 2016).

Hotel guests can have high expectations for smart technologies supporting normal, day-to-day hotel operations and services (Davari et al., 2021; Stylos et al., 2021). Nowadays, value for money is the main priority of guests, as staying in the hotel is a want rather than a need (Yang et al., 2021). Indeed, some guests would expect an easy-to-use information technology system that can assist them in planning their trip, suggesting places of interest, and searching for relevant information (Neuhofer et al., 2015). The era of guests satisfied only with a clean room, typical gym, and spa has passed. Nowadays, hotel guests are more knowledgeable and have higher standards, which they search, compare prices, check reviews, and reserve online (Petrevska et al., 2016). Besides that, some guests interested in technology seek this service delivery in the hotel (Cheong & Law, 2023; F. Wu et al., 2023) — for instance, robotic employees and high-tech service delivery. Even so, the hospitality elements and the fundamental attractions of the hotel, such as the hotel lobby, the presence and assistance from the hotel employees, and clean, functional facilities in the room, are still at the heart of the guests' requirements (Cadotte & Turgeon, 1988; Knutson, 1988; Li et al., 2013; Nguyen et al., 2023; Soderlund, 2016).

The IoT has been applied in all industries, including agriculture, healthcare, sports, manufacturing, travel and tourism. Since digitalisation and technology have reached the tourism industry, the Internet of Things (IoT) has been specifically adapted to hotel operations. IoT is a communication ecosystem in which physical objects (things) are wirelessly connected to the internet and one another (e.g., Wi-Fi, Bluetooth) to enhance guest experience and optimise expenses. The physical devices are installed with sensors, cloud computing, software and other technologies (Sharma & Gupta, 2021). In simple terms, it means linking digital devices with the internet to make them

“smart”. For instance, the curtains and shades in most four- and five-star hotels can be controlled using a tab or special switch (motorised curtains and shades). Additionally, IoT has been extended to light switches, air-conditioning control and RFID minibars. Besides that, it has also been utilised in the management and operation of the hotel, such as inventory control and kitchen management solutions in restaurants, mobile check-in and check-out, predictive maintenance systems, and RFID cashless payment systems (Ozdemir et al., 2023; Sharma & Gupta, 2021).

IoT has attracted the attention of hotel guests to experience the services and facilities offered in the era of digitalisation. Hotel guests could experience the co-operated technology as IoT connects different technological pieces. Tasks could be completed at the touch of a button. Millennials, the dominant generation of travellers, have a positive attitude towards hotels that implement smart technologies even though they know the risks that could occur due to the usage of the technologies (Nguyen, 2020). Hence, Indeed, it is confirmed from recent research that the IoT has been used in the hospitality industry and increases consumer satisfaction (Elkhwesky & Elkhwesky, 2022).

Therefore, hotels that are flexible and willing to change their service rapidly gain the benefits of “smartness”. Hotels can differentiate their services in the challenging and competitive hospitality market (Petrevska et al., 2016). Even though technology and digitalisation have brought enormous benefits to the industry, being the industry that is special and cares much about human service and the human touch, the industry has to balance between both elements, with the expectation that not all hotel guests will get attracted to digitalisation and technology usage especially the old citizens who has

the spending power but yet prefer to get personalised service from the hotel employees. Managers interested and passionate about implementing digitalisation must ensure that hotel guests' needs and desires are fulfilled (Stylos et al., 2021).

The combination of both service delivery elements would lead to "smartness" and assist the hotel's management in satisfying guests' needs. From the guests' standpoint, gaining experience in a smart environment and using hotel gadgets or tools is a valuable experience. Hence, embracing and understanding the technology from the expectations of the hotel's target market could enhance guest satisfaction and financial performance. Other than that, VCC by hotel guests from service experience is vital in improving satisfaction and behavioural intention, such as CCB. Accordingly, several issues in the industry require immediate attention.

2.8 Issues Faced by Luxury Hotels

This section provides a concise background on the research topic from the industry's perspective. The information on the industry was obtained from local and international newspapers, magazines, and websites. In a global context, the hotel industry structure comprises three elements: brands, owners, and operators. The brand companies are Marriott International, Hilton Worldwide, Accor, and the International Hotel Group; they usually do not operate their hotels. They franchise the brand to hotel owners. The hotel owners are usually real-estate investment trusts, which use investors' funds to buy hotel real estate and buildings. However, the standards of the hotel, quality of the guest experience and booking platforms were from the brand owners. Most hotel operators are hotel management companies operating many hotels under different brand names (Wynn & Jones, 2022).

The luxury hotel is known for its one-to-one and extraordinary personalised service, highlighting the human touch. This is mainly because the hotel is operating to provide good service delivery through a great environment and hoping for an excellent guest experience. Concerning this, the hotel environment has got the attention of the domestic guests of luxury hotel comments and is classified as the third most dissatisfied review (Razli et al., 2022). Surprisingly, consumer demand for luxury services increased (Padma & Ahn, 2019) due to industry competition (Ali et al., 2021; Olorunsola et al., 2022; Razli et al., 2022). Therefore, some current issues in the hotel industry were discussed as follows. These key areas include lack of personalization, digitalisation, lack of employees, and high operating costs.

2.8.1 Lack of Personalisation

According to Baloglu and Bai (2023), personalization in the context of luxury hotels is lacking. The issue has been growing in the service industry with the increasing role of luxury hotels to continue to be a high revenue generator for brands. It can be seen that the citizenship behavior between the hotel guests and employees will slowly decrease. The study has proven that service quality, such as interaction with employees and customer experience, leads to positive behavior, such as citizenship behavior (Y. Lin & Choe, 2022; Padma & Ahn, 2019). Even though digitalisation has emerged in the service industry, including the hotel industry, personalised service and human touch should be part of the luxury hotel (Harkison, 2017).

2.8.2 Digitalisation

Digitalization and technology usage, including the service industry, have been widely discussed and applied. The Malaysian government has emphasised the importance of

digitalisation in Measure 7: Prioritising the digital agenda. The second element is the digitalisation of business. It stated that it had set aside RM1 billion to support the company's digitalisation efforts.

Even the internet connectivity for the people has been improvised, with RM725 million provided to implement digital connectivity projects (MOF, 2023), which will enhance the connectivity. Following that, Soni (2019) mentioned the total expenditure on AI and robotics increased tremendously from US\$12 billion in 2017 to US\$58 billion in 2021 globally. In addition, the (MOF, 2024) has paid attention to digitalisation in the economy and society. Budget 2024 has allocated RM76 million for digitalisation to strengthen research, development, commercialisation and innovation ecosystem (The Star, 2023).

The hotel industry has become digitalised even though initially known for its human touch. Globally, many hotels have implemented Artificial intelligence (AI) and robotics in their operations (Khaliq et al., 2022). Osei & Cheng (2023) highlighted that technology has assisted hotel guests in getting the latest information before making decisions on experiencing the hotel and providing feedback.

In the existing scenario, the hotel sector has been using digital technologies such as software packages (Wynn & Jones, 2022). For instance, the Property Management System (PMS) was usually used as the database for guest reservations and assists in the check-in and check-out process. When technology is applied in the hotel, the industry benefits from cost reductions, accuracy, and speed (Stanislav H Ivanov et al., 2017). Besides that, technology has increased the price competition and occupancy

(Wynn & Jones, 2022). In addition, in the post-pandemic scenario, the implementation of technology generally and increasing digitalisation has explicitly made the service-intensive industries such as hotels and tourism be alerted and quickly adapt to new service delivery modes (Ozdemir et al., 2023).

Even though technology is essential in the industry, it is still in its infancy (Ozdemir et al., 2023) and in planning and developing digital transformation initiatives (Wynn & Jones, 2022). Many hotels previously suffered from a misalignment of IT and business strategies but have recently tried their best to adopt digital technologies in various operations (Wynn & Jones, 2022). With the nature of focusing on human service in the hotel service delivery, the adaptation will take some time to get going. Hence, combining the human element with technology is the best approach for the hotel industry (Slavković et al., 2023). Even so, some guests prefer to use technology in the hotel as it is convenient and suits the post-pandemic new normal lifestyle concerned with hygiene and cleanliness (Khan & Hashim, 2020; G. D. Sharma et al., 2021). For instance, the check-in process must not be with the front office employees.

In addition, the industry needs excellent support from the government to enhance the digital marketing platform to boost domestic tourism and international tourists from countries such as Southeast Asia (Dermawan, 2021). Nonetheless, using AI and robotics has led to job insecurity among hospitality workers. Therefore, these employees intend to leave the organisation for more stable employment elsewhere (Khaliq et al., 2022). Hence, it adds to the decline in employee numbers for the hotel sector already hit by the pandemic, which started in 2020.

2.8.3 Lack of Employees

The ambiguous, complicated and unstable business environment, including the service industry, has become an organisational challenge (Hormiga et al., 2013; Minh-Duc & Huu-Lam, 2019). The hotel industry recently faced a significant labour shortage after the pandemic (Razak et al., 2023). Even though the labour shortage in tourism is not new, the Malaysian Associations of Hotels (MAH) president mentioned that hotels in Malaysia are currently facing a 20 per cent shortfall in staff, which is believed to recover in 2025 (San, 2023). With the closure and limited operation faced by the hotel, the management of the hotel could not afford to pay their employees (Chong et al., 2023). Besides that, the number of employees has reduced due to various factors such as sudden reductions made by the hotel, high job demands, irregular working hours, insecure working positions (Leung et al., 2021), workload (San, 2023), and future uncertainties (Choi et al., 2022). The employees have reoriented themselves due to the uncertainty and shift to other industries. In addition, during the post-pandemic, the hotel sector needs to adopt modern technology and service delivery to avoid contact between employees and visitors. Thus, employees' downsizing and temporary leave occurred (Khaliq et al., 2022). Hence, the hotel industry faces a significant labour shortage (Leung et al., 2021).

Besides that, the new generation and fresh graduates' have less interest in joining the industry, which has also affected the number of employees. For the reasons above, the hotel employees are among the employees with passion and total interest in working in this industry. With the GIG economy's growth in Malaysia, youngsters are attracted to join that industry where they could arrange and work at their own pace and time without the supervision of the Supervisor and Manager. In addition, they prefer part-time jobs

(San, 2023) as they give them more income, and they can manage time, even though it is not confirmed, and the risk is higher. Hiring a foreign worker is one of the best hotel management options to overcome this problem. However, it is still an inadequate solution to the problem as many foreign workers hired do not have the skills needed by the industry. The present study will not detail the reasons for the shortage of employees but rather examine the actions that should be taken to address the situation.

Technology helps the industry operate and continue to serve hotel customers with excellent service (Davari et al., 2021). However, the use of technology is limited as hotels still consider the human touch as key to hotel service delivery (Ko, 2017). Hence, a combination of technology and human services is the best method to overcome the labour shortage issue. Due to that, the cost of adapting technology increases at the first stage to sustain the use of technology in daily operations. Nonetheless, the hotel will benefit from preventing higher operational costs.

2.8.4 High Operational Cost

Hotel operating expenses are associated with maintaining and running a hotel. The hotel industry's high operational costs are a significant problem for hotel managers. A recent study indicated a positive relationship between financial condition and customer satisfaction (Fotiadis et al., 2021; Quan et al., 2022; Ugurlu et al., 2022).

The hotel operating costs have increased tremendously due to the awakening period after the pandemic and the world economic condition (Bhat & Beigh, 2020; Choirisa, 2022; Ozdemir et al., 2021). Hotels may experience financial difficulties due to revenue losses and the economic implications of the pandemic (Gupta et al., 2020). This is due to the operation cost that needs to be borne by the hotel while the world

faces movement control orders to inhibit the spread of the virus. Even though the industry emphasises digitalisation and technology in operation, cost minimization is still the main objective (Liu et al., 2023).

Regarding the operation cost mentioned, the hotel's management could maximise its guests' role in helping it sustain its operation in the industry. The power of actual service experience by the guests has never been ignored as it can be a powerful live tool to attract others to experience it, too. It will also lead to free marketing activities such as promotion and advertisement. The digitalisation of operations is the same as with the reviewing and providing feedback and comment processes (Fernandes & Fernandes, 2018). The social media platform and the OTA (Online Travel Agency) have helped the process run smoothly and efficiently—for instance, AGODA, Booking.com, Facebook and Instagram, among others.

Besides that, the hotel can also maximise the existing function of its basic facilities and resources to attract people to experience the hotel (Pizam & Tasci, 2019). The current resources, such as the hotel environment, must be fully utilised to benefit the hotel, especially in the critical operation process. For instance, the attraction from the hotel lobby and the special treatment from the hotel employees, among others. Regarding the digitalisation of the hotel industry, the most suitable technology that the hotel guests prefer could also assist the hotel in delivering service to the guests. In this case, the human touch is still essential to engage with the guest in the service delivery process.

2.8.5 Other Issues

The newspaper article also discussed the financial issue faced by the industry and the action taken to solve the problem. The Finance Ministry (2021) is aware of the issues faced by the industry. RM30 million is allocated for budget hotels and homestay owners, RM50 million for companies to organize arts and culture-related programmes, and RM60 million for domestic tourism promotional programmes. In addition, the other newspaper article reported that there is financial help from the Government, but it has proven insufficient (Dermawan, 2021). However, substantial aid, such as additional tax incentives, hotel licenses, quit rent and assessment rates reduction, foreign workers' levy, and a decrease of 50 per cent on electricity and water bills, has helped the industry. Besides that, hotels need to generate immediate revenue. Hence, government servants and corporations are encouraged to organize events and stay at the hotel to sustain the business.

It is challenging to satisfy the needs and wants of the organisations' customers, including hotels (Esposito, 2023). This is due to the changing trends of the industry as a whole and the changing lifestyles and knowledge of the hotel customers. (Adediran et al., 2018). Their expectations have also affected the hotel's operation in this era after the pandemic, known as post-pandemic. Usually, guests will receive excellent service in a luxury hotel, which generally exceeds expectations (Lin & Choe, 2022). Due to the image and brand that the luxury hotel carries, the management must maintain the environment and ambiance of the hotel (Lahap et al., 2016; Li, 2020).

This indicates that most hotel customers are concerned about the hotel environment when experiencing the hotel. Even though it sounds simple, the attraction of the hotel

environment, such as the hotel lobby, motivates the hotel customers from the moment they make a booking until the date of check-in. With online reservations, the hotel customer gets to see the exact environment of the hotel in the booking engine such as Agoda or booking.com. At this point, it is essential to note that it is the responsibility of the hotel management to provide the best possible environment, including physical, social, and smart, for the hotel customer to get value from it. Thus, finding the best environment the hotel customer prefers is necessary. The following sections elaborate on the study variables, including the CCB, customer satisfaction, VCC, and servicescapes (physical, social, and smart).

2.9 Variables of the Study

The present study involves three dependent variables, physical servicescape, social servicescape, and smart servicescape, as the new untested construct towards the mediating and dependent variable. VCC is the mediating variable. Meanwhile, the dependent variables are customer citizenship behaviour (CCB) and customer satisfaction.

2.9.1 Customer Citizenship Behaviour (CCB)

Customer citizenship behaviour (CCB) is a vital customer trend (Dewalska-Opitek & Mitreğa, 2019). It is a fundamental property of organisational behaviour (OCB), focusing on the customer domain in the literature (Mohammad Shafiee & Tabaeian, 2021). CCB started from OCB (Yi and Gong, 2008). The role of the customer as the contributor to the business, such as in the service context, is long known before the 21st century (Bettencourt, 1997). It has been a topic of interest in business research. However, recent researchers have emphasized the role of customers as “partial

employees” and act as human resources and realize that this customer behaviour does contribute to the service quality (Chiu et al., 2015). It is a promising area in marketing theory and practice. To get to know CCB better, the section below discusses the concept and definition of CCB.

The concept of CCB was introduced by Groth (2005) with the idea that customers were the “good soldiers” of a company. Mills & Morris (1986) previously conceptualised customers as “partial employees” of service organisations. CCB is a voluntary behaviour that consumers do not require, which helps the organisations’ performance (Groth, 2005). Additionally, CCB is defined as discretionary customer behaviour that helps service companies in successful service delivery (Bettencourt, 1997). CCB is beneficial to the organization’s long-term planning (Al Halbusi et al., 2020; Chiu et al., 2015; Dewalska-Opitek & Mitre ga, 2019; Franco et al., 2021; Hossain et al., 2023; Ru & Jantan, 2023) and can create a competitive advantage (H. Liu, 2020; Ru & Jantan, 2023). The definitions proposed by Bettencourt (1997) and Groth (2005) were similar but differed in operationalization. Bettencourt (1997) included customer loyalty as one of the CCB dimensions, while Groth (2005) had three dimensions: recommendations, helping customers, and feedback without customer loyalty. Then (Yi & Gong, 2013) expanded from three dimensions (recommendations, helping customers, and feedback) to four, to include tolerance.

The concept of customer in-role and extra-role behaviour (customer citizenship) is that both are separate components of customer VCC (Growth, 2005; Yi & Gong, 2013). Hence, further studies use the customer extra-role performance as a synonym of

customer citizenship (Karaosmanoglu et al., 2016; Paulssen et al., 2019) This is further mentioned that other terms for CCB in the literature include extra-role and voluntary behaviour (Abdelmoety et al., 2022; Dewalska-Opitek & Mitreğa, 2019). It can be concluded that a primary concern of CCB is the different roles performed voluntarily by the customer that indirectly give value to the firm. An example of CCB in the hospitality industry is providing positive feedback during the check-out process, promoting the hotel facilities and services to other customers, and providing feedback to the surveys conducted by the hotel employees. According to Zoghbi-manrique-de-lara et al. (2014), in the context of hotels, CCB includes the actions of guests in helping to reduce costs and give advice/cover to other guests who have missed the hotels' resources.

The CCB construct has not been well-studied from a tourism point of view (Assiouras et al., 2019). However, CCB has piqued the interest of practitioners and researchers (Zoghbi-manrique-de-lara et al., 2014). Bettencourt (1997) states that CCB comprises three generic dimensions: loyalty, cooperation and participation. Groth (2005) elaborates on three aspects of CCB: making recommendations, providing feedback to the organisation, and helping other customers. In addition, Bove et al. (2009) conceptualise CCB from the organisational behaviour and marketing literature and presented eight criteria that consist of positive word of mouth, displays of relationship affiliation, participation in firm activities, benevolence, flexibility, feedback, and suggestions for further improvement, voice, and policing of other customers. There are four dimensions of willingness to engage in CCB: advocacy, feedback, helping, and tolerance (Assiouras et al., 2019). Furthermore, (Anaza & Zhao, 2013; Groth, 2005; Wei et al., 2018) identified three key components of CCB: employee service

facilitation, helping behaviour, and recommendation. Currently, (Mitrega et al., 2022) have identified six categories of CCB antecedents: company resources, business-to-customer relationship quality, value cocreation, identity fit, customer-to-customer quality, and customer resources. In addition, the CCB outcomes are organised into three categories: customer-company relational outcomes, customer-related outcomes, and employee-related outcomes. Hence, from the discussion, a few dimensions are highlighted from previous research. The present study focuses on feedback and helping (Groth, 2005), as these two are being neglected in the servicescape of the CCB study (Li & Wei, 2021) with other dimensions: advocacy (Groth, 2005) and tolerance (Yi & Gong, 2013).

Unfortunately, it creates confusion as to whether the features belong to CCB or VCC. The attributes of CCB have created conflicts, as mentioned earlier (Dewalska-Opitek & Mitreęa, 2019), that customer feedback may overlap with VCC attributes. One of the CCB dimensions, namely, providing customer feedback, coincides with VCC (Dewalska-Opitek & Mitreęa, 2019). Although there is a similarity between these two variables, they act differently in the relationship. For the present study, customer feedback is one of the dimensions of CCB (Li & Wei, 2021). Table 2.3 illustrates the relationship between CCB and other similar terms. It shows that CCB can be divided into in-role and extra-role involvement. Other related terms are customer participation, customer citizenship, and customer engagement.

Table 2.3 : Relationships between CCB and other Similar Terms

	Behaviour	Cognition and Emotion
In-role involvement	Customer participation	
Extra-role involvement	Customer Citizenship	Customer Engagement

(Source: Mitrega et al., 2022)

Traditionally, CCB has subscribed to the belief that the customer is the user and not part of the actor or service provider. With the emerging role of getting customers involved in new service development, they are now considered part of the employees (Hur et al., 2018). This is because the customer is unique, and some might need customised service from the service provider (Kuo et al., 2012). Their involvement is significant, particularly in most service industries (Ordanini & Parasuraman, 2011), especially in hospitality and tourism industries that involve experiential services (Sigala, 2012). For instance, in the hotel experience, multiple encounters in different periods are usually required for a full-service experience (customers may show CCB by giving recommendations during check-in, lobby experience, restaurant service, check-out, etc.) (Tung et al., 2017). More recently, with the advent of the COVID-19 pandemic, how hospitality businesses operate and how customers perceive and engage with other customers in a shared physical space has been drastically changed (Bonfanti et al., 2023; Miao et al., 2022).

In addition, product and service brands' image and pride depend on their customers (Raza et al., 2020). They will provide the service provider with the latest information and expectations. It will later create a relationship between both parties that leads to a positive service environment and a satisfied customer. Nevertheless, CCB is perceived as a complicated aspect of customer behaviour as there are specific factors that inspire customers to commence a different role (Dewalska-Opitek & Mitreęa, 2019) and roles of other customers towards CCB (Estelle van Tonder & Petzer, 2018).

As previously stated that CCB is one of the key components of OCB, and OCB is spreading its wing on customer-driven (OCB-C) (Wang et al., 2021). It shows that

when service employees practice OCB-C, they may receive positive recognition, thank-you notes, praise, or even customer friendships (Chan et al., 2017). Such positive feedback will make employees feel good and support them to contribute more towards citizenship behaviours (Todd Donovan et al., 2004). Guest feedback is an effective and inexpensive means of gaining insights into the consumer psyche and enables managers to minimize problems and maximize the satisfying experience (Hart et al., 1990). To promote CCB, managers should leverage their employees' OCB-C and their organisation's service climate (Chan et al., 2017). In other words, CCB and OCB need each other, and the role of the customer is getting important in the business environment.

According to (Blau, 1964), the motives/rewards for a CCB can be intrinsic (e.g., respect, affection) or extrinsic (e.g., money, free housing). This allows guests to give hotel employees feedback on the positive or negative aspects of the service provided because they want to receive better service (e.g., intrinsic reward). Furthermore, CCB in the virtual community occurs mainly in the virtual consumer community (Liu, 2020). Since virtual communication is increasing among hotel guests and hotel guests with hotel employees, online social influences, and characteristics like traditional communities created, this communicating group in cyberspace is referred to as a virtual community.

Understanding consumer behaviour is vital to making decisions about marketing tourism products and activities. There are two types of customer behaviours: customer co-production behaviours, defined as expected and required for successful production and delivery of the service, and CCBs, defined as voluntary and discretionary

behaviours, not needed for successful production but for helping the service (Groth, 2005). Table 2.2 illustrates the comparison of employee behaviour and types of customer behaviour. The required behaviour for an employee is to complete the task given by the organisation; meanwhile, OCB is a voluntary behaviour performed by the employee. Additionally, it is highlighted that there are two types of customer behaviour in the service delivery process; the first is the required behaviour to complete the service delivery process, such as customers having to make payment, and the second is voluntary, for instance, CCB (Bove et al., 2009).

Table 2.4 : Comparison of Employee Behaviours and Types of Customer Behaviours

	Employee behaviour	Customer behaviour
Required, expected in-role behaviour	Task performance	Customer coproduction
Voluntary, discretionary extra-role behaviour	Organizational citizenship behaviour (OCB)	Customer citizenship behaviour (CCB)

(Source: Groth, 2005)

CCB is becoming more relevant in the industry (Y. C. Wang et al., 2021) as it is one of the hot topics among scholars and practitioners in this era (Nagy & Marzouk, 2018). Several studies on CCB focus on the involvement of CCB and corporate social responsibility (CSR). It shows that CSR does impact the effort to get themselves with CCB, especially in the hospitality industry. CSR contributes significantly to customer help, customer feedback, and customer tolerance. Customers reward companies involved in CSR initiatives in the form of CCB directly and indirectly through the perceived quality of service (Aljarah & Alrawashdeh, 2020). Karaosmanoglu et al. (2016) and Abdelmoety et al. (2022) also highlighted that CSR improves customers'extra-role behaviour within the organisation. Organizations need to

promote CSR and portray and express good ethics regarding CSR as a marketing strategy.

Previous studies on CCB highlighted CCB as a mediating variable toward customer turnover intention (Raza et al., 2020). CCB is also emphasized in several service industries as the dependent variable. (Aljarah, 2021; Gong et al., 2021; Tung et al., 2017). For instance, Shuhao Li & Wei (2021) found that customer engagement mediates the physical and social servicescapes of the CCBs (provide feedback, make recommendations, and help other customers). Furthermore, in the different areas of service, Ulucayli et al. (2023) study citizenship behaviour in hospitals, known as patient citizenship behaviour (PCB). The study shows that service quality does not directly affect the PCB, but the mediators affect the relationship to create PCB via satisfaction, loyalty, and employee responsiveness. Mitrega et al. (2022) identified a lack of conceptual papers, and the call for theoretical clarifications highlighted by (Gong & Yi, 2021) remains unanswered. Therefore, there is a need to understand and discuss the CCB by looking at the fundamentals and origin with consideration of the theoretical and the support from other antecedents. Hence, citizenship behaviours needs other antecedents to make the relationship effective and meaningful. For instance, customer satisfaction. Below are the proposed dimensions for CCB adapted to the present study.

Table 2.5 : Proposed Dimensions of CCB

CCB dimensions	Source
Advocacy	(Shuhao Li & Wei, 2021)
Feedback	(Shuhao Li & Wei, 2021)
Helping	(Shuhao Li & Wei, 2021)
Tolerance	(Shuhao Li & Wei, 2021)

Due to the importance of other elements to strengthen the relationship of CCB, the following section discusses customer satisfaction. It is one of the studied variables in the study.

2.9.2 Guest Satisfaction

The fundamental role of hospitality is customer satisfaction. Effective communication between employees, colleagues, and guests is essential. Customer satisfaction is a behavioural and complex construct that gets the researcher's attention and is widely debated, especially in service-driven and marketing research that drives behavioural intentions (Aminudin & Jamal, 2021; Quan et al., 2022; Vega-Vazquez et al., 2013). In addition, customer satisfaction is a popular subject for research due to the role of customer response towards long-term customer relationships, which leads to the sustainability of a business (E. W. Anderson et al., 2004; Fornell et al., 1996; Hackl & Westlund, 2000; Sim et al., 2006) and leads to superior economic returns (Yu, 2007).

Guest satisfaction is a customer's perspective through multiple interactions between the organisation's overall performance and customer evaluation based on the experience (Quan et al., 2022; Russo et al., 2016). It also evaluates whether customers' needs, wants, and expectations throughout the product or service life cycle have been met, leading to the intention to repurchase and delay negative behaviour (Aminudin & Jamal, 2021). On top of that, Giese & Cote (2000) highlighted three general components for the definition of satisfaction: satisfaction is an emotional response, a definite focus of response, and a response that might change in a restricted time. From a tourism context, The World Tourism Organisation (1985) defined

satisfaction in the context of tourism service as a psychological concept that involves the feeling of well-being and pleasure that results from fulfilling one's hopes and expectations of an appealing product or service.

Customer satisfaction is one of the essential concepts of marketing and practice besides service quality (Spreng & Mackoy, 1996). Similarly, in the service industry, guest satisfaction is a crucial objective (B. J. Ali et al., 2021; González-Mansilla et al., 2019). The goal of the service organisation is to maximise customer satisfaction through its products and services offered (B. J. Ali et al., 2021; Cabral & Marques, 2023; Mittal et al., 1998; Subramanian et al., 2016). Almost 70 percent of the reasons customers switched to other competitors was a dissatisfying service experience during the service delivery process (Whiteley, 1991; Sim et al., 2006).

Providing and maintaining customer satisfaction is challenging (Bitner, 1990). The level of customer satisfaction is a strong indicator of the extent to which a customer appreciates the product or service provided during the service delivery process. According to Cheng et al. (2019), hotels must continuously incorporate new service elements in their service delivery. This is due to the different guests' expectations. Guests tend to be dissatisfied when the perceived quality of service does not meet expectations, which will later affect the long-term relationships between guests and the hotel (Cheng et al., 2019). Hotel operators must understand the background (Ezeh et al., 2021), be it cultural or experiential (Cheng et al., 2019), to strengthen the relationship to serve them well. Given the prevalence of the latest trend in hotels, there is an essential need for the hotel to satisfy the basic needs of the customers instead of

placing too much value on supplementary services (Cheng et al., 2019). Even so, the service provider should try to satisfy current customers' needs and wants.

Customers nowadays focus on emotional consumption which fulfills individual needs and wants rather than mass consumption (Lee & Lee, 2018). With that, customers have more expectations of hotels despite services such as accommodation and food and beverages (Bonfanti et al., 2021). To reiterate the vital role of customer satisfaction, the below diagram (Figure 2.2) illustrates the customer satisfaction element in a relationship. The figure shows the customer satisfaction model antecedents and impacts. It starts with customer expectations towards perceived quality and value. Hence, the customer is satisfied when the perceived service exceeds their expectations (Lee & Chuang, 2022). It is argued that customers are happy with their hotel consumption experience of the holistic hotel environment. Customers might stay loyal to the business after the satisfaction phase. Even though customers complain, they can remain loyal to the company.

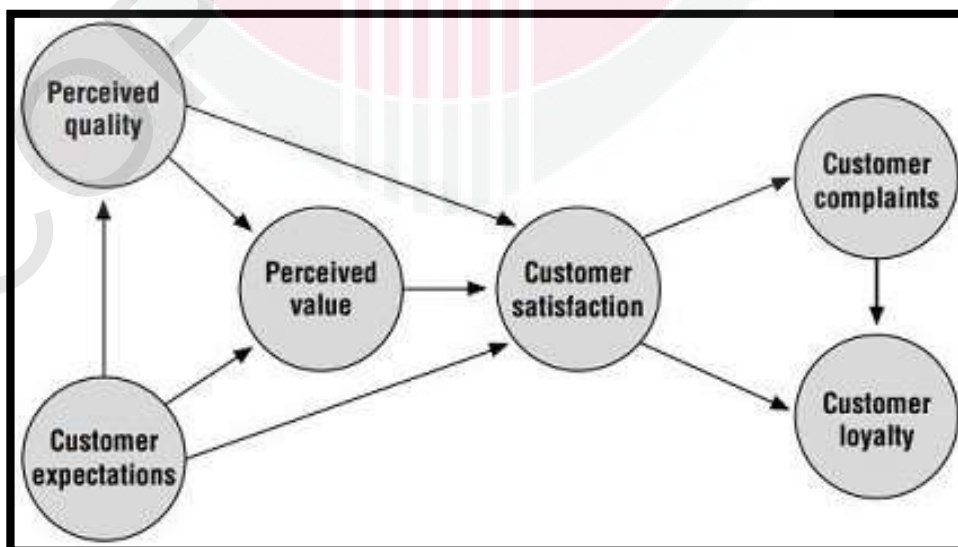


Figure 2.2 : Customer Satisfaction Model
(Source: Cheng, 2013)

The work in this arena generally concerns the loyalty and long-term relationship between customer and business (Solakis et al., 2021). Several studies have examined the customer satisfaction construct as a dependent variable (Lin et al., 2019; Solakis et al., 2021) and a mediating variable (Al Halbusi et al., 2020; Jin & Chen, 2021).

A closer look at the review shows that customers' satisfaction is influenced by the surroundings and atmosphere where they process the environmental cues. For example, when the hotel's atmosphere pleases them, it will improve the quality of their experience with the hotel. A good review of this is provided by Lee & Chuang (2021), who states that the surrounding atmosphere is part of the servicescape, which hotel customers will experience first when they step into the hotel. Recent activities by hospitality businesses have changed with the introduction of social distancing and capacity restrictions (Miao et al., 2022).

The systematic literature review study conducted by Aminudin & Jamal (2021) revealed that researchers frequently examined the front desk employees' promptness and courtesy, followed by the room attributes of comfort and value, the accessibility of the hotel facilities, and a variety of food and beverages. It is an essential attribute of customer satisfaction in the hotel industry in Malaysia. This has increased attention to studies in all tourism areas, including the accommodation sector (Aminudin & Jamal, 2021). Hence, there is a need to examine the hotel guests' behaviour towards the servicescape experienced.

Besides that, a content analysis by Torres & Kline (2013) highlighted frequently mentioned customer satisfaction codes: guests should be taken care of, friendliness,

employees' professionalism, and problem-solving skills. Hence, it shows that the management of the hotel needs to take care of the guests needs. It aligns with the study on satisfaction by Ghorbani et al. (2023), which provides insights to the hotel manager to examine customers' perceived value, leading to enhanced customer satisfaction. High satisfaction leads to excellent customer retention, higher lifetime value, a more substantial brand reputation, and customer loyalty.

With the emergence of the pandemic in 2020, a study by Solakis et al. (2021) found that tourist perceptions towards satisfaction have changed. There is a relationship between positive experiences and satisfaction in the hotel context. Due to that, Hanafi et al. (2021) examined that the experience of using an online servicescape has strengthened customer satisfaction. The usage of online and technology adaptation has increased due to the pandemic. In addition, the current study emphasises customer satisfaction through innovation. (Cabral & Marques, 2023). The innovation elements include collaboration, creativity, implementation, and value creation. Innovation leads to loyalty and productivity, reduces costs, and creates opportunities (Brooker & Joppe, 2014; Wikhamn, 2019). Esposito (2023) also examines customer satisfaction and technology used in the hotel industry. Technology increases the possibility of guest satisfaction, especially when the hotel embeds elements of technology which is friendly and preferred by the guests. The following table (Table 2.6) shows the proposed instruments of customer satisfaction. There are five instruments of customer satisfaction, which are further explained in Chapter 4.

Table 2.6 : Proposed Instruments of Customer Satisfaction

Customer Satisfaction	Source
Customer Satisfaction	Cheng et al., (2019) and Solakis et al., (2021).

Customer satisfaction and retention relationships have been researched for years (Sim et al., 2006). The present study extended the research by looking at the effect of servicescapes (physical, social and smart) on customer satisfaction and how it relates to CCB. To date, the role of VCC has impacted the customer's satisfaction level. Most businesses today want to engage and get stakeholders, especially customers, to be part of them. This is because the customer is considered a value creator. It is essential mainly when a business is operating at minimum cost. Hence, the below section discusses more on the value of co-creation.

2.9.3 Value Co-Creation

Another vital element that involves active participation from the customer is value co-creation (VCC). VCC is necessary for the organisation's survival (Vega-Vazquez et al., 2013). The idea of co-creation starts with the Internet, which provides customers with vast information (Prahalad & Ramaswamy, 2004); what or who is involved in the VCC must be identified and examined. In this case, customers play an active role. The market allows the customer to act out this role (Prahalad & Ramaswamy, 2000). Hence, VCC is a joint process between the customer and another party, such as a service provider, to create the output of value (Prahalad & Ramaswamy, 2004). The following section elaborates more on the VCC.

VCC is defined as a form of active interaction between customers and service providers or multiple actors, often unaware of each other, that contribute to each other's well-being, which creates value (Busser & Shulga, 2018; González-Mansilla et al., 2019; Leung & Loo, 2020; Vargo & Lusch, 2016). Usually, a service provider begins by offering products or services and then involves customers to create meaning and value (Grönroos & Voima, 2013; Harkison, 2018). Bitner (1992) suggests that how customers experience their activities is essential to their perception of value. This is to improve the organisation's knowledge and customer satisfaction (Kijima & Arai, 2016).

In addition, co-creation is a collaboration between the organisation and customers. The customer will participate in the creation of products or services. The process includes the stakeholders' products, services, experiences, time, and effort (Sugathan & Ranjan, 2019). Additionally, the co-creation of value exists when there is an interaction between the organization and the customer (Grönroos & Voima, 2013). Hence, it could be summarised that VCC is a joint venture activity involved in the production and consumption process. It actively interests customers in creating value-added and on-demand products and services. The value-added is expressed as essential in VCC as it will add a product or service function to make it attractive and more purchasable. For instance, a hotel uses its guests' input or suggestions on the environment and facilities experienced. Hotel managers use positive and negative information to provide the best to their guests.

There are five dimensions involved in the present study: knowledge, equity, interaction, experience, and personalisation. The following section discusses the

dimensions of VCC adopted in the present study. The first dimension of VCC is knowledge. The fundamental element of resources comprises sharing the consumers' knowledge, ideas and creativity (Ranjan & Read, 2016) for the current and future needs of the business. With information sharing based on ideas, creativity, and real-life situations between the organisation and consumer, it will co-creation value. It is more beneficial when sharing information with others than getting it individually.

Meanwhile, equity is the willingness of the organisation to share control to empower customers to co-creation (Fisher & Smith, 2011; Hoyer et al., 2010). Furthermore, interaction is the main element between parties involved in VCC. This is where the parties understand, share, serve needs, and continuously assess and adapt resource commitments (Merz et al., 2009; Prahalad & Ramaswamy, 2004). In addition, experience in VCC is the feeling, emotion, and memorable interaction that has actual value (Ballantyne & Varey, 2008; Lusch & Vargo, 2006). The experience also proves that the organisation has already offered the products and services (Bolton, 2004). In addition, personalisation is the uniqueness of the actual, perceived, and value based on individual characteristics (Karpen et al., 2012; Lemke et al., 2011). Then, the relationship can be described as the joint process and active communication between the customer and the other party/object in an environment or engagement (Ranjan & Read, 2016). All six dimensions of the VCC interrelate with each other. The following section further discusses the overview of the VCC.

The main objective of co-creation is to create and share lifetime memories face-to-face and on social media (Kotler et al., 2017). Besides that, the fully used VCC provides the organisation with a competitive advantage (Harkison, 2018; Navarro et

al., 2015; Olga Oyner, 2016; Thomas, 2013). Due to the demanding customers nowadays, the service provider is considering the best strategy to involve them in co-creation to make it effective (Sugathan & Ranjan, 2019). The key to effective service is arranging the capabilities among all the actors, as they can create the most value together (Maglio & Lim, 2016)—for instance, the customer and the organisation. The new paradigm in the management literature (Galvagno & Dalli, 2014) of co-creation emphasises businesses to empower (Solakis et al., 2021) and focus on customers' needs, skills, and resources to create value (Almeida & Campos, 2020; R. Leung & Loo, 2020; Vargo & Lusch, 2004b) and enables organisations including hotels to achieve a competitive advantage (Busser & Shulga, 2018; González-Mansilla et al., 2019; Harkison, 2018; Islam & Loureiro, 2023; Yen, 2023). There is a need to look at the migration of the traditional and the co-creation experiences from the business or operation view. Table 2.7 elaborates on the goal of the interaction, the arrangement of the interaction, the relationship between the organization and the customer, the options available, the pattern of interaction, and the quality.

Table 2.7 : Migrating to Co-Creation Experiences

	Traditional exchange	Co-creation experiences
Goal of interaction	Extraction of economic value	Co-creation of value through compelling co-creation experiences and extraction of economic value.
Locus of interaction	Once at the end of the value chain	Repeatedly, anywhere, and at any time in the system.
Company-customer relationship	Transaction based	Set of interactions and transactions focused on a series of co-creation experiences.
View of choice	Variety of products and services, features and functionalities, product performance, and operating procedures	Co-creation experience is based on interactions across multiple channels, options, transactions, and the price experience relationship.
The pattern of interaction between firm and customer	Passive, firm-initiated, one-on-one	Active, initiated by either firm or customer, one-on-one or one-to-many.
Focus on quality	Quality of internal processes and what companies have to offer	Quality of customer-company interactions and co-creation experiences

(Source: Prahalad & Ramaswamy, 2004)

VCC is also emerging in the service industry, including tourism and hospitality (Kim et al., 2019; Ranjan & Read, 2016; Sugathan & Ranjan, 2019). According to Vargo & Lusch (2004b), service, or VCC, has dominated the economic exchange. It contributes to a luxury experience and a good relationship between managers, employees and guests, with a better stay experience (Harkison, 2018) and innovation of new products and services with guests (Shaw et al., 2011). This value emphasis has been viewed from different perspectives without a clear definition of the term (Vega-Vazquez et al., 2013). Given the rising prevalence of VCC in the hospitality context, it is crucial for hospitality industry customers to co-creation unique and unforgettable experiences that affect the perceived values (Jang et al., 2015; Prahalad & Ramaswamy, 2004; Yen, 2023). The managers, employees, and guests highlight that the luxury accommodation experience occurs through co-creation. Hence, luxury hotels should encourage the co-creation process to ensure a positive effect on creating the luxury

accommodation experience (González-Mansilla et al., 2019; Harkison, 2018). Hence, it is essential to examine further the VCC process for the luxury hotel in Malaysia.

Nowadays, customers are actively involved in providing feedback (Galvagno & Dalli, 2014; González-Mansilla et al., 2019; Lin et al., 2019; Roy et al., 2019) and looking at the additional service that will provide value to them (Bonfanti et al., 2021). Therefore, three essential aspects of co-creation are the customer, the company, and the interaction between the customer and the company (Sharma, 2020). Co-creation is crucial in business operations, leading to a customer experience when using the products and services. The value is believed to be centred on the customer experience (Harkison, 2018). It is critical to the service industry because it is intangible and needs to be well-managed by the service provider. Hotels, as service providers, should move from being mere commodity accommodation suppliers towards customising their hospitality services whenever possible (González-Mansilla et al., 2019). This enhances the co-creation process, which involves the customer as the leading actor.

However, the concept of VCC and CCB has a bit of ambiguity. Even though the VCC study has gained attention from marketing scholars, the idea has not been confirmed in its precise definition and role. According to Yi & Gong (2013), there are two dimensions of VCC: customer participation behaviour and CCB. Each dimension has four dimensions: customer participation consists of information seeking, information sharing, responsible behaviour, and personal interaction, whereas CCB has feedback, advocacy, helping, and tolerance. Hence, the present study adapts the four dimensions of CCB mentioned. The following section will continue by providing the previous research on VCC.

These topics have been under constant investigation and development in the marketing literature since the end of the twentieth century (Guenzi & Troilo, 2007). Over time, the co-creation literature in the hospitality industry has gained popularity. VCC with customers has emerged as a relevant topic at the academic (among scholars) (Xu et al., 2021) and managerial levels (González-Mansilla et al., 2019). Several studies have explored VCC areas such as the family firm image (FFI) (Kallmuenzer et al., 2020) and peer-to-peer accommodation (P2P) (Razli et al., 2020), online and social media business (HOS et al., 2020; Lam et al., 2020; Shin et al., 2020), the fashion industry (Jain et al., 2021), and food and wine tourism (Jesus et al., 2021), Airbnb and hotel (Almeida & Campos, 2020; Fust, 2021; Johnson & Neuhofer, 2017), focusing on mobility-impaired people (MIP) (Lin et al., 2019), and in hotel IT systems (Shaw et al., 2011). Hence, the study of VCC has covered most of the services industry, such as tourism, fashion, and online business.

There is a need to discover customer behaviour and roles in doing business. Grönroos & Voima (2013) first conceptualise value creation on how value-in-use and how value creation can be managed. It also emphasised that direct interactions are essential for VCC opportunities. Hence, studies showed that the VCC process may require necessary customer and manager adjustments. This is because the VCC can fail or face a co-destruction phase (Vafeas et al., 2016), except if the organisation fully utilises its customers' efforts and skills in the VCC of products and services (Gambetti & Graffigna, 2015; Järvi et al., 2018; Sugathan et al., 2017). However, the present study will not elaborate on VCC failures. This research focuses on the hotel guests' experience and value from the servicescapes (physical, social, and smart).

The survey by Harkison (2018) and Prahalad & Ramaswamy (2004) demonstrated that the interaction creates value based on good dialogue, access to information, a clear indication of risk management, and transparency. It is supported that the customer's experience enhances when there is an interaction between the customer and service provider in a conducive service environment and customised service delivery (González-Mansilla et al., 2019; Razli et al., 2020; Sugathan & Ranjan, 2019). With that, Torres & Ronzoni (2018) have identified the concept of VCC in actual business operations. For an overview of the existing approach to outstanding guest experience that leads to co-creation by the customer, Torres & Ronzoni (2018) introduced KLEED (refer to Figure 2.3). There are five elements in KLEED: know and deliver guest needs, listen, empathise, engage in a personal, authentic, and attentive way, empower to own experience, and delight and surprise element. The features highlighted in KLEED show that organisations must consider their guests' needs first. Hence, the present study examines the servicescape element, which is the basic facilities of the hotel.

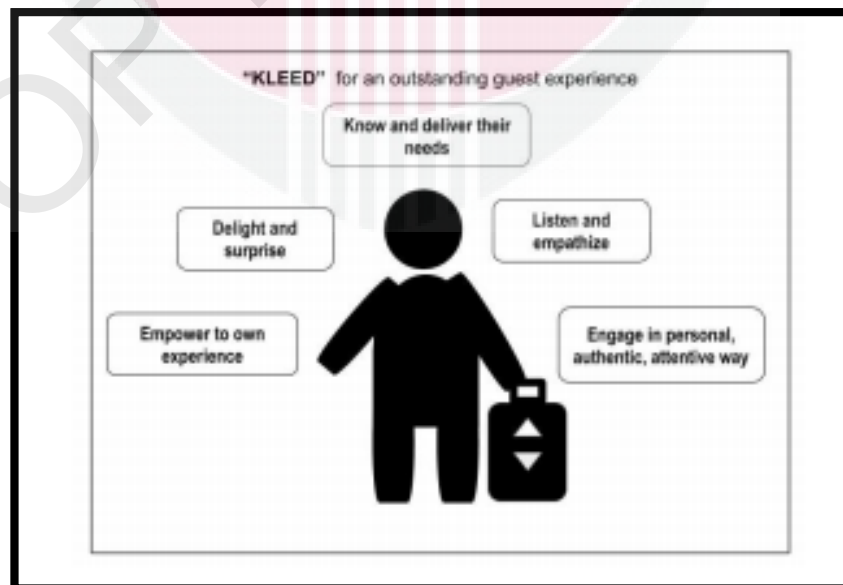


Figure 2.3 : Attributes of the Outstanding Guest Experience
(Source: Torres & Ronzoni (2018))

Concerning the theoretical foundation grounded in S-D logic, the study conducted by Rihova et al. (2018) and Vargo & Lusch (2016) found value is viewed as a dynamic, situational, meaningful, and phenomenological construct that occurs when a customer uses, experience, or adapt marketers' value propositions in their experiential contexts. Additionally, value is always created together in interactions between providers and consumers with the exchange of resources (Vargo & Lusch, 2008, 2017).

Furthermore, every element involved in the VCC process should be managed well to ensure sustainability. For example, service delivery, recovery, complaint management, and other relevant service behaviour. This has been investigated by Galvagno & Dalli (2014), who found that VCC sustainability enhances the co-creation process as the organisation interacts with the customer and acquires the latest information on customer expectations from service or other industries. The changing role of customers in the industrial system changes VCC from product and business-oriented to customer-oriented. According to Arica & Çorbaci (2020), VCC today consists of a combination of internal (service provider) and external (customer) resources. With that, Arnould (2008) and Sugathan et al. (2017) found that VCC affects service outputs by improving business results and customer experience. Hence, companies must reach environmental resources and technological development to develop VCC with customers.

Harkison (2018) found that the element of co-creation has gotten the industry's attention since the introduction and mass use of the internet. Kamboj & Gupta (2020) found that innovativeness positively affects customers, and the advancement of technology and digitalisation offers opportunities to improve the industry by creating

value for all stakeholders, including hotel customers (Ozdemir et al., 2023) but (Barile & Vassalli, 2017) mentioned that the relationship between technology and VCC is unclear. This aligns with the present study, which highlighted the smart servicescape as one of the study variables. Thus, the study further looks at the smart servicescape in the VCC behaviour. The study also considers physical and social servicescape as it is regarded as the primary and vital servicescape that should not be taken for granted. Before reviewing the servicescapes elements, the following section examines the relationship between the three abovementioned variables.

2.9.4 Relationship between Guest Satisfaction and CCB

In terms of the importance of CCB in the hotel industry, there has been significant research on customer satisfaction, including on servicescape. This aspect has been gaining popularity recently due to increased customer involvement as partial employees (Tung et al., 2017) in the post-pandemic era (Aljarah, 2021; Gong et al., 2021). This exercise help hotels in their recovery and operation while minimising costs. Hence, it is essential to include customer satisfaction as a component of CCB.

It is important to note that satisfied customers are more likely to recommend a hotel through word of mouth (WOM) rather than suggesting service improvements (Choi & Kandampully, 2019). This provides convincing evidence for the increase in CCB, with giving recommendations being one of the criteria of citizenship behaviour. As far as CCB is concerned, satisfied customers tend to engage in citizenship behaviour (Gong & Yi, 2019). This concept aligns well with customer commitment, trust, fairness, and loyalty. There has been growing awareness of the impact of customer characteristics on CCB.

Several studies on CCB have highlighted customer satisfaction as an antecedent (Al Halbusi et al., 2020; Gong & Yi, 2019; Zhu et al., 2016), alongside customer love (Hossain et al., 2023), and customer engagement (Li & Wei, 2021). In addition, some studies on CCB have emphasised customer satisfaction as the mediating variable (Anaza, 2014; Assiouras et al., 2019; Revilla-Camacho et al., 2017; Zhu et al., 2016). In other investigations of CCB, customer satisfaction serves as the dependent variable (Aljarah, 2021; Tung et al., 2017). It can be concluded that in most CCB studies, customer satisfaction is considered as an antecedent, given its essential role as the precursor to CCB (Anaza, 2014; Bettencourt, 1997). Hence, the present study will examine customer satisfaction as the dependent variable in relation to CCB.

Regarding the relationship model between customer satisfaction and CCB, Liu's model (2020) emphasised the relationship between customer satisfaction and CCB (Figure 2.4). In the context of virtual communities, this study highlighted the significance of customer satisfaction in relation to CCB. The model also highlighted that the citizenship behaviour of other users could influence CCB, as customers trust the perceptions and preferences of users who have experienced the products or services. This, in turn, can effectively shape customer attitudes and behaviours. Furthermore, "virtual community social capital" shows that recent technological advancements and the Internet of Things may have an impact on the relationship between customer satisfaction and CCB.

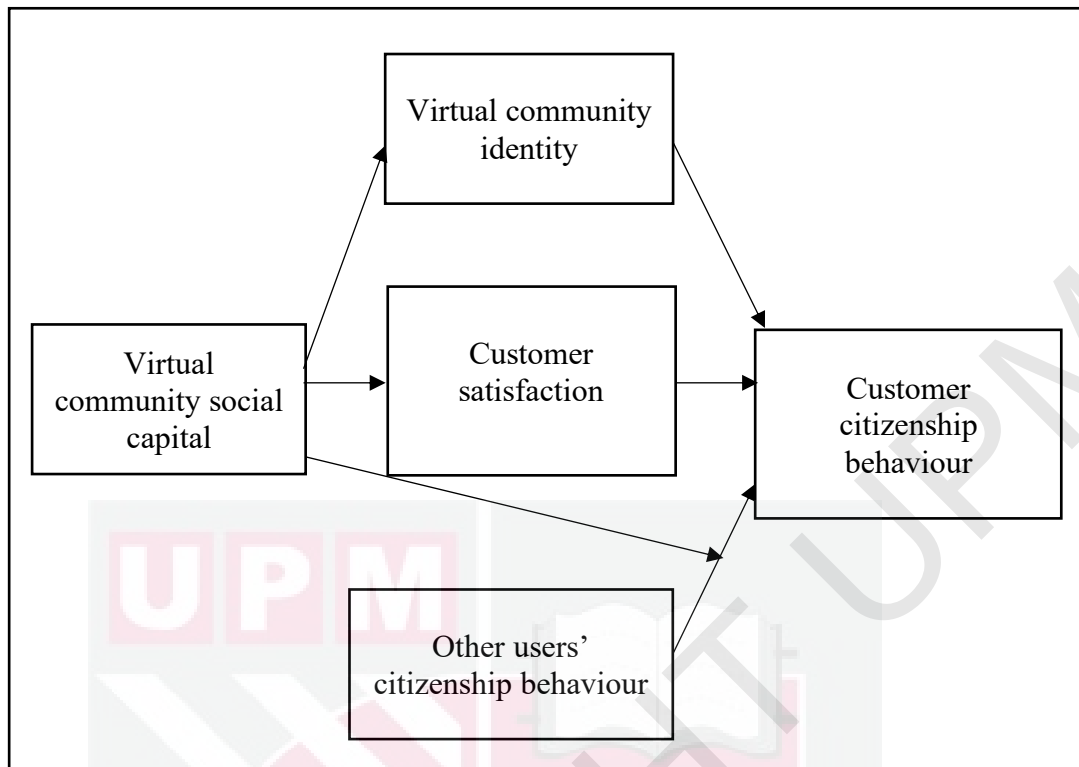


Figure 2.4 : Relationship Model between Customer Satisfaction and CCB
(Source: Liu, 2020)

As per Groth (2005), the implications of the social exchange relationship between customers and organisations are direct. Satisfied customers, who receive treatment beyond their satisfaction level, are more likely to engage in voluntary behaviours that benefit the organisation. In the case of the present study, the voluntary behaviour under consideration is CCB.

Another critical aspect of customer satisfaction is its ability to create customer happiness, preventing the spread of negative word of mouth (Szymanski & Henard, 2001). Customer satisfaction discourages customers from seeking alternative information and fosters enduring relationships with service providers (Anderson & Srinivasan, 2003). An illustrative example of customer satisfaction is customer loyalty and the provision of a platform for lodging complaints to enhance the quality of

products or services (Lee & Chuang, 2022), given the evolving needs of customers. This demonstrates the relevance of CCB in the context of customer satisfaction. Hence, the level of customer satisfaction plays a role in shaping their behavioural intentions, including CCB.

With respect to the impact of satisfaction on CCB, Cheng et al. (2019) noted that most studies have primarily focused on loyalty and repurchase behaviour. Additionally, Ru and Jantan (2023) found that customer loyalty mediates the relationship between customer satisfaction and CCB. However, to date, customer satisfaction has not been explored in isolation. It is crucial to investigate what transpires after a customer achieves satisfaction with a product or service. Therefore, based on these observations, there is a limited body of research that assesses the impact of satisfaction on CCB. The present study aims to examine the relationship between customer satisfaction and CCB by considering VCC from the servicescape mentioned (physical, social and smart). The following section discusses the relationship between VCC and CCB.

2.9.5 Relationship between Value Co-Creation and Customer Citizenship Behaviour

VCC and CCB are two interconnected behavioural elements. As noted by Xu et al. (2021), VCC acts as the in-role behaviour, while CCB takes on an extra role in this relationship. This extra role results in the creation of extraordinary value for the destination (Yi & Gong, 2013). Both variables are regarded as behavioural elements. However, there is limited research on the role of VCC as an antecedent of willingness to participate in CCB (Assiouras et al., 2019). Furthermore, the construct of CCB from the customers' perspective has not been well studied.

In addition to the effects of VCC on revisit and repurchase intentions, this behavioural element also has an impact on CCB. The latter comprises various elements, including customer feedback, advocacy, assistance and tolerance, particularly within the tourism and hospitality industry. This has garnered increased attention from both researchers and industry practitioners (Tung et al., 2017). In this industry, customers, guests and tourists take on the role of partial employees (Hur et al., 2018; Sharma, 2020). They actively participate in the production and consumption of services, engage in co-creating value, and provide feedback during the check-out process (Vargo & Lusch, 2004a).

VCC in the hotel industry has been shown to have a significant relationship with the willingness to participate in CCB (Assiouras et al., 2019). The study by Hossain et al. (2023) examines the relationships between hedonic value, customer-to-customer interaction, customer demandingness, customisation and customer love in the context of CCB. The research model used a mixed-method approach, combining interviews and a survey. The findings indicate that tourists' engagement in VCC behaviour is mainly determined by their involvement in online platforms, which, in turn, impacts their loyalty (Solakis et al., 2021). Therefore, it is evident that VCC in the hotel industry positively influences CCB.

2.9.6 Relationship between Value Co-Creation and Customer Satisfaction

The value derived from the co-creation process influences overall satisfaction and the likelihood of returning to the same service provider, such as hotels (Choi & Chu, 2001; Maglio et al., 2009). VCC has played a pivotal role in enhancing customer satisfaction. The literature review provides insights into past and current efforts to address the

issue. According to Vargo and Lusch (2004b), there has been a shift from tangible to intangible resources, such as VCC and relationships, driven by customers' involvement in the co-creation process and their perspective on assessing service satisfaction. Therefore, recognising customers as active participants in VCC (Vargo & Lusch, 2008) has been found to enhance satisfaction (Shulga & Busser, 2020; Solakis et al., 2021). This approach allows customers to obtain a final product fully adapted to their needs and desires (Sarmah et al., 2017). Consequently, meeting customers' unique requests presents a significant challenge.

Furthermore, Moise et al. (2020) examined VCC using the DART model, which encompasses components such as Dialogue, Access, Risk, and Transparency. This model was employed to explore VCC in hotels, and the study found that access, transparency, and risk assessment strongly influenced tourist satisfaction. In the context of hotels, opportunities for direct interactions, whether physical or digital, between employees and guests or guests and robots are increasingly inevitable since production and consumption occur simultaneously (Fan et al., 2019; Tingting Zhang, 2019). Moreover, Kamboj and Gupta (2020) found that the degree of co-creation has the most decisive impact and influences customer satisfaction and consumer innovativeness.

Additionally, Islam and Loureiro (2023) conducted a study on VCC following the recent trend of interactive co-creation and interactional co-creation with customer satisfaction. Their research demonstrated a significant relationship between interactive co-creation and customer satisfaction, which, in turn, encouraged guests to recommend the hotel they stayed into others and become repeat customers at the same

establishment. Experiences from these encounters are substantial as they create value and define customer satisfaction (Femenia-Serra et al., 2019). In summary, effective management of the VCC process can enhance customer satisfaction in the hotel industry. Therefore, VCC has had a positive impact on customer satisfaction in the hotel industry.

It's worth noting that not all studies support a direct link between higher involvement in VCC and positive customer-related outcomes. Heidenreich et al. (2015) found that increased levels of end-customer involvement in VCC do not always result in more positive customer-related effects. However, other studies, such as Vega-Vazquez et al. (2013), Chan et al. (2010), and Santos-Vijande et al. (2016), have highlighted a relationship between VCC and customer satisfaction. Additionally, Chowdhury et al. (2016) delved into the potential risks of co-destruction that could emerge in such relationships. For instance, as customer engagement increases, so do their expectations and the likelihood of dissatisfaction (Childers et al., 2001). Most of the research in this field is focused on exploring the impact of the relationship between VCC and customer satisfaction.

In summary, prior research in the tourism and hospitality industry has not explicitly addressed the relationship between VCC and customer satisfaction (Jin & Chen, 2021; Solakis et al., 2021). The potential implications of VCC in helping hotel managers develop competitive strategies to generate more value for tourists are anticipated (Moise et al., 2020). The present study represents an extension of prior research efforts and introduces fresh insights concerning the servicescape elements (physical, social, and smart) as antecedents of VCC and customer satisfaction.

2.9.7 Servicescape

The concept of servicescape has been operationalised differently by scholars, often according to the nature of their study area. This term has been a part of the business and management literature for 30 years (Turley & Milliman, 2000). Alongside the term “servicescape”, the literature has introduced other words, such as “atmospheric” (Kotler, 1973), “where else” (J. Baker et al., 2002) refers to the “physical environment” (Turley & Milliman, 2000) as the “marketing environment”. Arnold et al. (1996) used the term “economic environment”, while Cronin Jr. (2003) referred to it as the “service environment”. A. Roy and Tai (2003) labelled it “store environment,” and Tombs and McColl-Kennedy (2003) proposed “social servicescape” as a terminology. Finally, Bitner (1992) introduced the original term “servicescape”, which aligns well with the framework of the present study.

Servicescape, as introduced by (Bitner, 1992), is related to service encounters in both physical and social environments. Arnould and Price (1998) view servicescape as a well-designed and commercial place where stakeholders communicate. It is further defined as the comprehensive physical environment perceived by customers and consists of elements such as facilities, furniture, signs, temperature, noise, and cleanliness (Artuğer, 2020).

Servicescape was introduced to describe the physical environment in service consumption (S. H. Lee & Lee, 2018). It is also known as the environment within the context of business operations. Prior studies have also suggested concepts like atmosphere and ambiance. However, servicescapes are not solely restricted to the physical components of the environment; they are often utilised in broader or more

specific frameworks and are closely associated with the substantial staging of the servicescape (SSoS) (Dedeoglu et al., 2018). In the hotel context, a servicescape represents a human-made space where business transactions can be executed, such as accommodations (e.g., hotel rooms) and food and beverage areas (e.g., coffee houses).

Moreover, servicescape is considered the primary resource for hotels, playing multifaceted roles (Lin, 2022), such as the packaging for goods and reflecting the image of service organisations. It aims to provide a great experience to customers (Kandampully, 2023) and create a positive impression (Koay et al., 2019). Consequently, servicescape has a substantial impact on people's emotions, evaluations, and behaviours (Bitner, 1992). Furthermore, any service organization's survival and long-term growth rely on servicescape as the future competition in the service environment intensifies (Ishaq et al., 2014; Srivastava et al., 2023).

To remain competitive, hotels need to ensure they have all their resources well-prepared. The key categories of hotel resources encompass physical, financial, human, technological, and marketing resources, knowledge, information technology, reputation, and brands (Casanueva et al., 2014). Research shows that room, staff, food, service, and location are the top five factors that satisfy guests (Khoo-Lattimore & Ekiz, 2014). Furthermore, promptness, courtesy, room, and facilities are identified as the top three most critical factors contributing to Malaysian customers' satisfaction with hotels (Aminudin & Jamal, 2021). This underscores the critical role of servicescape, as all these elements are integral components of the servicescape.

The concept of servicescape has evolved to conceptualise the conditions of service and operations better. Besides the existing servicescape components, such as physical and social servicescape, there are other concepts of servicescape, such as hotel servicescape (Li & Wei, 2021; Lockwood & Pyun, 2020), green hotel servicescape (Mishra & Gupta, 2019), M-servicescape (Lee, 2018), e-servicescape (Harris & Goode, 2010; Roy et al., 2016), airport servicescape (Zhou et al., 2021), sustainable servicescape (Rehman et al., 2021), hospitality servicescape (Kaminakis et al., 2019), hotelscape (Lin, 2022), experience servicescape (Pizam & Tasci, 2019), and museum servicescape (Yang & Zhang, 2022). Servicescape is recognised as a critical determinant of customer psychology (such as emotion and satisfaction), as customers will spend a long time experiencing their surroundings in the hotel during service delivery.

In addition, servicescape influences customer behaviour. Servicescape has the potential to shape the desired customer experiences and satisfaction (Baderisang & Mohd Damanhuri, 2021). Hence, marketing managers within the hotel industry must carefully consider servicescape in their strategies (Lee & Lee, 2018). A well-designed servicescape enhances the comfort and happiness of customers while they consume services (Hanafi et al., 2021). For instance, luxury hotels invest thousands of dollars in the design of their hotel lobbies. They ensure that the entrance captivates the guest with its architecture and design (Franěk et al., 2018; Line & Hanks, 2019). Through servicescape, organisations can reposition themselves in new markets by conveying attractive messages and positive news to increase their market share, profitability, and customer base (Ishaq et al., 2014). Figure 2.5 shows the conceptual model of the servicescape.

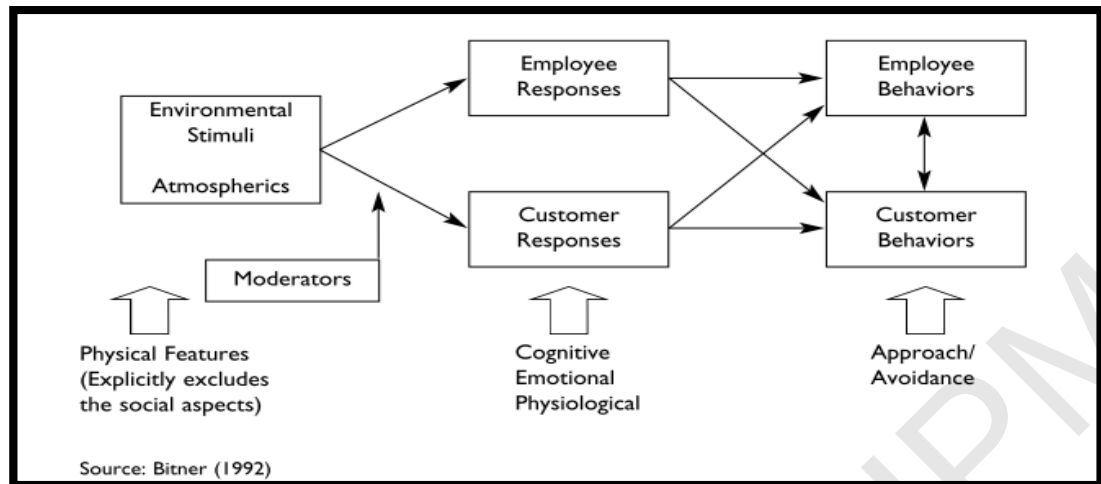


Figure 2.5 : The Servicescape Conceptual Framework
(Source: Bitner, 1992)

The figure above illustrates the servicescape conceptual framework as proposed by Bitner (1992). This framework serves as a foundational point for existing literature, offering insights into the influence of the physical environment on consumer responses (Kandampully, 2023). The model shows the complex environmental factors affecting customers' and employees' internal and external behaviours (Tombs & McColl-Kennedy, 2003). Notably, Koay et al. (2019) emphasised that customer engagement can be influenced by servicescape. The relationship between hotels and their guests is vital to creating a memorable experience, just like features of the servicescape, including the impressive decoration of guest rooms. Hence, examining the impact of servicescape on CCB is beneficial as it is part of engaging hotel guests. This is supported by Lockwood and Pyun (2018), who noted a limited number of studies that have explored the concept of servicescape.

2.9.7.1 Physical Servicescape

Physical servicescape describes the surroundings where businesses deliver services to their customers. This is considered the first servicescape in the business literature that Bitner (1992) introduced. Later, scholars debated other servicescapes, such as social servicescape, e-servicescape, hotel servicescape, and other related servicescape in business and marketing literature (Kaminakis et al., 2019; Li & Wei, 2021; Lin, 2022; Lockwood & Pyun, 2019; Roy et al., 2019; Yang & Zhang, 2022). The term servicescape presents a mix of physical environmental features under the control of service organisations.

Bitner and Booms (1981) defined servicescape as the environment where sellers and customers interact during a service encounter, which includes tangible facilities to support the business performance or communication. The earliest studies of the servicescape focused on defining it as the physical surroundings within which service delivery takes place (Bitner, 1992). The following section elaborates more on the conceptualisation of the physical servicescape.

The physical servicescape holds the prime position in the business environment due to its importance and impact on customer experience (Kotler, 1973). It is often considered as the basic servicescape, as it is the first thing guests experience when they visit a hotel. For instance, the physical servicescape encompasses components like the hotel lobby, the hotel's landscape, and amenities such as a swimming pool. To link the servicescape with the overall service experience, the term "atmospherics" has been used to represent the physical environment. This concept has been broken

down further into five senses, encompassing the visual, aural, tactile, olfactory and gustatory aspects (Kotler, 1973).

Prior research has yielded valuable insights into the dimensions of the servicescape in service settings (Bitner, 1992; Dedeoglu et al., 2018; Ryu & Han, 2010; Wakefield & Blodgett, 1996; Baker, 1986). Baker (1986) identified three servicescape dimensions: ambience, design and social. Bitner (1992) later expanded on this, categorising servicescape into three major groups: (1) ambience, (2) space and functions, and (3) signs, symbols, and artifacts. The component of ambience in Bitner's classification is similar to Baker's concept. Additionally, Medabesh and Upadhyaya (2012) classified the physical servicescape into ambient conditions, spatial patterns and signs, and symbols and signboards.

Bitner (1992) introduced an enhancement to the concept of servicescape, dividing it into two key elements: tangible and intangible. Tangible elements encompass the physical attributes, such as layout, equipment, furniture, signs, and décor, which can be perceived through the five human senses: sight, feel, auditory, taste, and smell. On the other hand, intangible elements comprise sensory features of physical surroundings (Bitner, 1992). Figure 2.6 illustrates the three dimensions of the physical servicescape.

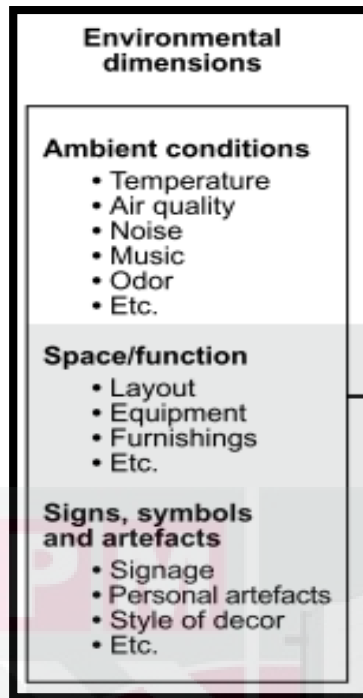


Figure 2.6 : Dimensions for Environmental
(Source: Bitner, 1992)

The present study focuses on the physical surroundings of luxury hotels in Malaysia, aiming to examine the value gained from these surroundings towards CCB. Firstly, ambient and background stimuli affect the five senses: smell, music, lighting and temperature. This aspect encompasses the overall environment and surroundings created by the organization or service provider, such as ensuring a comfortable and relaxed atmosphere in the hotel lobby. The second, space layout and function, relates to the spatial configuration of the service environment (e.g., how physical elements such as equipment and furnishing are arranged) and its functionality (e.g., the ability of physical characteristics to facilitate service performance). It refers to the organisation's area that fits its operations. For instance, it considers the design of a hotel lobby with comfortable seating areas for guests during check-in or check-out. The third dimension, signs, symbols, and artifacts, communicates information about

the service explicitly or implicitly, including rules of behaviour (for example, signage, personal artifacts, and style and décor), which are vital to assist customers using an organisation's or service provider's facilities. Adequate signage in a hotel, indicating the locations of amenities like banquet halls or conference rooms, makes it easier for guests to navigate and feel at ease. As Lockwood and Pyun (2019) suggest, attractive and communicative design within a hotel plays a crucial role in attracting customers and differentiating the value of its products and services. Therefore, tangible elements that customers can see and touch are essential within the physical servicescape.

Ali and Amin (2014) first highlighted the concept of physical servicescape, which relates to the physical environment. In their study on physical servicescape in a resort hotel, they found a relationship between customer satisfaction and behavioural intentions. Heerden (2009) similarly found that when customers perceive the physical servicescape highly, it is followed by positive behaviours, such as the likelihood of recommending the service provider to others. Customers generally prefer experiencing an excellent physical servicescape. This aligns with Lockwood and Pyun (2019), who determined that hotel design affects customers' emotional and behavioural responses.

Furthermore, the servicescape concept has been explored in the hospitality industry as a factor in behavioural intention, such as WOM, repurchase intention, loyalty, and recommendation (Cetin & Walls, 2015; Durna et al., 2015; Kucukergin et al., 2020; Rehman et al., 2021), as well as customer decision-making (Hoffman et al., 2016). The current study's specific focus on behavioural intentions is defined as CCB.

On the other note, Ariffin et al. (2013) examined hotels' physical servicescape as the moderating variable between hospitableness and customer satisfaction among hotel guests. In contrast, Ali et al. (2015) found that an attractive physical environment, considered an independent variable, influences price perceptions and may enhance customer satisfaction. Li and Wei (2021) conducted a similar study on hotel physical servicescape, considering it as the independent variable, with a focus on its impact on CCB and customer engagement as the mediating variable. In the present study, the physical servicescape is one of the independent variables under examination.

In addition to the hotel industry, the concept of physical servicescape has been studied in different service industries, such as life insurance companies. For example, Nguyen and Leblanc (2002) explored the impact of the servicescape on corporate image within this context. However, Lee (2011) contends that maintaining a brand image through the environment and layout is a challenging task, especially when trying to satisfy new customers in a particular area. Hence, the present study examines the servicescape experience of hotel guests.

Considering the impact of the COVID-19 pandemic on the tourism industry, research on the physical servicescape study typically focuses on safety measures, cleanliness, and hygiene aspects (Bonfanti et al., 2023; Jian et al., 2020; Pitol & Sapir, 2023; Tiong et al., 2020). This includes the standard operating procedure of social distancing (Shin & Kang, 2020) to reduce the risk to guests and employees. Additionally, some studies investigate the effect of crowding on the servicescape experience (Line & Hanks, 2020). In light of this discussion, the present study has identified suitable dimensions

for the physical servicescape within the hotel industry. Below are the proposed dimensions.

Table 2.8 : Proposed Instruments for the Physical Servicescape

Physical Servicescape dimensions	Source
Ambient condition	(Al Halbusi et al., 2020; Ariffin et al., 2013)
Space and function layout	(Al Halbusi et al., 2020; Shuhao Li & Wei, 2021)
Signs, symbols, and artifacts	(Al Halbusi et al., 2020; Durna et al., 2015)

2.9.7.2 Social Servicescape

The social servicescape refers to the social aspects of the environment and surroundings that influence consumer behaviour and evaluations (Holahan & Moos, 1982). It can be seen as an extension of the physical servicescape, a concept widely discussed by Bitner (1992). In the hotel industry, effectively managing the social and physical elements is crucial for hotel managers to enhance customer experiences and drive positive outcomes (Line & Hanks, 2019).

Social servicescape can be defined as a reflection of other social elements in a consumption environment, including customers' appearance, behaviour, and the degree to which they are perceived as socially similar to the person experiencing the phenomenon (Hanks & Line, 2018; Line et al., 2018; Kim & Baker, 2020). On the other hand, Arnould and Price (1998) and Dong and Siu (2013) expanded the concept to include employees as part of the social servicescape, such as politeness, passion, attractiveness, and suitable behaviours. Bitner (1992) points out that social servicescape influences both customers and service providers (employees) in the consumption environment.

In addition, Morkunas and Rudiene (2020) include social density in their study on the social servicescape. This expanded view of the social servicescape extends beyond the physical servicescape (Bitner, 1992). Brocato et al. (2012) categorised social servicescape into three groups: customer social servicescape, employee social servicescape, and social density. In this study, the social servicescape focuses on hotel employees rather than other customers (hotel guests). This is due to the impact of VCC among hotel employees on CCB. Therefore, this study focuses on hotel employees within the social servicescape.

Social servicescapes can be divided into two elements: social servicescapes involving interactions with other customers and social servicescapes involving interactions with service employees. The interaction between employees and customers, or the interaction between a company and its customers, is known as a direct interaction. In contrast, the interaction between other consumers and other stakeholders within the service system is known as an indirect interaction (Bonfanti et al., 2023). It is further elaborated by Durna et al. (2015) that servicescape is not only focused on décor and design, but also on communicative aspects, such as politeness, empathy and cultural expressions.

The first element of the social servicescape involves interactions with other customers. As noted by Kim and Baker (2020), customers within the social servicescape influence each other. They tend to make comparisons based on what they see and hear and may initiate correspondence with other customers. This behaviour aligns with the social comparison theory, which underlines humans' natural urge to compare themselves with others (Festinger, 1954). Social interactions play a significant role in customer-

to-customer (C2C) relationships, regardless of whether individuals consciously realise it or not, across various business environments. Therefore, the social servicescape encompasses the perception of other customers' and employees' characteristics in the service environment, including aspects like appearance, similarity, behaviour and density. The role of other customers gained recognition with Baker's (1987) publication.

The second element pertains to interactions with service employees. The literature has widely recognized the crucial role of service employees in delivering quality service (Lovelock & Wright, 1999; Nguyen, 2006). For this study, the social servicescape covers hotel employees (Choi & Kandampully, 2019). This choice is based on the typical pattern of guests having direct interactions and communications with employees, especially during check-in or the early stages of their experience. Figure 2.7 below shows the constructs and dimensions of the social servicescape, which consists of other customers and employees.

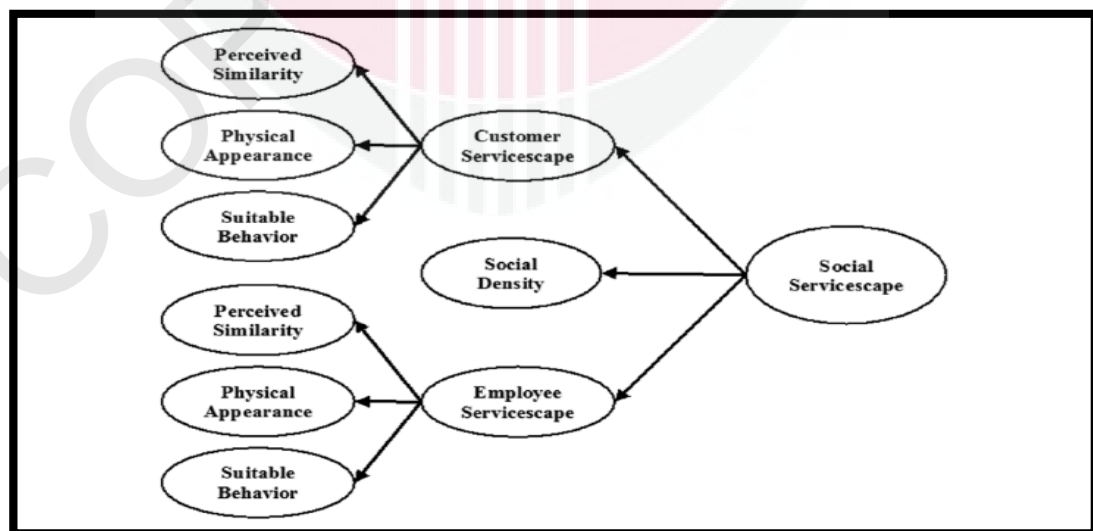


Figure 2.7 : Third-Order Specification of the Proposed Social Servicescape Construct

(Source: Line & Hanks, 2019)

Wood (1994) first emphasised that hotels are the agents of social exclusion, and there is a constraint on the interaction between hotel guests. The study highlighted that hotels prioritised providing products and services, such as guest rooms and food and beverage. Arnould and Price (1998) extended the research on social servicescapes to the interaction between hotel employees. Hence, the concept of social servicescape was introduced by Tombs and McColl-Kennedy (2003). Unfortunately, the social aspect of the servicescape is rarely included in servicescape frameworks (Line et al., 2018). Hence, establishing social and other well-established servicescapes, such as physical servicescapes, is essential.

According to Line and Hanks (2020), there is a growing interest among scholars in the study of social servicescape, especially in the hospitality industry. Research on social servicescape encompasses various areas, including theme parks (Dong & Siu, 2013), hotels (Hanks et al., 2021; Li & Wei, 2021), restaurants (Brocato et al., 2012; Morkunas & Rudiene, 2020), and tourism. Figure 2.8 illustrates the social servicescape conceptual framework comprising five key elements: purchase occasion (context), social density (physical aspects), displayed emotions of others (social aspects), customer's affective responses (internal responses), and customer cognitive responses (act as either intention behaviour or actual behaviours). This framework illustrates how customers' decision to make a purchase will influence their reactions to and acceptance of the social density and emotions of other customers, which in turn influence customers' affective responses (moods and emotions) and their affective and cognitive reactions (interactions with others and intention to repurchase) (Tombs & McColl-Kennedy, 2003). In essence, the conceptual flow of the social servicescape

highlights how customers' behavioural elements can lead to other beneficial behavioural outcomes that will benefit the business organisation.

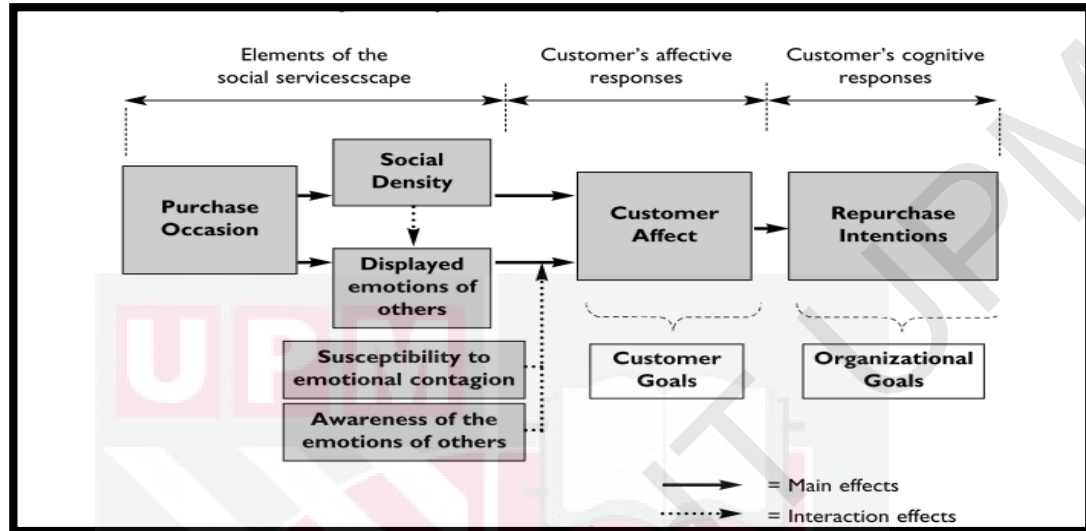


Figure 2.8 : The Social Servicescape Conceptual Framework
(Source: Tombs & McColl-Kennedy, 2003)

The social servicescape dimensions are further divided into perceived similarity, physical appearance, and suitable behaviour (Brocato et al., 2012). Perceived similarity refers to how hotel guests feel a sense of similarity to other customers or employees in the service environment (Brocato et al., 2012). Meanwhile, physical appearance encompasses the physical characteristics and overall look of others in the service environment (Brocato et al., 2012; Hanks et al., 2021). It includes how well-dressed employees or other guests may convey a sense of luxury or formality. Finally, suitable behaviour is the perception of other customers or employees as being pleasant, friendly and well-suited for the service environment (Brocato et al., 2012; Hanks et al., 2021). Additionally, Hanks et al. (2021) highlighted social density as a dimension of the social servicescape. It is defined as the total number of people in a specific physical space.

The relationship between social servicescape and other behavioural elements (Hanks & Line, 2018; Line & Hanks, 2019; Morkunas & Rudiene, 2020) further confirmed that social servicescape complements physical servicescape, leading to customer satisfaction. In light of this, the present study has selected the suitable dimensions for the social servicescape in the hotel industry. The proposed dimensions for the social servicescape are outlined below.

Table 2.9 : The Proposed Dimensions of the Social Servicescape

Social Servicescape dimensions	Source
Perceived similarity	Brocato et al., (2012)
Physical appearance	Brocato et al., (2012); Hanks et al., (2021)
Suitable behaviour	Brocato et al., (2012); Hanks et al., (2021)

In addition, considering the digitalisation and integration of smart technology in the service industry, the measurement for physical and social servicescapes is simple and needs enhancement from other servicescape types (Li & Wei, 2021). The effectiveness of the physical and social servicescape frameworks need to be complemented by different servicescapes that are relevant to the latest technological advancements in business and marketing (technology and digitalisation). Hence, this study considers smart servicescape as part of the framework that hotel and tourism industries would implement in their operations.

2.9.7.3 Smart Servicescape

The term “smart” is widely used to describe numerous emerging technologies that expedite human and non-human interaction in prompt, automatic, and intuitive ways (Poslad, 2011). It encompasses technological, economic, and social developments supported by several technologies, such as sensors, open APIs, open data, big data,

novel ways of connecting humans and machines, and networked information exchange (Xiang et al., 2015). The concept of “smartness” first emerged in the 1990s and has since gained significant attention (Hollands, 2008; 2015). Commonly, the terms “smart” and “intelligent” refer to a product or conditions of technology with various functionalities that can be adapted to specific circumstances (Neuhofer et al., 2015; Worden et al., 2003).

The use of “smart” in technology-based management practices has given rise to various terms, such as smart cities, smart tourism, smart destinations, smart hotels, and smart hospitality. All these enhance the tourism experience and increase the efficiency of tourism organisations and destinations (Buhalis et al., 2023). However, the “smart servicescape” term differs slightly from a smart hotel or smart room. Smart servicescape refers to the smart environment of the hotel. It depends on the hotels and their guests’ needs. Mittag et al. (2018) defined smart services as combining physical and digital services based on a physical product’s data. Therefore, smart services are integrated product-service systems focusing on digital, data-based service components. Figure 2.9 illustrates the definition of smart service. In the hotel environment, for instance, part of the existing environments of smart servicescape include Wi-Fi, smart curtains and tablets in hotel rooms.

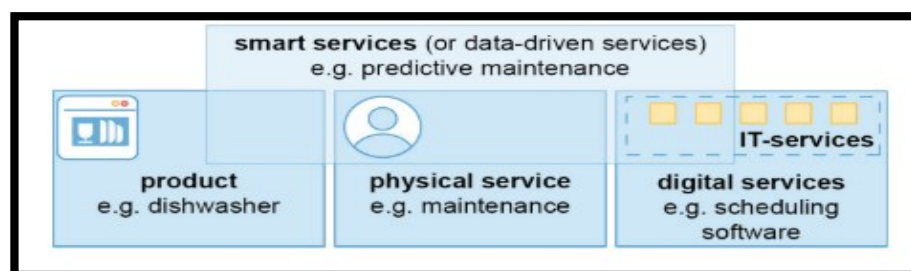


Figure 2.9 : Illustration of the Definition of Smart Service
(Source: Mittag et al., 2018)

Rapid technological advancements have led to the emergence of a smart servicescape, influenced by both smart services and smart consumers (Roy et al., 2019). Due to the convergence of online and offline elements in networked environments, the smart servicescape possesses different characteristics and properties than the conventional servicescape (Kang et al., 2017). This evolution extends the servicescape concept beyond its fundamental physical and social aspects to encompass the smart servicescape. This aligns with the latest trend of digitalisation in the service industry, with a focus on embedding human service to ensure customer satisfaction and VCC behaviour in the future.

While the concept of “smart” has been gaining attention since the 1990s, its application has not been fully embraced in service organisations such as hotels. This is largely due to the nature of the hospitality business, which places a strong emphasis on human service. Most hotel guests prefer a personalized, human touch to their service experience, particularly when paying for luxury services. However, the landscape of service delivery underwent a significant transformed with the onset of the global pandemic on March 11, 2020 (Fust, 2021). New methods were adopted, such as employing robots to deliver food and creating innovative spaces that allow for leisure and recreation at a safe distance. Despite the positive impacts of information and communication technology (ICT), total dependency will not generate maximum operation results (Aziz et al., 2021). Traditionally, service delivery in the service industry revolves around personal interactions, such as the warm greeting from a flight attendant, the hospitality of a B&B host, the friendly taxi driver, and the guidance of a tour operator.

The hospitality industry is actively implementing the concept of “smart” across various areas, including tourism (Messori & Escobar, 2021), destinations (Xiang et al., 2015), and hotels and hospitality. Within this industry, terms like “smart hotel” (Yang et al., 2021) and “smart service” (Kim & Han, 2020) have been introduced. Smart hotels are emerging, but they are still in their early stages and lack specific attributes in research (Kim & Han, 2020). This underscores the importance of developing a comprehensive view of the smart servicescape, which is essential for a more holistic understanding of “smartness” in the hotel industry.

One of the critical elements in the hotel industry that needs attention is the smart servicescape, as no specific study focuses on the hotel industry except for the retail sector (Roy et al., 2019). In today’s dynamic market, integrating smart technologies to create personalised experiences is critical for businesses to remain competitive (Neuhofer et al., 2015). Smart servicescape consists of the direct and indirect interactions between consumers, smart devices and service firms, and other elements in the service environment (Buhalis & Leung, 2018; Roy et al., 2019). It is influenced by the latest marketing trend that uses social media and marketing influencers to advertise and promote hotel facilities and products. Hotel guests will be inclined to try hotel accommodations that have been reviewed by influencers (Ristova, 2019). The smart servicescape takes into account the environment and the utilisation of smart services, ultimately affecting the overall customer experience. While some hotels are at the forefront of technology, adopting and upgrading to the latest IT infrastructure and application systems, others still rely on legacy technologies. (Buhalis & Leung, 2018). Hence, a smart servicescape framework for smart homes is introduced, which includes smart devices, data scape, connected scape, and design aspects (Kang et al.,

2017). This framework, as depicted in Figure 2.10, serves as the bridge between physical and social servicescape, combining frontstage and backstage interactions. It integrates technology and the human touch; as stated above, the smart servicescape comprises devices and interfaces. The following section discusses previous research on the smart servicescape.

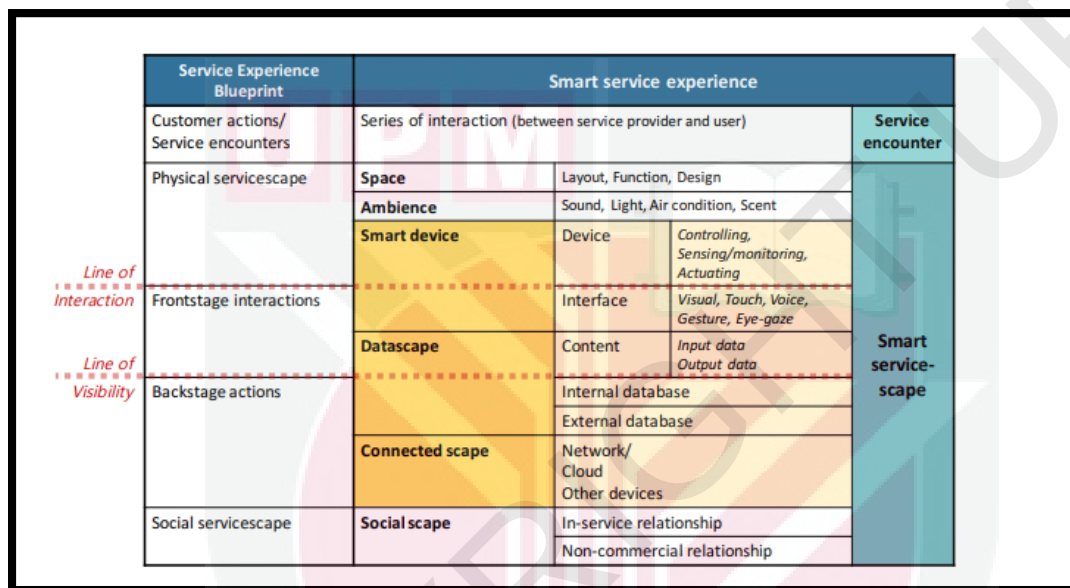


Figure 2.10 : A Framework for the Smart Servicescape
(Source: Kang et al., 2017)

The concept of the smart world has extended into various sectors, such as smart factories (Ryalat et al., 2023; Soori et al., 2023), smart homes (Ehsanifar et al., 2023) and smart aquaculture practices (Anamika, 2023). However, it is worth noting that there has been limited literature focusing on the smart servicescape (Kang et al., 2017). Several studies have explored and adapted the conceptual basis of servicescape in the online context and theorised an “e-servicescape” (Harris & Goode, 2010; Roy et al., 2014). They concluded that the e-servicescape comprises three main elements: aesthetics, interactivity, and navigation. There are limited studies on smart technology

service in the restaurant dining experience (Ivanov et al., 2017), as it is still in its infancy (Leung & Loo, 2020).

Furthermore, Ballantyne and Nilsson (2017) highlighted that traditional servicescape is essential even in the realm of digital services, And Roy et al. (2019) further argued that it was also vital for smart services that combine physical and digital services. The smart servicescape generally consists of the direct and indirect interactions between consumers, intelligent devices and service firms, as well as other elements in the service environment.

Previous research has established five main elements of the smart servicescape: aesthetic, social presence, superior functionality, perceived interactivity, and personalisation (Roy et al., 2019). Research in this area has conceptualised aesthetics as the overall influence of smart technology and how consumers perceive it as exciting and engaging (Harris & Goode, 2010). Aesthetics combines pleasure with an object or a space's artistic or beautiful appearance (Pizam & Tasci, 2019), creating sensory experiences that benefit the service provider and consumers by ensuring customer satisfaction and loyalty (Alfakhri et al., 2018). Social presence is defined as the potential for consumers to consume and be in the technological environment. The second dimension, superior functionality, encompasses the strength that smart technology offers consumers, being better and more advanced in comparison to other technology models (Roy et al., 2019). The third dimension, perceived interactivity, describes consumers'subjective and overall judgment of the interaction with smart technology (Scardamalia & Bereiter, 2014). It is essential as it assists consumers in achieving their goals. Finally, the fourth dimension, perceived personalisation, reveals

how smart technology can offer customers custom-made and personalised services (Neuhofer et al., 2015).

Balancing technology with a human touch is vital in the hotel industry to ensure that customers have an enjoyable stay (Torres & Ronzoni, 2018). A survey by the Malaysian Association of Hotels in 2020 revealed that hotels preferred to use online travel agencies for bookings, specifically during the pandemic. Lockwood and Pyun (2018) emphasised that an online image based on the “real” attributes of the hotel’s features helps distinguish the service offer and enhance revenue objectives. Kandampully (2023) highlighted that technology, as one component in the servicescape and experiencescape, influences customers’ consumption behaviour. Additionally, smart service development and constraints have been studied to understand complex service experiences, making them an essential element of investigation (Kang et al., 2020). Hence, the combination of technology and the human touch aligns with the five elements of the smart servicescape mentioned earlier.

Lockwood and Pyun (2019) highlighted the dimensions of the hotel servicescape, which consist of aesthetic quality, functionality, atmosphere, spaciousness, and physiological conditions. This study aims to explore these dimensions of the servicescape itself, mainly in the hotel environment. It will focus on specific variables, including physical servicescape (ambient condition, space or function layout and sign, symbol, and artifacts), social servicescape (perceived similarity, physical appearance, and appropriate behaviour), and smart servicescape (aesthetics, social presence, superior functionality, perceived interactivity, and perceived personalisation).

Due to the limited literature on smart servicescape, particularly in the hotel industry, the present study was adapted from Roy et al. (2019), and the particular servicescape is presented according to the experience blueprint structure. It is important to incorporate the smart servicescape as one of the antecedents of VCC and CCB. According to Roy et al. (2019), smart servicescape is part of the servicescape. The study highlighted smart consumer behaviour and co-creation value. Since service delivery involves interactions between service providers and customers, the present study needs to include physical and social servicescapes dimensions to ensure a comprehensive analysis. Hence, the table below illustrates the proposed smart servicescape dimensions in the hotel industry.

Table 2.10 : Proposed Dimensions of Smart Servicescape

Smart Servicescape dimensions	Source
Aesthetic	(Sanjit K. Roy, Singh, et al., 2019)
Social presence	(Sanjit K. Roy, Singh, et al., 2019)
Superior Functionality	(Sanjit K. Roy, Singh, et al., 2019)
Perceived Interactivity	(Sanjit K. Roy, Singh, et al., 2019)
Perceived Personalization	(Sanjit K. Roy, Singh, et al., 2019)

2.10 Underpinning Theories

In this section, selected theories that suit the present study are reviewed. Applicability and suitability are two main elements in determining the theories that fit the chosen construct for the present study. The objective of this review is to provide a better understanding of the relationship between each of the constructs, thereby contributing to the development of the conceptual framework. To further understand the study phenomenon, Figure 2.11 provides a summary of the relevant theories in the study area.

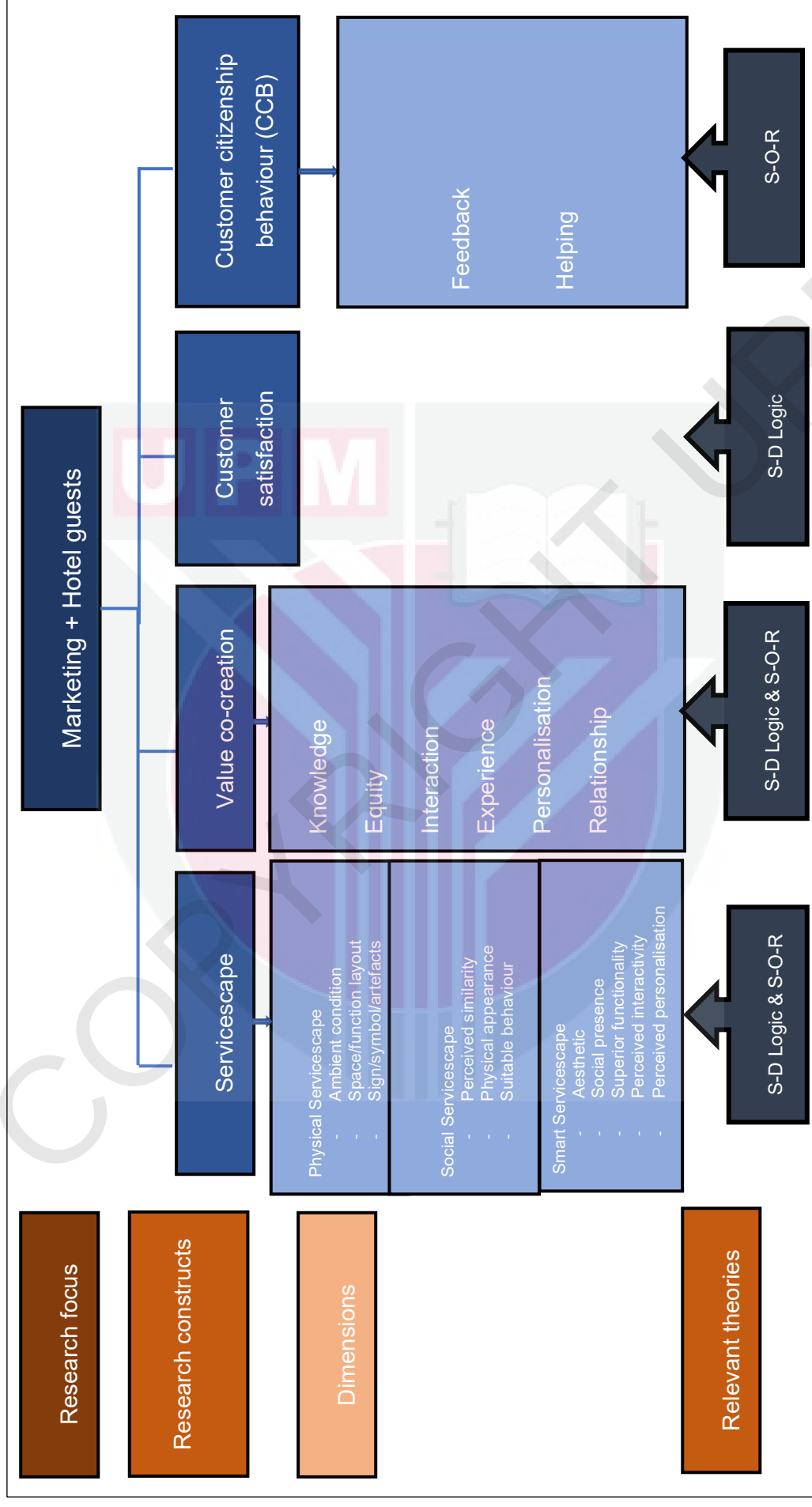


Figure 2.11 : Theories Applied for the Study Construct

The selection of these theories was guided by the prominent theories in the field of CCB (Gong & Yi, 2019). The chosen foundational theories are proposed to offer valuable insights into the research context. The study is underpinned by two main theories: the Service-Dominant (S-D) Logic and the Stimulus-Organism-Response (S-O-R) model. These theories are considered relevant to the current research objectives, which aim to investigate the influence of servicescape, VCC and customer satisfaction on CCB.

S-D logic (Vargo & Lusch, 2004a) and S-O-R theories and models (Mehrabian & Russell, 1974) served as the foundation in the development of the conceptual framework, with the other variables in the present research comprising servicescape, VCC, customer satisfaction and CCB. Servicescape motivates customer experience, which the S-O-R model supports (Mehrabian & Russell, 1974). Furthermore, this also led to VCC by hotel guests, ultimately impacting future behavioural outcomes, such as customer satisfaction and CCB.

Currently, the S-D logic and S-O-R model did not highlight the smart servicescape as one of the important elements. Traditionally, S-D logic emphasizes human interactions for co-creating value but has not fully integrated the role of advanced technologies such as smart servicescapes. Current literature primarily focuses on human-to-human interactions and overlooks how smart technologies can facilitate or enhance these interactions. Besides that, SDL often assumes a static role of customers in the co-creation process. However, the advent of smart servicescapes suggests a more dynamic role where customers can interact with the environment in real-time, providing immediate feedback and adjustments to their service experience. In

addition, SDL recognizes the importance of personalization, it does not adequately address how data collected from smart servicescapes can be used to tailor services dynamically. The role of big data and analytics in creating personalized experiences is underexplored.

SOR focuses on physical and social stimuli but does not consider the impact of digital or smart stimuli. The interaction of guests with smart devices and environments and their subsequent psychological and behavioral responses remain under-researched. Besides that, SOR models typically assume a linear and static response to stimuli. However, smart servicescapes offer dynamic interactions where stimuli can change in real-time based on guest behaviors and preferences, necessitating a revision of traditional SOR models to accommodate these adaptive responses. In addition, The existing SOR framework may oversimplify the organism's internal states by not accounting for the complex interplay between different types of stimuli (e.g., visual, auditory, digital) in smart environments. There is a need for more nuanced models that consider multi-sensory and interactive stimuli.

The incorporation of S-D logic into the present study is believed to enhance VCC (Vargo & Lusch, 2017) among hotel guests. This happens when guests experience the servicescape during their hotel stay, effectively collaborating with hotel staff in sharing information and generating positive WOM. As a result, this process has a direct impact on both customer satisfaction and CCB. The following section provides the discussions and elaborations of these theories.

2.10.1 Service-Dominant Logic

S-D logic is a dominant theory frequently employed in the service sectors (Al Halbusi et al., 2020). This theory marks a significant shift in marketing paradigms, transitioning from a goods-centric (more transactional) perspective to a more service-centric viewpoint (less tangible transaction) (Vargo & Lusch, 2004a). In essence, S-D logic is a service-centric alternative to the traditional goods-centric paradigm for describing economic exchange and value creation (Bordoloi & Fitzsimmons, 2018, p. 12).

The approach of the theory is to understand the interaction between people in different environments to identify the responses and immediate results of stimulation (Mehrabian & Russell, 1974). The theory applies when one entity provides services and another receives them, resulting in the creation of value (Ee & Akashima, 2021). In the context of the tourism industry, this theory can be applied, where the “tourism industry” and “residents” primarily provide services. At the same time, the “customer” in the form of a “tourist” is the entity receiving the benefits of these services. Therefore, S-D logic underscores the necessity of co-creation for sustaining the tourism industry.

Moreover, S-D logic, each justifying the roles of different elements. These encompass the service, the goods, the customer, the operant resources, the enterprise, all economies, and value. Each of these elements contributes to the model’s premise and is supported by distinct justifications. The figure below illustrates the foundational premise of S-D logic.

Table 2.11 : The Foundational Premises of Service-Dominant Logic

Premise	Justification
Service is the fundamental basis of exchange.	Applying operant resources (knowledge and skills), “service” is the basis for all exchange. Service is exchanged for service.
Indirect exchange masks the fundamental basis of exchange	Goods, money, and institutions mask the service-for-service nature of the interaction.
Goods are distribution mechanisms for service provision	Goods (durable and non-durable) derive their value through use (i.e., the service they provide).
Operant resources are the fundamental source of competitive advantage	The comparative ability to course desired change drives competition.
All economies are service economies.	Service (singular) is becoming more apparent with increased specialisation and outsourcing.
The customer is always a co-creator of value	This premise implies that value creation is interactional.
The enterprise cannot deliver value but only offers value propositions	The firm can offer its applied resources and create value collaboratively (interactively) following acceptance but cannot create/deliver value alone.
A service-centred view is inherently customer-oriented and relational	Service is customer-determined and co-created; thus, it is inherently customer-oriented and relational.
All economic and social actors are resource integrators	The context of value creation is networks of networks (resource integrators).
Value is always uniquely and phenomenologically determined by the beneficiary.	Value is individual, experiential, contextual, and meaning-laden.

(Source: Bordoloi & Fitzsimmons, 2018)

According to Sharma et al. (2021), S-D logic examines customer participation within the context of the VCC theory. Figure 2.9 illustrates the narrative and process of S-D logic in service environments (Vargo & Lusch, 2016). Notably, two major theoretical orientations within S-D Logic are ecosystems and institutional theory, which have strong connections. As depicted in the figure, the process unfolds in a sequence that begins with institutions, proceeds to the ecosystem, and further extends to encompass actors, resource integration, and service exchange.

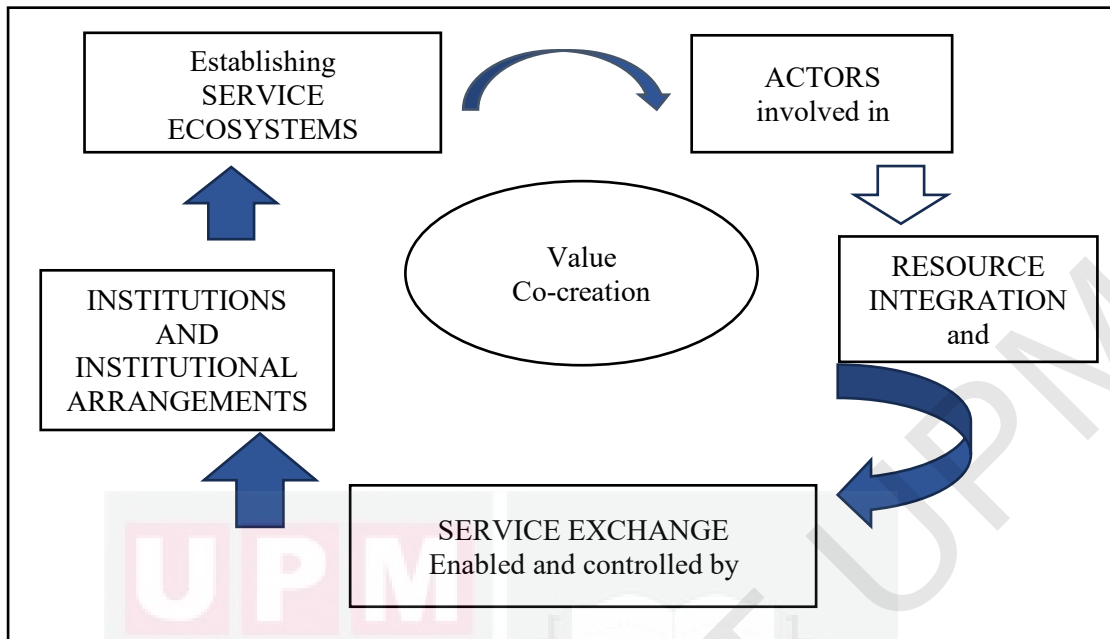


Figure 2.12 : The Narrative and Process of S-D Logic Theory
(Source: Vargo & Lusch, 2016)

In the hospitality industry, specifically hotels, providing good service is essential as it is the initial and the final point of interaction and experience for guests. The significance of first impressions cannot be overstated, making it imperative for hotels, as business entities, to ensure that their service representatives are courteous and efficient. This dedication to quality service can yield various benefits for hotels, including cost recovery, talent retention, the addition of contextual value, and the cultivation of brand loyalty. The value is consistently co-created between the service provider and the guests during each transaction. Table 2.12 offers an overview of service perspectives: goods-dominant logic, S-D logic and new service development (NSD).

Table 2.12 : Perspectives of Service

Perspective/paradigm/logic	Goods-dominant logic	Service-dominant logic interpretative consumer research consumer cultural theory	Nordic School Approach New Service Development (NSD)
What is service?	Service as an outcome (new kinds of service products or attributes)	Service as an experience (valuable, subjective experiences in different events)	Service as a process
Emphasis	Service is measured by attributes and variables in a functional domain	Service as an experience (valuable, subjective experiences in different events)	Service as a process (a new, well-functioning process)
What value is created?	Value-in-exchange	Value-in-context	Value-in-use

(Source: Kijima & Arai, 2016)

In the context of the present study, the primary actors involved in the transaction are hotel guests, followed by other guests and employees. It's interesting to note that while S-D logic literature often focuses more on VCC, the concept of CCB appears to have received comparatively less attention within this framework. (Mitrega et al., 2022). Nevertheless, this study recognizes the value of incorporating S-D Logic, as it has been applied effectively in the tourism and hospitality research literature. Notable studies that have adopted S-D Logic in related research include those by Al Halbusi et al. (2020), Ee and Akashima (2021), Payne et al. (2021) and Ye et al. (2020).

2.10.2 Stimulus-Organism-Response

The second theoretical framework employed in the study is the S-O-R model, originally formulated by Mehrabian and Russell (1974). The S-O-R paradigm initially consists of three types of organisms and two types of responses. However, the theory

has been expanded by introducing more constructs (Fiore & Kim, 2007). S-O-R explains the phenomenon of three main stages: stimulus, organism, and response.

In the S-O-R model, the “organism” represents internal processes and structures that lie between external stimuli and the final actions taken by an individual (Bagozzi, 1986). Hence, the organism variable is not limited to emotional responses only (pleasure, arousal, and dominance) but also includes cognition (e.g., thoughts about the stimuli) and perceived value (Fiore & Kim, 2007) associated with the response to the stimuli.

The S-O-R theory is illustrated in Figure 2.13, where the environment or personality acts as the stimulus; emotional states function as the organism, and behavioural responses constitute the response. To apply this to the present study, the servicescape (physical, social, and smart) serves as the stimulus, VCC behaviour as the organism, and guest satisfaction and CCB act as the response in the relationship. This will be further illustrated in the conceptual framework of this study.

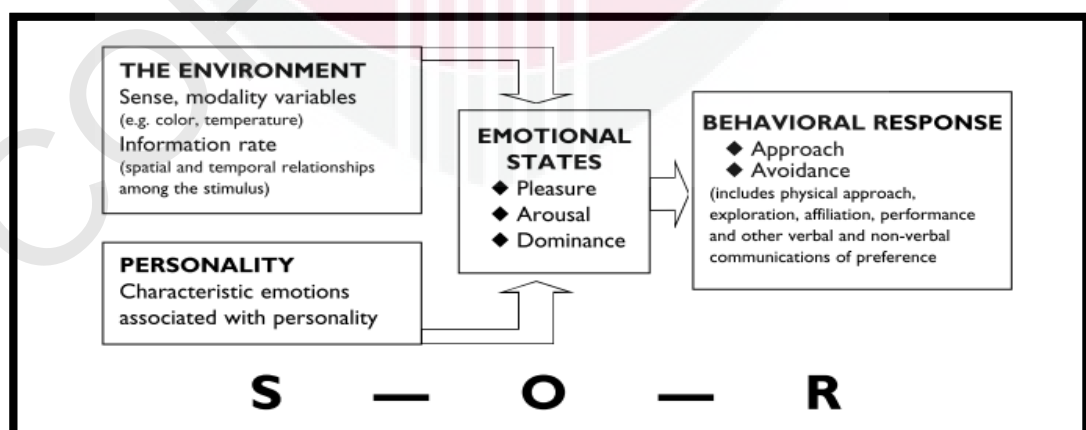


Figure 2.13 : Mehrabian and Russell’s Approach-Avoidance Model
(Source: Mehrabian & Russell, 1974)

Mehrabian and Russell's (1974) model emphasises the influence of environmental stimuli (S) on an individual's behavioural responses (R) over extract organisms (O). Stimulus, in this context, pertains to factors that impact an individual's internal state. Organism serves as the mediator between the stimulus and the responses, encompassing internal processes and outcomes resulting from the stimulus. The final component of the model is the response, which represents the outcome of the interplay between stimulus and organism, including individual intentions and actual behaviours.

In the present study, variables can be categorised into the S-O-R framework, with the servicescape (physical, social, and smart) acting as the stimulus (S), VCC as the organism (O), and guest satisfaction and CCB as the response (R) from hotel guests. The variables highlighted will be explained further in Chapter 3. However, recent research has shown that the model is generally used in studies in the hospitality industry. According to Gong and Yi (2019), one such study on CCB in the service context using the SOR model was identified in the review (Zhu et al. (2016).

The S-O-R model posits that the perception and interpretation of the servicescape affect consumers' emotions, which in turn drive customers to deliver their emotional value and reactions to the physical environment (Baderisang & Mohd Damanhuri, 2021). This is illustrated in Figure 2.14, which summarises the application of the S-O-R model to the study constructs.

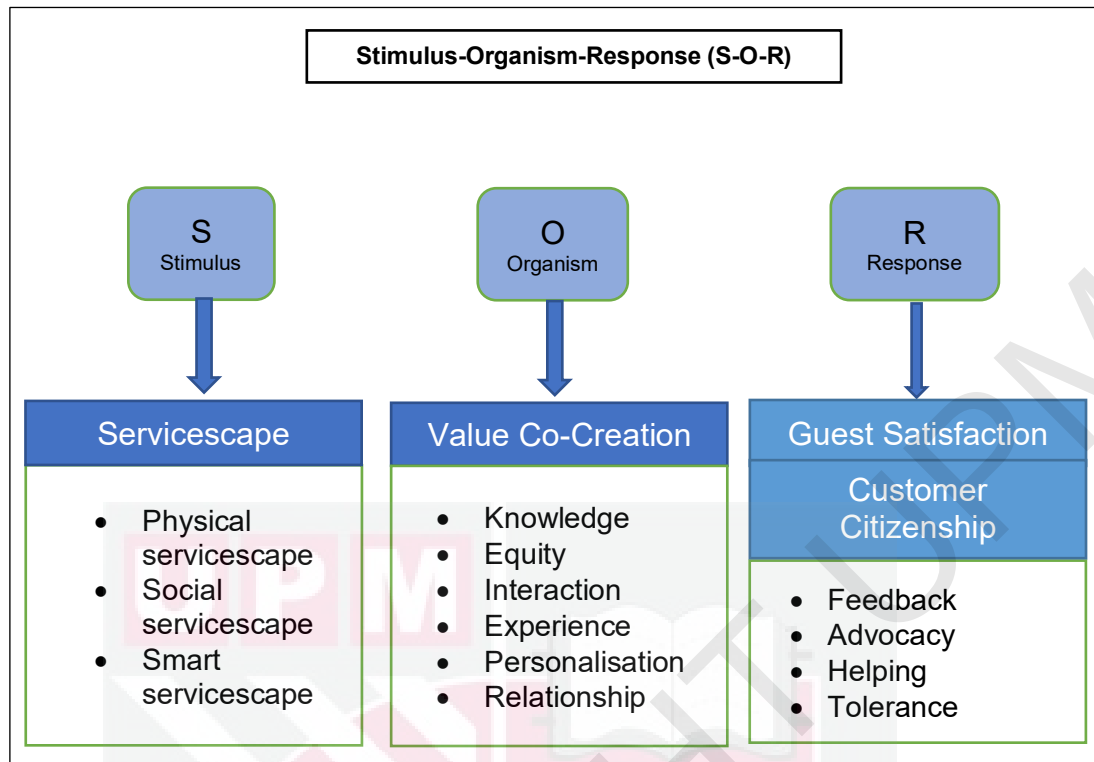


Figure 2.14 : Application of the S-O-R Model for the Study Constructs

The studies that have adopted the S-O-R model include Baderisang and Damanhuri (2021), Dedeoglu et al. (2018), Huang et al. (2017), Lee (2018), Liu et al.(2018), Roy et al. (2019), Siguaw et al. (2021), Tombs and McColl-Kennedy (2003) and Zhu et al. (2016).

This study contributes to the field of marketing philosophy, offering insights into the integrated marketing body of knowledge with a specific focus on servicescape physical evidence. Grounded in the theoretical frameworks of S-D logic and the S-O-R model, this research provides substantial support for understanding and substantiating the phenomenon explored in this study. The following section reviews the research gap of the present study.

2.11 Research Gap

Research gaps play a crucial role in enhancing the understanding of a given field of study. They represent areas with limited information or insufficient knowledge, which hinders researchers from drawing definitive conclusions on specific questions. Addressing these gaps holds value for both academic and practical purposes. Researchers aim to bridge these gaps, providing answers to the so-what question (Vosburgh, 2022) and establishing the objectives of the studies. In the context of this research, a review of the academic literature on the examined constructs revealed the presence of research gaps, particularly in terms of knowledge and industry.

2.11.1 Knowledge Gap

A closer look at the academic literature reveals several gaps and shortcomings. These educational gaps covered the servicescape, VCC, guest satisfaction, and CCB. Previous studies on the antecedents of CCB have primarily focused on the perception of the relationships with organisations (Bettencourt, 1997; Bove et al., 2009), social support (Zhu et al., 2016), corporate social responsibility (Abdelmoety et al., 2022; Aljarah, 2020), and customer love (Hossain et al., 2020). Servicescape has been highlighted as one of the antecedents contributing to CCB and warrants further exploration (Gong & Yi, 2019). However, there have been relatively fewer studies conducted to investigate the role of servicescape in influencing CCB, even though it is a pivotal resource for the hotel industry (Li & Wei, 2021). It was further noted by (Xu et al., 2021) that the servicescape's effects on CCB related to helping other customers and providing feedback to an organisation had been overlooked. Therefore, this study includes a survey of the servicescape's impact on tourist citizenship

behaviour (TCB), focusing on the physical and social servicescapes (Al Halbusi et al., 2020).

Past research has delved into the influence of both physical and social servicescapes on TCB within the context of Malaysian cultural and creative industries (Al Halbusi et al., 2020). Additionally, Asghar Ali et al. (2021) explored the servicescape in the restaurant sector, while Lai and Chong (2019) investigated it within public and private hospitals. Physical and social servicescapes are the principal servicescapes in a business organisation (Bitner, 1992); therefore, it is essential to examine both servicescapes (Asghar Ali et al., 2021; Hanks et al., 2021). However, this topic warrants further investigation, as it encompasses not only the physical and social servicescapes but also the incorporation of the smart servicescape. There has been a growing demand for technology integration in the service industry, particularly within the hotel sector.

Given the pivotal role of technology in today's business landscape, the hotel industry must consider its position within the broader service sector. Previous studies have focused on the smart servicescape and its role in facilitating smart co-creation within the context of the smart home experience (Roy et al., 2019). Some research has focused on smart hotels (Chiang et al., 2019; J. J. Kim & Han, 2020). However, it is worth noting that the intersection of servicescapes and "intelligence" has received limited academic attention in the literature (Yin et al., 2023). Few works link servicescapes and artificial intelligence (AI), although both topics have received considerable attention (J. Sun et al., 2020). There remains ample room for further

exploration and research in the domain of smart servicescapes within the hotel industry.

Despite the literature on CCB, most of the studies asked respondents (consumer/tourist/hotel guest) to look into the antecedents and effects of CCB (Al Halbusi et al., 2020; Assiouras et al., 2019; Hossain et al., 2020; Hur et al., 2018; J. Hwang & Lyu, 2020). Few studies attempted to obtain information from hotel guests regarding the servicescape (e.g., physical and social) (Al Halbusi et al., 2020). There has been limited consideration of the antecedents of smart servicescape, VCC, guest satisfaction, and CCB. Therefore, there is an increasing need and scope for the study of the three servicescapes (physical, social and smart).

The present study is a response to the need for an in-depth examination of the roles played by physical, social, and smart servicescapes, specifically in the hotel industry. By incorporating these three dimensions, the study aims to bridge the existing knowledge gap and shed light on their influence on VCC behaviour and CCB.

Moreover, it is conducted to capture the attention of hotel managers, especially in the context of the pandemic (Bonfanti et al., 2021). The study also aims to explore the strategic choices made by hotels in their marketing approaches, including whether they choose to prioritize high-touch, high-tech, or a combination of both in shaping consumer behaviour (Davari et al., 2021). Figure 2.15 shows the future research directions of CCB. The arrow points to and highlights servicescape as one of the potential antecedents of CCB.

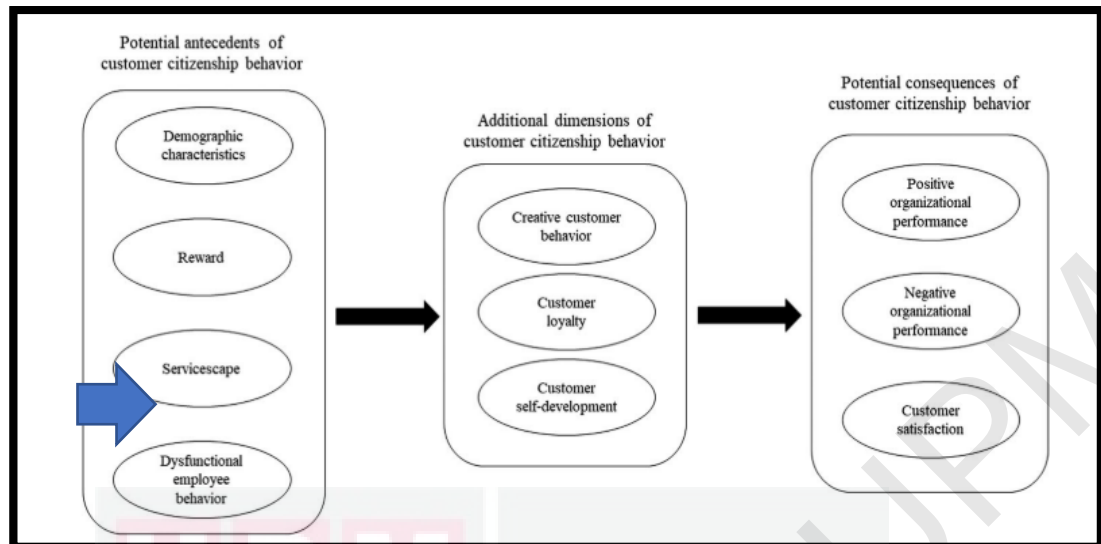


Figure 2.15 : Future Research Directions
(Source: Gong & Yi, 2021)

Additionally, VCC behaviour, a relatively new concept in the industry, remains an area with limited research, especially in the hotel industry (Roy et al., 2019). There is still a substantial gap in the existing body of knowledge when it comes to studying VCC, especially in the context of the tourism industry, where its impact on customer satisfaction is not extensively explored (Jin & Chen, 2021; Solakis et al., 2021). This highlights a clear necessity to contribute to the literature by delving into the relationship between VCC and customer satisfaction.

2.11.2 Industry Gap

Despite the rapid growth and development of the luxury hotel sector in Malaysia, there remains a notable gap in understanding the relationship between servicescape elements and customer citizenship behavior (CCB). While extensive research has been conducted globally on these constructs, there is limited empirical evidence specifically addressing how the unique cultural and environmental factors in Malaysian luxury hotels influence CCB. This gap underscores the need for a comprehensive

investigation to determine how tailored servicescape strategies can enhance customer value co-creation, satisfaction, and proactive customer behaviors in the context of CCB. Addressing this gap is crucial for luxury hotels in Malaysia to develop competitive advantages and foster sustainable customer relationships.

Despite the rapid growth and development of the luxury hotel sector in Malaysia, there remains a notable gap in understanding the relationship between servicescape elements and customer citizenship behavior (CCB). While extensive research has been conducted globally on these constructs, there is limited empirical evidence specifically addressing how the unique cultural and environmental factors in Malaysian luxury hotels influence CCB. Furthermore, the COVID-19 pandemic has significantly disrupted the hotel industry, exacerbating the need for new strategies to enhance customer engagement and proactive behaviors.

The pandemic has altered customer expectations and behaviors, necessitating a reassessment of servicescape elements to ensure they meet heightened health and safety standards while still promoting a luxurious experience. This gap underscores the need for a comprehensive investigation to determine how tailored servicescape strategies can enhance customer engagement, satisfaction, and proactive customer behaviors in this context. Addressing this gap is crucial for luxury hotels in Malaysia to develop competitive advantages and foster sustainable customer relationships in a post-pandemic landscape.

For a comprehensive overview of the gaps and research objectives, please refer to Table 2.13.

Table 2.13 : Summary of the Knowledge Gaps and Research Objectives

Knowledge Gap 1	Research Objectives
1. VCC behaviour, which is relatively new in the industry, has received little research attention, especially in the hotel industry (Sanjit K. Roy et al., 2019).	RO1: To examine the relationship between antecedents (physical, social, and smart servicescape) towards VCC.
	RO2: To examine the relationship between VCC and customer satisfaction.
	RO3: To examine the relationship between VCC and CCB.
Knowledge Gap 2	Research Objectives
2. Satisfaction will lead to extra-role behaviour from customers (Al-Halbusi, 2020).	RO4: To examine the relationship between customer satisfaction and CCB.
	RO5: To examine the relationship between antecedents (physical, social, and smart servicescape) and customer satisfaction.
Knowledge Gap 3, 4 & 5	Research Objectives
3. Gong and Yi (2019) have suggested one of the future research directions of CCB is to consider the elements of servicescape as the potential antecedents. 4. There is still a great deal of work to be done in the area of smart servicescape in the hotel industry (Chiang et al., 2019; J. J. Kim & Han, 2020) 5. The marketing literature gives limited attention to CCB. Despite its apparent importance (Fowler, 2013), there is a missing link between customers (Al Halbusi et al., 2020).	RO6: To examine the relationship between antecedents (physical, social, and smart servicescape) on CCB.
	RO7: To examine the mediating effect of VCC on the relationship between antecedents (physical, social, and smart servicescape) on CCB.

2.12 Conclusion

A summary of the key points discussed in the chapter, reinforcing the importance of the hotel industry to Malaysia's economy and tourism sector. This chapter provides a comprehensive analysis of the hotel industry in Malaysia, tracing its historical development, examining its current market structure, and highlighting key players and

their strategies. It underscores the economic impact of the industry and explores current trends such as sustainable practices and digital innovation. The chapter also addresses the challenges and opportunities within the sector, supported by case studies of successful hotel businesses specifically four- and five-star hotel. Concluding with a future outlook, it emphasizes the importance of continuous innovation and strategic adaptation to ensure the industry's sustained growth and competitiveness in the dynamic global tourism market. The conclusion reiterates the need for continuous innovation and adaptation to maintain competitiveness and growth in the industry.

This chapter encompasses a thorough exploration of all the relevant variables discussed in this study. The literature review delves into the concept of CCB and its various antecedents, such as VCC behaviour, different types of hotel guests, and the multifaceted servicescape (physical, social, and smart). The literature primarily focuses on the elements of servicescapes, namely physical, social, and smart, and their influence on VCC behaviour. This examination seeks to reveal the dynamics between these variables and the extent to which customers engage in co-creation with service providers and other customers within the service environment, ultimately benefiting both parties.

Thus, even after an extensive literature review, some variables might have been overlooked. Additionally, while existing studies have established the importance of servicescape in influencing behavioral intentions, there remains a gap in understanding its precise impact on VCC and CCB. Hence, the present study aims to fill the gap by examining the servicescapes (physical, social and smart), VCC customer satisfaction and CCB in the context of Malaysian luxury hotel guests.

CHAPTER 3

CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter covers the justification for the proposed hypotheses. The first part focuses on the underpinning theories that support the theoretical framework. As briefly discussed in Chapter 2, the conceptual framework of servicescape and customer citizenship behavior (CCB) comprises the service-dominant logic (SDL) and stimulus-organism-response (S-O-R) theories. This study's leading theory is based on the two theories above. Constructs are identified according to the relevancy of the study, and six variables are proposed for the current study. The hypotheses are then developed for each relationship.

3.2 Proposed Conceptual Framework

The conceptual framework defines the research objectives and maps out the coherent conclusions. It is usually developed based on a literature review of existing studies. In addition, it represents the relationship between study variables. The framework should be constructed first before data is collected.

The proposed framework for the present study shows the relationship between servicescape, value co-creation, and CCB. Specifically, this study will assist in looking at the role and influence of physical, social, and smart servicescapes with value co-creation towards satisfaction and CCB among luxury hotel guests in Malaysia. Conceptualization of all the variables will help academicians and industry practitioners gain a deeper understanding of the vital role that the guests can play. In

forming the framework for the present study, three framework models from the previous research are referred to as a guideline. Each framework shows the relationship between related study variables. The discussion below will elaborate on the interconnections of those variables.

3.2.1 Servicescape, Satisfaction, and Customer Citizenship Behavior

Al Halbusi et al. (2020) developed the model to examine tourist citizenship behavior (TCB) in Malaysian cultural and creative industries. The study investigated the antecedents of TCB and found that physical and social servicescapes act as independent variables. In contrast, co-creation value acts as a mediator, which is moderate by satisfaction. However, the combination of the mentioned servicescapes needs to be enhanced due to the emergence of Industry 4.0, which has given rise to the concept of “smartness” and the need for technology to be embedded and adapted among hotel employees and management (H. Hsu & Tseng, 2022). The servicescapes will influence hotel guest behavior, which is the best hope to help the business remain sustainable. Therefore, the present study adds another element of an under-explored “smart” servicescape that potentially plays a significant role in CCB among hotel guests. Additionally, the study also looks at hotel guest behavior to suit its context. Figure 3.1 illustrates the framework developed by Al Halbusi et al. (2020).

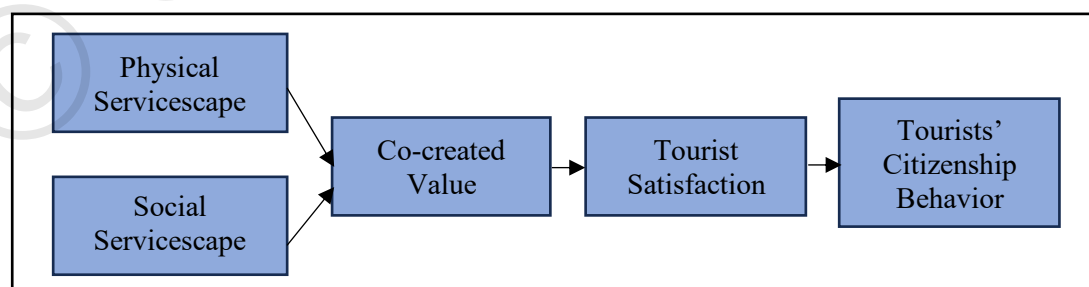


Figure 3.1 : The Conceptual Framework of Servicescape, Satisfaction and TCB
(Source: Al Halbusi et al., 2020)

Servicescape and TCB show a positive relationship that may later lead to other behavioral intentions, such as the intention to revisit the business (Al Halbusi et al., 2020). The new addition of servicescape as another factor that influences CCB was proposed based on the objectives of the present study, which is supported by the S-O-R model (Mehrabian & Russell, 1974). The present study has adapted the model by adding another element of servicescape — the smart servicescape — due to its significant business role in this technological era, specifically in the hotel industry (Al Halbusi et al., 2020). Moreover, the dependent variable has been modified from TCB to CCB to suit the study setting, namely luxury hotel guests. Servicescape remains the antecedent as it plays an essential role in the hotel environment.

3.2.2 Value Co-creation, Guest Satisfaction, and Customer Citizenship Behavior

The second framework (Figure 3.2) illustrates the relationship between value co-creation, guest satisfaction, and CCB observed in a study among tourists in Greece (Assiouras et al., 2019). The study explored the association between value co-creation and willingness to engage in CCB. It looked at the relationship between these three variables, which included value co-creation (IV), guest satisfaction (mediator), and willingness to engage in CCB (DV). Value co-creation had two dimensions: co-production and value-in-use.

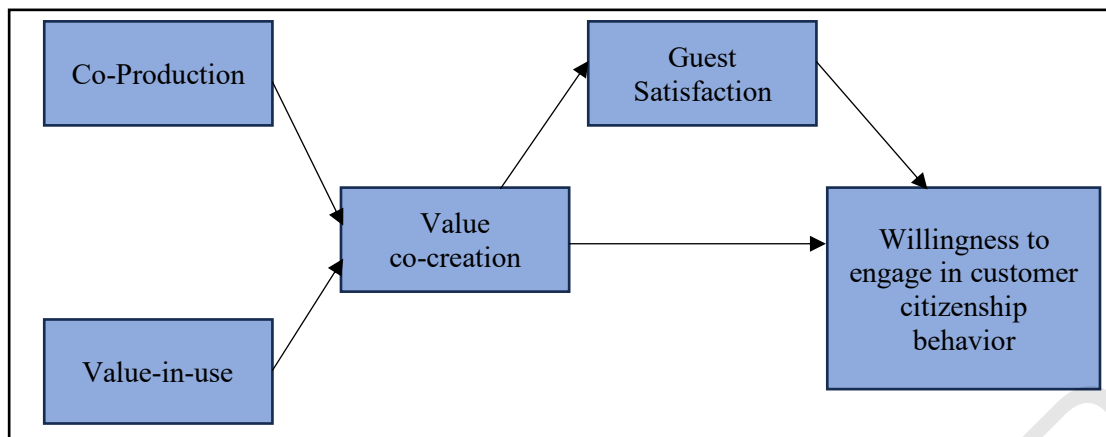


Figure 3.2 : The Conceptual Framework of Value Co-Creation, Guest Satisfaction and CCB
(Source: Assiouras et al., 2019)

This study indicated a positive relationship between antecedents and willingness to engage in CCB. As discussed earlier, most of the CCB relationships with any antecedent showed a significant relationship. In the present study of luxury hotels, few studies have focused on the effects of corporate social responsibility (CSR) rather than servicescape towards CCB (Abdelmoety et al., 2022; Alhouz & Hasouneh, 2020).

3.2.3 Guest Satisfaction and Customer Citizenship Behavior

The concept of satisfaction is not new in the business and marketing environment. Even so, it has attracted academic researchers to look at the factors leading to behavioral intentions. Satisfaction is deemed necessary before continuing or ending the relationship. For the operational strategy of the hotel industry, customer satisfaction is of utmost importance to managers (O'Neill & Mattila, 2010) as it promotes long-term relationships between organizations and customers are achieved through customer satisfaction (Darley & Luethge, 2019; Ji & Prentice, 2021).

Figure 3.3 illustrates the third conceptual framework, highlighting the satisfaction and behavior intention among hotel guests in China (Quan et al., 2022). The framework shows satisfaction and behavior intention as two dependent variables for the study. The study indicated customer satisfaction has a positive relationship and improves behavior intention to visit a hotel. Hence, in the present study, customer satisfaction and customer citizenship behavior (CCB) are the dependent variables of the servicescapes (physical, social, and smart) and value co-creation (VCC). The behavioral intention in the framework has been changed to CCB in the present study. Below is the study's conceptual framework that has been discussed.

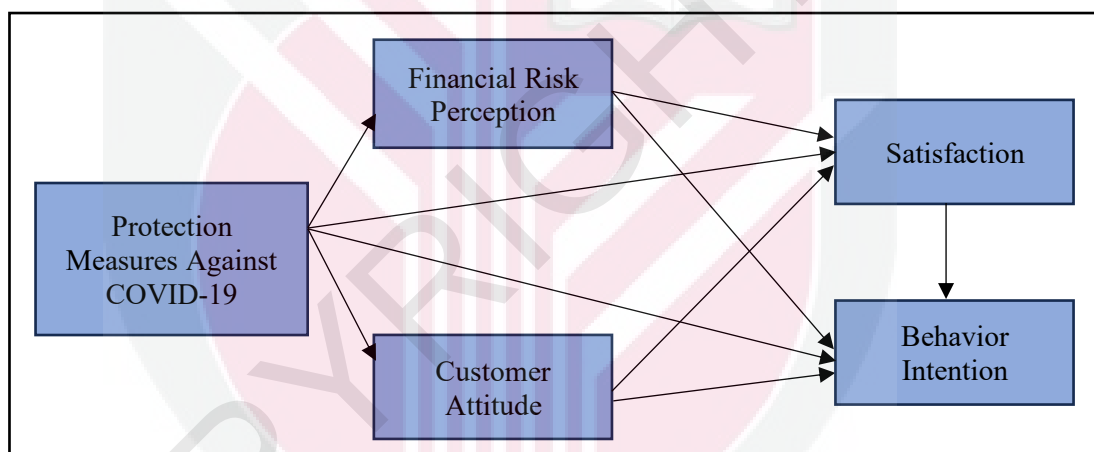


Figure 3.3 : The Conceptual Framework for Customer Satisfaction and Behavior Intention

(Source: Quan et al., 2022)

3.2.4 Smart Servicescape

Smartness has become one of the essential things in organizations nowadays. It helps the organization to be more visible and has better control over its processes. In addition, it enables the organization to predict unforeseen challenges. Sanjit et al. (2019) investigated smart servicescape in retailing as the antecedent of brand equity and word-of-mouth with the S-O-R model as the underpinning theory. The study

showed a significant relationship between the antecedents and their dependent variables, as illustrated in Figure 3.4. Due to the importance of the “smart” element in business, the present study has adopted the same antecedent, which extends and generalizes the concept of CCB. Therefore, a newly proposed smart servicescape concept and CCB would attempt to fill the literature gap.

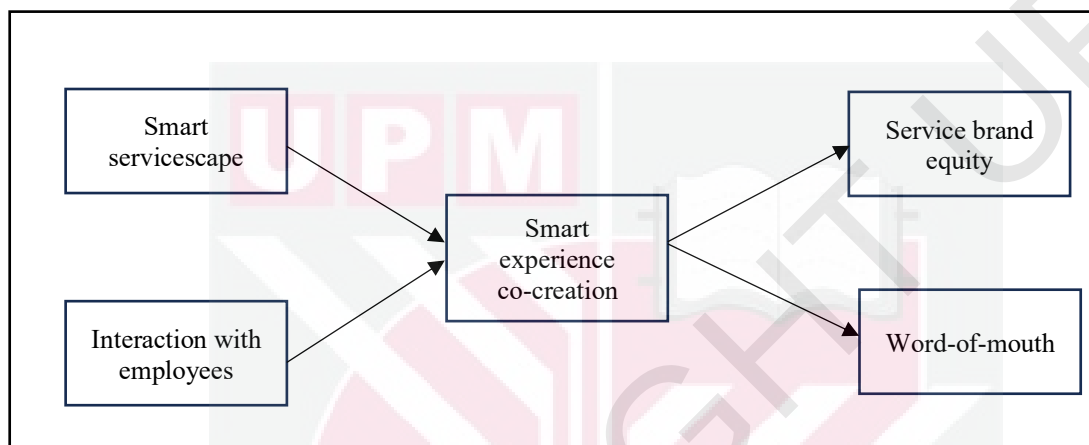


Figure 3.4 : Research Model of Smart Servicescape in Retail
(Source: Sanjit et al., 2019)

3.2.5 Conceptual Framework for Study

The extension of this study occurred with the development of its conceptual framework, which is based on SDL and S-O-R theories. The conceptual framework was developed based on the four studies by Al Halbusi et al. (2020), Assiouras et al. (2019), Sanjit et al. (2021), and (Quan et al., 2022). As in the previous discussion, the components of the study need to be updated from the existing framework based on the latest issues in the service environment. The study by (Al Halbusi et al., 2020) highlighted the antecedents that stimulated TCB. They consisted of both physical and social servicescapes. Meanwhile (Assiouras et al., 2019) examined the association between value co-creation and consumer willingness to engage in CCB. Additionally,

the third study explored the role of smart servicescape in brand equity and good word-of-mouth (Sanjit et al., 2019).

Based on the conceptual framework and discussion above, this study investigates the role of three servicescapes (physical, social and smart), value co-creation, guest satisfaction and CCB among luxury hotel guests in Malaysia. A framework comprising six essential constructs was proposed. Independent variables include (i) physical servicescape, (ii) social servicescape and (iii) smart servicescape. Physical servicescape comprises ambient conditions, space/function layout and sign/symbol/artifacts contained within the hotel premises. Social servicescape consists of perceived similarity, physical appearance and suitable behavior of the hotel staff. Smart servicescape has five dimensions: aesthetics, social presence, superior functionality, perceived interactivity, and perceived personalization. Value co-creation and customer satisfaction are mediating variables. CCB is referred to as the dependent variable.

The combination of study models by (Al Halbusi et al., 2020; Assiouras et al., 2019; Gong & Yi, 2021) specifically contributed to the proposed conceptual framework of the present study. Integration of SDL theory and the S-O-R model may provide an extensive understanding of the phenomenon, besides contributing to existing literature. The proposed conceptual framework (Figure 3.5) and underpinned theories (Figure 3.6) illustrate this study's storyline.

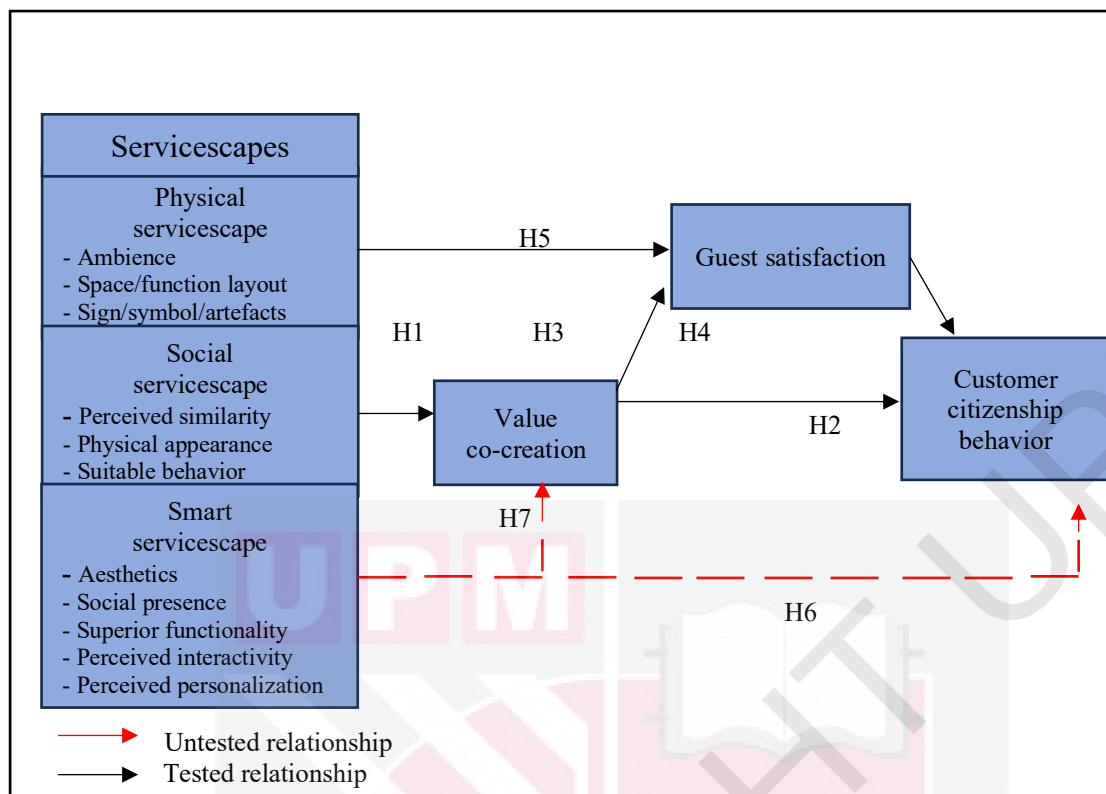


Figure 3.5 : The Proposed Conceptual Framework of the Study

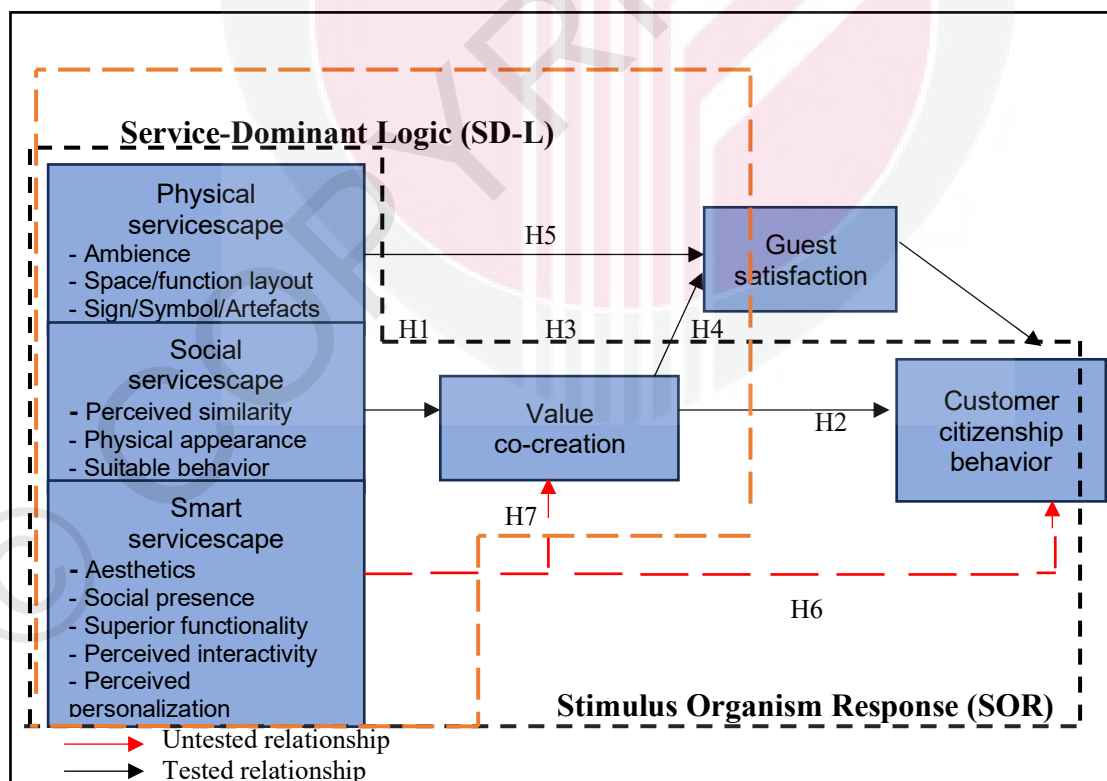


Figure 3.6 : The Underpinning Theories in the Proposed Conceptual Framework of the Study

The study extends the research by integrating elements of a smart servicescape alongside the physical and social servicescape. Unlike the previous study by Al Halbusi et al. (2020), which focused exclusively on human services. This study incorporates both human services and technology through smart services.

3.3 Hypotheses Development

This section will further discuss the hypotheses in examining the proposed relationships between constructs of servicescape, value co-creation, guest satisfaction and CCB. The discussion will cover the development of the study's hypotheses.

3.3.1 Servicescape (Physical, Social and Smart) and Value Co-Creation

Servicescape is viewed as an operant resource in a service setting and as a variable to assess value co-creation naturally (N. Nguyen & Leblanc, 2002). As servicescape is the primary tool that most service providers would have, including hotel and other tourism products, it can serve as a mediator that connects the service provider and customer. As good service providers, luxury hotels should provide the best facilities to guests, regardless if they are repeating or new customers. The hotel's best first impression will attract most guests. This is where servicescape will help to create value for the hotels.

Besides that, tourists and service providers may be considered as an integration of resources in service encounters. Nevertheless, the interactions may involve other consumers (Al Halbusi et al., 2020). The employees and other tourism factors, such as physical image and observed behaviors, will affect the value perception of guests and customers (Hanks et al., 2017). In addition, servicescape relates to service

encounters in both physical and social environments. The physical environment comprises three core elements: ambiance, layout and signs, symbols, and artifacts. Meanwhile, the social environment includes direct and indirect interactions in social relationships (Hanks et al., 2017).

In addition, technology can be considered one of the operant resources with the ability to integrate, collaborate and access other resources. Hence, integrating technology is a critical and popular medium in value co-creation (Zainuddin et al., 2016) between service providers and customers (Knote et al., 2021). From our fundamental understanding of regular and “traditional” services, a business value is co-created by the interaction of two or more actors. Still, value may be co-created in smart services between humans and sophisticated technical objects (Medina-Borja, 2015). Since smart services capture value in terms of monetary features (payments and advertising), consumers will view it as functional (helping others), hedonic (creating pleasant experiences) and social (facilitating a sense of community) factors, or a combination of the above (Paukstadt et al., 2019)

According to Sanjit et al. (2019), the aesthetic elements in the e- and m-servicescapes will significantly impact smart consumers’ emotional and cognitive evaluation. There will be a lot of interactions among consumers and the smart servicescape dimensions. It is highlighted that smart service may promise additional and newly tailored values (Maglio & Lim, 2016; Porter & Heppelmann, 2014). These interactions will result in superior experience and eventually increase value co-creation (Jaakkola et al., 2015). Thus, the following hypotheses are developed for this study.

H1a: There is a relationship between physical servicescape and value co-creation.

H1b: There is a relationship between social servicescape and value co-creation.

H1c: There is a relationship between smart servicescape and value co-creation.

3.3.2 Value Co-Creation and Customer Citizenship Behavior

Sanjit et al. (2020) stated that the participation of patrons and the effects of such behaviors have received limited empirical attention. This is unfortunate as investigating value co-creation behavior (VCCB) can help managers improve customer experience and strengthen hotel relationships with guests. According to the SDL theory perspective, customers are co-creators of value, which they determine independently (Vega-Vazquez et al., 2013). The SDL theory is also a new resource, exchange, and human action paradigm. In this case, human activity can be considered the CCB in the present study.

The tourism and hospitality industry has benefited from applying the tools of CCB (which consist of feedback, advocacy, help, and tolerance) in their co-production and value (Assiouras et al., 2019). CCB rewards for a customer can be intrinsic (e.g., respect and affection) or extrinsic (e.g., monetary gains and free accommodation). Hence, hotel guests will provide positive or negative feedback as they expect better services after their first visit (e.g., intrinsic rewards). Besides, helping other guests during their stay or referring others for a future visit may bring extrinsic rewards (e.g., expecting tips from the hotel) (Blau, 1964). A few studies only examined VCCB from the customers' perspective, and even when they did, focus was made on partial aspects (Fang et al., 2008; Groth, 2005). It is highlighted that future studies need to investigate the reliability of value co-creation and CCB in helping a business grow (Assiouras et al., 2019). Therefore, with the above discussions, the hypothesis below is suggested.

H2: There is a relationship between value co-creation and CCB

3.3.3 Value Co-Creation and Customer Satisfaction

The organization tries to provide excellent service to create better customer co-creation (Jain et al., 2021). Value co-creation applies the SDL framework (Vargo & Lusch, 2004b, 2008), and changes from the goods-dominant logic to SDL will indirectly change the meaning of values (Vargo et al., 2020), whereby it involves all participants in the exchange process (Vargo & Lusch, 2008, 2017), which is also responsible for the process viability and wellbeing (Vargo et al., 2020).

In addition, the expectation-confirmation theory (ECT) has established itself in many scientific processes. According to ECT, satisfaction is identified during interactions of expectations, perceived performance, and disconfirmation of beliefs. Customers will develop feelings about the product or service and differentiate their perceptions and expectations to ensure how far the expectations can be confirmed. Hence, it will form the degree of customer satisfaction (Jin & Chen, 2021). ECT was adopted by Eveleth et al. (2015) in their research on the function of corporate websites and by Fu et al. (2018) in a study of the overall service performance of public transport services based on passenger satisfaction and loyalty.

A previous study pointed out that co-creation behavior is consistent with customer needs, whereby customer satisfaction will improve when the process is seen as rewarding (Franke & Schreier, 2010). Aminudin & Jamal (2021) further elaborated that to foster satisfaction factors among customers in the hotel industry, the sharing and using knowledge are crucial, and the co-created value is one of the critical

dimensions (Jin & Chen, 2021). Given the strong association and growing importance of the value co-creation process, it is essential to understand better the relationship between value co-creation and guest satisfaction (Vega-Vazquez et al., 2013). Furthermore, several studies have proven that the co-created values are related to customer satisfaction and business outcomes (Dabholkar & Sheng, 2012; Guenzi & Troilo, 2007; Maglio et al., 2009; C. H. Wu, 2011). Hence, it may be hypothesized as below.

H3: There is a relationship between value co-creation and customer satisfaction.

3.3.4 Guest Satisfaction and Customer Citizenship Behavior

Satisfaction is often associated with citizenship behavior (Al Halbusi et al., 2020; Ali & Amin, 2014; Anaza & Zhao, 2013; Assiouras et al., 2019; Hwang & Lee, 2019; Lee et al., 2014; Paendong, 2021). Customers can kindly reward a business organization that has satisfied them by providing positive word-of-mouth, assisting other customers in patronizing the organization, and participating in online activities (Assiouras et al., 2019; Kandampully & Suhartanto, 2000; Ryu & Han, 2010). They will also refer their friends and relatives to the organization and provide return business even when there is a price increase (Duman & Mattila, 2005; Kim & Lee, 2011; Lee et al., 2011; Li & Petrick, 2008; Williams & Soutar, 2009). All the mentioned elements are part of CCB.

Furthermore, Ali et al. (2021) reported that customer satisfaction may also contribute to the business objective of minimizing cost. Nevertheless, although several studies have examined the influence of customer satisfaction on CCB, the results are still inconsistent (Nagy & Marzouk, 2018). For instance, customers will engage in citizenship behavior when they receive excellent treatment (Groth, 2005). Another

study also showed the mediating role of customer satisfaction with CCB (Zoghbi-manrique-de-lara & Rodríguez, 2015). In addition, customer satisfaction also mediates CCB (Thai, 2022) and increases their willingness to engage in it (Assiouras et al., 2019).

The construct of CCB has not yet been sufficiently investigated from a tourism point of view (Assiouras et al., 2019). Some studies explored antecedents, such as loyalty (Tung et al., 2017; Zoghbi-manrique-de-lara & Rodríguez, 2015), guest satisfaction and perceived value in the context of a packaged tour and destination (Tung et al., 2017). This voluntary behavior (CCB) has been demonstrated by tourists in several studies as a result of satisfaction (Auh & Johnson, 2005; Chen & Chen, 2010; Zeithaml et al., 1996). Thus, the research hypothesis is developed as below.

H4: There is a relationship between customer satisfaction and CCB.

3.3.5 Servicescape (Physical, Social, and Smart) and Customer Satisfaction

Customers will feel more comfortable and satisfied with the services provided if the servicescape is in good condition (Hanafi et al., 2021; Paendong, 2021). When customers have a higher perception of a hotel's physical servicescape, they are more likely to be satisfied with the experience provided to them (Ali & Amin, 2014). Various studies have proven that physical servicescape may influence customer satisfaction. Previously, a study compared customer expectations and perceptions (Zeithaml & Berry, 1993). It is noticed that customers will always be satisfied when all their expectations are met by the hotel, which includes aesthetic design and ambiance (Ha & Jang, 2012; Han et al., 2009).

Social servicescape factors may determine customer satisfaction (Choi & Kandampully, 2019; H. Lin et al., 2020; Morkunas & Rudiene, 2020; Yalinay et al., 2018). Nathaniel D. Line & Hanks (2019) suggested that the social aspects of the servicescape need to be taken care of besides the physical servicescape in the service environment. For instance, some of the social servicescape elements include the anticipated, recognized and suited behavior of the employees and hotel guests. In addition, social servicescape is believed to help shape human behavior and create a positive image, which converts to satisfaction (Jang et al., 2015; Line et al., 2018). When guests feel comfortable communicating during the service delivery and value co-creation process, a good relationship will happen and lead to satisfaction.

On the other hand, in this new changing environment, the Internet of Things (IoT) enables smart environments to redefine how customers navigate their experiences (Pappas et al., 2021). The smart servicescape has got in the business environment, such as retailing (Sanjit K. Roy, Singh, et al., 2019) and factories (Soori et al., 2023) as the business environment moves to the fourth industrial revolution, known as Industry 4.0. In the hospitality industry, some processes such as hotel room booking, facilities controlled by tablets, use special Apps and service robots to order menus in restaurants (Seo & Lee, 2021). With the service delivery enhancement through technology available, it will assist hotel guests to get better and faster services and products, which will increase their satisfaction (Afaq et al., 2023). Most businesses want satisfied customers to ensure positive behavioral intention. Hence, the hypotheses below are proposed.

H5a: There is a relationship between physical servicescape and customer satisfaction.

H5b: There is a relationship between social servicescape and customer satisfaction.

H5c: There is a relationship between smart servicescape and customer satisfaction.

3.3.6 Servicescape (Physical, Social, and Smart) and Customer Citizenship Behavior

It is highlighted in the S-O-R framework that physical and social servicescapes act as the external environmental stimuli of service providers, which are assumed to impact customer engagement positively and essentially reflect the psychological state of customers (Li & Wei, 2021). The effects of social servicescape on the service experience and how its constructs influence customer behavior appear to be particularly salient (Line et al., 2018), with significant consequences for CCB. Hence, the hypothesis below is proposed.

H6a: There is a relationship between physical servicescape and CCB

H6b: There is a relationship between social servicescape and CCB

H6c: There is a relationship between smart servicescape and CCB

3.3.7 Value Co-creation Mediates Servicescape Antecedents and Customer Citizenship Behavior

Guests who are satisfied with the value co-creation relationship will be more willing to engage in CCB (Assiouras et al., 2019). Meanwhile, guests who spend resources, such as time and knowledge, for the organization and do not receive the expected value will have a lower willingness to engage in CCB. Furthermore, in the field of smart servicescape, it is highlighted that implementing safety and security technology can introduce substantial changes in citizenship behavior and resource integration among

actors by leading them to co-create new values and co-develop new social practices (Polese et al., 2020). Therefore, the study will explore the following hypotheses.

H7a: Value co-creation mediates physical servicescape and CCB

H7b: Value co-creation mediates social servicescape and CCB

H7c: Value co-creation mediates smart servicescape and CCB

Table 3.1 summarizes the mapping of research objectives and the direction of the hypotheses.

Table 3.1 : Summary of Research Hypotheses

Research Objectives	Hypotheses
Objective 1 To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	H1a: There is a relationship between physical servicescape and value co-creation. H1b: There is a relationship between social servicescape and value co-creation. H1c: There is a relationship between smart servicescape and value co-creation. H2: There is a relationship between value co-creation and customer satisfaction. H3: There is a relationship between value co-creation and CCB.
Objective 2 To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	H4: There is a relationship between customer satisfaction and CCB. H5a: There is a relationship between physical servicescape and customer satisfaction. H5b: There is a relationship between social servicescape and customer satisfaction. H5c: There is a relationship between smart servicescape and customer satisfaction. H6: There is a relationship between antecedents (physical, social and smart servicescapes) and CCB. H6a: There is a relationship between physical servicescape and CCB. H6a: There is a relationship between social servicescape and CCB. H6c: There is a relationship between social servicescape and CCB.

Table 3.1 : Continued

Objective 3 To investigate the mediation effect of value co-creation between servicescapes (physical, social and smart servicescapes), and CCB.	H7: Value co-creation mediates the relationship between antecedents and CCB. H7a: Value co-creation mediates the relationship between physical servicescape and CCB. H7b: Value co-creation mediates the relationship between social servicescape and CCB. H7c: Value co-creation mediates the relationship between smart servicescape and CCB.
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After summarizing all the hypotheses developed to examine the proposed framework, the following section concludes the chapter on the conceptual framework.

3.4 Conclusion

This chapter elaborates on the research framework and the underpinning theories that will assist the proposed conceptual framework based on SDL and S-O-R theories, with consideration of previous researchers and some modifications of the model that have guided the six constructs used in this study. All six constructs in the proposed conceptual framework align with the hypotheses that will answer the seven research objectives highlighted in Chapter 1. Hence, with an established framework and hypotheses, the next chapter will focus on the research methodology required to execute the fieldwork.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the research design and justifies the application of a quantitative approach. The topics include population and sampling, sampling frame and units of analysis, sample size, sampling technique, design, and proposed conceptual framework. Then, the instrumentation used to measure the constructs' validity and reliability is explained. Finally, the methods to analyse the hypotheses are described.

The theoretical and empirical methods are integrated to understand the proposed constructs' relationship better. Indeed, the present study also examined the relationship between variables. Furthermore, the questionnaire was designed to meet the study objectives. The Structural Equation Modelling (SEM) method validated the relationship between constructs within a framework.

4.2 Research Philosophy

Research philosophy is the belief in how data about a phenomenon should be collected, analysed and used, which affects the quality of the findings (Easterby-Smith et al., 2015; Sekaran & Bougie, 2016). The research philosophy aims to design relevant and applicable measures and processes to serve the objects examined (Easterby-Smith et al., 2015). Meanwhile, the research paradigm refers to common beliefs and agreements about understanding and addressing problems (Sekaran & Bougie, 2016). Research paradigms can be characterised by ontology, epistemology,

and methodology (Zikmund et al., 2010). It is also known as a type of philosophical assumption.

Epistemology in research design refers to the study of knowledge and how we come to understand and interpret reality. It is a foundational aspect of research that influences how researchers conceptualize their study, choose methods, and interpret findings. The epistemological assumption is the level of knowledge contributed to literature as the result, and therefore, the main concern is the knowledge gained (Crawford-Welch & McCleary, 1992; Lugosi et al., 2009). It concerns our understanding of what defines acceptable, valid, and legitimate knowledge, as well as how we can convey this to the community. There are five types of epistemology: positivism, interpretivism, pragmatism, post-modernism, and critical realism (Sekaran & Bougie, 2016).

Positivism leads to observations grounded in theories and the investigation of hypotheses. In a positivism paradigm, it appeals to be more bias-free and not intuitive-driven. Positivists investigate the antecedents of causes that lead to outcomes (Kumar, 2011). The positivism paradigm assumes that knowledge is objective and can be measured using scientific methods. Researchers following positivism typically use quantitative methods (e.g., surveys, experiments) to gather data that is considered to reflect an objective reality. The approach to theory development is deductive. The process starts with stating a theory. Then, hypotheses are developed from that theory. Lastly, the data is collected and analysed to test the hypotheses. It has been highlighted that deductive and inductive approaches may be adapted to understand the topic better.

However, previous research mentioned that hospitality studies should focus on a deductive approach (Lugosi et al., 2009).

Specifically, this study examines the relationship between variables mentioned in the conceptual framework. To execute it, the researcher used a questionnaire in the research strategy. The survey was conducted and managed through an online platform.

Table 4.1 summarises the methodology used.

Table 4.1 : Research Methodology

Research method	Research philosophy	Theory development approach	Characteristics	Research strategies
Quantitative	Positivism	Deductive	Examines the relationship between variables	Questionnaire survey

4.3 Research Design

A research design details the procedures for obtaining the information required. It serves as a draft of the study content comprising the methods used, data collection techniques and plans for data analysis. In other words, it helps a researcher to plan a structure to obtain evidence to answer the research questions (Sekaran & Bougie, 2016). The research design aims to operationalise the research question and objectives. This study adopts a quantitative analysis approach to investigate customer citizenship behaviour (CCB) and its relationship with antecedents, such as servicescapes (physical, social, and smart), value co-creation, and guest satisfaction.

Quantitative analysis is under a mono-method methodological choice. The quantitative method emphasises objective measurements. The statistical and

numerical analyses are performed after gathering data from surveys. Furthermore, quantitative research focuses on information gathering (numerical data) for the generalisation process. A questionnaire is commonly used to measure the respondents' attitude towards any system and perception of experiences (Patten, 2016).

A quantitative study can be categorised as a mono method (one method) and classified as explanatory. Explanatory research establishes causal and consequential relationships between variables of a well-defined problem. A descriptive survey is further described as a situation or problem in the relationship between variables, which may provide explanatory answers to the “why” and “how” questions. This study adopts the descriptive research approach, whereby it ascertains and describes the characteristics of variables of the phenomenon of interest: CCB among luxury hotel guests. The study of CCB is mainly carried out to ascertain and describe the characteristics of its variables (Al Halbusi et al., 2020; Assiouras et al., 2019; Hossain et al., 2020; Kallmuenzer et al., 2020).

The research process involved five stages. In the introduction stage, several elements were taken into consideration. The research objectives and questions were formed after the problem was discovered. The study framework was adopted from Al Halbusi et al. (2020) and Seyitoğlu & Ivanov (2020). When the background of the study had been laid out, a literature review of CCB and its antecedents, such as servicescapes, value co-creation, and types of hotel guests, were carried out and discussed.

Before the actual data collection, the pilot study must be conducted to ensure that the instrument used in the questionnaire has been tested for reliability. The data analyses

in this study were performed using the IBM SPSS Version 28.0 (190) and SEM-PLS 4.0.9.2 software. Finally, the discussion, conclusion, and recommendations will be stated in Chapter 6 to conclude the study. Therefore, Figure 4.1 illustrates the research design.

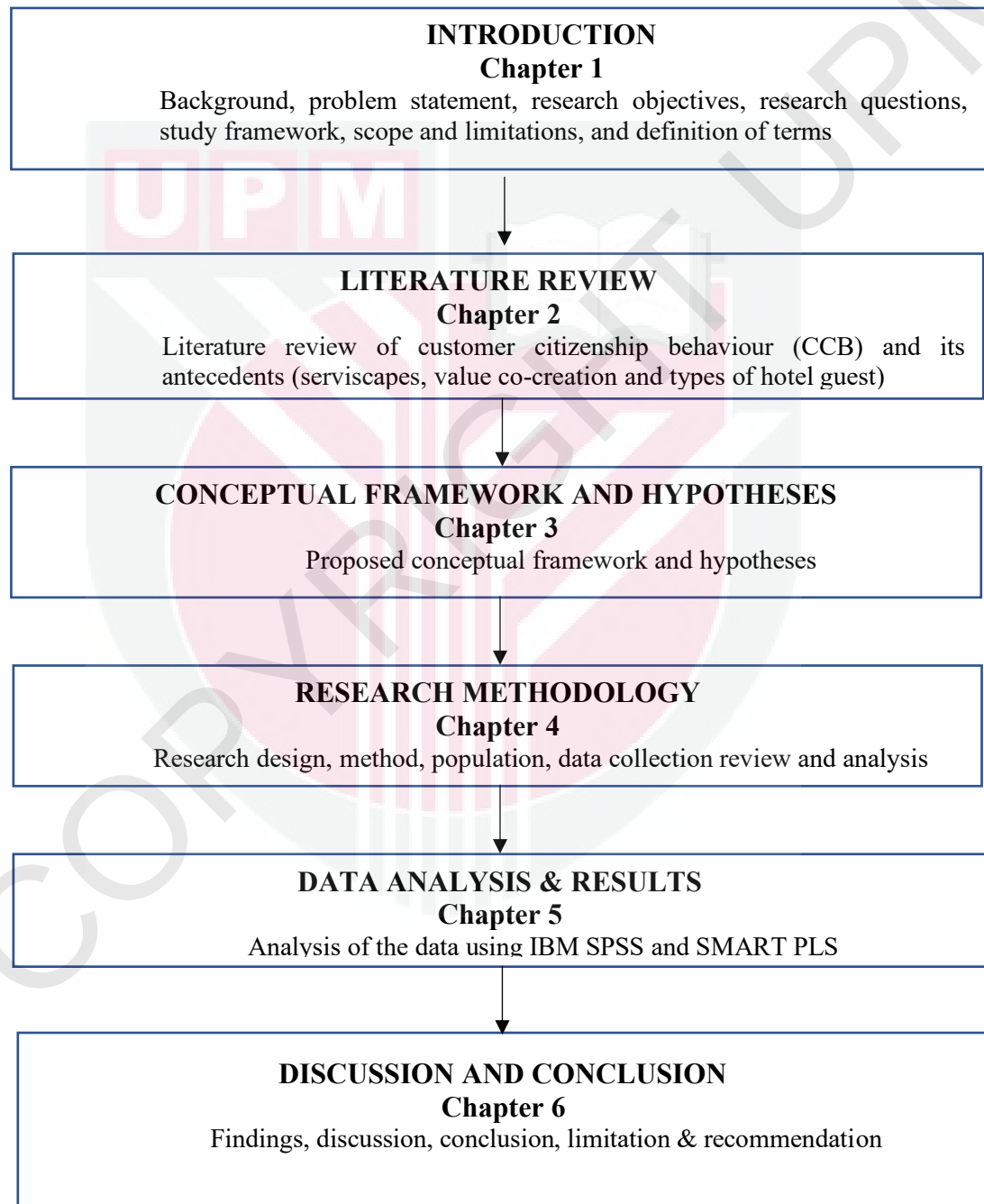


Figure 4.1 : The Research Flowchart

4.4 Sampling Design Process

The sampling design process includes three stages. In the first stage, the target population is defined. This is followed by the second stage, sampling technique, and the final stage, sample size. The following sections discuss the details of these stages.

4.4.1 Target Population

This section discusses one of the research design fundamentals: the study population. Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate (Sekaran & Bougie, 2014). In this study, the target population is the domestic hotel guests who have experienced staying at least one night at a four-star or five-star hotel between 2019 and 2022. Only the four-star and five-star hotels were included in the study because these hotels have excellent and top-class physical and social servicescapes, also known as the environment. This is even crucial for the new included servicescape that is smart servicescapes. Most luxury hotels have included the elements of smart (technology and human service) compared to other hotels with lower star ratings. With such exposures, the respondents from these hotels are expected to have better knowledge and experience to give feedback and answer the survey accordingly. Furthermore, luxury hotels usually share common characteristics in terms of facilities and services that make the survey development and questioning easier than other low-star ratings hotels.

4.4.2 Sampling Technique

The sampling technique selects the sampling units for the study, which includes probability and non-probability techniques (Cooper et al., 2006; Sekaran & Bougie,

2016). Probability sampling refers to the best tendencies of the population to be selected as a sample (Sekaran & Bougie, 2016). Probability sampling is more complex, time-consuming, and typically more expensive than non-probability sampling. Non-probability sampling is generally more straightforward and economical as there is no need to list all the population elements. It is used when the researcher cannot determine or access the sampling frame (Acharya et al., 2013). Probability sampling includes simple random, systematic, stratified and cluster sampling. Non-probability samplings comprise convenience, judgemental, quota, purposive, and snowball (Zikmund et al., 2010). According to Acharya et al. (2013), selecting a sampling method depends on the population of interest.

Purposive sampling was employed in this study to select the domestic guests of four-star and five-star hotels in Malaysia (Ali et al., 2021; Hulland et al., 2018; Memon et al., 2017). Purposive sampling imposes judgments, such as hotel guests who have stayed at the luxury hotels for the last three years, to provide clear answers and have the latest memory of the servicescapes they experienced. This non-probability method is ideal for several reasons, such as the unavailability of hotel guest data and the niche features of luxury hotel guests. Due to the hotels' private and confidential policy (P&C), the sampling frame remains unidentified. This technique also often improves the sample's representativeness as the randomness issue was fulfilled when every tourist who stayed at a hotel had an equal and genuine chance of being selected as a respondent — the small-number samples represented a larger group of respondents (Campbell et al., 2020). Hence, it could reduce bias as all population members were equally likely to be chosen as a sample. Most tourism research adopts purposive

sampling as the sampling technique (Bethapudi, 2013; Chandralal & Valenzuela, 2013; Mansouri, 2014; Subawa et al., 2021; Sudarsono et al., 2021).

The sampling procedures for selecting hotel guests involve three steps. Step 1 defines the appropriate groups in the social media platform for the researcher to distribute the online survey. The process involves identifying the proper group of hotel guests in which they share their experiences with the group members and the public. Step 2 lists the groups, whereas Step 3 selects the groups. Concerning the lists of groups, the researcher chose Facebook (FB) and Instagram (IG) as the social media platforms, as Malaysians prefer them in the hotel industry (X. Y. Chin et al., 2017). The final step is to select the groups where the researcher distributes the online survey to the respondents with the approval of the groups' admin. This is an essential step, as it assists the researcher in getting the appropriate response. In this final step, 26 groups were identified from the researcher's observation. Hence, Table 4.2 further summarises the sampling procedures for hotel guests.

Table 4.2 : Sampling Procedures for Hotel Guests

Steps	Details
<u>Step 1:</u> Defining the appropriate groups (to distribute the online survey) in the social media	The proper group of guests who share their experience staying at the four-star and five-star hotels identified.
<u>Step 2:</u> Listing the groups	The researcher identified a list of groups by surveying social media (Facebook and Instagram). Facebook and Instagram were selected as Malaysians highly use these two social media platforms. There are a few categories of tourism groups: accommodation, food and beverages, and places of interest. Since the study focuses on the hotel guests, the search focuses on the accommodation. Due to many groups, the search is later specified towards the groups that have discussed and shared experiences on the four-star or five-star hotels (luxury hotels).

Table 4.2 : Continued

	In this event, this study's results will meet the aims and objectives.		
Step 3: Selecting the groups	This study employed the purposive sampling technique to select the hotel guests of four-star and five-star hotels (luxury hotels). To get to the respondents, the researcher selects appropriate groups (with the approval of the group admin). For the online distribution of the survey, 26 groups were selected: 19 from the Facebook (FB) platform and seven from the Instagram (IG) platform. The below table summarises the group's name, number of members, and platforms.		
	No	Name Of Group	Number Of Members
	1.	Kaki Travel Malaysia	85 000
	2.	Malaysia Travel	66 000
	3.	TRAVEL AND FOOD MALAYSIA	18 000
	4.	Malaysia Backpackers	25 000
	5.	Malaysia Air Travel Support Group	43 000
	6.	Hotel Review Malaysia	476 000
	7.	Hotel Buffet Malaysia Promotion	113 000
	8.	Hotel & Resort Review	38 000
	9.	Hotel Review Malaysia & Port Cuti Menarik	548 000
	10.	Staycation Malaysia Promotion	15 000
	11.	Hotel Review Malaysia 2	9
	12.	Malaysia Hotel Offers	4400
	13.	Hotels In Malaysia	963 000
	14.	Malaysia Hotel Group	572 000
	15.	Malaysia Hoteliers	1600
	16.	Ex Hoteliers Group of Malaysia	3800
	17.	Review Hotel @ CUTI-CUTI RENTAS NEGERI	47
	18.	Malaysianfoodandtravel	226 000
	19.	travelmalaysian	649 000
	20.	malaysiatravelresorts	31 200
	21.	travelmalaysiaefair	1618
	22.	malaysiatravelcom	1842
	23.	malaysiaworld1957	3847
	24.	malaysiawanderlust	8359
	25.	hiddengems_malaysia	1401
	26.	Hotelsmalaysia	1422

Concerning the time frame of guests' experiences in the luxury hotel, this was in line with a previous study that collected data from respondents who stayed at resort hotels in Malaysia for the past two years (Shobri et al., 2021). It is best known that the best information from guests would come from those who have stayed in hotels for the last 12 months (1 year). Due to the pandemic in 2020, people could not travel in Malaysia because of the Movement Control Order (MCO) that was imposed at various times to reduce the spread of COVID-19 (Foo et al., 2020; Sangaran & Selvanayagam, 2021). Hence, six months to three years of experience at the luxury hotel is the best time frame for selecting the respondents for this study. It is essential for hotel guests to answer the survey as best as their memory may recall.

Establishing inclusion and exclusion criteria for study participants is a standard essential practice in designing quality research protocols (Patino & Ferreira, 2018). It is defined as the key characteristics of the target population used to answer their research question (Hulley et al., 2007). Typical inclusion criteria are demographic, clinical, and geographic characteristics. In contrast, exclusion criteria include factors or features that make the target population ineligible for the study as it could interfere with the study's success or increase their risk for an unfavourable outcome. General exclusion criteria include characteristics of eligible individuals that make it highly likely to be lost to follow-up, miss scheduled dates for data collection, provide inaccurate data, and have comorbidities that could affect study results (Patino & Ferreira, 2018).

In this study, among the inclusion criteria are the respondents should be adults aged 18 and above. The age selection is one of the most critical demographic questions in

surveys. Hence, the choice of age between 18 and 60 is suitable, which is in line with previous studies in the hotel industry that is between 18 to 67 years old (Jeżewska-Zychowicz et al., 2020; Nuseir, 2020; Sarkar et al., 2021). Besides that, they should have experience staying (at least one night) at a four-star or five-star hotel in Malaysia to be able to answer the survey accordingly. The respondent should respond ‘yes’ to the screening question in the questionnaire survey (question no.1) to proceed with answering the survey. The types of hotels chosen are because, during the pandemic, most of the hotels that sustain their business is among the luxury hotels (four and five-star). This is because most of the small and medium businesses in the tourism and hospitality industry hardly survive during the pandemic (Abhari et al., 2021).

Meanwhile, the exclusion criteria are when the domestic hotel guest is aged below 18 years old. The second exclusion criterion is when the domestic hotel guests do not have experience checking in or staying at a four-star or five-star hotel (at least one night). For example, they go to the hotel to attend an event, meet clients or friends, and dine in at the coffee house. Other than that, if the hotel guests answer ‘no’ to the screening question, they will be excluded from answering the survey and participating in the study. The inclusion and exclusion criteria are also illustrated in the table below (Table 4.3).

Table 4.3 : Inclusion and Exclusion Criteria for the Study

No	Inclusion	Exclusion
1.	Adults 18 years old and above	Hotel guests are below 18 years old.
2.	Stay at the four or five-star hotel for at least one night	Did not stay at a four or five-star hotel (e.g., attend the event, dine in at the coffee house, or meet colleagues and friends)
3.	A respondent who answers ‘yes’ to the screening question.	The respondent answers ‘no’ to the screening question.

The inclusion and exclusion criteria assist the researcher in getting the respondent. The below section elaborates on the determination of the sample size for the study.

4.4.3 Sample Size

Sample size may be defined as the number of observations or participants involved in the study (Zikmund et al., 2010). The substantial number of samples is crucial for the investigation to analyse and generalise the findings (Kock, 2018; Memon et al., 2020; Sekaran & Bougie, 2016). According to Memon et al. (2020), there are four basic ways to calculate the sample size for a quantitative study. It consists of using a sample size calculator, following statistical rules, having a minimum size of 30, and following the data analysis method.

Before determining the sample size, the researcher needs to understand the nature of the samples that must be obtained from the population. It is also essential to ensure consistency between the selected samples and the purpose of the study. In essence, this study identified the domestic guests of four and five-star hotels in Malaysia as the samples of the study. This study has no specific list of hotel guests that can be referred to. Even though every hotel has a list of hotel guests in the system, it is private and confidential (P&C). In other words, the respondents could not be reached by referring to the data set kept by the management of the hotel. It is understood that the hotel will be questioned, and the image will be ruined by giving the guests' data to the researcher. Typically, this study requires the researcher to approach the guests at the hotel or any suitable places such as places of interest or at the airport to get the respondents. This cannot be executed due to the COVID-19 pandemic.

The unit of analysis for this study is individual as the respondents are four and five-star hotel guests. The general population is most suitable for this study. The general population can be defined as individuals sharing at least a single attribute of interest (Bartlett et al., 2001; Creswell, 2003). Previously, it was used in most medical research (K. Chen & Kandel, 1995) and online behavior studies (Rumpf et al., 2014). In addition, previous research in tourism also used the general population for their study (Jie et al., 2024). The population consists of the accessible, target, and general populations. The accessible population is the population the researcher can access. The population may be limited to state, region, country, or institution. It may be the subset of the target population. Meanwhile, the target population is the population the researcher wants to learn more about. It is a subset of the general population identified as the targeted population (Creswell, 2003). Figure 4.2 shows the diagram of a general population known universally to researchers (Asiamah et al., 2017).

Regarding this study, the general population constitutes the “hotel guests” of the luxury hotel in Malaysia. People in this population usually share at least one essential characteristic, which is the fact that they are luxury hotel guests. Gender, education, and income can be other attributes shared by the population members, but being a luxury hotel guest is the primary common characteristic of interest, considering the aim of the study.

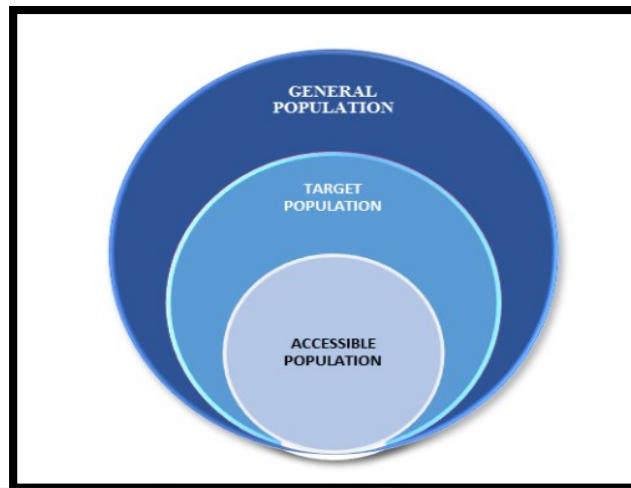


Figure 4.2 : A Conceptualisation of the Relationship between General, Target and Accessible Populations

In addition, the age range chosen for this study is 18 and 60. Figure 4.3 shows the age range of guests who used three types of hotel amenities (dry cleaning, massage and spa, and pet care services) in the United States. The statistics showed that those aged 18 to 34 were the majority users of all three amenities. In Malaysia, according to the Department of Statistics, most local hotel guests are aged between 25 and 39, comprising 37.8 percent of all guests nationwide (DOSM, 2020). This was followed by those aged 15 to 24 (26.4 %), 40 to 54 (24.1 %), and 55 and above (11.7 %).

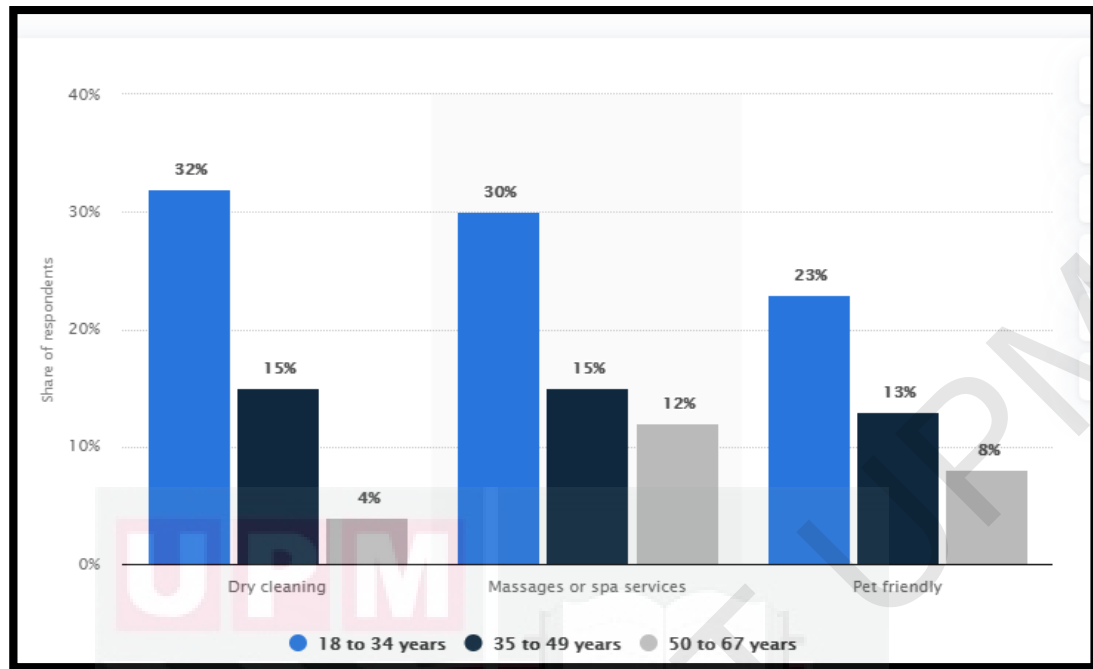


Figure 4.3 : Age Groups of Guests Who Use Three Types of Hotel Amenities in the United States (Statistica, 2014)

To reiterate, the general population was used in this research. Consequently, adopting the general population is considered the study contribution. Since the population size in this study was not identifiable, approaches that would optimise the model's fit were considered. There are two different approaches used, namely: (1) Roscoe's rule of thumb for sample size needed for Structural Equation Modelling (SEM) (Putri, 2012) and (2) Power tables or power analysis using programs such as G*Power.

To employ SEM for data analysis, it is compulsory to ensure the estimation of sample size. According to Williams & Vogt (2011), the model complexity must be considered to obtain the sample size for SEM analysis. It is also mentioned that the sample size is usually larger than 200 as SEM is an extensive sample technique (M. Williams & Vogt, 2011). Additionally, Malhotra & Indrayan (2010) stated that the sufficient number for sample size for this type of study is about 300 to 500, but the minimum

sample should be 200. This aligns with Roscoe's rule of thumb, suggesting more than 30 and fewer than 500 as a suitable sample size for most behavioural studies. A sample size larger than 500 might lead to Type II errors (Sekaran & Bougie, 2016). Traditionally, most behavioral research used Krejcie & Morgan (1970), which proposed a table that stated the sample size that should be used according to the population (N). For example, the sampling size should have 384 samples for a population that exceeds one million. However, this method could not be used because this study was a non-probability study with no units of analysis. Other studies supported the minimum sample size of 200 as appropriate and goal for SEM research (Al Halbusi et al., 2020). Hence, Since no sampling frame was available, this study applied Roscoe's "rule of thumb" to count the sample size (Putri, 2012).

Considering the second method of determining the sample size, a minimum sample size had to be selected to obtain meaningful results. Power tables or power analyses using programmes such as G*Power could be used to determine statistical power (Table 4.4) (Cohen, 1992; Faul et al., 2009). G*Power 3.1 was used in this study to determine the statistical power as suggested by Hair et al. (2016) and to calculate the minimum sample size required to perform Partial Least Squares-Structural Equation Modelling (PLS-SEM). The researcher used a power level of 90 %, as recommended by Hair & Alamer (2022). Other studies also utilized the power tables for the sample size (Kucukergin et al., 2020).

Table 4.4 : Sample Size Recommendation in PLS-SEM

Maximum Number of Arrows Pointing at a Construct (Number of Independent Variables)	Significance Level											
	1%				5%				10%			
	Minimum R ²				Minimum R ²				Minimum R ²			
	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75
2	158	75	47	38	110	52	33	26	88	41	26	21
3	176	84	53	42	124	59	38	30	100	48	30	25
4	191	91	58	46	137	65	42	33	111	53	34	27
5	205	98	62	50	147	70	45	36	120	58	37	30
6	217	103	66	53	157	75	48	39	128	62	40	32
7	228	109	69	56	166	80	51	41	136	66	42	35
8	238	114	73	59	174	84	54	44	143	69	45	37
9	247	119	76	62	181	88	57	46	150	73	47	39
10	256	123	79	64	189	91	59	48	156	76	49	41

(Source: Cohen J. A power primer. Psychological Bulletin, 112, 155-519)

The F-test of regression was used with the G*Power programme. The power analysis was set at four predictors to obtain an accurate sample size. The α was set at 0.05, the power was set at 0.90, and the effect size was set at “medium” ($f^2 = 0.15$). Most social science investigations required at least 80 % power (Gefen et al., 2011), so the minimum target sample size was set at 90. However, the minimum sample size determined by these calculations may still be insufficient (Kock & Hadaya, 2016).

To solve the concerns, Kock & Hadaya (2016) developed the inversed square-root approach, which considered the possibility of the ratio of a path coefficient and its standard error exceeding the critical value of a test statistic at a given significance level. A single path coefficient is required for the minimum technical sample size, and the size of the model’s most complex regression does not affect the results. The minimum sample size (min) is calculated based on an ordinary power level of 80 % and significant levels of 1 %, 5 %, and 10 %. The mean is used as the path coefficient value with minor magnitude in PLS-SEM.

Figure 4.4 produced from the G*Power sample calculation, shows the minimum sample size needed for the present study. Using F tests – Linear multiple regression (Fixed model, R² increase) and four tested predictors, the minimum sample size was calculated at 130 (Figure 4.5). Nevertheless, the number of variables in quantitative analysis would determine the sample size. It was highlighted that the number of respondents must be at least five times the number of question items (Hair et al., 2013). Hence, as the study had 57 questionnaires, this made the total number of respondents at 280.

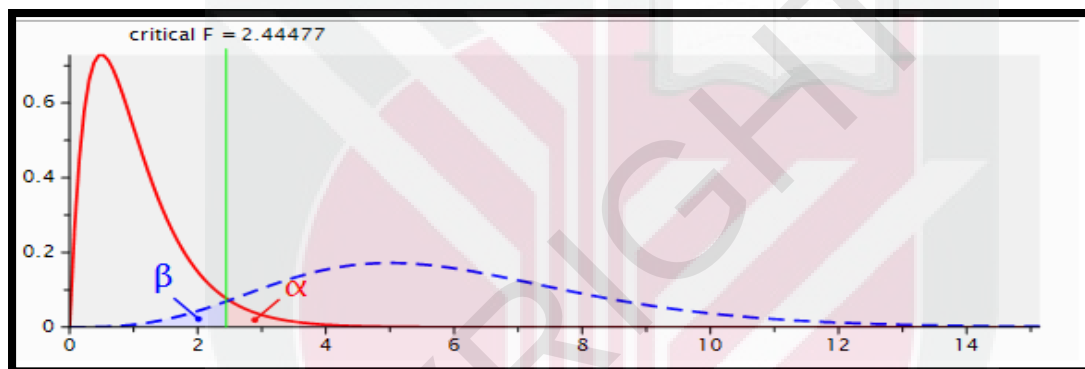


Figure 4.4 : Central and Non-Central Distributions

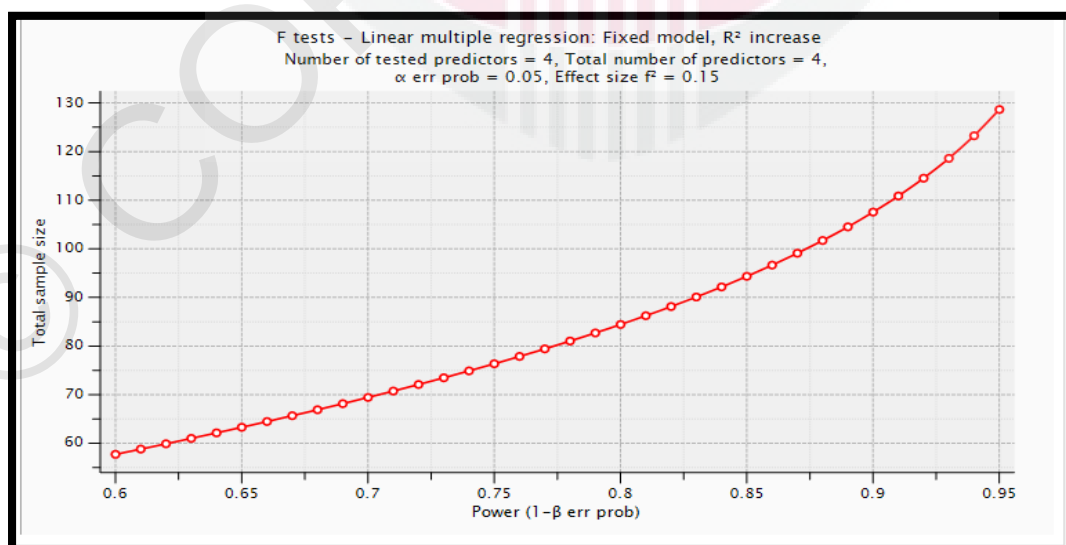


Figure 4.5 : Minimum Sample Size Based on G*Power Sample Calculation

Considering all the justifications for the sampling size and to ensure research credibility, questionnaires were distributed to 700 potential respondents, with a targeted response rate of 50 % to 70 % for this tourism and hospitality study (Ali et al., 2021; Dalton et al., 2008). However, a satisfactory response rate for social science studies may range from 30 % to 70% (Vaus, 2002). Similarly, the acceptable customer response rate may be up to 54.87 % (Ali et al., 2021). Hence, the acceptable range of total collected data is 300 to 350. As a rule of thumb, 200 responses would provide good survey accuracy under most assumptions and parameters, while reasonably acceptable accuracy would likely require 100 responses. A sample size of 250 to 280 is sufficient to show results. According to Mellahi & Harris (2015), there is no clear definition of a satisfactory response rate. Hence, researchers must decide on a reasonable response rate that suits the study with the justifications provided.

4.5 Instrumentations

A self-administered questionnaire was developed by adapting items validated by a previous researcher (Patten, 2016). Minimal changes and modifications were made to the adapted questionnaires for the independent, mediating, and dependent variables to suit the context of the study. A five-to-seven-point Likert scale is appropriate to gauge the respondents' views on a certain item (Salkind, 2003). It is stated that many researchers commonly use the five-point Likert scale, and it is best used in business and social science research (Revilla et al., 2014; Sekaran & Bougie, 2016). However, the psychometric literature suggests that having more scale points is better for respondents to express their views accurately, but it should not exceed 11 points (Nunnally, 1978).

In addition, the seven-point Likert scale is claimed to be more accurate, user-friendly and may better reflect a respondent's actual evaluation. Additionally, as this study involved lower and higher-order items, the seven-point scale would be the best instrument to use (Huang, 2010). Some findings indicated that having more scale points may reduce skewness (Leung, 2011). Furthermore, the seven-point Likert scale provides a more precious opinion or answers to be determined by respondents. Given these advantages, this study adopted a seven-point Likert scale for the survey instrument. The scale comprised of the following values: (7) strongly agree, (6) slightly agree, (5) agree, (4) neutral, (3) disagree, (2) slightly disagree, and (1) strongly disagree. This scale would allow respondents to quickly express their opinions on a topic (Joshi et al., 2015) and avoid excessive and inappropriate reactions (Sauro, 2010).

The questionnaire consisted of Parts A, B, C, D, E, F, and G. Part A was a statement of consent requiring respondents to declare that they were Malaysian, above 18 years old, and willing to participate in the study. At the same time, Part B had one screening question to determine if the respondents met the main criteria. The question asked if the respondents had stayed in a four- or five-star hotel at least once in the past three years (Kim & Han, 2020). Part C enquired on the demographic profile of respondents. The section contained 13 questions, such as the race and age of respondents. Part D included the independent variables (D1; physical, D2; social and D3; smart servicescape). Part E and F consisted of mediating variable questions on value co-creation and customer satisfaction, respectively. The final part (Part G) contained questions on guest CCB. The six main constructs are displayed in Table 4.5. The

constructs and items were later reviewed by a panel of experts comprising industry players and members of the academia.

Table 4.5 : Summary of Original Constructs and Items Proposed in the Questionnaire

Part	Construct	No. of Items	Sources
D1	Physical servicescape	10	Ariffin et al., (2013); Durna et al., 2015); Shuhao Li & Wei (2021); Al-Halbusi et al., (2020)
	Ambience	4	
	Space/function layout	3	
	Sign/symbol/artifacts	3	
D2	Social servicescape	7	Al-Halbusi et al (2020); Shuhao Li & Wei (2021); Al-Halbusi et al (2020)
	Perceived similarity	2	
	Physical appearance	2	
	Suitable behaviour	3	
D3	Smart servicescape	11	Sanjit K. Roy, Singh, et al (2019)
	Aesthetics	2	
	Social presence	2	
	Superior functionality	2	
	Perceived interactivity	2	
	Perceived personalization	3	
E	Value co-creation	12	Ranjan & Read (2016)
	Knowledge	2	
	Equity	2	
	Interaction	2	
	Experience	3	
	Personalization	1	
	Relationship	2	
F	Guest satisfaction	5	Cheng et al. (2019); Solakis et al., (2021)
G	Customer citizenship behaviour	12	Shuhao Li & Wei (2021)
	Feedback	3	
	Advocacy	2	
	Helping	3	
	Tolerance	4	
	TOTAL	57	

4.5.1 Servicescape

Servicescape is an independent variable (IV) or construct involved in the study. The present study investigated three servicescapes, namely physical, social and smart servicescape.

4.5.1.1 Physical Servicescape

The current study on physical servicescape has gained attention from scholars in marketing, retailing (Baderisang & Damanhuri, 2021; Betzing et al., 2018), hospitals (Lai & Chong, 2019), and the tourism and hotel industry (Ali et al., 2015; Ishtiaq et al., 2014; Kucukergin et al., 2020). Physical servicescape was first introduced by Bitner (1992), who stated that services by companies may be provided and consumed in physical surroundings. It helps to analyse and identify the impact of a good environment on the industry. In the early stage, the physical servicescape comprises three sub-areas: signs, symbols and artifacts, ambiance, and spatial layout and functionality (Bitner, 1992).

The present study assessed the physical surroundings of Malaysia's four- and five-star hotels. Hence, the dimensions for physical servicescape were adapted from Ariffin et al. (2013), Li & Wei (2021), Al-Halbusi et al. (2020) and Durna et al. (2015). A total of nine measurement items were used to represent the physical servicescape constructs in three dimensions, namely (1) ambiance, (2) space/function layout, and (3) sign/symbol/artifacts.

4.5.1.2 Social Servicescape

Several scholars have highlighted the role of social servicescape in the tourism and hotel industry (Andaji et al., 2021; Hanks et al., 2017; Line & Hanks, 2019). The concept was first highlighted by Bennett & Bennett (1970) and Holahan & Moos (1982), who stated that social interactions were affected by the physical elements in which they occurred. For instance, the interaction between guests and employees would be more conducive with a pleasant ambiance in the hotel lobby. Hence, in this case, the physical and social servicescapes are the main elements that occurred together (Al Halbusi et al., 2020; Bitner, 1992).

The present study measured the social surroundings of Malaysia's four- and five-star hotels. The instruments for social servicescape were adapted from Al-Halbusi et al. (2020) and Li & Wei (2021). Seven questions represented the social servicescape constructs with three dimensions, namely (1) perceived similarity, (2) physical appearance and (3) suitable behaviour.

4.5.1.3 Smart Servicescape

There is a little bit of confusion about the instruments of the smart servicescape as most four- and five-star hotels in Malaysia do not provide them. More recently, the studies on Smart Tourism Technology (STT) have only focused on five smart tourism destinations (Jeong & Shin, 2020) and four smart museums (Yang & Zhang, 2022).

Since there are many constraints on finding the instruments that suit the current study, the researcher needs to adjust the questionnaire based on suitability. Hence, smart servicescape instruments for this study were adapted from Sanjit et al. (2019).

Adjustment to the words suited to the hotel industry has been made as the adapted instruments are from the retailing background. This study examined the smart servicescape of four- and five-star hotels in Malaysia. Hotels are an industry that is well known to be a huge contributor to the service economy (Tseng et al., 2008). With the emergence of the Internet of Things (IoT) in the service industry, hotels have been chosen to be examined in the smart servicescape context (Lamarre & May 2019).

There are five dimensions of smart servicescape: aesthetics, social presence, superior functionality, perceived interactivity and perceived personalisation. In aesthetics, the instruments of the previous studies referring to retail industries did not suit hospitality management, specifically the hotel industry (O'Brien & Cairns, 2015; Sanjit et al., 2019). Hence, the aesthetic instruments were adapted and adopted from other studies (Lin, 2016). The 11 questions represent the smart servicescape construct with five dimensions. Aesthetics, social presence, superior functionality, and perceived interactivity have two questions, while perceived personalisation has three.

4.5.2 Value Co-Creation (VCC)

Value co-creation (VCC) usually occurs outside the business operation (Prahalad & Ramaswamy, 2004). VCC has two dimensions, namely co-production (in-role behaviour) and value in use (extra-role behaviour) (Ranjan & Read, 2016; Yi & Gong, 2013). Co-production consists of knowledge, equity and interaction. Value in use consists of experience, personalisation and relationship. Hence, this study adapted the six dimensions (knowledge, equity, interaction, experience, personalisation and relationship).

The instruments for VCC were adapted from (Ranjan & Read 2016). There were 12 questions representing the six dimensions of VCC. Knowledge, equity and interaction had two questions each. Experience had three; one question represented personalisation, and two were on the relationship.

4.5.3 Guest Satisfaction

Satisfaction occurs from evaluating the experience with various service areas (Xiang et al., 2015). In the present study, positive value co-created from the study of servicescapes (physical, social, and smart) led to satisfaction. This construct may be divided into financial and non-financial satisfaction (Hallencreutz & Parmler, 2021). However, the present study focused on non-financial satisfaction.

The guest satisfaction instruments were adopted and adapted from Cheng et al. (2019) and Solakis et al. (2021). Since three servicescapes were involved in this study, the satisfaction level of hotel guests for each of the servicescapes had to be determined. Hence, questions one to three asked the respondents about their satisfaction with the physical, social, and smart servicescapes they experienced in the four- or five-star hotel they stayed in. This was consistent with the research suggestion that the hotel should first satisfy the customers' basic needs rather than placing too much emphasis on supplementary services (Cheng et al., 2019).

4.5.4 Customer Citizenship Behaviour

The four dimensions of CCB are feedback, advocacy, helping and tolerance (Li & Wei, 2021). These four dimensions are further known as the benefits of CCB (Chiu et al., 2015). Hence, the study adopted 11 instruments for the survey (Li & Wei, 2021).

“Feedback” represented three questions, “advocacy” had three questions, two questions were on “helping”, and two were on “tolerance”. Table 4.6 illustrates the measurement items used for all constructs. There were six constructs involved, with an original total of 57 questions. A panel of experts later reviewed the questions before being finalised.

Table 4.6 : Original Measurement Items in the Questionnaire before Review by an Expert Panel

Construct	Item
Physical servicescape	Ambience AC_1: The smell in the hotel is pleasing. AC_2: The air aroma within the hotel premises is attractive AC_3: The background music in the hotel makes me feel relaxed. AC_4: The temperature in the hotel is comfortable. Space/Function Layout SL_4: The architecture of the hotel is attractive. SL_5: The facilities of the hotel are up to date. SL_6: The layout of the facilities makes it easy to use. Sign/Symbol/Artefact SSA_7: The signage displayed provided adequate directional information. SSA_8: The décor of the hotel is fashionable. SSA_9: In general, the hotel is interesting and comfortable.
Social servicescape	Perceived Similarity PS_1: The hotel employees are friendly. PS_2: I get along well with the hotel employees. Physical Appearance PA_3: The hotel employees are neatly dressed. PA_4: I liked the appearance of the hotel employees. Suitable Behavior SB_5: The hotel employees are polite. SB_6: The hotel employees give hotel guests personal attention SB_7: The relationship with the hotel employees was generally good during my stay.
Smart servicescape	Aesthetic AE_1: The smart environment in the hotel attracts me. AE_2: The smart environment in the hotel satisfies me. Social Presence SP_3: The smart environment in the hotel makes me comfortable. SP_4: The technology used in the smart environment still has a sense of human touch. Superior Functionality SF_5: The smart environment in the hotel is user-friendly.

Table 4.6 : Continued

	SF_6: The smart environment in the hotel allows me to view the vital information needed. Perceived Interactivity PI_7: The smart environment in the hotel responds to my specific needs quickly. PI_8: I control the technology used in the smart environment (E.g., the control panel or tablet used in the hotel room). Perceived Personalization PP_9: The technology used in a smart environment in the hotel knows what I want. PP_10: The smart environment provides extra services based on my preferences (E.g., guests can order room service via QR code, WhatsApp, and F&B Apps). PP_11: Generally, I prefer a hotel that can provide suitable technology via a smart environment to guests.
Value co-creation	Knowledge KN_1: Most hotels I stayed at were open to ideas and suggestions for service improvement. KN_2: The hotel provides sufficient facility information (e.g., brochure, catalog, and online information). Equity EQ_3: The hotel environment met my requirements. EQ_4: The role of hotel guests is essential to improve service. Interaction IN_5: The employees conveyed relevant information about the hotel facilities. IN_6: I could conveniently express my specific requirement to the hotel. Experience EX_7: I have good experience in using the hotel facilities during my stay. EX_8: I had a good experience being served by a hotel employees during my stay. EX_9: The hotel provided me with a memorable experience. Personalization PE_10: The hotel tried its best to serve my personal needs. Relationship RE_11: I felt a bond or connection with the hotel. RE_12: In addition to the facilities offered, the hotel provided an excellent overall experience
Customer satisfaction	Satisfaction SAT_1: I am satisfied with the hotel facilities (physical servicescape). SAT_2: I am satisfied with the appearance of the hotel employees (social servicescape). SAT_3: I am satisfied with the technology used in the hotel (smart servicescape). SAT_4: My stay at this hotel has met my expectations. SAT_5: In general, I was satisfied with the hotel stay.

Table 4.6 : Continued

Customer citizenship behaviour (CCB)	Feedback
	FE_1: I will let the hotel employee know if I have a valuable idea for improving service.
	FE_2: When I receive good service, I comment on it.
	FE_3: When I experience a problem, I let the hotel employee know about it.
	Advocacy
	AD_4: I recommended the hotel to others.
	AD_5: I encouraged friends and relatives to experience the service of this hotel.
	Helping
	HE_6: I assist other hotel guests if they need help.
	HE_7: I help other hotel guests if they seem to have problems.
	HE_8: I help other hotel guests to use the service correctly.
	Tolerance
	TO_9: I am patient if the service is not delivered as expected.
	TO_10: I am patient if the hotel employee makes a mistake.
	TO_11: I can adapt if I must wait longer for the service.
	TO_12: In general, I am willing to help the hotel.

4.5.5 Common Method Bias

The pragmatic suggestions of (Podsakoff et al., 2012) were followed to minimise threats from common method bias. For example, the measures of the constructs used different response formats (eg. the measurement of servicescape was by five-point Likert scales ranging from “strongly agree” to “strongly disagree”, and the measurement of perception of smart servicescape relied on Likert scales ranging from “strongly interested” to “strongly uninterested”). However, the present study only used a seven-point Likert scale ranging from “strongly agree” to “strongly disagree”. The analysis result had no common method bias as CMV in the PLS-SEM had a fair value.

The introductory statement also gave an assurance to respondents that their answers would be anonymous, that the items contained no right or wrong answers, and that the analysis would be free of any identifying information.

4.6 Data Collection Procedure

Data collection is gathering and measuring the variables studied to answer the study's research questions and objectives (Sekaran & Bougie, 2014). The present study used a set of questionnaires to collect data. The questionnaire was efficient because what was required and how the variables were measured had been known (Hanif & Gafar, 2017; Sekaran & Bougie, 2016). Additionally, questionnaires distributed in surveys are commonly used in hospitality research as a data collection method (Ali et al., 2021).

The present study was conducted during a tough time. In the post-pandemic era, in response to the Omicron coronavirus variant, the research methodology for the present study needs to be reorganised to suit Malaysia's current condition. The current situation (COVID-19 pandemic and quarantine/distancing measures) has forced researchers to conduct research in risky environments (Swenson & Roll, 2020). Even when a "new normal" environment was established, the research approach must be altered, forcing the researcher to change the research plan.

Technology is a handy tool for social interaction and research during the pandemic, especially for social science scholars (Howlett, 2021). Current researchers need to move from the physical world into a digital reality. Notably, online research is not a new phenomenon in the social sciences. Many examples of surveys, content analysis and digital ethnography, or "netnography", incorporate existing online material and social media platforms (Bluteau, 2021). This is in line with the previous research in social science, in which the online survey questionnaire approach was distributed to targeted respondents via Facebook (Shobri et al., 2021). Additionally, this has been a

common practice for some researchers in hospitality and tourism (Han et al., 2009; Ali et al., 2021).

4.6.1 Online Survey

Online questionnaires are administered over the Internet to collect data about experiences, behaviors, beliefs, attitudes, and values that do not require the interviewer's presence (Duffy et al., 2005). Online data collection is attractive as it is considered fast to compute (Nguyen & Pham, 2022). Online respondents have a lower dropout rate and can outturn less incomplete data (Assiouras et al., 2019). There is also a high tendency to obtain a younger and well-educated sample pool (Dolnicar et al., 2009). Online questionnaires provide several advantages, such as lower cost, no interviewer bias, and an outreach to geographically diverse respondents (Ritter & Sue, 2007; Schillewaert & Meulemeester, 2005).

In the present study, the survey questionnaire was created using Google Forms and distributed through selected groups on social media such as Facebook and Instagram. Respondents were given a screening question (D. Huang et al., 2017) on whether they had experienced a four or five-star hotel in Malaysia. The respondents can proceed to answer the questionnaire when they answer 'Yes' to the screening question, and vice versa. They were also provided with the definition of each variable in the study. They must recall their most recent experience of staying in a luxury hotel (six months to two years) and then complete the survey items based on that experience (Lin & Choe, 2022). Respondents should be 18 years and above and could read both English and Bahasa Melayu, as the questionnaire was constructed in a dual language (Choi & Lotz, 2018). The respondents had to answer accordingly to get the essential data. Once

respondents completed answering the questionnaire, they have to click on the 'Submit' button. The answering process ends there.

Dealing with similar or duplicate respondents in research is crucial for ensuring the integrity and validity of the data. The researcher tracks respondents' answers using unique identifiers, such as their email addresses, to ensure that no duplicate responses are submitted by the same individuals. However, it is quite difficult to monitor (Ward & Meade, 2023). The data collection process aimed to explore the relationship between value co-creation, customer satisfaction and CCB, rather than accurately predict the behaviour of a representative sample (Hulland et al., 2018). It was difficult to predict whether a face-to-face survey could be conducted when the pandemic had been brought under control. Thus, an online survey was the best tool for data collection. The process took two to three months (until the minimum number of respondents was achieved per sample size).

Due to safety reasons, restriction of movement, and new SOP practices by hotels and other service industries, the hotels could not be visited to conduct further research. Potential respondents would also not feel comfortable being approached for a face-to-face survey (Villacé-Molinero et al., 2021). It has been shown by Gopalakrishna et al. (2021) that the focal point in the recovery plan for COVID-19 is safety and hygiene. Hence, online research is best for conducting research during a pandemic (Howlett, 2021; Pavlatos et al., 2021).

4.7 Pre-test

The questionnaire in this study was subjected to a pre-test process to correct any wording, measurements and structural weaknesses (Sekaran & Bougie, 2016). The objective was to determine the instrument's validity and reliability. Generally, the approach for the pre-test consisted of (1) an expert review (panel judgment) and (2) a pilot study.

4.7.1 Panel Judgement

Before the pilot study could be conducted, the panel judgment or expert review was implemented to get the expert's feedback on the content and validate the measurement. Expert review, also known as expert analysis, was conducted in two parts: in the industry and with academicians from the hospitality and tourism field. The reason for conducting an expert review was to collect opinion and feedback on the suitability of the content of the questionnaires before it was distributed to the respondents in the pilot study.

This aligned with a previous study that created videos to show the servicescape style to an expert panel (Lin, 2016). In the present study, the panel of experts revised the questionnaire draft to improve and enhance the respondents' understanding of the questions. The assessment of the questionnaire clarification was designed first before the execution of the pre-test. The procedure (Question Appraisal System) was adopted by Willis et al. (1999). The questionnaire assessment guideline was attached (Appendix 4.1). The criteria and their description are shown in Table 4.7.

Table 4.7 : Guideline for Questionnaire Review

Assessment criteria	Description
Instructions	Assess complications of study introduction, instructions, and explanations.
Clarity	Assess problems regarding the content of the question.
Assumptions	Assess issues with the underlying logic or assumptions.
Knowledge memory	Assess the recall information for respondents.
Sensitivity/bias	Assess questions regarding wording and potential bias.
Response categories	Assess the adequacy of the range of the responses to be recorded.

(Source: Willis et al. 1999)

Three experts from the industry and two from academia agreed to participate and review the questionnaire. Researchers and experts communicated via phone calls and WhatsApp (WA) platform. The questionnaire sets were emailed to the expert reviewers as a formal invitation (Appendix 4.2).

Industry experts, mostly hoteliers, were invited to validate the draft of measurements. The hotel representatives were experienced personnel working in departments such as housekeeping, front desk, and human resources. The selected hoteliers had experience working in operation and managerial positions.

Additionally, two academic experts from the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM), were recruited. They were contacted, and the validity of the measurement items was conducted online. Each item was reviewed and clarified on its meaning and level of understanding. Suggestions and recommendations were recorded for further adjustment (See Appendix 4.3). Table 4.7 lists the expert panels involved in the panel judgment process.

Table 4.8 : Summary of Expert Panel

Organisation	Field of expertise
Hotel Industry	
St. Regis Hotel, Kuala Lumpur	Housekeeping
Four Seasons Hotel, Kuala Lumpur	Front desk
Impiana Hotel, Ipoh	Human resource
Academia	
Faculty of Hotel & Tourism Management, UiTM Puncak Alam	Hotel management
	Hotel management

Regarding the expert panel's recommendations, some amendments were made to the measurements for each construct. Based on the panel judgment approach results, concrete recommendations were collected to correct the measurement validity. For example, out of five experts, four had highlighted the ambiguity of one (1) item in the ambiance dimension of the physical servicescape construct (AC_2 in Table 4.5). Hence, that item was removed because of its redundancy and potential to be misleading. Table 4.9 shows the changes in the measurement items and the final items remaining for each construct. All constructs and items were accepted except AC_2.

Table 4.9 : Summary of Constructs and Items after Panel Judgement Analysis

Construct	Dimension	Initial items	Items removed	Items remaining
Physical servicescape	Ambience	4	1	3
	Space/Function layout	3	-	3
	Sign/Symbol/Artefacts	3	-	3
Social servicescape	Perceived similarity	2	-	2
	Physical appearance	2	-	2
	Suitable behaviour	3	-	3
Smart servicescape	Aesthetics	2	-	2
	Social presence	2	-	2
	Superior functionality	2	-	2
	Perceived interactivity	2	-	2
	Perceived personalisation	3	-	3
Value co-creation (VCC)	Knowledge	2	-	2
	Equity	2	-	2
	Interaction	2	-	2
	Experience	3	-	3
	Personalisation	1	-	1
	Relationship	2	-	2
Guest satisfaction		5	-	5
Customer citizenship behaviour (CCB)	Feedback	3	-	3
	Advocacy	2	-	2
	Helping	3	-	3
	Tolerance	4	-	4
		57	1	56

Obtaining experts' feedback on content relevancy and suitability is crucial before distributing the survey. The explanation of the pre-test continues with the pilot study.

4.7.2 Pilot Study

A pilot study was carried out before the actual distribution of the questionnaire to respective respondents. According to Baker et al. (1994), a pilot study is a pre-test method to try out a research instrument such as a questionnaire in a small sample. It is conducted before the researcher allocates time and resources for the actual study. The purpose is to fulfill the ordinary survey procedures for consistency (Cooper et al., 2006) and to evaluate the adequacy of the wording and layout of the questionnaire. It

also reveals potential problems in measurement procedures, items that may be unclear or questionable, and other issues regarding the items' wording. These issues arise because of the process of adapting and adopting measurements from other studies (Easterby-Smith et al., 2015). It may then be decided whether to create a new measurement or adapt the existing one from another.

Given the popularity of the pilot, there are surprisingly few sample size recommendations for pilot studies in the social science literature (Johanson & Brooks, 2010). Nonetheless, some pertinent articles call attention to the issue. Usually, it is advised that the pilot study utilised the actual population of respondents (Cavana & Maani, 2000), and Fink (2002) mentioned that 10 was the minimum number to provide sufficient data for analysis. Meanwhile, Yusak et al. (2016) stated that 30 are acceptable. According to Isaac & Michael (1995), the adequate sample size for a pilot study is between 10 and 30. However, Hertzog (2008) has different recommendations on the sample size depending on the pilot study's purpose; for the feasibility study, 10 to 15 per group is sufficient, whereas for instrument development, 25 to 40 is sufficient. Hence, it is best to consider the number between the range (1 to 30) or more for the pilot study. In addition, the number of respondents also depends on the unit of analysis (individuals or organisations) and the type of analysis used. For instance, individuals and organisations have different numbers of sufficient respondents. For the study that will conduct exploratory and confirmatory factor analysis (EFA and CFA), the need will be at least 100 respondents (Awang, 2015). Since the present study will not perform the mentioned analysis, 44 respondents were sufficient for the pilot study. Even though a pilot study does not promise success in

the survey, it will increase the likelihood of obtaining significant results (Lockwood & Pyun, 2019).

4.7.2.1 Demography of Respondents

The pilot survey was conducted online, and the questionnaire in Google Forms was distributed to respondents through the link <https://forms.gle/TbLDNT4ZSAzVfCp79>. People who experienced a four or five-star hotel stay between six months to two years were the expected respondents. A total of 47 effective responses were received, but three respondents had to be excluded because they answered “No” in the screening question.

Table 4.10 shows the demographical details of the respondents. Most of them were females (74.4 %), with the largest age group between 35 and 44 (63.6 %), followed by 45 and 54 (20.5 %). The respondents’ main reason for staying in a hotel was for vacation (56.8 %). The pilot study found no significant problems, such as ambiguity, layout adequacy and understanding of the questions’ context. Hence, the pilot study proved the questionnaire’s clarity. No changes were made at this point, and the questionnaire was finalised for use in the primary study.

Table 4.10 : Summary of Respondents' Background in the Pilot Study

Demographic	Categories	N=44	Percentage (%)
Gender	Male	11	25.6
	Female	33	74.4
Age	18 – 24	-	-
	25 – 34	7	16.0
	35 – 44	28	63.6
	45 – 54	9	20.5
	55 and above	-	-
Race	Malay	37	84.1
	Chinese	2	4.5
	Indian	2	4.5
	Bumiputera (Sabah/Sarawak)	3	6.9
Employment	Government	28	63.6
	Private	9	20.5
	Self-employed	7	15.9
	Retired	-	-
	Others	-	-
Monthly income	Less than RM2000	-	-
	RM2001 – RM4000	5	11.4
	RM4001 – RM6000	4	9.1
	RM6001 – RM8000	20	45.5
	RM8001 – RM10,000	9	20.5
	RM10,000 and above	6	13.7
Purpose of visit	Business	7	15.9
	Visiting friends	4	9.1
	Visiting family	4	9.1
	Vacation	33	56.8
	Attending event	4	9.1
	Others	-	-

4.7.2.2 Analysis of Pilot Data

Several issues have been addressed in the pilot study. Many of the respondents provided comments along with their questionnaire answers. This allowed the researcher to check whether the instructions and wordings were appropriate and could be clearly understood by respondents. The suggestions for improvements were considered, and the questionnaire was amended accordingly. For instance, the sequence of some questions was changed, and minor wording changes were made to

sharpen the items. The reliability analysis using Cronbach's alpha was performed after the pilot study.

Cronbach's alpha coefficient is one of the most commonly used indicators for internal consistency (Nunnally, 1978). Ideally, the Cronbach's alpha coefficient scale should be above 0.70 (Hair et al., 2010). The Alpha value was obtained and evaluated from the pilot test result. Based on the pilot test, the reliability results were recorded (physical servicescape = 0.865; social servicescape = 0.890; smart servicescape = 0.908; VCC = 0.872; guest satisfaction = 0.952 and CCB = 0.816). Thus, it could be concluded that the internal consistency of all constructs was good. The reliability of the items fulfilled the acceptance level (see Appendix 4.4). Hence, there was no violation of items and the reliability acceptance of constructs. With the result of the pilot study, the original questionnaire was amended accordingly, and the final survey questionnaire is presented in Appendix 4.5. Table 4.11 summarises the constructs and reliability.

Table 4.11 : Summary of Item Constructs and Reliability

No	Construct	Cronbach's Alpha
1.	Physical Servicescape	0.865
2.	Social Servicescape	0.890
3.	Smart Servicescape	0.908
4.	Value Co Create (VCC)	0.872
5.	Guest Satisfaction	0.952
6.	Customer Citizenship Behavior (CCB)	0.816

4.8 Overview of Data Analysis Technique

Descriptive statistics were used to determine the demographic overview of the respondents. SEM, a multivariate analysis combining factor analysis and regression,

was used to test the hypotheses. It allowed a simultaneous examination of relationships between measured and latent variables and between latent variables (JHair et al., 2014). Additionally, SmartPLS was also used in the current study. It is utilised through the PLS-SEM software to analyse the relationship between constructs with many indicators (Sarstedt et al., 2019).

4.8.1 Data Analysis Technique

Data collected from the actual field work need to be analysed for further understanding using the appropriate statistical tools. Data analysis is the crucial part of knowing the results of the study. For the current study, the data analysis serves several purposes, such as (1) to provide an overall understanding of the whole data, (2) to achieve the validity of the measurement, (3) to achieve the reliability of the instrument, (4) examine the relationship between variables, and (5) access the model fit for the research framework. According to Sekaran & Bougie (2016), three objectives should be achieved in data analysis: getting a feel for the data, testing the goodness of the data, and testing the hypothesis for the research.

A preliminary analysis was performed to obtain the pattern across the data. These initial steps ensured that the data would be accurate, complete and suitable for analysis (Sekaran & Bougie, 2016). The preliminary process includes checking the reliability of measurements, evaluating the effectiveness of any manipulation, examining the distribution of individual variables, and identifying the outliers. The raw data must be coded, screened and cleaned to achieve “error-free” status. Data coding includes transforming the information and determining the value of the scale and category of data used. The initial process is coding, followed by screening and cleaning processes.

The data screening and cleaning aims to identify missing data, outliers and errors so they may be corrected. In addition to data screening and cleaning, descriptive analysis describes the coded data. Descriptive analysis is one of the most essential steps in conducting statistical analysis. The descriptive analysis provides an overview description of the sample and the basic assumptions of the data.

The instrument's validity and reliability are the statistical analysis' aims. To execute them, the IBM SPSS version 28 was used to screen and describe the data set. After data screening, the interrelationships between the variables were examined. The present study applied the multivariate analysis approach of SEM to investigate the relationships between exogenous and endogenous variables (Hair et al., 2019).

4.8.2 Descriptive Analysis

Data coding and screening processes were employed to perform the preliminary data analysis. For the coding process, variables and instruments were defined and labeled before assigning values for the scale (Sekaran & Bougie, 2016). For instance, for gender, "1" was set as male, and "2" represented females. For questions using the Likert scale, "1" was used to represent "strongly disagree" and "7" as "strongly agree". Data screening was then performed. Executing a data screening process to review the variables and ensure errors-free data for analysis was mandatory. Data screening could identify missing values and potential outliers. The missing values and potential outliers were then resolved using an appropriate procedure. In addition, the data screening also included an analysis to check whether the data met the basic assumptions before multivariate analysis was used. After the data screening process was completed, the instrument's consistency was checked to ensure the accuracy and

quality of the data. Instrument validity was examined using factor analysis (Sekaran & Bougie, 2016).

4.8.3 Structural Equation Modelling

The present study used PLS modelling in SmartPLS version 4.0.9.2 (Ringle et al., 2022) to study the measurement and structural model. It did not require any assumption on the data distribution (W. W. Chin et al., 2003; Dash & Paul, 2021).

The PLS-SEM, known as PLS Path Modelling, is a widely used multivariate data analysis method in business and social science (J. M. Becker et al., 2023; Sabol et al., 2023). The graphical user interface for PLS-SEM is known as SmartPLS. The software has been consistently improved with regular updates and extensions to its modelling and analysis capabilities. The first online version was released in 2003. In 2005, SmartPLS 2 was released, followed by the third version in 2015 (Memon et al., 2021). Currently, the fourth version (4.0.9.3) was released in August 2022, and it is in use by most researchers.

SEM is the second generation of multivariate analysis popular in social science studies because of its ability to test theoretically supported and additive causal models (Ramayah et al., 2018). SEM is a combination of path and factor analysis. There are two approaches to SEM, namely (1) Covariance-based Structural Equation Modelling (CB-SEM) and (2) PLS-SEM (Joseph F. Hair et al., 2017; Lowry & Gaskin, 2014; Sarstedt et al., 2016). CB-SEM is designed to confirm the theories underlying a study (Dash & Paul, 2021). This approach is often used to examine whether the model fit is consistent with the data. Furthermore, this method also determines the covariance and

theoretical covariance matrices. On the other hand, PLS-SEM aims to explain variable variances in predicting another variable and does not confirm any theory (Sarstedt et al., 2016). This method focuses on prediction and estimation.

In addition, PLS-SEM may also be used to explain the relationship between independent and dependent variables (Ramayah et al., 2018). Hence, this study adopted PLS-SEM to predict relationships between independent and dependent variables. The present study was adopted from existing literature proposed by Al Halbusi et al. (2020) and Assiouras et al. (2019). Table 4.12 illustrates the differences between CBSEM and SmartPLS.

Table 4.12 : Differences between CBSEM and SmartPLS

	CBSEM (LISREL, AMOS, EQS, Mplus)	PLS (SmartPLS, PLSGrapp, XLSTAT)
Theory	Strong	Flexible
Distribution of assumptions	Multivariate normality	Non-parametric
Sample size	Large (at least 200)	Small (30-100)
Analytical focus	Confirming theoretically assumed relationships	Prediction or identification of relationships between constructs
Number of indicators per construct	Depending on aggregation (or parcelling): ideally 4+	One or more (see consistency at large)
Indicators to construct	Mainly reflective (can use MIMIC for formative)	Both reflective and formative
Improper solutions/factor indeterminacy (unique solution)	Depends on model	Always identified
Type of measurement	Interval or ration (otherwise need PRELIS)	Categorical to ratio
Complexity of model	Large models (>100 indicators) problematic	Can deal with large models

(Source: Salem et al., 2016)

The usage of SEM is to examine measurements simultaneously and provide a better picture of the research model. Thus, SEM can provide the overall model fit, which explains the construct relationship (Hair et al., 2014). The present study applied SEM

to confirm the measurements and structural theories (Hair et al., 2016). Overall, there were six steps to conducting SEM. First, it was categorised into two phases from steps 1 to 4 to examine the measurement model. Steps 5 and 6 test the structural model or the overall model of the study. The six steps may be summarised in Table 4.13.

Table 4.13 : The Six Steps in SEM

Step of SEM	Activity
1	Define individual constructs
2	Development and specification of the measurement model
3	Designing a study to achieve an empirical result
4	Assessing the validity of the measurement model
5	Specification of the structural model
6	Evaluating the structural model validity

4.8.3.1 Assumption of SEM

SEM consists of normality and multicollinearity. The execution of multivariate data analysis may be done when the data fulfills basic assumptions. Key assumptions associated with SEM include multivariate normality, no systematic missing data, sufficiently large sample size, and correct model specification.

4.8.3.2 Normality

It is necessary to examine the data distribution in looking at the normality. It is crucial to investigate the normality assessment for the data before proceeding to the structural model (Awang, 2015). It is further explained that the normality assessment can be made by assessing the measure of skewness for every item. Hence, the Likert scale is used in this study to have a high tendency to skew. The normality test is performed after factor analysis.

Normality assessment has been proven to be an essential step in statistical analysis. Generally, there are two types of normality: (1) univariate and (2) multivariate. Univariate normality refers to the degree to which a variable is represented by the data distribution conforming to a normal distribution. Multivariate normality refers to data distribution with a joint allocation of more than one variable (Hair et al., 2017). The data is normally distributed when the absolute skewness value is 1.0 or lower. The skewness and kurtosis values are used to assess data distribution (Tabachnick & Fidell, 2013)

4.8.3.3 Multicollinearity

Multicollinearity looks at the degree of correlation between variables in the present study (Hair et al., 2017; Lowry & Gaskin, 2014). The regression analysis was employed to identify the multicollinearity issue (Hair et al., 2016). To check the multicollinearity issue using IBM SPSS, the variance inflation factor (VIF) is used as the indicator (Hair et al., 2016; Lowry & Gaskin, 2014). The acceptable threshold for VIF indexes should be within 10 (Lowry & Gaskin, 2014) and not exceeding 3.3 tolerance values.

4.8.4 Mediation Analysis

Mediation analysis has gained popularity among researchers as it examines the mechanisms by which effects operate and the factors influencing them. To understand and explain complex causal processes, marketing and other business research disciplines often test mediation and moderation models or both as a combination (Sarstedt et al., 2020). Mediation is a research design in which a third variable, called the mediator variable, intervenes between two related constructs. More specifically,

in mediation analysis, researchers examine whether a change in the independent construct may result in a change in the mediator variable, which changes the dependent construct in the model (Sarstedt et al., 2020). The mediation effect can be specified in SEM as an indirect effect (Alwin & Hauser, 1975). The indirect effect of an independent variable (X) on a dependent variable (Y) via a mediator (M), in which X affects M, which in turn affects Y. An example of the direct relationship and basic mediation model can be seen in Figures 4.6 and 4.7.

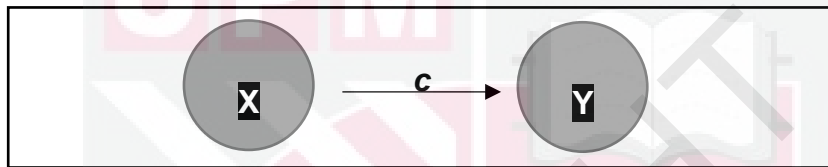


Figure 4.6 : Direct Effect
(Source: Rucker et al., 2011)

Figure 4.7 illustrates the basic mediation model in which X represents the independent variable, Y is the dependent variable, and M theoretically mediates the relationship between X and Y. Figures X and Y represent the direct relationship's total effect. In contrast, the M means the mediator's introduction to the dependent variable. The independent effect is labelled as a . Meanwhile, the effect of the mediator on the dependent variable, controlling for the independent variable, is marked as b . The indirect effect is the result of $a \times b$. Generally, $a \times b = c - c'$ is the difference between the overall and direct effects. However, testing the significance of $a \times b$ is more straightforward because these coefficients are drawn from a single model.

In contrast, c and c' are drawn from two separate models. Most mediation tests quantify the effect as $a \times b$ (Sobel, 1982). Mediation analysis assesses the evidence from studies designed to test hypotheses (Hayes, 2022).

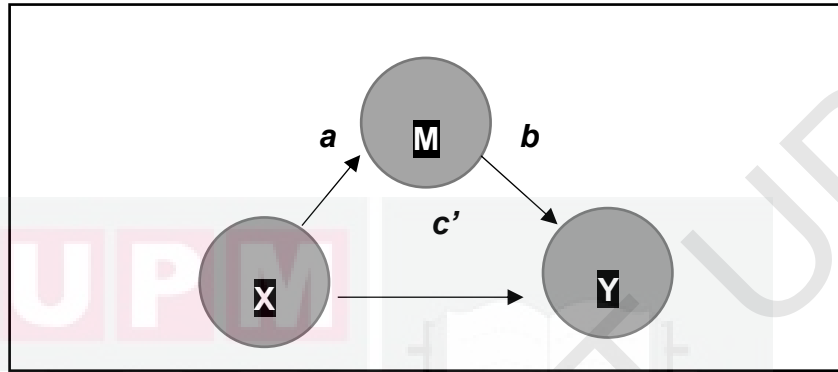


Figure 4.7 : Basic Mediation Model
(Source: Rucker et al., 2011; Sarstedt et al., 2020)

The approach by Baron and Kenny (1986) was not used in this study to examine the mediation effect. This was due to three limitations: (1) it had low statistical power; (2) it did not test for the significance of a specific indirect effect; and (3) it neither quantified the magnitude of the mediation effect nor considered models with inconsistent mediation (Hayes, 2009). Concerning the limitations mentioned, the bootstrapping method was used to examine the indirect effect of VCC between smart servicescape and CCB (Sarstedt et al., 2020).

Bootstrapping does not assume the shape of the variables' distribution or the sampling distribution of the statistics and exhibits high statistical power (Sarstedt et al., 2020). Therefore, the bootstrapping technique suits the PLS-SEM (Streukens & Leroi-Werelds, 2016). In addition, SmartPLS Version 4.0.9.2 can illustrate each specific indirect effect of the basic mediation, multiple mediators and sequential mediators

without manual calculation. Hence, the mediation effect was also conducted, as there is one mediator in the present study. There are two types of mediating effects, namely, full mediation effect and partial mediation effect.

4.8.4.1 Full Mediation Effect

A demonstration of full mediation implies that an underlying process may fully explain the X-to-Y relationship (Rucker et al., 2011). It predicts that the direct effect of X to Y will be significant only if the mediator is absent. Complete mediation is when variable X no longer affects Y after M has been controlled, making path c' as zero.

4.8.4.2 Partial Mediation Effect

In contrast, a demonstration of partial mediation implies that it cannot fully explain the X-to-Y relationship. Partial mediation is when the path from X to Y is reduced in total size but differs from zero when the mediator is introduced. It is viewed as smaller or less important than a full mediation effect. In addition, partial mediation can be divided into complementary and competitive. It may be argued that using the terms “partial” and “full” may help convey a mediating process’ effect size or practical significance (Rucker et al., 2011).

In a simple mediation model consisting of one mediator, full mediation means that a researcher has entirely explained how X affects Y. There is no need to test for other indirect effects. A clear implication for partial mediation is that other indirect effects could (and probably should) be investigated and tested empirically. Thus, partial and full mediation conclusions can have implications for theory building as they suggest

the plausibility of additional mechanisms. Practically, partial versus full mediation might indicate the importance of an intermediate variable in explaining the total effect (Rucker et al., 2011).

4.9 Conclusion

Overall, this chapter elaborated on the elements of research design by considering the research objectives that required a comprehensive plan to execute in stages. The relevant methodological procedures described the research methods of study. In addition, the research design, population and sampling, sampling design and instrumentation aimed to construct a questionnaire based on what was supposed to be measured. The sampling technique used in this study was convenience sampling and a self-administered questionnaire (online) was the method for data collection. The instruments were adopted and adapted from various studies on business and marketing, hospitality and tourism management. The experts' opinions (industry and academia) were obtained after developing the questionnaire to ensure it was suitable for respondents to answer without ambiguity. Data analysis was also necessary to achieve valid and reliable findings. Hence, this study used PLS-SEM as the data analysis approach as the nature of the survey was confirmatory-driven rather than prediction-oriented, and the sample size was more than 100.

CHAPTER 5

DATA ANALYSIS AND DISCUSSION

5.1 Introduction

In this chapter, data analysis was performed to answer the research question and achieve the study's aims. It discusses the research design and justifies the application of the quantitative approach, covering antecedents like physical servicescape, social servicescape and smart servicescape, value co-creation (VCC), guest satisfaction and customer citizenship behaviour (CCB). This chapter starts with an overview of the response rate. Before data entry was implemented, a screening analysis was performed to detect outliers and missing data. Descriptive analysis for respondents' demographic profiles and study variables was discussed. This study employed the Partial Least Squares-Structural Equation Modelling (PLS-SEM) method to test the hypotheses. The measurement model was used to assess convergent and discriminant validities, while the structural model was evaluated in five steps. Finally, the mediation effect of VCC on smart servicescape and CCB was tested.

5.1.1 Response Rate

Data were collected from hotel guests who experienced a stay in four- and five-star hotels in Malaysia. The invitation to participate in the survey was sent to respondents online (see Appendix 5.1). The questionnaire was created in Google Forms and distributed on social media platforms, such as Instagram and Facebook, through the link:

https://docs.google.com/forms/d/e/1FAIpQLSchIL66uOcVTB8O9um5zSQBDFJQlT-00XW1q8RsvvqU7PBvA/viewform?usp=sf_link which may be shortened to

<https://forms.gle/fcgxC66YmDeB2j2N7>. The front cover of the questionnaire contained instructions for respondents in the answering process (See Appendix 5.2).

A total of 344 people responded to the invitation to answer the survey. From the 344 questionnaires, 315 respondents said they had experienced staying in a four- or five-star hotel in Malaysia from 2019 to 2022 and completed the survey (answered yes to the screening question). Of these, 29 responses were excluded as they did not have experience staying at the luxury hotel from 2019 to 2022. The Google responses are shown in Appendix 5.3. The 315 completed questionnaires fulfilled the acceptable sample size discussed in the previous chapter. This has also considered the respondent's attrition rate (Spennemann, 2022) of 40% of the total sample suggested by the G*Power. Hence, the researcher monitors the number of respondents in the Google form until it reaches the number intended. The total number of respondents should be more than 182, as the G*Power suggests 130, and 52 is the attrition rate.

Assiouras et al. (2019) stated that online respondents have a lower dropout rate and may outturn fewer incomplete data. It is generally highlighted that the higher the response rate, the better (Mellahi & Harris, 2015). From the researcher's observation, limited studies have specifically examined the concept of response rates in hospitality research (Ali et al., 2021). A final 298 sets were accepted for further analysis after those with missing data were excluded, and multivariate outlier analysis was employed. The survey recruitment and questionnaire responses are summarised in Table 5.1.

Table 5.1 : Description of Responses and Response Rate

	Total
Returned complete by respondents	344
Agreed to participate in the survey and confirmed to have stayed at four- or five-star hotels between 2019 and 2022	315
Usable questionnaires after missing data removal and multivariate outlier analysis	298
Unusable and excluded questionnaires	17

5.2 Analysis Strategy

The analysis strategy in this chapter provides a preliminary analysis of the study. All items were coded and recorded as statistical data in the first phase. Data analysis was employed to clarify missing patterns and their acceptance level. Next, outlier analysis was performed to evaluate the extreme variance scores that were substantially different from the data set. The Z scores measured the potential outliers from the data set. The outliers were further identified by a multivariate outlier analysis and removed from the data set. Multivariate analysis for Structural Equation Modelling (SEM) was then employed by performing normality, linearity, homoscedasticity and multicollinearity analyses.

For further data analysis, the measurement model assessment included an examination of all six constructs with uncovered factor structures and confirmed measurements underlying each construct. Construct validity was revealed through unidimensionality analysis, which reflected a set of measurement variables that constituted a construct. The structural analysis was carried out after completing the measurement model analysis. The investigation further explored the model by performing an initial specification. The following discussion started the initial analysis

with a preliminary data analysis. A summary of the analysis strategy is portrayed in Figure 5.1.

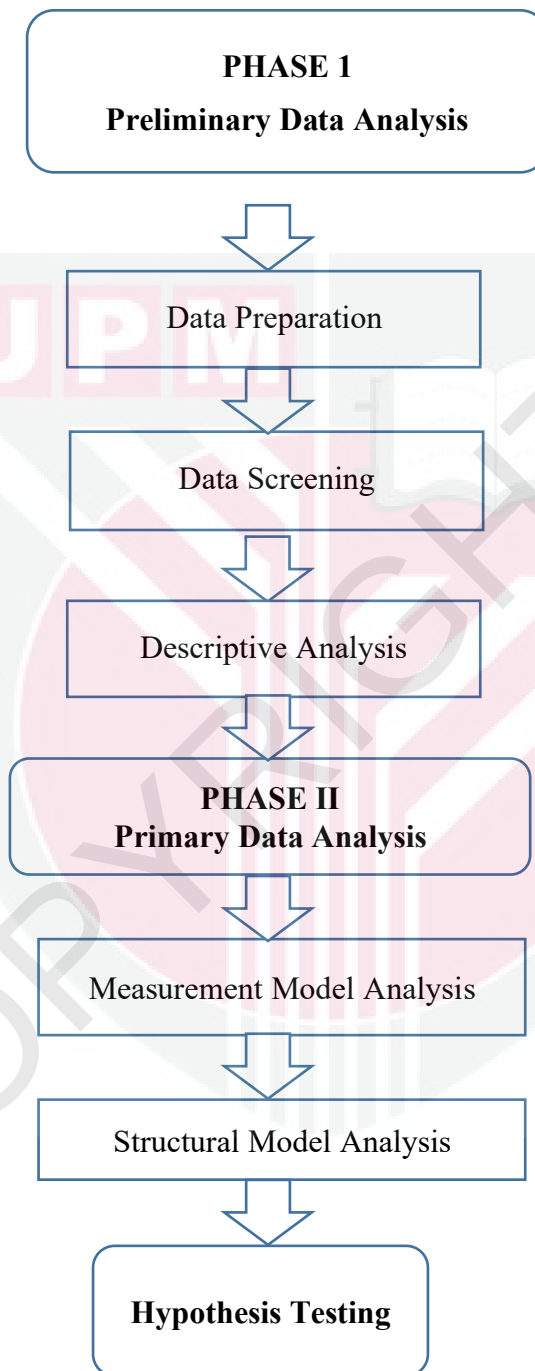


Figure 5.1 : Two Phases of Data Analysis Strategy

5.3 Phase I: Preliminary Data Analysis

The objective of performing a primary analysis is to attain a “feel” for the data by meeting the basic assumptions before executing a multivariate analysis. The process includes data entry, exclusion of missing data, checking for potential outliers and clarifying all assumptions for multivariate analysis (normality, linearity, homoscedasticity and multicollinearity). It is crucial to ensure the adequacy of the multivariate data to draw a meaningful conclusion on the hypotheses.

5.3.1 Data Preparation

Raw data is prepared for further processing and analysis. The preparations consist of two main activities, including coding and data entry, before the main analysis is conducted (Zhang et al., 2003).

5.3.1.1 Data Coding

After completing the collection, the respondents' responses are recorded and coded. Coding converts data into discrete, continuous, ordinal or nominal information that can be analysed. For instance, the data is transformed into numerical or categorical codes. The respondents' information and responses were compiled in IBM SPSS Version 20. The collected data in text form must be converted into categorical or numerical data for analysis. First, all questionnaires are assigned a specific identification number (ID). For instance, number 1 was given to the first set of questionnaires. The exact process is being done for all the questionnaires. This ID assigned is necessary for cross-checking cases (Pallant, 2007).

All the items were coded with abbreviations and numbers for differentiation purposes. For example, servicescape has three sub-dimensions: (1) ambiance, (2) space/function/layout and (3) sign/symbol/artefacts. Each sub-dimension has different abbreviations, like “AC” representing the ambiance, “SL” representing space/function/layout, and “SSA” representing sign/symbol/artifacts. Thus, the ambient condition dimension would consist of three items recorded as AC_1, AC_2, and AC_3. All item abbreviations would be coded before the data entry (Appendix 5.4).

For the demographic section, the responses were recorded accordingly. Overall, there were 13 questions in this section. Questions one to five were related to the personal details of respondents. Meanwhile, questions six to 13 asked about their experience when staying at a hotel. One of the questions was on “Race of the respondent.” Four categories were displayed for them to choose from: 1 represents Malay, 2 for Chinese, 3 for Indian, and 4 for Bumiputera (Sabah/Sarawak).

5.3.1.2 Data Entry

Data collected for Section A were recorded. They were translated into numerical values. For example, Malay was represented by 1, Chinese (2), Indian (3) and Bumiputera (Sabah/Sarawak) (4). In Section B, Likert scale items in the questionnaire were coded accordingly. For instance, “strongly disagree” was denoted as 1, whereas 7 represented “extremely strong agreement”.

5.3.2 Data Screening

Two major clean-ups were performed on the data, including (1) straight-lining and (2) outlier analysis (Hair et al., 2022). The straight-lining analysis was employed to identify and overcome the issue of missing data and suspicious response patterns. Meanwhile, outlier analysis was performed to identify potential outliers that differed significantly from the rest of the data and may affect statistical outcomes. The screening data process is essential to verify that it is usable, reliable and valid for theory testing (Gaskin, 2017). Detailed analysis and discussions are provided in the next section.

5.3.2.1 Straight-Lining

Researchers must look out for a “straight line” pattern. A straight-line pattern occurs when respondents provide the same answer or feedback to most questions (Hair et al., 2016). For instance, a seven-point Likert scale (one to seven) is adopted to collect data, and the response pattern consists solely of four (the middle response). This respondent must be excluded from the data set because he has demonstrated a straight-line pattern in answering the questionnaire. In this study, the straight-lining test was performed using Microsoft Excel 2016. Seven questionnaires out of 315 were found to have straight-lining issues. As a result, the following responses from respondents No. 3, 19, 75, 138, 189, 251 and 275 were excluded from the study, leaving 308 cases only to be examined. To continue with the screening process, the following section explains the outlier analysis.

5.3.2.2 Outliers

Outliers are data with different characteristics that distinguish them from normal ones. They are unusual answers for a specific topic or set of questions (Hair et al., 2017; Sarstedt et al., 2016). The term “outlier case” describes unusually high or low responses to a survey question or in general (Hair et al., 2017). Outliers are identified using the Mahalanobis D^2 measure, a multivariate assessment of each observation across variables (Hair & Sarstedt, 2019). Using IBM SPSS version 20, this study calculated the distance between observations in the multidimensional space of all observations. A higher D^2 value indicated that the data should be removed from the observed generation distribution.

The analysis began by determining six study variables (with guest satisfaction and CCB being dependent variables). The researcher then determined the number of outliers using the chi-square statistics table and the degrees of freedom with a value of four (total number of variables 6-2). On the other hand, Zhu (2016) recommended that the p-value be set at 0.001, as shown in Table 5.2. The chi-square value obtained from statistics Table 5.2 was 18.4668.

Table 5.2 : Chi-Square Statistical Table

df	p-value					
	0.1	0.05	0.025	0.01	0.005	0.001
1	2.7055	3.8415	5.0239	6.6349	7.8794	10.8276
2	4.6052	5.9915	7.3778	9.2103	10.5966	13.8155
3	6.2514	7.8147	9.3484	11.3449	12.8382	16.2662
4	7.7794	9.4877	11.1433	13.2767	14.8603	18.4668
5	9.2364	11.0705	12.8325	15.0863	16.7496	20.515
6	10.6446	12.5916	14.4494	16.8119	18.5476	22.4577
7	12.017	14.0671	16.0128	18.4753	20.2777	24.3219
8	13.3616	15.5073	17.5345	20.0902	21.955	26.1245
9	14.6837	16.919	19.0228	21.666	23.5893	27.8772
10	15.9872	18.307	20.4832	23.2093	25.1882	29.5883
11	17.275	19.6751	21.92	24.725	26.7568	31.2641
12	18.5493	21.0261	23.3367	26.217	28.2995	32.9095
13	19.8119	22.362	24.7356	27.6882	29.8195	34.5282
14	21.0641	23.6848	26.1189	29.1412	31.3193	36.1233
15	22.3071	24.9958	27.4884	30.5779	32.8013	37.6973
16	23.5418	26.2962	28.8454	31.9999	34.2672	39.2524
17	24.769	27.5871	30.191	33.4087	35.7185	40.7902
18	25.9894	28.8693	31.5264	34.8053	37.1564	42.3124
19	27.2036	30.1435	32.8523	36.1909	38.5823	43.8202

Any questionnaire with a Mahalanobis D^2 value of 18.4668 or higher must be excluded since it had been determined to contain multivariate outliers. A total of 10 outliers with a Mahalanobis Distance greater than 18.4668 were identified, as shown in Table 5.3. After excluding the ten outliers, only 298 questionnaires remained for analysis.

Table 5.3 : Multivariate Outlier Detection

No	Case Number	Mahalanobis (D^2)
1	116	55.98973
2	99	40.34092
3	295	37.48736
4	163	36.70665
5	228	31.96414
6	304	24.85188
7	267	23.79337
8	195	23.78737
9	101	22.68358
10	279	22.64851

Note: Sorted in descending order based on case D^2 values

5.3.3 Normality Test

A normality test was required to examine data distribution. Data from a normal distribution will make a more decisive analysis result (Hair et al., 2016). Therefore, the normality test is an essential step in statistical analysis. Generally, there are two types of normality tests: (1) univariate and (2) multivariate. Univariate normality refers to the normal distribution of data, while multivariate refers to the distribution with a joint allocation of more than one variable (Hair et al., 2016). In normal data, skewness and kurtosis are used as indicators to summarize the distribution (Tabachnick & Fidell, 2013). Skewness measures asymmetry, while kurtosis determines the height of a distribution associated with a normal distribution (Hair et al., 2009).

5.3.3.1 Mardia's Multivariate Test

When evaluating the data normality suggested by (Hair et al., 2016), a multivariate normality assessment was used to evaluate Mardia's coefficient (Mardia, 1970). To indicate that the research data is normal, the value of skewness and kurtosis should be <3 and <20 , respectively. Specifically, the skewness should be between -2 to $+2$, and kurtosis should be between -7 to $+7$ (Hair et al., 2009). Based on the evaluation, the data stated a multivariate kurtosis value of 701.4213 and a skewness value of 115.9245 (Mardia's coefficient was obtained). It indicated that the effects of skewness and kurtosis were more than 3 and 20. Hence, it would be essential to use bootstrapping for the analysis. Table 5.4 shows the skewness and kurtosis analyses.

Table 5.4 : The Skewness and Kurtosis Analyses

Sample size: 298						
Number of variables: 22						
Univariate skewness and kurtosis						
	Skewness	SE_skew	Z_skew	Kurtosis	SE_kurt	Z_kurt
AC_PS	-0.623	0.141	-4.413	-0.290	0.281	-1.032
AD_CCB	-0.900	0.141	-6.372	0.265	0.281	0.943
AE_SMS	-0.531	0.141	-3.763	-0.262	0.281	-0.932
EQ_VCC	-0.760	0.141	-5.383	0.535	0.281	1.902
EX_VCC	-0.695	0.141	-4.925	0.170	0.281	0.602
FE_CCB	-0.765	0.141	-5.422	0.138	0.281	0.491
HE_CCB	-1.099	0.141	-7.784	1.447	0.281	5.143
IN_VCC	-0.398	0.141	-2.819	-0.447	0.281	-1.589
KN_VCC	-0.666	0.141	-4.718	0.280	0.281	0.997
PA_SS	-0.892	0.141	-6.315	0.292	0.281	1.038
PE_VCC	-0.439	0.141	-3.111	-0.545	0.281	-1.935
PI_SMS	-0.763	0.141	-5.406	0.544	0.281	1.934
PP_SMS	-0.431	0.141	-3.053	-0.439	0.281	-1.559
PS_SS	-0.795	0.141	-5.631	0.291	0.281	1.033
RE_VCC	-0.474	0.141	-3.356	-0.343	0.281	-1.218
SAT_	-0.567	0.141	-4.015	0.098	0.281	0.348
SB_SS	-0.798	0.141	-5.654	0.132	0.281	0.470
SF_SMS	-0.683	0.141	-4.836	-0.198	0.281	-0.705
SL_PS	-0.679	0.141	-4.811	-0.266	0.281	-0.944
SP_SMS	-0.488	0.141	-3.457	-0.488	0.281	-1.733
SSA_PS	-0.751	0.141	-5.321	0.018	0.281	0.063
TO_CCB	-0.512	0.141	-3.625	-0.123	0.281	-0.438

Mardia's multivariate skewness and kurtosis			
	b	z	p-value
Skewness	115.9245	5757.58294	0
Kurtosis	701.4213	46.06263	0

(Source:<https://webpower.psychstat.org/models/kurtosis/results.php?url=cf3b8cf9cd5f7320306687ae5fb9c14d>)

5.3.4 Common Method Variance

Common method variance (CMV) is defined as systematic error variance expected from the respondents' response styles, measurement aspects and item characteristics that could affect the study findings' validity as it was collected using similar methods (Podsakoff et al., 2003, 2012). CMV was attributable to the measurement method rather than the constructs the measures represented (Podsakoff et al., 2003).

5.3.4.1 Harman Single Factor

Harman's single-factor test determines whether a single factor arises from principal component analysis or whether a distinct factor accounts for most covariance among variables in unrotated factor analysis (Podsakoff et al., 2003). Factor analysis without rotation may integrate the Harman single-factor test method. The researcher noted that the common method bias problem did not arise based on the Harman single-factor test because it was 44.144 %, which was less than the 50 % of the threshold (Eichhorn, 2014; Podsakoff & Organ, 1986) as shown in Appendix 5.5. In addition, CMV was not a problem if the single factor accounted for less than 50 % of the total variance (Tingru Zhang et al., 2019). Hence, it was confirmed that CMV was not a problem in this study data set.

In addition, the present study utilized a few practical steps to reduce the possible common method bias. The first step was the cover page that guaranteed respondents that the online survey was anonymous. This would ensure the confidentiality of data. Second, the statement, "There are no right or wrong answers to the questions in the questionnaire," stated on the cover page. Third, it was mentioned that participation was voluntary, and respondents were selected as luxury hotel guests. Respondents were also provided descriptions of each construct with precise instructions on answering the survey and avoiding confusion. Moreover, the steps taken during the survey development and data collection procedures were consistent with practices described by Podsakoff et al. (2012). This was also in line with a previous study (Olorunsola et al., 2022).

5.3.4.2 Full Collinearity

In addition, a full collinearity test was performed to determine if any constructs had variance inflation factor (VIF) values equal to or greater than 3.3 (Kock & Lynn, 2012; Kock, 2015). This was because all the data was collected using a single source, and all variables were regressed against a common variable. The table below shows the tolerance and VIF analysis using IBM SPSS version 20 to evaluate the regression results. The analysis yielded VIF tolerances between 0.225 and 0.500 (See Appendix 5.6), which was significantly greater than 0.1. VIF was considerably less than five (Hair et al., 2011), ranging from 2.001 to 4.451, as stated in Table 5.5.

Table 5.5 : Full Collinearity Testing

Variables	PS	SS	SMS	VCC	GS
VIF	2.472	2.494	2.001	4.451	4.413

*Note: PS = Physical Servicescape, SS = Social Servicescape, SMS = Smart Servicescape, VCC= Value Co-Creation, GS = Guest Satisfaction

5.3.5 Descriptive Analysis

This section describes the profiling of respondents and variables. The descriptive data assisted the researcher in describing, demonstrating and summarising the data points (Kemp et al., 2018; Lawless & Heymann, 2010). In the present study, the respondents' backgrounds and experiences were reviewed.

5.3.5.1 Goodness of Data

Primary data of the study was collected through survey questionnaires targeting luxury hotel guests who had stayed at four or five-star hotels in Malaysia between 2019 and 2022. The data collection was conducted for eight weeks, starting on 10th August 2022

and ending on 11th October 2022. The final number of completed questionnaires used in this research was 298.

5.3.5.2 Descriptive Analysis of Respondents

The IBM SPSS version 28 was used to compile the respondents' profiles (See Appendix 5.7). Respondents were asked questions on their gender, age, race, employment, monthly income and hotel experience and stay behaviours.

The respondents' profile was vital to validate the appropriate respondents for the study. From the data collected, 31.9 per cent of the total respondents were male (n=95) and 68.1 per cent were females (n=203). In addition, five age groups of age were noted. Those aged 35-44 showed the highest number of respondents at 50 per cent (n=149) of the total sample, whereas the 18-24 category showed the lowest at 2.3 per cent (n=7). The 25-34 age group represented 24.2 per cent (n=72). The older age group of 45-54 represented 17.1 per cent (n=51) and senior citizens aged 55 and above represented 6.4 per cent (n=19) of the total population.

When based on ethnicity, the Malays comprised the majority at 94.6 per cent (n=282) of the total respondents, followed by Chinese at two per cent (n=6), Indians at 0.7 per cent (n=2) and Sabah/Sarawak Bumiputeras made up 2.7 per cent (n=8).

The employment of respondents showed a good mix. The category comprised government servants (46 % or n=137), private sector workers (33.2 % or n=99), self-employed (8.7 % or n=26), retirees (1.7 % or n=5) and others (10.4 % or n=31).

The monthly income section covered six categories: Less than RM2,000, RM2,001–RM4,000, RM4,001–RM6,000, RM6,001–RM8,000, RM8,001–RM10,000, and RM10,000 and above. The common income range of the respondents was from RM4,001 to RM6,000 (21.8 % or n = 65). As expected, the least common income range of respondents was less than RM2,000 (9.1% or n=27), as luxury hotel stays were beyond their normal affordability. The RM2,001–RM4,000 category represented 20.8 per cent (n=62), the RM6,001–RM8,000 category represented 18.5 per cent (n=55). In the high-income range, the RM8,001–RM10,000 group represented 17.1 per cent (n=51) and the highest category of RM10,000 and above represented 12.8 per cent (n=38). Hence, it could be noted that luxury hotel guests did not necessarily mean they were high-income earners, but they mostly comprised those in the middle- and upper-middle income group. Table 5.6 summarises the respondents' background.

Table 5.6 : Summary of Respondents' Background

Demographic	Categories	N=298	Percentage (%)
Gender	Male	95	31.9
	Female	203	68.1
Age	18 – 24	7	2.3
	25 – 34	72	24.2
	35 – 44	149	50
	45 – 54	51	17.1
	55 and above	19	6.4
Race	Malay	282	94.6
	Chinese	6	2.0
	Indian	2	0.7
	Bumiputera (Sabah/Sarawak)	8	2.7
Employment	Government	137	46
	Private	99	33.2
	Self-employed	26	8.7
	Retired	5	1.7
	Others	31	10.4
Monthly Income	Less than RM2000	27	9.1
	RM2001 – RM4000	62	20.8
	RM4001 – RM6000	65	21.8
	RM6001 – RM8000	55	18.5
	RM8001 – RM10,000	51	17.1
	RM10,000 and above	38	12.8

5.3.5.3 Descriptive Analysis of Hotel Experience

Eight additional sub-sections ask the respondents about their latest experiences and staying behaviour at the hotels. These included (1) their last stay at the hotel, (2) the length of stay, (3) the purpose of stay, (4) whom they travelled with, (5) the frequency of staying at the hotel, (6) service preferences, (7) the technology they preferred in the hotel and (8) concerns when using technology.

In the last stay at the hotel category, most respondents reported staying for the previous six months (30.9 %, n=92). Few had stayed at the hotel for the last 12 months (10.4%, n=31). The length of stay was divided into four sections: (1) less than three days, (2) three days to a week, (3) one to two weeks, and (4) more than two weeks. Most respondents stayed fewer than three days (71.1 %, n=212). In addition, only 1.3 per cent (n=4) stayed between one to two weeks and nobody stayed for more than two weeks.

Furthermore, respondents' purpose of staying at the hotel was primarily because of vacation (80.2 %, n=239). Besides business, visiting friends and family and attending events, respondents had other purposes, such as conducting audits, accomplishing research work, and other purposes (4.4 %, n=13). Most respondents travelled with their family members (60.7 %, n=181), and few had travelled alone (8.5 %, n=25). In a normal year, the respondents said they would typically travel one to three times (47.7 %, n=142).

When respondents arrived at the hotel, they preferred to be served by both hotel employees (human) and the check-in system used by the hotel (technology) (84.6 %,

n=252). The technology-driven respondents get the minimum numbers of the preferred service (3.4 %, n=10). Among the technology that exists, such as robots, sensors, smartphones, apps, voice assistants and automated F&B and housekeeping tasks, respondents mostly liked to use a tablet panel to control their room lights, temperature, door and curtains (72.8 %, n=217). As hotels turned to advanced technologies to attract guests, some were concerned about the privacy and safety of their data (86.6 %, n=258). Table 5.7 summarises the respondents' hotel experience and staying behaviour.

Table 5.7 : Summary of Respondents' Experience and Staying Behaviour

Staying at the hotel experience	Categories	N=298	Percentage (%)
Last stay at the hotel	Less than a week	49	16.4
	Less than a month	87	29.2
	Less than six months	92	30.9
	Less than 12 months	31	10.4
	12 months and above	39	13.1
Length of stay	Less than three days	212	71.1
	Three days to 1 week	82	27.5
	1 to 2 weeks	4	1.3
	More than two weeks	0	0
Purpose of stay	Business	42	14.1
	Visiting friends	20	6.7
	Visiting family	28	9.4
	Vacation	239	80.2
	Attending event	52	17.4
	Others	13	4.4
Whom they travelled with	Alone	25	8.4
	Family members	181	60.7
	Spouse	58	19.5
	Friends	34	11.4
Frequency of staying	1 to 3 times	142	47.7
	3 to 6 times	106	35.6
	6 to 10 times	23	7.7
	More than 10 times	27	9.1
Service preferences	More human, less technology	36	12.1
	More technology, less human	10	3.4
	A balance between humans and technology	252	84.6
Preferred technology	Hotels provide robots to greet hotel guests	18	6

Table 5.7 : Continued

Preferred technology (Respondents may choose more than one answer)	Hotels provide robots to greet hotel guests	18	6
	The hotel room is covered with sensors	96	32.2
	The hotel room uses a tablet panel to control lights, temperature, door and curtains	217	72.8
	The hotel room peephole (hole at the main door to see outside) can be viewed through a smartphone.	84	28.2
	The hotel uses smartphones for guests to communicate with the employees (eg. on WhatsApp)	130	43.6
	Check-in is fully automated (done through an app/kiosk)	182	61.1
	Check-out is fully automated (done through an app/kiosk)	192	64.4
	A voice/movement assistant controls the room amenities	63	21.1
	The food & beverage (F&B) task is performed by automated machines or robots	47	15.8
	Housekeeping is performed by automated machines or robots	32	10.7
Factors of concern when using technology	Data privacy	258	86.6
	Data safety	23.3	78.2
	Hacking of data	217	72.8

5.3.5.4 Descriptive Analysis of Instruments

This section further discusses the effects of outliers as suggested by (Pallant, 2007).

The mean score and standard deviation of all items are summarised in Table 5.8.

Table 5.8 : Summary of Descriptive Statistics

Variables (N=298)	Mean	Standard deviation
Physical servicescape	6.069	.73928
Social servicescape	6.121	.78592
Smart servicescape	5.720	.93187
Value co-creation	5.916	.73826
Guest satisfaction	5.964	.76696
Customer citizenship behaviour (CCB)	5.693	.82068

According to Table 5.8, social servicescape was essential due to the highest mean score. The second highest score was physical servicescape. Guest satisfaction got the third-highest score, followed by value co-creation and smart servicescape. Customer citizenship behaviour scored the lowest variable score. The results showed that social servicescape was essential compared with physical and smart servicescape. This concurred with a previous study by Line & Hanks (2019). The social servicescape was vital in hotels where other customers' appearance, behaviour and perceived similarity were essential to the transaction atmosphere. It was known that servicescape had tangible and intangible elements.

For the social servicescape, the present study focused on the guest perception of hotel employees since the latter would be the first point of contact (Nguyen, 2006). This is because the study focused on luxury hotels, where the environment would generally be more private, and communication is usually between the guests and attending employees during a particular moment. In the service industry, specifically hotels, the relationship and communication between both parties are very significant. This is because most of the transactions in the hotel would involve the social interactions between guests and employees, for instance, during check-in, check-out and dining at the coffee house (Cetin & Walls, 2015; Chalke, 2023; Wood, 1994). The Malaysian culture, which still preferred social relationships, especially in the service industry, also supported the results. Even social interaction needed to be minimised due to the pandemic that had impacted the industry environment (Shin & Kang, 2020). However, some guests still did not prefer high-tech services, especially at the front desk (Wang et al., 2023). Hence, with the results, hotel managers must appreciate and use their

human capital to overcome the diminishing role of kindness in a so-called technology-ubiquitous service context (Solnet et al., 2019).

Meanwhile, the physical servicescape was the second-most important antecedent, as the findings showed. The servicescape captured the attention of guests externally. For instance, when guests entered the hotel lobby, the features and environment would provide a tangible part of the service. Loyal guests would anticipate the atmosphere of luxury based on changes in decorations and ambiance. That is why updating the hotel environment is crucial to catch the attention of guests from time to time (Lee & Chuang, 2022; Boran, 2023). Hence, that was partly why guests were attracted to and considered the social elements in the hotel as their priority. Guests would expect to be treated accordingly with the rates they paid for the facilities and services of the luxury hotels.

Smart servicescape, the third-most crucial servicescape combining humans and technology, has entered the industry. The hotel industry needs time to effectively implement a smart servicescape (Mittag et al., 2018), which depends on the suitability and needs of its guests. It has been highlighted that service robots could be useful in the food and beverage industry. For instance, the use of robots in fast-food restaurants, especially when performing routine tasks, often resulted in higher product turnover at lower cost. However, it may result in the loss of jobs as many roles, once performed by human workers, will become redundant. Hence, industry players need to consider the attitudes and intentions of consumers in using service robots before implementing them (Abdelhakim et al., 2023). It has become a unique research domain as it is not

easy to implement the use of robots and technology in hospitality and tourism. The detailed descriptive analysis of the instruments can be seen in Appendix 5.8.

5.4 Phase II: Structural Equation Modelling

The study employed structural equation modelling (SEM) to test the hypotheses. The partial least squares-structural equation modelling (PLS-SEM) allows the prediction of correlations through the heterotrait-monotrait ratio of correlations (HTMT). It also allows the testing of measurement models with internal consistency reliability, convergent validity and discriminant validity. Hypothesis testing can be done using PLS-SEM by examining the structural model (Hair et al., 2014). The use of PLS-SEM is proposed for studying complex models and higher-order formative constructs, especially mediating models (Sarstedt et al., 2020). The present study uses the SMARTPLS Version 4.0.9.2 software, as shown in Appendix 5.8.

5.4.1 Specification of Formative and Reflective Measurements

The relationship between the indicator and construct may be either formative or reflective. A formative measurement model is the arrow's path from the indicator's variables to the construct, indicating that the variables may affect construct measurement (Hair et al., 2013). This model is constructed when the statement is related to the cause of the variable. Hence, the arrow will point inward from the variables. Concurrently, the reflective model measurement arrow indicates outward from the construct to the indicator. This assumes that the measurement model is affected by the construct of the indicator variables (Hair et al., 2013). This model is used when the statement is related to the impact of the variables. Reflective relationships exist when the indicator reflects the construct (Hair et al., 2014).

Choosing the correct measurement model is crucial. The incorrect labelling of indicators may lead to inaccurate results regarding the relationship within the model in the PLM modelling. Previous research has highlighted that the validity test does not apply in formative measurement models. This model assumes that the indicators affect or cause a construct (Diamantopoulos & Winklhofer, 2001; Duarte & Amaro, 2018). The causality reversal can affect the different interpretations and evaluations of measurement modes. Hence, formative measurement is frequently used because the linked construct contains multiple dimensions. However, the reliability of different dimensions is unnecessary since each dimension explores a different feature of the multidimensional construct.

The present study used reflective-formative second-order constructs. The two-stage approach was applied, where the second higher-order components automatically changed to formative components to get results for the structural model. Reflective constructs of main variables were used in the first lower-order components. This was due to the condition where the same variables caused the indicator items for the lower-order construct. The removal of any single items could be done without changing the meaning of the variables and constructs due to sufficient reliability (Hair et al., 2013).

5.4.2 Model Estimation

Subjects with PLS had a Higher-Order Model, or hierarchical component model (HCM), comprising higher and lower-order constructs. Hierarchical constructs are commonly known as models with more than one dimension (Wetzels et al., 2009). To demonstrate HCM, it usually has a general construct. For instance, a higher-order model measures absorption at a higher level. It includes several subdimensions, such

as a lower-order model that covers more specific features. The HCM approach reduces the number of structural model relationships, making the PLS path easy to interpret, besides reducing complexity and avoiding confusion in multidimensional structures (Ringle et al., 2012).

This study involved higher-order constructs and model testing (Sarstedt et al., 2019). The higher-order constructs were the physical servicescape, social servicescape and smart servicescape. In addition, all the higher-order constructs consisted of lower-order constructs with two absorption levels. For example, physical servicescape had three lower-order constructs: ambient condition, space/function layout and sign/symbol/artifacts. Similarly, social servicescape consisted of three lower-order constructs: perceived similarity, physical appearance and suitable behaviour. Meanwhile, smart servicescape had five lower-order constructs: aesthetics, social presence, superior functionality, perceived interactivity and perceived personalisation. These constructs measured general ideas or thoughts about abstract concepts of the study (Hair & Sarstedt, 2019). Due to the nature of conceptual constructs, researchers needed to use multiple items to measure them (Sarstedt et al., 2020).

In HCM, there are four model types: reflective-reflective, reflective-formative, formative-reflective, and formative-formative. The second-order model Type I is reflective-reflective. For model Type I, the path of lower-order constructs is caused by the associated items being observed, while the path of the higher-order model exerts on lower-order constructs (Afthanorhan, 2014). The Type II model, which is reflective-formative, was used in this study. This model type illustrates the lower-order constructs exerting on higher-order constructs. The higher model will serve as a

formative construct in the structural model to explain the reflective-formative measurement model.

In the formative-reflective model, the higher-order model is imposed on each indicator, and the causal action of the higher-order construct exerts a lower-order construct. To use this model, the researcher must achieve the VIF value required for the formative measurement model. In addition, there is a need to measure the discriminant and convergent validity of the structural model. The last model is formative-formative. This model is well known for using a higher-order construct and a two-stage approach.

In estimating the HCM, there are seven methods involved: The Repeated Indicators Approach (Wold, 1982), Three Stage Approach (Wilson, 2007), the Embedded Two-Stage Approach (Sarstedt et al., 2019), Disjoint Two-Stage Approach Becker et al., 2012; Sarstedt et al., 2019), Extended Disjoint Approach (Becker et al., 2012; Sarstedt et al., 2019; Wilson, 2007), Hybrid Approach (Sharma et al., 2021) and Improved Extended Repeated Indicators Approach (Cheah et al., 2019). The HCM (the higher-order or second-order model) is popular among researchers (Baden et al., 2022).

In this study, an embedded two-stage approach was utilised for data analysis, as performed in a previous study (Schuberth et al., 2020). This approach had two types: the embedded two-stage approach (Ringle et al., 2012) and the disjointed two approach (Betzing et al., 2018). The difference between the embedded two-stage and disjointed two approaches is that the former could measure the entire higher-order

construct in its first-stage approach. In contrast, the disjointed approach measured only the lower-order construct. (Burke et al., 2017, Cheah et al., 2019).

There are two stages in the embedded two-stage approach. The first is to measure the constructs following the standard repeated indicators approach, which has an antecedent construct in the structural model, measuring a non-significant path coefficient from antecedent to higher-order construct. The latent scores for all constructs in the model were recorded. Then, it was added to the PLS software. Next, the higher-order construct would measure the formative construct with the latent scores from stage 1. It was suggested that the data for the study should be analysed and interpreted in two different stages: (1) assessment measurement and (2) assessment of the structural model (Hair et al., 2017).

5.4.3 Measurement Model Assessment

The measurement model assessment analysed the loadings, indicator reliability, composite reliability, average variance extracted (AVE) and discriminant validity. In this section, the measurement model was established. A measurement model measures latent or composite variables (Kline, 2010). Earlier in the confirmatory factor analysis (CFA), the number of factors within a construct was assessed by identifying factor loadings for each item. CFA is employed to examine the fitness of the construct. Hence, the second order of measurement model reflected on six constructs, namely: (1) physical servicescape, (2) social servicescape, (3) smart servicescape, (4) value co-creation, (5) guest satisfaction and (6) customer citizenship behaviour. Table 5.9 shows the measurement model threshold.

Table 5.9 : Measurement Model Threshold

Assessment	Level of Acceptance
Reflective indicator loadings	> 0.708
Internal consistency reliability	Minimum 0.70 (or 0.60 in exploratory research) Maximum of 0.90 to avoid indicator redundancy, which would compromise content validity Recommended 0.70 – 0.90
Convergent Validity	AVE > 0.50
Discriminant Validity	HTMT < 0.90

Due to the nature of the constructs having sub-dimensions, there is a need to use second-order factors. The model of this study was a reflective-formative higher-order construct in which the embedded two-stage approach was used to specify and estimate the model (Sarstedt et al., 2019). In the first stage, the reflective measurement model of the first-order construct was evaluated. This study measured the entire higher- and lower-order constructs to capture the latent variables score for each dimension. The reflective measurement model could be validated by examining the internal consistency, indicator reliability, convergent validity and discriminant validity (Lewis et al., 2005)

5.4.3.1 Internal Consistency

Cronbach's Alpha is used to measure the internal consistency of measurement items. The higher the alpha value, the stronger the questionnaire items are to have the same range and meaning (Kane, 1992). Internal consistency may also be measured using composite reliability in the PLS software (Chin, 1998). However, composite reliability considers the value of indicators with different loadings compared with Cronbach's Alpha, which assumes all indicators have the same weight (Khoi & Van Tuan, 2018). Internal consistency is considered significant when the alpha value exceeds 0.7 (Hair

et al., 2016). Indicators less than 0.6 are considered as having a lack of reliability (Nunnally & Bernstein, 1994). In this study, Cronbach's alpha and composite reliability for the measurement model were all found to be greater than 0.70 (See Appendix 5.9). Hence, this model had an acceptable level of reliability.

5.4.3.2 Indicator Reliability

The objective of measuring indicator reliability is to examine the extent to which the variable is consistent with its intended measure (Khoi & Van Tuan, 2018). The recommended value for indicator loadings must be between 0.05 and 0.7 loads (Chin, 1998). Studies suggested factor loadings above 0.05 for better results, but a 0.05 cut-off is also acceptable (Sharma et al., 2005). According to Hair et al. (2016), the factor loading value should be 0.7. Nevertheless, in PLS, the researcher should not eliminate loadings below 0.7. This is because loadings between 0.4 and 0.7 may increase the AVE value when not removed (Henseler et al., 2015). The factor loadings in this study are all above 0.7 except for HE_CCB (0.579) and TO_CCB (0.581) (Appendix 5.10). Thus, all of them were retained.

5.4.3.3 Composite Reliability

Composite reliability is another method of measuring the internal consistency of the items. The recommended value for the construct is at least 0.70. High composite reliability is a good indicator to show that all the items constantly measured the same construct.

5.4.3.4 Convergent Validity

Convergent validity refers to the degree to which individual indicators reflect a construct converging compared with indicators measuring other constructs (Hair et al., 2017). Three metrics were employed to assess convergent validity: loading, CR and AVE (Hair et al., 2014). The threshold for the metrics is loading >0.5 , CR >0.7 and AVE >0.5 (Fornell & Larcker F., 1981; Gefen et al., 2011; Hair et al., 2017). In this study, all items showed an adequate convergent validity, resulting in the AVE of each dimension being larger than 0.5. Therefore, all the results showed that this study's scales had great convergent validity. If the Variance Inflation Factor (VIF) is greater than 3.3, the study may be affected by common method bias. However, the VIF in this study was lower than 3.3, proving that the data was not affected by the bias. There were six items with VIF values of 3.557 (SB_5), 4.086 (SB_7), 3.086 (AE_1 and AE_2), and 3.35 (SF_5 and SF_6). Since the measurement model had higher-order and lower-order constructs, some items would have a VIF value of more than three. Table 5.10 illustrates the summary of the initial specification model result. The measurement model is shown in Appendix 5.11.

Table 5.10 : Summary of Initial Specification Model Result

HOC	LOC	Items	Loadings	VIF	CA	CR	AVE
Physical Servicescape	Ambient Condition	AC_1	0.838	1.911	0.801	0.883	0.715
		AC_2	0.838	1.802			
		AC_3	0.816	1.558			
	Space/Function Layout	SL_4	0.805	1.502	0.802	0.883	0.717
		SL_5	0.82	1.908			
		SL_6	0.896	2.086			
	Sign/Symbol/Artefacts	SSA_7	0.865	1.777	0.84	0.903	0.757
		SSA_8	0.838	2.077			
		SSA_9	0.912	2.532			
Social Servicescape	Perceived Similarity	PS_1	0.944	2.571	0.874	0.923	0.799
		PS_2	0.951	2.571			
	Physical Appearance	PA_3	0.952	2.904	0.895	0.95	0.905
		PA_4	0.954	2.904			
	Suitable Behaviour	SB_5	0.928	3.557	0.915	0.946	0.854
		SB_6	0.907	2.648			
		SB_7	0.945	4.086			
Smart Servicescape	Aesthetics	AE_1	0.95	3.086	0.902	0.953	0.911
		AE_2	0.959	3.086			
	Social Presence	SP_3	0.936	2.326	0.86	0.935	0.877
		SP_4	0.927	2.326			
	Superior Functionality	SF_5	0.956	3.335	0.86	0.935	0.877
		SF_6	0.966	3.335			
	Perceived Interactivity	PI_7	0.946	2.293	0.858	0.934	0.875
		PI_8	0.945	2.293			
	Perceived Personalisation	PP_9	0.917	2.424	0.832	0.9	0.75
		PP_10	0.907	2.532			
		PP_11	0.832	1.554			
Value Co-creation	Knowledge	KN_1	0.898	1.591	0.757	0.892	0.805
		KN_2	0.897	1.591			
	Equity	EQ_3	0.886	1.339	0.669	0.857	0.75
		EQ_4	0.841	1.339			
	Interaction	IN_5	0.913	2.135	0.843	0.927	0.865
		IN_6	0.916	2.135			
	Experience	EX_7	0.914	2.72	0.88	0.926	0.807
		EX_8	0.917	2.722			
		EX_9	0.884	2.12			
	Personalisation	PE_10	1	1	NA	NA	NA
Guest Satisfaction	Relationship	RE_11	0.931	2.314	0.859	0.934	0.877
		RE_12	0.939	2.314			
	Satisfaction	SAT_1	0.908	3.609	0.92	0.94	0.759
		SAT_2	0.875	2.836			
		SAT_3	0.777	1.931			
		SAT_4	0.913	3.87			
		SAT_5	0.896	3.474			
Customer Citizenship Behaviour (CCB)	Feedback	FE_1	0.806	1.529	0.743	0.851	0.655
		FE_2	0.795	1.534			
		FE_3	0.82	1.401			
	Advocacy	AD_4	0.954	2.819	0.891	0.948	0.902
		AD_5	0.952	2.819			
	Helping	HE_6	0.95	5.085	0.943	0.963	0.897

Table 5.10 : Continued

Tolerance	HE 7	0.96	6.634	0.875	0.913	0.724
	HE 8	0.941	3.665			
	TO_9	0.866	3.067			
	TO 10	0.849	2.859			
	TO 11	0.876	2.599			
	TO 12	0.823	1.576			

5.4.3.5 Discriminant Validity

Discriminant validity is the degree to which indicators differentiate across constructs or measure distinct concepts by examining the correlations between potential overlapping measures (Hair et al., 2014). It is described by the HTMT value, in which the proposed cut-off is <0.85 . Discriminant validity was formerly possible to access using the Fornell-Larcker criterion and cross-loadings (Hair et al., 2011). However, the recent study by Henseler et al. (2015) found that the results obtained from the HTMT ratio of correlations were more acceptable with a value below one (Sarstedt et al., 2016). The previous researcher also found that the Fornell-Larcker criterion lacked the capability to establish distinctiveness between variables. Hence, the results of HTMT are superior to those from the Fornell-Larcker criterion. In this study, HTMT was used, and the highest value obtained was 0.958. Therefore, the discriminant validity for lower-order and higher-order constructs is adequate. Table 5.11 illustrates the results of the value of correlations in this study.

Table 5.11 : Discriminant Validity between Constructs of Staying in a Luxury Hotel

	AC	AD	AE	EQ	EX	FE	HE	IN	KN	PA	PE	PI	PP	PS	RE	SAT	SB	SF	SL	SP	SSA	TO
Ambient Condition	0.846																					
Advocacy	0.506	0.95																				
Aesthetics	0.477	0.475	0.954																			
Equity	0.539	0.577	0.546	0.866																		
Experience	0.566	0.617	0.48	0.737	0.898																	
Feedback	0.441	0.601	0.453	0.567	0.558	0.809																
Helping	0.288	0.471	0.337	0.376	0.358	0.497	0.947															
Interaction	0.468	0.569	0.504	0.748	0.729	0.585	0.364	0.93														
Knowledge	0.402	0.546	0.427	0.698	0.625	0.535	0.365	0.722	0.897													
Physical Appearance	0.54	0.44	0.402	0.567	0.585	0.457	0.3	0.499	0.484	0.951												
Personalisation	0.421	0.512	0.401	0.664	0.769	0.516	0.329	0.679	0.563	0.508	1											
Perceived Interactivity	0.474	0.471	0.747	0.595	0.569	0.497	0.313	0.565	0.47	0.443	0.5	0.936										
Perceived Personalisation	0.46	0.468	0.764	0.6	0.501	0.482	0.299	0.541	0.472	0.407	0.462	0.82	0.866									
Perceived Similarity	0.548	0.437	0.457	0.573	0.633	0.421	0.239	0.613	0.5	0.735	0.572	0.52	0.45	0.944								
Relationship	0.507	0.65	0.486	0.699	0.813	0.531	0.412	0.689	0.639	0.564	0.735	0.59	0.505	0.621	0.936							
Guest Satisfaction	0.588	0.66	0.594	0.76	0.794	0.596	0.411	0.723	0.681	0.635	0.713	0.607	0.601	0.648	0.811	0.871						
Suitable Behaviour	0.502	0.467	0.459	0.599	0.659	0.47	0.337	0.586	0.578	0.757	0.592	0.527	0.437	0.827	0.646	0.671	0.924					
Superior Functionality	0.486	0.458	0.785	0.567	0.541	0.49	0.307	0.515	0.436	0.454	0.463	0.886	0.785	0.475	0.54	0.606	0.511	0.958				
Space/Function Layout	0.683	0.486	0.552	0.639	0.587	0.581	0.45	0.278	0.548	0.448	0.614	0.497	0.532	0.472	0.567	0.533	0.627	0.568	0.847			
Social Presence	0.455	0.442	0.871	0.547	0.505	0.441	0.326	0.475	0.409	0.408	0.445	0.784	0.773	0.429	0.474	0.586	0.469	0.847	0.937			
Sign/Symbol/Artefacts	0.683	0.517	0.612	0.647	0.602	0.488	0.343	0.612	0.477	0.613	0.52	0.596	0.544	0.61	0.599	0.69	0.63	0.612	0.845	0.57	0.87	
Tolerance	0.197	0.381	0.33	0.361	0.361	0.43	0.544	0.321	0.355	0.274	0.359	0.299	0.297	0.297	0.413	0.433	0.374	0.328	0.253	0.356	0.302	0.851

Note: Note: AC=Ambience, AD=Advocacy, AE=Aesthetics, EQ=Equity, EX=Experience, FE=Feedback, HE=Helping, IN=Interaction, KN=Knowledge, PA=Physical Appearance, PE=Personalisation, PI=Perceived Interactivity, PP=Perceived Personalisation, PS=Perceived Similarity, RE=Relationship, SAT=Guest Satisfaction, SB=Suitable Behaviour, SL=Space/Function Layout, SF=Superior Functionality, SP=Social Presence, SSA=Sign/Symbol/Artefacts, TO=Tolerance

5.4.4 Structural Model Assessment

The structural model assessment is conducted in this section after assessing the measurement model. The latent scores from the measurement model were saved and used for the structural model assessment to test the proposed hypotheses. Furthermore, structural model assessment in PLS-SEM focused on assessing the significance and relevance of path coefficients, followed by the explanatory and predictive power of the model (Kline, 2020). In the structural model assessment, five main steps were discussed, namely collinearity, significance assessment of hypothesised relationships, coefficient of determination, size analysis effect and predictive relevance (Hair et al., 2017). The structural model analysis further validated the model's fitness. The structural model was assessed after measurement of the model's validity and unidimensionality. The assessment to investigate the relationship between constructs was identified.

5.4.4.1 Collinearity

Physical servicescape (PS) caters to three lower constructs (ambiance (AC), space/function layout (SL) and sign/symbol/artifacts (SSA)). Social servicescape (SS) is the second construct of the second-order, which had three first-order constructs: perceived similarity (PS), physical appearance (PA) and suitable behaviour (SB). In addition, smart servicescape (SMS) was the third construct of the second-order that consisted of five first-order constructs: aesthetics (AE), social presence (SP), superior functionality (SF), perceived interactivity (PI) and perceived personalisation (PP). VCC was the fourth second-order construct that consisted of six first-order constructs, namely knowledge (KN), equity (EQ), interaction (IN), experience (EX),

personalisation (PE) and relationship (RE). Guest satisfaction (SAT) was the fifth construct with no first-order constructs. Finally, CCB was the sixth construct of the second-order that consisted of four first-order constructs: feedback (FE), advocacy (AD), helping (HE) and tolerance (TO).

Overall, the model achieved a good fit. In SmartPLS, the relationship between constructs was identified from the PLS algorithm calculation. Path coefficient (beta) values were standardized from -1 to +1. While coefficients closer to +1 indicated strong positive relationships, coefficients closer to -1 indicated strong negative ones (Sarstedt et al., 2014). A bootstrapping procedure was conducted to evaluate the significance of path coefficients, which provided the “t statistics” and “p-value”.

The empirical t value was compared with the critical value to determine if it was more significant than desired. Generally, any t-value greater than +2 or less than - 2 was acceptable. The higher the t-value, the greater the confidence was in the coefficient as a predictor. Low t-values indicated low reliability of the coefficient’s predictive power (Ramayah et al., 2018). In this study, the essential t-values in the bootstrapping process were expected to be greater than 1.96 for a significance level of 0.05 (two-tailed tests), except for SL; 1.375, SP; 0.212, SF; 0.958, PE; 0.549, HE; 0.090. The results of the bootstrapping procedure are stated in Table 5.12. The structural model illustrates that the causal arrow is applied to the exogenous and endogenous latent constructs (See Appendix 5.12).

Table 5.12 : Higher-Order Construct Validity

HOC	LOC's	Outer Weight	t-value	Outer Loadings	Outer VIF
PS	AC	0.269	3.273	0.825	2.025
	SL	0.168	1.375	0.897	3.77
	SSA	0.645	5.703	0.971	3.775
SS	PS	0.324	3.563	0.923	3.472
	PA	0.277	2.639	0.878	2.568
	SB	0.478	4.453	0.956	3.747
SMS	AE	0.296	2.021	0.89	4.54
	SP	-0.036	0.212	0.874	5.886
	SF	0.162	0.958	0.922	6.484
	PI	0.394	2.690	0.949	5.72
	PP	0.268	2.107	0.916	3.704
VCC	KN	0.084	2.442	0.778	2.448
	EQ	0.306	4.692	0.896	3.076
	IN	0.16	2.307	0.856	3.226
	EX	0.212	3.160	0.904	4.18
	PE	0.019	0.549	0.796	2.834
	RE	0.348	5.993	0.912	3.498
	FE	0.412	5.055	0.848	1.772
CCB	AD	0.602	7.666	0.915	1.679
	HE	-0.007	0.090	0.579	1.68
	TO	0.178	2.485	0.584	1.504

PS=physical servicescape; SS=social servicescape; SMS=smart servicescape; VCC=value co-creation; CCB=customer citizenship behaviour; AC=ambience; SL=space/function layout; SSA=sign/symbol/artifacts; PS=perceived similarity; PA=physical appearance; SB=suitable behaviour; AE=aesthetics; SP=social presence; SF=superior functionality; PI=perceived interactivity; PP=perceived personalisation; KN=knowledge; EQ=equity; IN=interaction; EX=experience; PE=personalisation; RE=relationship; FE=feedback; AD=advocacy; HE=helping; and, TO=tolerance

5.4.4.2 PLS Prediction

To further analyse the structural model, the PLSpredict was conducted. The method was a holdout sample-based procedure that generated case-level predictions on an item or a construct level using PLSpredict with a 10-fold method to check for predictive relevance (Hair et al., 2019; Shmueli et al., 2019). It is suggested that if differences in all the items were lower, there would be a strong predictive power. When the majority of differences were lower, there would be moderate predictive power; if it were a minority, there would be low predictive power (Shmueli et al., 2019). Table 5.13

shows all errors of the PLS model were lower than the LM model, except for EQ_VCC (0.004). Hence, it was concluded that the model for the present study had strong predictive power. The summary and histogram of the prediction are stated in Appendix 13 and 14.

Table 5.13 : Results of PLSpredict between Various Constructs

	PLS	LM	PLS-LM	Q ² predict
AD_CCB	0.816	0.835	-0.019	0.337
FE_CCB	0.824	0.842	-0.018	0.325
HE_CCB	0.93	0.956	-0.026	0.139
TO_CCB	0.936	0.943	-0.007	0.129
SAT	0.62	0.626	-0.006	0.618
EQ_VCC	0.69	0.686	0.004	0.528
EX_VCC	0.692	0.699	-0.007	0.524
IN_VCC	0.731	0.733	-0.002	0.47
KN_VCC	0.804	0.806	-0.002	0.358
PE_VCC	0.779	0.79	-0.011	0.397
RE_VCC	0.704	0.713	-0.009	0.507

VCC=value co-creation; CCB=customer citizenship behaviour; SAT=guest satisfaction; KN=knowledge; PE=personalisation; RE=relationship; EQ=equity; IN=interaction; EX=experience; TO=tolerance; FE=feedback; AD=advocacy; and, HE=helping

5.4.4.3 Goodness-of-Fit

The goodness-of-fit (GOF) is another result that needs to be reported. Previously, it has been highlighted by scholars that CB-SEM strongly relies on the concept of model fit; this is less the case for PLS-SEM (Hair & Sarstedt, 2019). However, a couple of experts in research methodology have endorsed model fit measures for PLS-SEM (Henseler et al., 2016). The threshold for the goodness of fit is illustrated in Table 5.14.

Table 5.14 : Threshold for the Model Fit

	Saturated model	Estimated model
SRMR	≤ 0.08	≤ 0.1
NFI	0.952	0.951
RMSTheta	0.10	0.17

Note: Source (Hair et al., 2019)

Table 5.14 elaborates on the threshold of the model fit. A comprehensive assessment of these measures had not been conducted so far. Hence, any threshold (guidelines) in the literature would be tentative. Therefore, researchers must be cautious when considering the applicability of measures available for the PLS-SEM (Hair & Sarstedt, 2019; Henseler & Sarstedt, 2013). The model fit summary showed the results for the structural model (estimated model). It was a good fit based on the GOF concept with the chi-square value of 315.044, SRMR of 0.031 (<0.1), and NFI of 0.951 (>0.95). Table 5.15 shows the summary of the model fit.

Table 5.15 : Summary of Model Fit

	Saturated Model	Estimated Model
SRMR	0.026	0.031
D_ULS	0.175	0.238
D_G	0.205	0.211
CHI-SQUARE	307.495	315.044
NFI	0.952	0.951

5.4.4.4 Path Coefficients

Each path connects with variables that present a hypothesis in the structural model. It enables the researcher to understand and reconfirm the relationship between independent and dependent variables in each hypothesis (Wright, 1960). To access the value of the path coefficient, PLS software can be used using the standardised beta coefficients and bootstrapping technique. Figure 5.2 shows the structural modelling

test results and path coefficients of this study. The inner model shows the path coefficients and p-values. R square values are at the constructs.

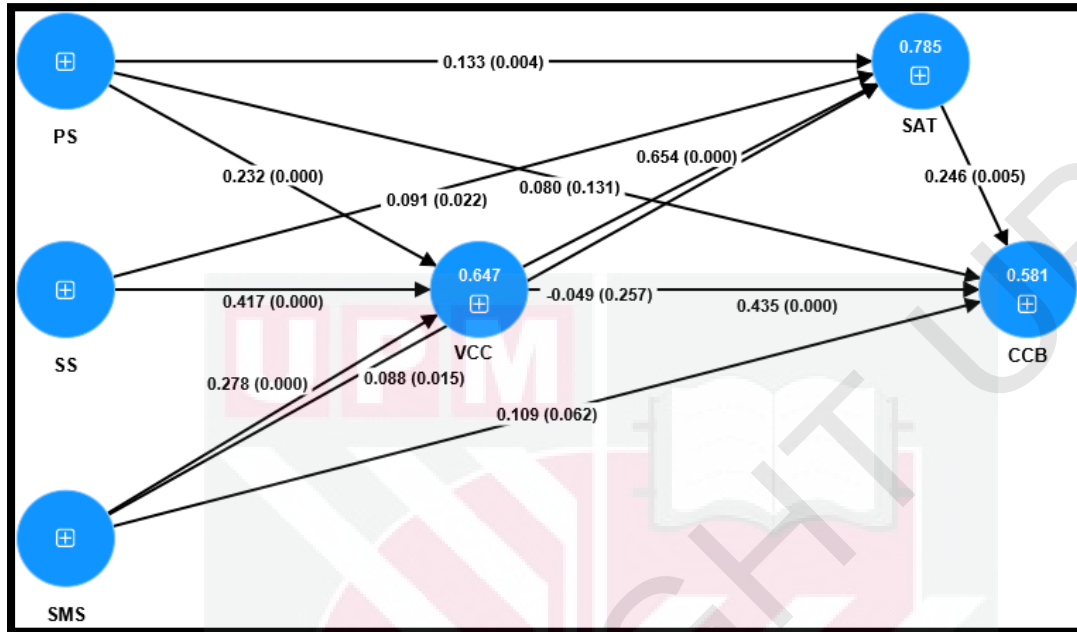


Figure 5.2 : Structural Model Testing Results

5.4.4.5 Hypothesis Testing

In this section, an examination of the relationship between constructs was carried out. A total of 15 hypotheses were addressed and examined. To look at the significance level, it is not adequate to report the p-value and t-value only because they are influenced by sample size. Hence, confidence interval bias must be addressed, in addition to performing BLL and ULL corrections, and f square was added to examine the significance level of the hypothesis. The present study followed the suggestions of Becker et al. (2023), which reported the path coefficients, the standard errors, t-values and p-values using a 10,000-sample re-sample bootstrapping procedure for the structural model (Ramayah et al., 2018). In addition, the criticism by Hahn & Ang (2017) highlighted that p-values were not good criteria to test hypothesis significance.

They suggested combining a few criteria, such as p-values, confidence intervals and effect sizes. Hence, this study adopted those criteria to analyse the structural model.

Table 5.16 summarises the requirements used to test the developed hypotheses.

Table 5.16 : The Thresholds for the Hypothesis Relationship

Test	Threshold
Bootstrapping procedure:	
Multi-collinearity / Lateral Collinearity (VIF)	VIF < 5 (Joseph F. Hair et al., 2017) VIF < 10 (Pallant, 2016)
Significance level (p-value)	< 0.05 or <0.01 (Joseph F. Hair et al., 2017)
Critical value (t-value)	≥ 1.645 (one-tailed) > 1.645 (two-tailed) (Joseph F. Hair et al., 2017)
Path coefficient (beta, β)	$\beta \geq 0.2$ (Kock & Hadaya, 2016)
Coefficient of determination (R^2)	$R^2 = 0.25$ (weak) $R^2 = 0.50$ (moderate) $R^2 = 0.75$ (good) (Joseph F. Hair et al., 2017)
Confidence intervals bias	AVE > 0.50
Confidence intervals (BLL & ULL)	BLL & ULL are both positive or negative (Joseph F. Hair et al., 2017)
Effect size (f-squared)	> 0.02 is small > 0.15 is medium > 0.35 is a large (Cohen, 1988)
PLSpredict procedure:	
Predictive power Error comparison	Q2 predict > 0 PLS-SEM RMSE < LM RMSE (Shmueli et al., 2019)

The results showed that 12 hypotheses were supported, but three were not. The structural model for the hypothesis testing is shown in Appendix 8 and 9. The coefficient and p-values of the hypotheses are shown in Table 5.17.

Table 5.17 : Summary of Hypothesis Testing

Hypotheses	Coefficient Value	p-value	Supported/ Not Supported
Hypothesis 1a There is a relationship between physical servicescape and value co-creation	0.233	***	Supported
Hypothesis 1b There is a relationship between social servicescape and value co-creation	0.414	***	Supported
Hypothesis 1c There is a relationship between smart servicescape and value co-creation	0.283	***	Supported
Hypothesis 2 There is a relationship between value co-creation and CCB	0.436	***	Supported
Hypothesis 3 There is a relationship between value co-creation and customer satisfaction	0.658	***	Supported
Hypothesis 4 There is a relationship between customer satisfaction and CCB	0.257	0.001	Supported
Hypothesis 5a There is a relationship between physical servicescape and guest satisfaction	0.132	***	Supported
Hypothesis 5b There is a relationship between social servicescape and guest satisfaction	0.092	***	Supported
Hypothesis 5c There is a relationship between smart servicescape and guest satisfaction	0.083	***	Supported
Hypothesis 6a There is a relationship between physical servicescape and CCB	0.080	0.130	Not Supported
Hypothesis 6b There is a relationship between social servicescape and CCB	-0.052	0.251	Not Supported
Hypothesis 6c There is a relationship between smart servicescape and CCB	0.109	0.060	Not Supported
Hypothesis 7a Value co-create mediates the physical servicescape and CCB	0.102	0.001	Supported
Hypothesis 7b Value co-create mediates the social servicescape and CCB	0.183	***	Supported
Hypothesis 7c Value co-create mediates the smart servicescape and CCB	0.123	***	Supported

***p<0.001, **p<0.005, *p<0.05

In sum, 15 hypotheses were examined. The findings showed that hypotheses 6a, 6b and 6c — summarised as “There is a relationship between the antecedents (physical, social, and smart servicescape) and CCB” — could not be supported. The following sections further discuss the proposed hypothesis in detail.

First, the present study tested the effects of three servicescapes on VCC. The R^2 value was 0.647, indicating that all three servicescapes could be used to explain 64.7 % of VCC variance. Therefore, physical servicescape ($\beta=0.245$, $p<0.01$), social servicescape ($\beta=0.404$, $p<0.01$) and smart servicescape ($\beta=0.28$, $p<0.01$) were related to VCC and thus, H1a, H1b, H1c were supported. Next, we tested the effects of VCC. The impact of VCC was evaluated ($\beta=0.419$, $p<0.01$) on CCB with an R^2 of 0.581, indicating that VCC could explain 58.1 % of the variance in CCB, which supported H2. Then, the effects of VCC ($\beta=0.649$, $p<0.01$) on guest satisfaction were tested with an R^2 of 0.785, which indicated that VCC could explain 78.5 % of the variance in guest satisfaction; hence H3 was supported. Next, guest satisfaction ($\beta=0.258$, $p<0.01$) effects on CCB were tested; the R^2 value was 0.581, indicating that guest satisfaction could explain 58.1 % of the CCB variance, which supported H4. In addition, the study also tested the effects of three servicescapes on guest satisfaction. The R^2 was 0.785, showing that all three servicescapes could explain 78.5 % of guest satisfaction variance. Therefore, physical servicescape ($\beta=0.125$, $p<0.10$), social servicescape ($\beta=0.101$, $p<0.10$) and smart servicescape ($\beta=0.088$, $p<0.10$) were related to guest satisfaction; thus, H5a, H5b, H5c were supported. Then, the effect of three servicescapes on CCB. The R^2 was 0.581, showing that all three servicescapes explained 58.1 % of CCB variance. Unfortunately, for the relationship, the physical servicescape ($\beta=0.071$, $p=0.147$), social servicescape ($\beta=-0.04$, $p=0.294$), and smart

servicescape ($\beta=0.112$, $p=0.052$), thus, H6a, H6b, H6c could not be supported. Table 5.18 summarises the criteria used to test the hypotheses developed for direct effects.



Table 5.18 : Hypothesis Testing Using Direct Effects

Hypothesis	Relationship	Std Beta	Std Error	t-values	p-values	BCI LL	BCI UL	VIF	F ²	R ²	Decision
H1a	PS → VCC	0.245	0.054	4.535	0.000	0.16	0.336	2.37	0.072	0.651	Supported
H1b	SS → VCC	0.404	0.045	8.969	0.000	0.327	0.475	1.972	0.238	0.651	Supported
H1c	SMS → VCC	0.28	0.054	5.198	0.000	0.199	0.374	1.776	0.127	0.651	Supported
H2	VCC → CCB	0.419	0.083	5.057	0.000	0.279	0.553	4.79	0.087	0.579	Supported
H3	VCC → SAT	0.649	0.051	12.722	0.000	0.566	0.733	2.866	0.671	0.781	Supported
H4	SAT → CCB	0.258	0.091	2.84	0.002	0.109	0.408	4.572	0.034	0.579	Supported
H5a	PS → SAT	0.125	0.051	2.463	0.007	0.04	0.207	2.541	0.028	0.781	Supported
H5b	SS → SAT	0.101	0.045	2.233	0.013	0.027	0.177	2.441	0.019	0.781	Supported
H5c	SMS → SAT	0.088	0.041	2.155	0.016	0.019	0.153	2.001	0.018	0.781	Supported
H6a	PS → CCB	0.071	0.068	1.047	0.147	-0.041	0.183	2.613	0.005	0.579	Not Supported
H6b	SS → CCB	-0.04	0.074	0.542	0.294	-0.157	0.084	2.488	0.002	0.579	Not Supported
H6c	SMS → CCB	0.112	0.069	1.625	0.052	0.002	0.23	2.036	0.015	0.579	Not Supported

Note: 95 % confidence interval with a bootstrapping of 10,000

PS=physical servicescape, SS=social servicescape, SMS=smart servicescape, VCC=value co-creation and CCB=customer citizenship behaviour

In addition, the present study also tested the indirect effects as shown in Table 5.19. To test the mediation hypotheses, the suggestions by Preacher & Hayes (2004 and 2008) were followed by bootstrapping the indirect effect. A significant mediation exists if the confidence interval did not straddle a 0. According to the results shown in Table 5.19, PS → VCC → CCB ($\beta = 0.102$, $p < 0.05$), SS → VCC → CCB ($\beta = 0.169$, $p < 0.05$) and SMS → VCC → CCB ($\beta = 0.117$, $p < 0.05$) were all significant. No intervals were straddling a 0 for the confidence intervals bias corrected to 95 %, thus confirming the findings of the present study. Hence, H7a, H7b, and H7c were also supported.

Table 5.19 : Hypothesis Testing Using Indirect Effects

Hypothesis	Relationship	Std Beta	Std Error	t-values	p-values	BCI LL	BCI UL	Decision
H7a	PS→VCC → CCB	0.102	0.031	3.332	0.000	0.057	0.156	Supported
H7b	SS → VCC → CCB	0.169	0.04	4.241	0.000	0.104	0.236	Supported
H7c	SMS→VCC→CCB	0.117	0.032	3.719	0.000	0.071	0.174	Supported

Note: We used a 95% confidence interval with a bootstrapping of 10,000

PS=physical servicescape, SS=social servicescape, SMS=smart servicescape, VCC=value co-creation and CCB=customer citizenship behaviour

5.4.4.6 Mediation Analysis

In addition to testing the indirect effect of the hypothesis, the present study employed a bootstrapping technique for the mediation analysis to examine the mediation effect and verify the hypothesised relationship. The approach from Baron & Kenny (1986) was not used due to these limitations: (i) it did not directly test the significance of the specific indirect effect, (ii) the low statistical power was not directly tested, and (iii) it neither considered models with inconsistent mediation nor assessing the magnitude of the mediation effects (Aguinis et al., 2017; Hayes, 2009). Hence, the direct and indirect effects of VCC and CCB with physical, social, and smart servicescapes

(Sarstedt et al., 2020) were analysed using bootstrapping. This method was chosen because bootstrapping made no assumptions about the sampling distribution of the statistics or the shape of the variables' distribution besides exhibiting high statistical power (Sarstedt et al., 2020). Thus, for the PLS-SEM method, the bootstrapping approach is suitable. In addition, SMARTPLS Version 4.0.9.2. can show the mediation effects with simple calculations using the mediation effect calculator (David, 2021).

The effect size criteria from Cohen (1992), Kenny (2021), and Preacher & Kelley (2011) were reviewed to understand the mediation effects and size. There are three classifications of effect size, which are small effect (0.02), medium effect (0.15), and large effect (>0.35). A small effect size means that a research finding has limited practical applications, whereas a large size indicates practical significance (Kock, 2014). The effect size calculations in this study were calculated using the effect size calculator described by Kenny (2021). The classification comprised none (0), small effect (0.01), medium effect (0.09), and large effect (0.25). The following Table 5.20 summarises the effect size threshold.

Table 5.20 : Summary of the Effect Size Threshold

v^2	Classification of Effect Size
0	None
0.01	Small effect
0.09	Medium effect
0.25	Large effect

(Source: Kenny, 2021)

The results of the effect size threshold indicate that all three indirect effects had the same effect size. The first indirect effect PS → VCC → CCB with the specific indirect

effects of 0.101 ($v^2 = 0.102$) had small effects. Meanwhile, the second effect SS → VCC → CCB with the specific indirect effects of 0.181 ($v^2 = 0.0328$) also had small effects. The third effect of SMS → VCC → CCB with the specific indirect effects of 0.121 ($v^2 = 0.0146$) had small effects. Table 5.21 below illustrates the summary of the effect size.

Table 5.21 : Summary of Effect Size

Indirect Effects	Specific Indirect Effects	v^2	Effect Size
PS → VCC → CCB	0.101	0.0102	Small
SS → VCC → CCB	0.181	0.0328	Small
SMS → VCC → CCB	0.121	0.0146	Small

As part of this study, further mediation analysis on the full mediate and partial mediate was conducted. Providing evidence of mediation in empirical, experimental studies is critical to theory development and testing in marketing research (Kim et al., 2018). Full and partial mediation is further explained in Table 5.22.

Table 5.22 : Differences between Full and Partial Mediates

Mediation effect	Criteria	Types
Full mediate (Perfectly/Completely)	Indirect effect – significant Direct effect – not significant	Nil
Partial mediate	Indirect effect – significant Direct effect – significant	a. Complimentary – direction of hypothesis: (i) + and + (ii) - and - b. Competitive – direction of hypothesis: (i) + and – (ii) – and +

For this study, it was found that hypotheses 7a, 7b and 7c could not be supported. The specific mediation effect was further investigated for these hypotheses. Both direct

and indirect effects had a significant result. Hence, the hypotheses were categorized as partial mediate. Furthermore, the types of partial mediate were complementary as the hypothesis for a (hypothesis 1a, 1b, and 1c) and b (hypothesis 2) had direct positive effects.

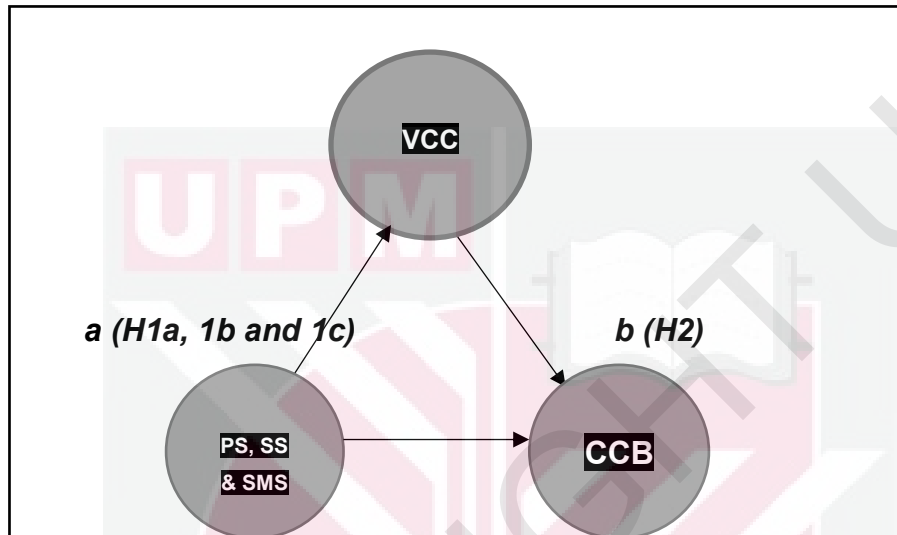


Figure 5.3 : Hypotheses in Basic Mediation Model

Table 5.23 exhibits the assessment of mediating and related indirect effects. It was proven that the indirect effects of physical servicescape ($\beta = 0.102$, $p < 0.05$), social servicescape ($\beta = 0.169$, $p < 0.05$), smart servicescape ($\beta = 0.032$, $p < 0.05$) and CCB could mediate with VCC. Hence, H7a, H7b and H7c were supported. Furthermore, the specific mediation effects were further investigated for these hypotheses. For hypotheses 7a, 7b, and 7c, both the indirect and direct effects had a significant result. Hence, the hypothesis was categorised as partial mediate. Furthermore, the types of partial mediate were complementary as the hypothesis for a (H1a, H1b and H1c) and b (H2) had a direct positive effect.

Table 5.23 : Assessment of the Mediating Effect

Hypothesis	Mediating Relationship	Beta β	Std Error	t-values	p-values	Decision
H1a	PS -> VCC	0.245	0.055	4.535	0.000	Supported
H1b	SS -> VCC	0.404	0.046	8.969	0.000	Supported
H1c	SMS -> VCC	0.28	0.054	5.198	0.000	Supported
H2	VCC -> CCB	0.419	0.084	5.057	0.000	Supported
H7a	PS -> VCC -> CCB	0.102	0.031	7.359	0.000	Supported (Partial Mediate)
H7b	SS -> VCC -> CCB	0.169	0.04	4.241	0.000	Supported (Partial Mediate)
H7c	SMS -> VCC -> CCB	0.117	0.032	3.719	0.000	Supported (Partial Mediate)

Notes: SMS=smart servicescape, VCC=value co-creation, CCB=customer citizenship behaviour, **p<0.001, *p<0.05

5.5 Chapter Summary

This chapter describes the research findings, including measurement and structural analysis. The assessment results from the survey data were presented and examined empirically. Assumptions were used to guide the analysis, and assessments were carried out to analyse the survey data rationally for each decision. Factor loadings and clarified composite reliability of a construct were used to establish scale reliability. Correlations among a construct's dimensions were examined to assess the construct's underlying dimensions adequately.

The reliability, validity and uni-dimensionality of the measurement models were evaluated. The results indicated that the measurement model for physical, social, and smart servicescape, VCC, guest satisfaction and CCB was in good condition.

This study also looked at the cause-and-effect relationship of the model. The causal path analysis revealed that CCB was affected by physical servicescape, social

servicescape, smart servicescape, VCC and guest satisfaction. The results showed that 12 out of 15 hypotheses were supported. H7a, H7b and H7c were not supported. As for the mediating effects, the value co-creation mediates the relationship between all the independent variables (physical, social and smart servicescape) and dependent variables. Hence, H1a, H1b, H1c, H2, H7a, H7b and H7c were supported. Apart from the findings, which provided valuable guidelines for hotel management, the findings also contributed to the body of knowledge through further investigations of the theory in support of the existing literature.

CHAPTER 6

DISCUSSION AND CONCLUSION

6.1 Introduction

This chapter analyses and attempts to conclude the results in the previous chapter. There are six sections. In the first section, the research questions in Chapter 1 are revisited. In section 6.2, the study objectives and constructs are reviewed. Next, the discussion of the findings is presented in section 6.3. This is followed by the research implications presented in section 6.4. These implications are divided into two categories: theoretical and managerial. Limitations of the study and recommendations for future research are presented in section 6.5. The chapter content is summarised and concluded in the last section (section 6.6).

6.2 Summary of Result and Discussion

The study aims to assess the role of servicescapes (physical, social and smart) and value co-creation (VCC) towards customer satisfaction and customer citizenship behaviour (CCB) in luxury hotels in Malaysia. The relationship and mediation tests were presented in detail. The study objectives were:

1. To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.
2. To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.
3. To investigate the mediation effect of value co-creation between servicescapes (physical, social and smart servicescapes), and CCB.

There is relatively little research to examine the role of servicescapes in CCB. Most studies look at organisational citizenship behaviour (OCB). In this section, the support for the empirical findings is discussed. The empirical discussion of hypothesis results provides information for practical implications. Based on the analysis, hypotheses were supported with p-values less than 0.05. All 12 hypotheses were supported, whereas three were not, as shown in Table 6.1.

Table 6.1 : Summary of Result

Research Objective	Hypotheses	Results
RO1: To examine the relationship between antecedents (physical, social, and smart servicescape) and value co-creation.	H1a: There is a positive relationship between physical servicescape and VCC	Supported t-value: 0.233 p-value: 0.000
	H1b: There is a positive relationship between social servicescape and VCC	Supported t-value: 0.414 p-value: 0.000
	H1c: There is a positive relationship between smart servicescape and VCC	Supported t-value: 0.283 p-value: 0.000
RO2: To examine the relationship between value co-creation and customer satisfaction.	H2: There is a positive relationship between VCC and CCB	Supported t-value: 0.436 p-value: 0.000
RO3: To examine the relationship between value co-creation and customer citizenship behavior (CCB)	H3: There is a positive relationship between VCC and customer satisfaction	Supported t-value: 0.658 p-value: 0.000
RO4: To examine the relationship between customer satisfaction and customer citizenship behavior (CCB)	H4: There is a positive relationship between customer satisfaction and CCB	Supported t-value: 0.257 p-value: 0.001
RO5: To examine the relationship between antecedents (physical, social, and smart servicescape) and customer satisfaction	H5a: There is a positive relationship between physical servicescape and customer satisfaction	Supported t-value: 0.132 p-value: 0.000
	H5b: There is a positive relationship between social servicescape and customer satisfaction	Supported t-value: 0.092 p-value: 0.000
	H5c: There is a positive relationship between smart servicescape and customer satisfaction	Supported t-value: 0.083 p-value: 0.000
RO6: To examine the relationship between antecedents (physical, social, and smart servicescape)	H6a: There is a positive relationship between physical servicescape and CCB	Not Supported t-value: 0.080 p-value: 0.130

Table 6.1 : Continued

and customer citizenship behavior (CCB)	H6b: There is a positive relationship between social servicescape and CCB	Not Supported t-value: -0.052 p-value: 0.251
	H6c: There is a positive relationship between smart servicescape and CCB	Not Supported t-value: 0.109 p-value: 0.060
RO7: To examine the mediating effect of value co-creation on the relationship between antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB).	H7a: VCC mediates the physical servicescape and CCB	Supported t-value: 0.102 p-value: 0.001
	H7b: VCC mediates the social servicescape and CCB	Supported t-value: 0.183 p-value: 0.000
	H7c: VCC mediates the smart servicescape and CCB	Supported t-value: 0.123 p-value: 0.000

6.3 Discussion of Findings

This study has seven research questions, as stated in Chapter 1. The findings have been used to answer all the research questions in this section.

6.3.1 Research Question 1: What is the Relationship between Servicescapes (Physical, Social and Smart Servicescapes), Value Co-Creation and CCB? (H1, H2, H3)

H1a, H1b, and H1c were tested to answer the research question above. The results found that physical, social, and smart servicescape significantly influenced VCC in Malaysia's four- and five-star hotels. Specifically, the results showed that each dimension of the physical servicescape —ambiance, space/function layout and sign/symbol/artifacts — could influence VCC. The same goes for all dimensions under social servicescape: perceived similarity, physical appearance and suitable behaviour. Other dimensions under smart servicescape that affected VCC were aesthetics, social presence, superior functionality, perceived interactivity and personalisation. The VCC process success depends on customer engagement (Lei et

al., 2020). In this case, the servicescapes experienced needed to be valued by the guests. Servicescapes have been proven to be one of the essential elements of the luxury hotel. It must be updated constantly as it gives value to the hotel guest, especially when adapting to the pandemic and when transitioning into endemicity — for instance, room quality and settings and hotel facilities and environment. Additionally, the demand for additional services, such as delivery, takeaway and late check-out, has also shown an increase (Wörndl et al., 2021). In addition, a previous study indicated that “rooms”, “staff”, “food”, “services,” and “location” were the top five factors that guests were interested in (Khoo-Lattimore & Ekiz, 2014). It showed that physical and social servicescape elements were essential for hotels and their guests.

6.3.1.1 The Relationship between Physical Servicescape and Value Co-Creation (H1a)

This study analysed how physical servicescape could affect VCC. Three dimensions of the physical servicescape were adopted as proposed by Li & Wei (2021), Durna et al. (2015) and Al Halbusi et al. (2020). These dimensions were ambiance, space/function layout and sign/symbol/artifacts. Based on the results, the hotel room ambiance influenced the guests’ intention to co-create value with the hotel. Hotels strive to provide excellent and satisfactory products and services to guests to initiate interaction after the consumption process. It is essential to create a long-term relationship between the two parties. In addition, it is more profitable to retain existing guests rather than attract new ones (Tien et al., 2021). Therefore, hotels have to focus and invest more in their ambiance, especially in the rooms, as most the time, guests would spend most of their time there (Ali et al., 2021). The disruptive effects of the

pandemic required hotel managers to restructure the physical servicescape (Bonfanti et al., 2021). It is unclear how hotels can survive as they try to adapt to the COVID-19 pandemic, and even if they do, they must continue to implement health and sanitation measures for guests as part of the “new normal” (Hoang et al., 2021).

A functional layout in a spacious hotel room will attract guests in the new millennium. This includes how hotels make the space attractive in relation to size (Omar et al., 2020). The hotel layout is not just dictated by the location of its furniture, fixtures and decor. Still, it is also able to create an excellent experience to instil loyalty among guests. Hotels have to make their guests feel at home. Hence, the square footage, floor configuration and spacing between furniture and fixtures will significantly impact their stay and experience.

The signage, symbols and artifacts are essential to inform guests of the hotel’s facilities. This is all the more important for first timers. The proper signage may help guests navigate the premises and inform them of its services, such as the location of rooms, coffee house, spa and swimming pool. The guests’ stay will be more enjoyable and memorable if the hotel facilities are easily accessible. The hotel symbol is associated with its branding and gives it a unique identity worldwide. Hence, guests would love to co-create with the hotel because of its branding, and they will feel at ease to share their experiences with family and friends. In addition, the hotel’s extraordinary design and artifacts, especially in the hotel room, will get the guests’ attention. Besides the physical servicescape, social servicescape can also affect VCC, which will be discussed in the next section.

6.3.1.2 The Relationship between Social Servicescape and Value Co-Creation (H1b)

Empirical data supported hypothesis H1b, in which a positive relationship exists between social servicescape and VCC. The finding confirms previous research that social servicescape could impact VCC (Al Halbusi et al., 2020). In this study, the social servicescape was focused on the relationship between guests and hotel employees. According to Bitner (1992) and Davari et al. (2021), employees and servicescape are two crucial elements in determining service delivery success in tourism and hospitality.

Based on the results, the respondents mostly looked at the hotel's physical environment and employees in judging the experience of their stay. Therefore, employees must show their warmth and treat guests fairly without practicing double standards or discrimination. This is stated in the dimension of perceived similarity. The study found a significant relationship between social servicescape and VCC and supported the results of existing literature on this topic (Al Halbusi et al., 2020).

In addition, previous research in the business and psychology literature suggested that a match between customers and employees could lead to positive outcomes for both consumers and the company. Among the theories involved were the similarity-attraction theory (Tsui et al., 2015), the theory of customer discrimination (Becker & Geer, 1957) and the social identity theory (Turner & Oakes, 1986). In these examples, familiarity and desire to be around people with similar traits could indicate the characteristics of the company.

Additionally, these theories highlighted the preferences of customers in a service environment with employees similar to themselves, even if they didn't directly interact with them. Employees would intuitively understand the needs and preferences of guests well when they share the same background (Yrjölä et al., 2019). For example, employees with the same background, lifestyle and locality of a particular customer could better understand the latter's likes and dislikes, changing needs and particulars. Hence, customers would feel more comfortable in an environment where they were surrounded by people who were similar to themselves (Martin & Pranter, 1989), including employees and other customers. However, as guests checking in at four- and five-star hotels tend to come from various backgrounds, employees must act accordingly to suit their preferences. Hence, it would be advantageous for the hotel to have employees of diverse backgrounds who might learn from each other's traits. With that, it was crucial to make guests feel delighted and comfortable as it would enhance their behavioural intentions, such as co-creating with the hotel and providing benefits for both guests and the hotel. Hence, happy and motivated employees would result in happy and satisfied guests (Yrjölä et al., 2019).

In the dimension of physical appearance, hotel guests will be impressed by the employees' dress and attire. It portrays the image of the hotel as the employees are the first point of contact (Nguyen, 2006). However, in the service industry, image assessment is challenging mainly because of its intangible nature (Nguyen, 2006). Due to that reason, to make it tangible, the management of hotels will standardise their employees' appearance by providing uniforms (Knezevic et al., 2015). When guests feel happy, and their stay is worth their money, it will encourage them to form a good relationship with the hotel and its employees. Hence, this will lead to VCC with the

hotel. Therefore, the human resource department of hotels must be aware and continually educate their employees to take care of their physical appearance.

On the other hand, the behaviour of the employees is also vital to guest perception (Nguyen, 2006). To give the best service and create good relationships with guests, employees should behave slightly similar to the guests. For instance, employees can pay personal attention to the guests professionally without becoming too patronising. The guests will feel appreciated by such behaviour.

The results of this study concurred with previous research (Al Halbusi et al., 2020) regarding the significant relationship between social servicescape and VCC. The results showed that perceived similarity, physical appearance and appropriate employee behaviour could influence the VCC of hotel guests. On the other hand, if the employees do not deliver the right service to guests, it would lead to negative effects; as a result, guests might not return to the hotel and maybe even all its related establishments (Ali et al., 2021).

6.3.1.3 The Relationship between Smart Servicescape and Value Co-Creation (H1c)

In this study, the empirical data was found to have a positive relationship between smart servicescape and VCC. It confirmed and extended the statement from previous studies that focused on the smart environment in the food and beverage sector, healthcare services and a smart city, all of which could influence VCC behaviour (Kang et al., 2019; Kashef et al., 2021; Leclercq & Rijshouwer, 2022). To the best of the researcher's knowledge, this study seemed to be the first to apply the particular concept in the hotel industry. In addition, the technology element was not highlighted

much during guest reviews. Despite the COVID-19 pandemic, the respondents still enjoyed their hotel experiences due to the high-tech nature of the hotel operations (Davari et al., 2021). This showed that hotel guests appreciated a smart environment (a combination of human service and technology).

In this new era, people are learning to embrace technological advancements. It is even crucial when the customers' input is becoming critical in VCC with the increased digitalisation of services (Khan & Hashim, 2020; Neghina et al., 2017). It is said that technology may allow hotel staff members to interact more with guests by relieving them from the burden of their routine work (Buhalis & Moldavska, 2021). For example, during the check-in and check-out process, the employees can extend a personal touch by enquiring about the guests' experience when operations, such as room key collection, billing and payment, are automated at the front desk. In fact, hotels are increasing their investment in self-service kiosks to address customer needs and reduce queues at their front desks. Guests may get their room keys in the form of keycards from the self-service kiosks and check into their rooms without going through the front desk (Kim et al., 2022).

With the increasing role of technology, smart services are also being implemented in the food and beverage industry to create a better experience (Abdelhakim et al., 2023; Leung & Loo, 2020). For example, the management of Johnny's (a restaurant selling Thai food and steamboat) deployed robot servers in 2021 to reduce the workload of their waiters to allow them to focus on other tasks such as record keeping of the stocks and sales and marketing tasks. The employees can interact more with diners. Besides that, it can overcome the problem of a lack of employees in the food and beverage

industry. From the other point of view, the usage of robots in restaurants can attract customers to dine in to experience the new concept of service delivery and increase customer satisfaction (Seo & Lee, 2021).

In the service industry, robots and self-service devices have allowed customers to take control and personalise their own desired services. At the same time, AI and machine-learning abilities provided indicators of customer behaviour and revenue forecasting. From the researcher's observations, four and five-star hotels in Malaysia, such as Four Seasons Kuala Lumpur and St Regis Hotel, have embedded technology in their room operations, such as tablets to control the smart curtains and other fixtures in rooms through artificial intelligence and the Internet of Things (IoT). In addition, guests can communicate with employees online such as using the hotel's mobile application and social media platforms such as WhatsApp. With that, the dissemination of information will be easier and faster. This is to cater to guests who prefer the combination of human touch and technology in service delivery (Seyitoğlu & Ivanov, 2020).

A hotel in Malaysia that may be truly considered a "smart hotel" is the Crockford Hotel in Genting Highlands, where operations are controlled online using the IoT. Most facilities and fixtures in the hotel are connected to the Internet; its rooms may be controlled by a smart tablet (control panel) provided by the hotel or even through the hotel app on the guests' smartphones. The housekeeping trolleys or carts are embedded with an intelligent system so that the management may keep track of room service and supplies (See Appendix 6.2). However, not all luxury hotels will choose to use the latest technologies in their operations. It depends on their needs, guest preferences, hotel location and financial condition.

A smart environment in a hotel room may attract more guests to stay out of curiosity (Petrevska et al., 2016). This is especially true among the new generation (Millennium and Gen Z), who are tech-savvy and enjoy experiencing the latest technologies as their lifestyle (Moon & Chan, 2022). These guests will take pictures and spread the hotel information via their social media accounts, influencing their friends and followers to visit the hotel. Some hotels even provide a nice background for guests to snap photos and capture the memories of their stay. In times of pandemic, the usage of technology may also help the industry to ensure the safety, cleanliness and hygiene of their premises (Awan et al., 2020; Ivanov et al., 2020; Khan & Hashim, 2020). A recent study stated that social distancing and reducing in-person contact may increase the purchase intention of hotel guests (Kim & Liu, 2022). When the technology and environment attract the guests, they will co-create value with the hotel and have a good relationship in the future (Femenia-Serra et al., 2019; Solakis et al., 2021).

When the guests feel satisfied, it will increase the VCC behaviour among guests, which benefits the hotel and its employees. It is highlighted that hotels are becoming more reliant on technology (Kim & Montes, 2021). According to the research by Sun et al. (2016), the main benefit of installing smart networks is the free exchange of data; devices such as smart sensors may be connected anywhere, and big data transfer is facilitated from IoT to devices. With the benefit gained by the hotel, they will provide the same environment for the guests to experience and attract them. Hence, the guest will be satisfied with the hotel's smart environment.

Guests who are comfortable with a mix of human service and technology operations in hotel rooms will co-create value with the hotel and establish a long-term

relationship (Kim & Montes, 2021; Mehrotra, 2019). According to Kijima & Arai (2016), the interactions between the guests (customers) and providers (hotel employees) need to be experienced, remembered and evaluated.

A smart environment focuses more on technology assistance (robot or smart equipment), but guests will still prefer human service (Husain et al., 2016). It is believed that the demand for human service is increasingly proportional to the age of the guests (Wu et al., 2020). Kijima & Arai (2016) emphasised that value is co-created when there is an interaction between service providers and customers.

As hotel guests vary in age, the technology installed in hotel rooms should be user-friendly for all (Shin et al., 2019). According to Wu et al. (2020), 23.5 % of their respondents aged 45 and above preferred human services more than technological self-service. This is not because their knowledge of technology was low but because the older guests felt comfortable interacting with another human beings (Wu et al., 2020). In this study, most participants were in the younger age group, which was expected as they were the ones who frequently used social media through which the survey was conducted. The use of technology should also ensure that potential guests can easily obtain information, such as the hotel features and reviews. The information should be precise and updated with the latest news. With the competitive environment in the hotel industry, it is important to furnish customers with accurate information, such as room rates and pictures of the hotel rooms and facilities.

The technology used in the hotel should respond to the guests' needs quickly. This is in line with the study by Bilgihan et al. (2011), Gosjen et al. (2023) and Schrier et al.

(2010), who highlighted that the system and technology used in the hotel needed to be flexible with a fast response rate (Yang et al., 2021). This could be seen in the result of this study that showed 72.8 % (217 respondents) of guests preferred the facilities in their rooms to be controlled online with a tablet or smartphone. Meanwhile, 43.6 % (130 respondents) liked to use their smartphones to communicate with employees via WhatsApp or a platform created by the hotel. Even though guests preferred online technology, safety was still the main priority. This was indicated by the 28.2 % of total guests (84 respondents) wanting to use the peephole feature on their smart devices to monitor outside their room door.

Luxury hotels provide various in-room technology based on the hotel's budget and guests' preferences. It is essential to set the hospitality industry on the path to a high-tech and low-touch future due to the COVID-19 pandemic (Hao & Chon, 2022). Hence, hotels must consider the need for sustainable technology that is most preferred and guest friendly. According to Victorino et al. (2009), hotels provide technology according to their understanding and in trying to meet their guests' needs. Therefore, the employees need to get to know their guests as close as possible through human interaction so both the hotel and guests can co-create value in the business.

Hence, measuring VCC is complex and encompasses many rational and experiential dimensions (Kijima & Arai, 2016). This study covers the experience of the environment in the hotel that consisted of physical, social and smart servicescapes. The value is usually determined by the beneficiary (Vargo & Lusch, 2008), who, in this study, were the guests. But the absolute value of the co-creation process comes from the guests, the service provider and the hotel. So, the hotel should focus on

providing good facilities and a comfortable environment. As the country transitions into endemicity and gains experience from the pandemic, there are changes in guests' needs that hotels must consider to maintain a good relationship between both parties (Miao et al., 2022).

6.3.1.4 The Relationship between VCC and CCB (H2)

In this study, the empirical data found a positive relationship between VCC and CCB (H2). Previous research on VCC has also determined a positive relationship between VCC and CCB (Al Halbusi et al., 2020; Assiouras et al., 2019). In this context, the co-creative experience presents itself as an opportunity for the customer to participate actively in personalised value creation (Almeida & Campos, 2020). In addition, there was also a study on the dark side of VCC towards CCB (Heidenreich et al., 2015). In this study, the VCC had led to CCB. However, studies on the relationship between VCC and CCB are still lacking (Guan et al., 2022).

Most research on consumer behaviour examined the brand community, such as loyalty, consumer satisfaction and purchase intention. It was highlighted that value might lead to business results (Dabholkar & Sheng, 2012; Guenzi & Troilo, 2007; Wu, 2011), but this study looked at CCB. There were attempts by a few researchers to explore consumer behaviour participation beyond their purchases, such as VCC. According to the research done by Guan et al. (2022), the VCC depended on CCB instead of their actual participation. However, this study demonstrated the other way round, where CCB depended on VCC. This could be due to the ambiguity of the VCC theory (Ranjan & Read, 2016).

It is known that knowledge could contribute to the guests' future behaviour. The different types of knowledge obtained from studying guests from diverse backgrounds would create innovation (Sugathan & Ranjan, 2019), which was a key to effective service (Kijima & Arai, 2016). According to the social identity theory, consumers would contribute more to the community when their knowledge about the community increased (Bhattacharya et al., 1995; Dessart & Veloutsou, 2021). Hence, they would portray the CCB behaviours, such as helping others and recommending and providing feedback (Deng et al., 2021; Hsu et al., 2015).

Equity or fair treatment from the hotel may lead to CCB when guests experience the servicescapes in the hotel room. The feeling of being treated equally is essential. For equity, the hotel is willing to share control of guests' empowerment and their desire to contribute towards their role in co-creation activities (Ranjan & Read, 2016). The equity practice by the hotel will lead to behaviour such as CCB, as guests willingly contribute to the hotel due to the empowerment they receive.

The interaction between guests and employees is essential to inculcate CCB. Verbal interactions and body language play a significant role as they are the primary behaviours in co-production (Ranjan & Read, 2016). Good interaction will help increase the opportunity to understand, share and fulfil the guests' needs, besides simultaneously assessing and adapting resource commitments (Merz et al., 2009; Prahalad & Ramaswamy, 2004). Numerous studies have confirmed that active customers were driven by their interactive, long-term engagement (Ordanini & Parasuraman, 2011) and constructive participation in VCC (Guan et al., 2022).

Furthermore, the experience gained from a stay will affect guest behaviour. In this case, it involves the experience that meets or exceeds guest expectations. According to Sugathan & Ranjan (2019), VCC helps customers set realistic expectations, reducing the chances that their expectations will be disconfirmed. On the other hand, co-creation helps the service provider identify the consumers' needs and better meet those needs. Higher service quality and realistic expectations support a better customer experience. Hence, guests are more likely to engage in CCB and help the hotel's business to remain sustainable.

Personalisation of service has become one of the fundamental reasons for hotels to co-create their guest experience (Sugathan & Ranjan, 2019). It has gained managerial attention because the services have a high level of uniqueness and novelty (Hinson et al., 2018). In addition, consumers come from different identities and cultural backgrounds (Lugosi, 2014). It is suggested by S-D logic that successful organisation-customer VCC will lead to a more personalised experience (Prahalad & Ramaswamy, 2004; Ranjan & Read, 2016; Vargo & Lusch, 2004b; Vega-Vazquez et al., 2013). The co-creation of tourism experiences is a good starting point to acclimatise consumers and set appropriate expectations for the service. Therefore, tourism and hospitality service providers have been looking for ways to engage customers in the value-creation process to provide personalised experiences (Lei et al., 2020) to gain a good response from the guests. Hence, the positive relationship shown in this study proves that most four- and five-star hotels in Malaysia have provided personalised services to their guests, which led them to co-create value with the hotels (Sugathan & Ranjan, 2019). Prahalad & Ramaswamy (2004) mentioned that consumers want to interact and

co-create value with the organisation, especially with the emergence of the attractive and interactive communication tools such as medial social.

Based on the S-DL theory, value is always co-created with customers (and others) rather than solely distributed by the organisation (Lei et al., 2020; Merz et al., 2009; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2004b). Thus, management and hotel employees may better understand guests and maximise their service offerings. In this case, it can be said that the relationship between these two stakeholders is essential in VCC. This is probably because the Internet and technology may facilitate customer demand (Buhalis & Leung, 2018; Kohler et al., 2011; Lei et al., 2020; Neuhofer et al., 2015).

In addition, guests can choose activities and plan their holiday packages through Online Travel Agencies (OTA), such as Agoda, Traveloka and Booking.com, to maximise their accommodation experience. This was reflected by the fact that when consumers participated in co-creating a product or service, this would lead to positive outcomes such as relationship intentions (Asatryan & Oh, 2008; Jussila et al., 2015).

Hypothesis H2 was significant and part of the study's motivation as there was limited understanding of how guest VCC affected tourism experience and behaviour (Sugathan & Ranjan, 2019), specifically in the hotel industry. The study by Vargo & Lusch (2004b) on co-creative S-DL marketing research has produced significant interest in VCC over recent years (Ranjan & Read, 2016). Hence, the importance of VCC, which describes the collaboration between multiple stakeholders, has gained the attention of academics and industry practitioners to slowly clear the ambiguity in this

area (Prahalad & Ramaswamy, 2000). That has driven this study to look at the influence of VCC on CCB, even though knowledge in the area is limited.

6.3.1.5 The Relationship between VCC and Guest Satisfaction (H3)

This study analysed how VCC affected CCB. Empirical data supported hypothesis H3, in which a positive relationship exists between VCC and CCB. This concurred with previous studies showing positive and significant relationships between VCC and guest satisfaction (Al Halbusi et al., 2020; Solakis et al., 2021; Vega-Vazquez et al., 2013). However, there was a study that highlighted value that did not affect satisfaction (using the DART Model) (Solakis et al., 2021), and corporate co-creation had failed to attract customer satisfaction and participation (Kohler et al., 2011). Thus, in this study, it was observed that the co-creation value gained by guests from the servicescapes (physical, social and smart) had led to satisfaction.

Hotel guests nowadays are knowledgeable, informed, educated, selective and demanding (Ali et al., 2021). They want to receive more value from the products and services that they paid for (Vega-Vazquez et al., 2013), such as quality, functionality and modern features (González-Mansilla et al., 2019). Hence, the value from experience may lead to customer satisfaction (Dabholkar & Sheng, 2012; Guenzi & Troilo, 2007; Wu, 2011). In this study (H3), the VCC had led to guest satisfaction.

The hotels need to identify their guest requirements to anticipate and satisfy their experience in using the facilities. This is where knowledge of guest backgrounds becomes important. The benefits gained from both parties will allow the fostering of a long-lasting business relationship between hotels and guests.

In addition, guests who are satisfied with their hotel stay usually feel that the management and employees have treated them fairly. The hotel has to focus on satisfying guests to gain a competitive advantage. These findings imply the higher satisfaction level of hotels that consider the co-creation process with guests and treat them equally as part of the cycle. The improved guest satisfaction may be attributed to increased customer equity (Hao & Chon, 2022).

This study found an interaction between the hotel and guests in service delivery. The results showed that 35 % (111 respondents) agreed that hotels were open to any ideas and suggestions to improve the service. Communication and interaction of the ideas could be done verbally or in writing. The results supported the fact that it was the hotels' responsibility as the service provider to initiate interaction and create meaning and value to gain knowledge and provide service satisfaction for guests (Kijima & Arai, 2016). Hence, the facilities, products and environment provided should consider and match the guests' latest needs and wants.

When a hotel provides the latest trends for guests, it will create a good experience. Although providing a guest experience is a normal thing that is always discussed and looked forward to by the hotel and guests, co-creation accomplishes the process and leads to customer satisfaction (Chan et al., 2010). It further leads to economic value, and guests can benefit from customization and control of the service. They will be more than satisfied, and guests will feel delighted (Dabholkar & Sheng, 2012)

In addition, Internet and communication technology advancements have allowed the hotel industry to transform its facilities and services into a more personal experience

(Neuhofer, 2016). This happens when guest data, such as length of stay, money spent and purchasing information, are recorded in the hotel's system. Sometimes, personal data, such as allergies and favourite food, are also collected. With all these data, hotels can personalise their services to the guests accordingly (Solakis et al., 2021). This is all from the VCC process that leads to guest satisfaction. Guests are looking for this as they can co-create value from the facilities and services they experienced and interlink their travel and stay at the hotel with their daily lives. When guests feel comfortable and get personalised service, they will be satisfied with the experience and share it with their peers. Hence, the hotel gains a competitive advantage in the form of free advertising and promotion by word-of-mouth (Chiu et al., 2015). It is important to note that satisfying and retaining guests is a crucial element in spreading the word about the hotel's good service (Ali et al., 2021).

Besides that, when guests are involved in VCC and share their good experiences and information with the hotel and other guests, they will indirectly build a relationship with the hotel (Miao et al., 2022). For instance, there are many avenues to provide travel and accommodation reviews online, such as social media (hotel groups) and OTA platforms (Agoda, booking.com and trivago). Hotels usually respond to their guest comments, hence the creation of a relationship.

VCC is necessary and strongly linked with guest satisfaction. Therefore, the co-creating value from the experience of using the servicescape in the hotel room is essential for both parties (guest and hotel). This finding follows the notion that along with the basic facilities provided by the hotel, such as servicescape, the VCC acts as the information to the service provider as to whether they are satisfied or dissatisfied.

It is proven that most guests will be happy when value is gained from the servicescapes experienced (Al Halbusi et al., 2020). As for this study, the results showed that 41 % of guests were satisfied, and the hotels had met their expectations.

6.3.2 Research Question 2: What is the Relationship between Servicescapes (Physical, Social and Smart Servicescapes), Customer Satisfaction and CCB? (H4, H5 & H6)

This study explored whether guest satisfaction could lead to CCB in Malaysian four- and five-star hotels.

6.3.2.1 The Relationship between Guest Satisfaction and CCB (H4)

Based on the results for H4, the positive relationship between guest satisfaction and CCB was in line with previous studies (Abdou et al., 2022; Al Halbusi et al., 2020; Assiouras et al., 2019; Hwang & Lee, 2019). Therefore, the hotels must ensure that their guest satisfaction is maximised to reap benefits in the future, such as creating a solid relationship between guests and building loyalty (Anwar & Balcioglu, 2016; Zhu et al., 2016). For instance, satisfied guests may engage in CCB by providing suggestions on how to give them a satisfactory experience to front desk employees upon check-in or out. The immediate responses by the employees are vital in starting a relationship on a good note. Other than that, VCC gained from experiencing the hotel lobby, the food and beverage outlet, and other facilities are also essential for guest perception (Paraskevas, 2001; Tung et al., 2017; Wu & Liang, 2009). Those touch-points have been observed to lead to positive future behaviour, such as CCB.

Guest satisfaction cannot be underestimated. A dissatisfied guest may be considered a lost business opportunity for all eternity as they will never return and will even

discourage their peers from staying in the hotel (Ali et al., 2021; Assiouras et al., 2019; Kim et al., 2020). In addition, a study by Hossain et al. (2020) sees the potential of CCB as a new and dynamic approach towards its outcomes and enhancement to the hotel industry. CCB will help hotels and other service providers in delivering good service.

Hypothesis five is divided into three sub-hypotheses (H5a, H5b and H5c). It is of high importance to deliver high-quality service as it will lead to an increase in the level of customer satisfaction (Ali & Anwar, 2021). Guest satisfaction occurs in every stage of service delivery. For instance, from the moment they enter the hotel entrance and check-in to their room. Numerous studies have confirmed a positive correlation between positive experiences and customer satisfaction (Ghani et al., 2023; Ali et al., 2021; Ali et al., 2015; Paendong, 2021; Serra-Cantalops et al., 2020). In this study, the positive experiences would come from the package of three antecedent servicescapes (physical, social and smart). Furthermore, from the guest satisfaction level, most hotels were seeking to implement quality improvement systems for competitive advantage (Ali et al., 2021).

6.3.2.2 The Relationship between Physical Servicescape and Guest Satisfaction (H5a)

Physical servicescape is the main element and contributor towards guest satisfaction in four- and five-star hotels in Malaysia. The hotels are considered an essential element of the tourism industry because they meet the most critical need of the guests, which is accommodation (Prabhu, 2020). Additionally, a study by Ghani et al. (2023) identified four dimensions of destination service quality: health and hygiene,

accommodation, shopping, and information facilities. Hence, accommodation as part of the hotel's physical servicescape must be well handled. Furthermore, the hotel should make instant improvements, such as creating an exciting ambiance and additional decoration with attractive promotions to enhance guest satisfaction, even though they cannot change their room setting. This is essential as the hotel environment has been categorised as the third element that received negative guest comments besides expensive room rates (Razli et al., 2022).

Similar work has also been pursued by Countryman & Jang (2006), Huang & Tsaih (2021) and Nanu et al. (2020), in which the ambiance of the hotel lobby leads to first impression and simultaneously satisfies guests in the first place (Han & Kim, 2009; Triana et al., 2018). Specifically, it is suggested that hotel managers should focus on visual dimensions that the guests can see. For example, the hotel lobby and public areas can be designed to highlight food and beverage outlets to attract social gatherings. In contrast, quiet and secluded areas may attract people who are looking for a private engagements or business travellers looking for a calm workplace (Line & Hanks, 2019).

According to Mehrabian & Russell (1974), the S-O-R framework demonstrated a strong influence of the physical environment on human behaviour. Hence, hotel management has increasingly paid attention to colour, temperature and music to enhance the ambience of their premises and customer satisfaction (Ali et al., 2015; Leenders et al., 2019). This is essential as good ambience, especially in the lobby, may affect the guest's decision to spend more money on the hotel facilities (Mehrabian & Russell, 1974).

Besides the ambiance, the space or design of the physical servicescape is essential. Hotels have various floor spaces, including the lobby, guest rooms, coffee house, conference rooms and ballroom. It should be functional based on the needs and wants of the guests (Lockwood & Pyun, 2019). Hence, to determine the efficiency of hotel operation by looking at the hotel servicescape planning and ensuring that the servicescape supports and reflects the service being offered.

However, similar work has also been pursued by Triana et al. (2018), in which the hotel layout showed no effect on guest impression and satisfaction. This might be attributed to the study being conducted in three-star hotels, where the premises were basic and minimal in design. In the case of upscale hotels, the influence of the physical environment would become more significant. Hence, for the rates charged, guests of three-star hotels could not expect more on the layout compared with four- and five-star hotels (Lockwood & Pyun, 2019).

Hotels have an increasing need and scope for proper and clear signage. Some special cases need to be considered. For instance, special facilities must be installed for older adults and people with special needs. In this study, 6.4 per cent of respondents were aged 55 and above. The percentage of elderly respondents could be considered small, but their feedback was considered essential as they had the spending power to stay in luxury hotels. This might partially be attributed to low Internet literacy among older adults, who were not savvy enough to participate in the survey that was conducted online (Boulus-Rodje et al., 2015; Marston & Van Hoof, 2019; Yang et al., 2021). For disabled people, the provision of special facilities needs to be considered (Sayed & Elsaid, 2023). This could be seen in most hotels, irrespective of stars, where basic

facilities like Braille are printed on elevator buttons for people who are blind, and ramps are built at the entrance for wheelchair users.

In summary, the main advantage of physical servicescape is ensuring the physical facilities are attractive to guests. Given the rising prevalence of four- and five-star hotels in Malaysia, it is essential to provide facilities that suit the needs of all guests. Key to this is the need for guest feedback and comments.

6.3.2.3 The Relationship between Social Servicescape and Guest Satisfaction (H5b)

Empirical data supported hypothesis H5b, which had a positive relationship between social servicescape and guest satisfaction. In recent years, research has focused on the impact of social servicescape in the hospitality industry (Line & Hanks, 2020). This servicescape is believed to be directly related to guest satisfaction (Bitner, 1992). The role of social servicescape is essential and influenced by many factors, namely, perceived similarity, physical appearance and appropriate behaviour. According to Anwar & Shukur (2015), employees play a huge role in determining a business' success.

In the tourism and hospitality industry, employees are the ones who deliver and provide services to guests, which subsequently creates and maintains customer satisfaction (Nguyen, 2006). However, hospitality employees generally receive low wages, with little or no benefits compared to their strategic contributions to company performance. For example, the front desk staff counts the most in customer ratings of a hotel's quality of service (Hartline et al., 2003). This may become a problem for the business when the employees become demotivated and resign from their jobs, leading

to high turnover in the industry. However, in Malaysia, there seem to be enough human resources for hotels to cope with such a situation, hence leading to the creation of an employers' market.

For social servicescape, perceived similarity is one of the vital dimensions. This study focused on employee and guest similarity in terms of background. Even though Line & Hanks (2020) focused on the social interaction between employees and guests, similar behaviour between employees and guests may affect guest satisfaction and other behaviours (Hanks & Line, 2018; Martin & Pranter, 1989). As such, guests believe that the similarity between them and hotel employees will assist in predicting and understanding their desires, needs, and preferences (Line & Hanks, 2020). Hence, customers prefer to interact with similar employees (Martin & Pranter, 1989).

Another factor influencing guest satisfaction is the employees' physical appearance (Hanks & Line, 2018; Knezevic et al., 2015; Martin & Pranter, 1989). The employees' appearance, in turn, affects the service delivery process. Customers prefer interacting with physically attractive employees (Tsai et al., 2012). For instance, their facial and hair appearance, body shape and friendly disposition are significant features that make guests want to interact with them (Baker & Kim, 2018; Magnini et al., 2013). In response, employees will be more willing to service the hotel's guests, such as assisting them in clearing the check-in process with minimal hassle. Therefore, the employees' characteristics and behaviour may significantly impact customer satisfaction (Pizam, 2016), and behaviour is essential in the functional element of delivering services (Nguyen, 2006). However, this may lead to a subtle form of discrimination as hotels will then hire people who show a certain trait only.

Even though technology takes place in most luxury hotels, employees still have a role to play in the industry. They are responsible for providing human service for guests that technology cannot fulfil. Hence, hotels are offering a blend of human services and technology in their environment to ensure maximum guest satisfaction.

6.3.2.4 The Relationship between Smart Servicescape and Customer Satisfaction (H5c)

As few studies investigated the smart environment in the hotel industry, this study tried to explore the subject in the hotel industry in Malaysia. This provided the opportunity to explore a new and relatively unexplored area of smart servicescape in the country, which was gaining importance in the process of adapting to the COVID-19 pandemic. A similar study was conducted (Jeong & Shin, 2020) in a different research setting. The present study data showed a significantly positive relationship between smart servicescape and guest satisfaction. This concurred with a previous study in which up-to-date technology could increase guest satisfaction (Chen, 2015).

The growth in the use of smart services is due to the rapid development of the IoT and Internet accessibility. It is known that smart servicescape is unique as it merges the online and offline environments (Kang et al., 2017). According to a survey in this study, 84.6 % of respondents preferred combining human service and technology in the hotels where they stayed. A related study found that guests liked to use the most straightforward and helpful technology facilitated by the IoT, such as using a tablet to adjust the curtains in their room (Bilgihan et al., 2016). The survey results in this study showed that most guests (72.8 %) also liked to control the curtains, lights and air-conditioning in their rooms through a tablet or handphone application. There was only

a small percentage of services, such as the use of robots in the food and beverage and housekeeping departments, which were accepted by guests (Table 5.7). This contradicted the scenario in the financial industry, whereby the focus was on the massive deployment of artificial intelligence (AI) and minimisation of human workforce to increase customer satisfaction (Mehrotra, 2019).

Aesthetics is essential in today's hotel design (Lin, 2022). The study stated that aesthetics was part of the smart environment. In this case, the technology used in a smart environment must give pleasure, attract guests and have a good appearance. Those criteria could attract the interest of guests in using the technology provided and creating sensory experiences that enhance satisfaction and loyalty (Alfakhri et al., 2018). For instance, a tablet used in the hotel room to control the room fixtures should have attractive features or interfaces to make the guests want to use them.

However, the service delivery process in a smart environment may need the support of human employees, especially in terms of trouble-shooting. Employees can help guests to use a system whenever they face difficulties, thus minimising disruptions and increasing the satisfaction of their stay. Human service is an essential resource, especially in trouble-shooting system failures. For instance, problems that occur during automated check-in have to be resolved by a human employee to ensure that guests have an uninterrupted stay in the hotel. Guests will not feel disappointed if hotels have employees on standby in case of difficulties (Petrevska et al., 2016).

When relying on a smart system in daily operations, the hotel management had no choice but to ensure that their hardware, software, Internet connection and main

servers were well maintained. For instance, the fixtures and facilities in the rooms should be in working order, including the tablet provided to control them. Apps created to control the system should also be constantly updated to ensure that they are fault-free, besides ensuring guest safety and security by preventing intrusion from hackers. The highest risk for hotels depending on a smart environment is a system failure, which may disrupt entire operations. It is more dangerous when hackers and criminals compromise the system with the intention of stealing data or gaining access to rooms to harm the guests. Hence, smart hotels may have allocated a significant business budget for a cybersecurity team to protect their operations.

Most four- and five-star or luxury hotels are well known for their high-level and personalised interpersonal interactions between employees and guests. With the technology era, they have extended and actively adopted various technologies to enhance guest experience and satisfaction (Jeong & Shin, 2020). The role of perceived interactivity plays a crucial part in implementing the technology environment in the hotel, as guests will feel that it is easy and not something new to them. The study showed a small percentage of respondents aged 45-54 (17.1%) and 55 and above (6.4 %). Therefore, the system and technology used should be guest-friendly for all ages. Suryotrisongko et al. (2017) suggested that the technology used should be accessible, safe and flexible. Besides that, the hotel has to consider customisation and personalisation of their services even though the technology is part of the service delivery and daily operation.

The service delivered by luxury hotels is known for its personalisation and customisation features (Kang et al., 2017; Petrevska et al., 2016) due to in-room

technologies (Petrevska et al., 2016; Van Hoof et al., 1995). In tourism, the customer is the domain for delivering personalised services based on the technology applied (Neuhofer et al., 2015). A study on smart tourism technology (STT) highlighted that personalised services might maximise the travel experience and satisfy tourists' satisfaction in smart tourism destinations (Madu & Madu, 2002; No & Ki, 2015).

With the IoT becoming prominent in tourism and hospitality, the role of humans in service delivery has decreased to 30 % in the industry (Assiouras et al., 2019). In this case, the management of hotels needs to evaluate the best integration between humans and technology (Yang et al., 2021). Even though smart technologies are limited in tourism, they have been widely used in other societies and industries (Neuhofer et al., 2015). From time to time, tourism and hospitality will pick up the trend to increase their competitive advantage. This is because technologies have evolved into integral tools for experience creation (Gretzel et al., 2015).

6.3.2.5 The Relationship between Physical Servicescape and CCB (H6a)

H6a, H6b, and H6c were tested to answer the research question above. The results found that the influence of physical, social and smart servicescapes on the CCB of hotel guests was insignificant.

The effects of the physical environment on human behaviour have become the subject of numerous research, specifically in business (Han & Ryu, 2009). However, the present study found that the direct relationship between physical servicescape and CCB was insignificant. This was due to the service delivery itself. Hotel guests need

to experience the environment before they become interested in engaging in CCB. Nevertheless, a study by Wei et al. (2018) showed a negative relationship between physical servicescape and CCB when the environment was crowded. For instance, when there is a frequent long queue to check-in or check-out of the hotel. This tends to form a poor impression of the hotel as guests will be tired and looking forward to relaxing in their room or returning home. They do not appreciate being kept waiting for a long time to settle their dues with the hotel. Hence, they refuse to engage with CCB.

Guests' expectations and standards have a significant impact on hotels. In 4 and 5-star hotels, where guests often have high and consistently met expectations for the physical servicescape, the physical environment may be perceived as standard or adequate. As a result, it might not strongly influence their Customer Citizenship Behavior (CCB).

Other dominant factors, such as service quality, can also play a significant role. Guests might prioritize service quality and personal interactions over physical attributes when deciding to engage in Customer Citizenship Behavior (CCB). If the service provided is exceptional, it may overshadow the impact of the physical servicescape on CCB.

Additionally, the uniformity of the physical servicescape contributes to this issue. In luxury hotels, the physical environment may be quite similar across different establishments, resulting in less variation in its impact on Customer Citizenship Behavior (CCB). If all hotels offer comparable levels of physical comfort and aesthetics, guests may not perceive significant differences that would affect their behavior

Guests in luxury hotels often have diverse preferences and expectations, which could weaken the relationship between physical servicescape and Customer Citizenship Behavior (CCB). Some guests may prioritize other aspects of their stay, such as luxury amenities or personalized services, over the physical environment.

6.3.2.6 The Relationship between Social Servicescape and CCB (H6b)

Hypothesis 6b proposed to examine the relationship between social servicescape and CCB. Surprisingly, the findings did not support the hypothesis. From the researcher's observation, no previous study had examined this direct relationship. Previous research typically looked at the effects of the servicescape towards CCB with other factors that mediated the relationship. For instance, customer engagement (Shuhao Li & Wei, 2021) and VCC (Al Halbusi et al., 2020; Roy et al., 2019).

6.3.2.7 The Relationship between Smart Servicescape and CCB (H6c)

The assumption of hypothesis 6c was not supported. There was insufficient evidence to support the relationship between smart servicescape and CCB. However, this study revealed a negative relationship between smart servicescape and CCB (H6). The results were similar (Jeong & Shin, 2020; Ozturk & Hancer, 2015), highlighting that technology could positively and negatively affect individuals' behaviour. In this study, the behaviour intention was CCB. The study showed negative behaviour intention.

Furthermore, a study reconfirmed that the previous hospitality competence literature had neglected technology competence, making the current methods and ways of thinking unsuccessful in the smart era. In addition, current hospitality employees are good at offline transactions (face-to-face and traditional tasks). There is a gap in

online-related abilities and attitudes (Hsu & Tseng, 2022). Research in this area is of great interest even though the definition of smart in the hotel is subjective. This is due to the intangible nature of human services provided by the hotel.

6.3.3 Research Question 3: Does Value Co-Creation Mediate the Relationship between Servicescapes (Physical, Social and Smart Servicescapes) and CCB? (H7)

The VCC element has received fair attention from researchers and practitioners when evaluating luxury hotels. The findings of this study suggested that value co-creation, a predictor of CCB, mediated the influence of servicescapes on dependent variables. Luxury hoteliers need to understand that adopting suitable technology in their operations can also influence the experience and perspective of their guests' intention to engage with CCB (Aljarah, 2020; Assiouras et al., 2019; Lin & Choe, 2022). The results of this study were in line with previous research findings, in which the hotel guests' VCC could affect their intention to engage in CCB with the luxury hotel they stayed in (Hossain et al., 2023).

6.3.3.1 Does VCC Mediate the Relationship between Physical Servicescape and CCB (H7a)?

The results showed that VCC mediated the relationship between physical servicescape and CCB. Therefore, Hypothesis 7a was supported. The ambiance, layout and signage in the physical servicescape of luxury hotels could influence CCB among hotel guests. Experiencing this servicescape would lead to VCC in hotel guests and encourage CCB, which was the desire of the hotel management.

The results also supported the theory by Mehrabian & Russell (1974), whereby guests of luxury hotels could receive a stimulus from physical servicescape and respond with a positive CCB. The value of the physical servicescape could act as an essential stimulus in citizenship behaviour (Al Halbusi et al., 2020). The environment that portrayed the luxury that satisfied the guests of what they spent for that particular experience would make them value the stay and share it with their compatriots. This would indirectly help the hotel to collect meaningful feedback and other positive citizenship behaviour.

The results in this study were consistent with Lin (2022) and Bouchriha (2023), which showed that value was a significant mediator for physical servicescape and CCB. The products and services provided by luxury hotels could enhance the value experienced by guests when the hotel enhances its sense of luxuriousness that suits the guests' expectations. With the popularity of luxury hotels, elegant and attractive decorations and upscale facilities have become the standard setting. Thus, the guests would have begun to pay attention to the physical environment (Chang et al., 2020). This included a sanitary environment as a result of the pandemic that affected the industry tremendously (Tiong et al., 2020). According to a previous study, with the developing and competitive environment of the luxury hotel market in Asia, guest experience value and citizenship behaviour are very much related to each other. Hence, the results suggested that providing an up-to-date physical environment was essential in improving the hotel industry. This would also attract guests with knowledge and experience in this industry.

6.3.3.2 Does VCC Mediate the Relationship between Social Servicescape and CCB (H7b)?

The findings showed a mediating effect of VCC between social servicescape and CCB. Therefore, Hypothesis 7b could be accepted. The background similarity between employees and guests, their appearance and behaviour could affect how guests value the social environment in the luxury hotel. There was an increase in guest citizenship behaviour towards the hotel. A study found that the personalised services of a hotel could increase guest volume by 14 %. Most importantly, it was reported that providing excellent service to guests would allow a hotel to reap 5.7 times more revenue than its competitors (Roy et al., 2019).

The present study's results are consistent with the literature (Assiouras et al., 2019; Razli et al., 2020). Experiencing social servicescape will result in VCC, which leads guests to engage in CCB. When there is social contact between guests and hotel employees, the VCC will increase (Razli et al., 2020). Hence, luxury hotel employees need to show a refined character and take pride in serving the guests.

Asian culture, including in Malaysia, emphasises humility irrespective of social standing. The culture relies on sincerity, love, forgiveness, balance and paying attention to small details (Fakfare et al., 2019). Those are the traits that luxury hotel guests value. In this case, hotel employees must be alert and careful to ensure that their guests will appreciate and value their services. However, there is a downside to using assumptions in VCC. Conversely, there is a negative relationship between VCC and customer behaviour when an organisation fails to deliver the services and products

expected by customers (Heidenreich et al., 2015). Besides physical and social servicescapes, VCC can also become the mediator for smart servicescape.

6.3.3.3 Does VCC Mediate the Relationship between Smart Servicescape and CCB (H7c)?

The study found that smart servicescape in a luxury hotel could influence VCC and encourage guest CCB in the future. The findings showed a mediating effect of VCC between smart servicescape and CCB; thus, Hypothesis 7c was supported. Technological innovations are critical for a successful transition into endemicity from a world affected by the pandemic. Even before the pandemic, there had been significant structural changes in Tourism 4.0 (Fust, 2021).

Previous studies emphasised that organisations must engage with their customers before innovating new products or services (Heidenreich et al., 2015). The hotel management has to ensure that the smart environment and the technology used in the hotel can truly make their guests more comfortable. In addition, guests will demand higher service and support systems (Chang et al., 2020). The Malaysian tourism industry, which hires foreigners as hotel employees (Ahmad & Scott, 2021), must also be taken care of.

There is a total of 109 five-star hotels in the country, and almost 60 % are operated by the Tourism, Arts and Culture Ministry, and mostly expatriates were hired to senior management positions. Up to June 2019, there were 306,152 foreign service workers (non-management) in Malaysia. Most of them were recruited from South Asia, with Bangladeshis making up the majority of 93,651 workers. Besides top managers, Malaysian hotels also attract foreign interns (Ahmad & Scott, 2021). When hiring

foreign workers, communication may become a problem with guests (Salleh et al., 2021). However, with the industry's emerging technology, guest communications with foreign workers will no longer be a problem for hotels. The use of AI and translation applications may help break barriers and convey the intentions and requests of guests to hotel employees. This will help the workers to carry out their duties as naturally and genuinely as possible.

This study's Stimulus–Organism–Response (S-O-R) Theory guided the establishment of the relationship between smart servicescape, VCC and CCB. In the existing literature, the S-O-R theory is described by the connection between stimuli (external factors) that affect organisms (attention and concern of the people) and the people's response to the stimulus (guest behaviour). This study has expanded the S-O-R Theory by examining the mediation effect of organism components between stimuli and response. In this study, VCC was an organism component mediating smart servicescape (stimuli) and response (CCB).

In any business practice, companies or organisations want to welcome and encourage customers to engage in CCB. These customers, in turn, are treated as value co-creators (Dewalska-Opitek & Mitreğa, 2019). In the VCC process, customers and companies interact with each other and create new values together (Kijima & Arai, 2016). It is portrayed in the mediation relationship, where primary resources of the hotel make the guests co-create the value, which in turn, influences the behavioural intention that is CCB. This is emphasised in the S-D Logic Theory, whereby it synthesises and articulates an alternative way of exchange and value creation in business. It is considered the basis of social and economic interactions.

There is another convincing answer to justify the mediating effects of VCC on hotel guests. Experience gained from using smart servicescape will provide guests value. The value will then be co-created for future behavioural intention (CCB). Hence, the guests will provide good word-of-mouth (WOM) and electronic word-of-mouth (eWOM) on the hotel that may attract other potential guests. This will benefit the hotel's business, even though guest engagement is not compulsory, and it will assist in achieving organisational goals (Bouchriha, 2023). The experience allows guests to co-construct their service experience to suit their context (Prahalad & Ramaswamy, 2004).

The mediation effects of VCC may be explained by a justification of the relationship created by the hotel. In providing and delivering service in four- and five-star hotels (luxury hotels), value becomes the most crucial element in the overall experience. A high context of personalised services from the smart servicescape may influence the degree of CCB, which may be negative or positive feedback. In any circumstances, there appears to be a positive association between guests and the hotel. Hence, the role of the customer cannot be ignored since they expend a new understanding and provide an insight into the hotel and customer relationships towards a profitable business (Bouchriha, 2023).

6.4 Research Implications

The present study extended the S-DL and S-O-R Theory in explaining luxury hotel guest behaviour. This study highlighted the importance of servicescapes (physical, social and smart) as stimuli of guest behaviour intentions, such as CCB, and to voluntarily recommend their other potential guests via WOM and eWOM to revisit or

to experience the services of the hotel that they stayed at. The S-DL Theory has guided the unique contribution where it is known that products or services will be valuable when customers use them. Empirical evidence showed that other determinants, such as VCC and guest satisfaction, may also lead to CCB.

6.4.1 Theoretical Implications

This study represented the first novel work developed to assess the relationship between smart servicescape in the Malaysian luxury hotel industry and CCB. Insights into these aspects are expected to contribute to a better understanding of guest behaviour literature by investigating other antecedents of servicescapes and their consequences in operating through the comprehensive framework.

First, this study extended previous research, particularly conducted in retailing (Gong et al., 2021), smart homes (Assiouras et al., 2019) and events (Al Halbusi et al., 2020). The findings of the present study contribute to the hospitality industry, particularly the hotel industry in Malaysia. From the perspective of the S-O-R model, the servicescape or the environment in the hotel acts as a stimulus that enhances the experience of the guests (Mehrabian & Russell, 1974).

Second, the study validated the theoretical framework supporting the S-O-R model according to Mehrabian & Russell (1974). The role of VCC as the mediator and “organism” had added value to the existing stimulus-responses path of the S-O-R model. The findings confirmed that VCC could act as the mediator in the relationship between servicescapes (physical, social, and smart) and CCB. It showed the importance of VCC, managed by the management of hotels through their employees.

It further led to favourable guest behaviour by engaging in CCB (Gong et al., 2021). Furthermore, this was an important study that recommended a conceptual framework to investigate the effects of physical, social, and smart servicescapes on guest satisfaction and CCB.

Third, an approach similar to the study had been presented before (Al Halbusi et al., 2020). Still, this study included the smart servicescape as an antecedent, which had not been explored in the hotel industry. With the emergence of the IoT in business (service and manufacturing), luxury hotels should be among the first to include technology in their facilities, daily operations and service delivery (Yang et al., 2021). For instance, Wi-Fi in the hotel room should be fast and stable. Hence, the study results contributed to the knowledge of enhancing hotel services and improving the understanding of servicescape elements in the hospitality context (Ariffin et al., 2013).

Fourth, the study supported the S-DL Theory. To appreciate the value of the servicescape, S-D Logic was applied to market the hotel environment, emphasising the value of a service experienced by guests that were created by various stakeholders (Ee & Akashima, 2021). The S-DL Theory explains the value creation through exchange between businesses and their patrons. Furthermore, the theory emphasises that the service alone cannot develop value without usage by customers (Vargo & Lusch, 2004b). For example, the actors would be employees and guests. When guests book a hotel room, the value of the room comes from the service it provides when the guests use it. Hence, this study explored the fundamental yet unique relationship of the study construct operations.

Fifth, the need for technological elements has caught the researcher's interest. Even though it is hard to implement the latest technologies in the industry fully, the industry should try to embrace the latest trends. The suitability of the technology used is still in the hands of hoteliers (the management and employees) to implement or stick with the human touch in delivering their services. It is highlighted that human services will always be relevant in the industry (Seyitoğlu & Ivanov, 2020).

Sixth, this study provided a comprehensive guest behaviour model, which considered the importance of guests to the hotels' business. The model examines the relationship between the servicescape, VCC, guest satisfaction, and CCB. The relationship's input and impact will benefit the hotels and guests. In addition, it will create a long-term relationship between hotels and guests. For instance, if guests help a hotel improve its services and facilities by providing positive comments and feedback, the hotel will appreciate it and improve based on the feedback it receives. With that, there is a relationship formed between the hotel and its guests.

Seventh, the model SEM-PLS version 4.0 provided an advantage compared with similar models that used version 3.3. The evaluation and validation of the model contributed to improving the competing model. Hence, this study supported the best representative model among other models. All the operations of the constructs would be necessary for the hotel industry, marketing, and psychology body of literature.

6.4.2 Managerial Implications

This study recommends several managerial contributions. The findings lead to valuable knowledge for industry players (hotel industry) and policymakers

(Government). The research model offered opportunities for hotel managers, marketers and policymakers to improvise and get involved in facilitating CCB among guests. Thus, the next section explains the contribution of the industry players and policymakers.

6.4.2.1 Hotel Industry

The findings of this study assist the hotel managers and the industry to promote the participation of guests in citizenship behavior (Choi & Lotz, 2018; Gong & Wang, 2022; Wu et al., 2017). It is further mentioned that the internally oriented guests were expected to engage in CCB. This is because they have feelings of appreciation and love towards the hotel as they have a great experience with the hotel. In apparent recognition of this study's findings, specific actions need to be taken by the hotels, such as establishing a customer feedback system on their website so guests may provide valuable suggestions for service improvement. In addition, hotels can develop distinctive and memorable programmes (Johnson & Neuhofer, 2017; Prebensen et al., 2013) to gain guest loyalty and good recommendations. Besides that, the hotel manager should provide comfortable spaces and create a setting that is emotionally engaging to increase customer tolerance and promote overall CCB. Additionally, the hotel could boost its Internet and social media presence to expand the connection between customers and employees to nurture CCB further. Hotels may use reward and incentive programmes besides getting to know more about the actual needs and want of CCB to find the value that guests seek (Minh-Duc & Huu-Lam, 2019).

According to the findings and support from the S-O-R model, management and employees of the hotel should pay attention to the primary environment, which will

be the products of the intangible services consumed by guests. This study covered two main servicescapes (physical and social) and an auxiliary servicescape (smart). The smart servicescape had been found to be aligned with the industry's trends and needs. In running the daily operations of the service industry, the challenges in delivering the preferred service of most guests must be resolved. Thus, the management of the hotel, through its employees, should ensure that the environment is up-to-date so that guests will co-create value. Once guests are satisfied with the value and experience, they will comment and provide good feedback. This is very important as hotel managers evaluate their servicescape based on guest comments (Lockwood & Pyun, 2019). The hotel needs to enhance the environment, such as the ambiance, communication skills of the employees, and in-room technology to get the guest's attention from time to time. The hotel could segment its market according to sociodemographic characteristics and focus on older guests (Generation Z and Y) that is more sensitive to environmental issues (Moise et al., 2020). The study respondents were mainly from Generation Y (35 to 44 years old). The findings disclosed that all servicescapes played a significant role in a good hotel stay experience. It created competitiveness in the industry as it influenced guest behaviour. Hence, understanding the concept of servicescape is crucial for better administration and operation of a hotel.

The technology embedded in the hotel industry should be within the familiarity of the guests' usage. This ensures that the unique technology element in the hotel room leads to CCB. The technology used in the service industry, especially in the hotel, is notable. At the same time, the management of the hotel needs to consider the element of human service, which is still essential in this industry. When guests feel comfortable with the technology used, they feel excited and cannot wait to share the experience and

recommend it to others or future guests. The information will be spread in a second with the fast dissemination of information through online channels, such as WhatsApp, Telegram and other social media platforms (Huete-Alcocer, 2017). In addition, with the official group on social media, the guests can review and share their experiences with the group members and the public.

As time changes, word of mouth (WOM) concept has changed to electronic word of mouth (eWOM) (Castano & Escandon-Barbosa, 2022). The unique and exciting element they highlighted about the hotel they experienced will increase the tendency of other guests to experience it. For example, the Hotel Review group on Facebook (FB) allows members to share their good and bad experiences with admin approval. The information will provide input to other travellers and attract them to experience the services. In addition, online comments can be seen anytime (Huete-Alcocer, 2017). For instance, guests who want to survey a hotel room can view the comments online. Hence, the CCB element exists in this situation as guests voluntarily and discretely share the information with others, which will enhance the hotel's performance (Choi & Lotz, 2018). Table 6.2 summarises the differences between word-of-mouth (WOM) and electronic word-of-mouth (eWOM).

Table 6.2 : Differences between WOM and eWOM

	WOM	eWOM
Credibility	The receiver of the information knows the communicator (positive influence on credibility)	Anonymity between the communicator and the receiver of the information (negative influence on credibility)
Privacy	The conversation is private, interpersonal (via dialogs), and conducted in real-time.	The shared information is not private and can sometimes be viewed by anyone at any time because it is written down.
Diffusion speed	Messages spread slowly. Users must be present when information is being applied.	Messages are conveyed more quickly between users and via the internet and can be obtained anytime.
Accessibility	Less accessible	Easily accessible

(Source: Huete-Alcocer, 2017)

Even though technology is being used in hotel rooms, the social presence of technology is essential. The tangible element of technology should be emphasised and highlighted to make the guests feel at ease. The moment guests step into the hotel room, they should be able to see the tools, such as the tablet or remote control, to adjust room fixtures. When guests can operate the devices, they will be satisfied, leading to the future behaviour of sharing the experience. This is primarily for first-time guests staying at the hotel. In addition, the trend of taking photos and sharing with others will exist here. This is considered CCB.

When the technology is functioning, the tendency of guests to recommend and share their experience will be higher. Guest will share experience both negative and positive experiences (Ozturk & Hancer, 2015). A study reported that when technology was compatible with the guests and provided them an advantage, the CCB would increase dramatically as they felt its convenience and value (Gong et al., 2021).

The more interactive the smart environment in the hotel room, the happier the guests. When they are happy, they will recommend and promote the hotel. With the emergence of social media, guests can share and comment on the smart services they have experienced in the hotel online. For example, they can now share videos and show live experiences as the trend. There is a value placed on WOM, and the latest is eWOM (Castano & Escandon-Barbosa, 2022), and CCB is promoted. This technique relies on the idea that using the internet and technology when using the hotel is a concern — searching for information, using the online travel agency (OTA) to book a hotel room, and giving comments and feedback on the experiences.

Personalisation of hotel rooms based on guest preferences can be done by sending certain requests to employees using a mobile application on a smartphone. Hence, the hotel application is an essential tool for collecting guest information to personalise the service. According to the data obtained in this study, 43.6 % (130 respondents) would like to use smartphones to communicate with employees (For example, through the WhatsApp platform).

Servicescapes provide a memorable experience for guests when they enter the hotel. The study results indicate that physical servicescape is essential, and the communication skills among the employees and the technology are also relevant in association with the co-creation of value. To engage guests in this new era, hotels must acquire knowledge about applications of the IoT, specifically in-room technology. Increased levels of service customer participation have been associated with delivering high-quality service (Jeong & Shin, 2020). Hence, the good smart environment offered in four- and five-star hotels in Malaysia will increase the

tendency of guests to engage in CCB. Nowadays, almost all hotel operations would include the implementation of technology. Hotels should take note of guests' changing attitudes towards in-room entertainment technology. It is also beneficial for the management of hotels to consider which technology is most preferred by their guests. For example, the increase in social media usage and IoT applications in daily life shows the importance of good Internet connectivity.

In the case of this study, it was observed that 72.8 % of guests preferred to use a tablet or smartphone in their hotel rooms to control the lights, air-conditioning and curtains. On the other hand, only 6 % of guests preferred to have a robot or automated system to assist them in check-in during arrival. Even though robot technology seemed interesting, however, results showed that it had a very low guest preference. Hence, the hotel management should get the exact information on their guests' choices and behaviour before investing in any technology to ensure profitable returns (Yang et al., 2021). This is very important for developing countries like Malaysia, where resources are limited. It is proven that almost 84.6 % of luxury hotel guests prefer a combination of human service and technology in the delivery process. Combining these two elements may be considered a smart servicescape, which is part of the study's contribution.

This research hopes to contribute to the direction of hotel management in choosing whether to become "high-tech" or "high-touch" in meeting guest expectations. In addition, hotels must check the suitability and appropriateness of their service delivery methods (Solnet et al., 2019). Technology and robots are suitable for repetitive tasks and automated conversations. The human aspect will facilitate complex personalised

requests, understand sentiments, build trust and establish meaningful relationships. Even though times and trends may change, the priority will always remain in guest preferences and expectations. The hotel management must put themselves in the guests' perspective by mapping their experience from booking to departure.

Once the hotel management chooses the best concept (high-tech or high-touch), they can make better plans for the operation cost and long-term operations (Yang et al., 2021). The quality assurance and maintenance of the servicescape, especially the smart servicescape, is essential. It is crucial to sustain VCC among the guests. Therefore, the technologies implemented need proper maintenance to keep the hotel quality and standard (Carrera et al., 2023). Hotels must consider guest compatibility with the system and whether the equipment is user-friendly (Yin et al., 2023). It is unnecessary to invest in technology based on the latest market trends ambitiously, and instead, the focus should be on catering to the niche market. One of the challenges in implementing technology in hotel operations is to find professionals (e.g., information technology and engineering consultants) who can do the job properly and provide training for employees to use the systems correctly (Mehrotra, 2019).

With the continual advances in technology, there is a need for the management of hotels to educate their guests in using applications relating to the smart environment. This can be done with the support of technical infrastructure (Wu et al., 2011). This will facilitate guest experience and avoid faults and complications when they use the technology. To do this, hotels can establish a dedicated IT department handled by tech-savvy professionals who have troubleshooting skills. Most hotels have their technical team on the digitalisation of the hotel (promotion etc.) but not on the technology used

in the hotel room. For instance, The Danna Hotel Langkawi has its digital manager to manage the digitalisation programme of the hotel. The job scope is to promote and manage the digital presence, such as managing website content and social media strategy engagement. Besides that, they have to propose collaborations with influencers and advertising.

The digitalisation of the hotel industry is growing. Hotels must be prepared and well-equipped, especially when it involves up-to-date technology. The significant input from the study will assist hotels in marketing, which highlights the elements of digitalisation of the hotel industry. This will also benefit the tourism industry as a whole. The study framework emphasised the importance of appreciating and maximising the primary resources of hotels, which comprised servicescapes (physical, social and smart). This involved how the hotel management appreciated their guests' involvement following success in getting comments and feedback, which aligned with the government policy of having good relationships among stakeholders (Ariffin et al., 2013). In addition, the management of hotels needs to actively get involved in internal marketing approaches, such as prompt response, positive feedback and improved customer-oriented behaviour and guest satisfaction (Olorunsola et al., 2022).

To ensure the success of the internal marketing of the hotel, the hotel management may include co-creation elements in the interface designs for hotel services (Sugathan & Ranjan, 2019). For instance, the easiest and simplest way for guests to give feedback and comment is through voice chat or by pressing customised buttons at the front desk before checking out. Guests who engage in CCB are most likely active on social media

platforms like Facebook, Instagram and Twitter. With this in mind, a communication strategy should further facilitate customer conversations and stimulate advocacy and helping behaviours within the different settings (Van Tonder et al., 2023). Gathering sufficient data from comments and feedback can be beneficial and uplifting when hotels provide excellent value. Hence, a good experience will be remembered by guests. VCC, as the mediator, has been a good attempt in this study to enhance the framework and show the interaction of an excellent relationship between guests and hotels. According to the basic concept of the SD-Logic Theory, the facilities' value should be maximised by gathering the guest's needs through interactive dialogues (Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2004b).

The hotel management has to consider the high-touch and high-tech elements to ensure guests experience a high-value stay. The value should satisfy both types of service delivery concepts. In this aspect, the hotel management should consider the practical estimation of their resources, programmes, and relationships with guests and other stakeholders when planning the future of their service delivery process. They include the evaluation of new resources that the hotel wants to obtain and resources that are underutilised or outdated. The managers and employees have to take good care of the value they provide to their guests, starting with the most basic facility — the hotel room. Short- and long-term planning should be on the existing basic facilities to ensure satisfaction and gain good feedback from the guests. As the world transitions from the pandemic to the endemic, a hybrid system between humans and technology is most preferred. However, hotel guests may still prefer to use technology when they want to ensure health safety (Seyitoğlu & Ivanov, 2020).

Even though the adoption of technology has been a controversial issue in the hotel industry (to use or not to use), it is being highlighted that 2023 could be a turning point to expand the adoption of artificial intelligence in the hotel industry. For instance, robotics could help the human resource department maintain employee sustainability and cybersecurity issues (American Hotel & Lodging Association, 2023). According to Petrevska et al. (2016), there are benefits in implementing the smart room concept (room with technology). For example, it reduces the wastage of energy and water; synergises the functions of all the IoT devices smoothly and harmoniously; maximise convenience, comfort, security and safety of guests and their belongings; increases the reliability and quality of the services provided at the hotel; improve employees' efficiency by giving new and reliable information; and, nurtures environmental awareness among stakeholders.

In addition, the luxury hotel is known for its luxury and personalised service to its guests. Luxury hotels seem keen to use technology to enhance efficiency and support their frontline. At the same time, to satisfy their guests who are eager to use the technology. Hence, the management of the hotel needs to identify to what extent their guests expect from the interaction. This will further help hotels determine the form of technology representing an effective added value for the guests. Once recognized, the introduction cost can be calculated (the technology purchase). Then, it must be compared with the increased revenue to ensure it is needed in this business environment. Therefore, the hotel must understand the latest technology, innovation, the must-have list, and the technology that will mainly provide experience value to the guests (Bharwani & Mathews, 2021).

Lastly, the findings also shows that the value co-creation exist in the relationship between servicescape and CCB. Hence, the management of the hotel should realize that hotel guests and generally the customers in the hospitality industry are essential to co-create unique and memorable experiences. Promoting customer value co-creation behaviors (CVCBs) is crucial so that the managers gain a competitive advantage and ensure sustainable operations (Yen, 2023).

6.4.2.2 Policy Makers

The findings also provide useful information to policymakers such as the Ministry of Tourism, Arts and Culture (MOTAC) and the Malaysia Association of Hotels (MAH) for strategic planning to ensure the hotel has a good relationship with guests. Even though the hotel is focusing on managing and planning the best service delivery to ensure the profit maximisation of the business, the relationship with other hotel stakeholders, especially guests, should be taken into consideration. When looking at the citizenship behavior of hotel guests towards the hotel, it is hoped that the relationships between stakeholders are positive and good. Hotel guests should be educated on giving comments and feedback on the products and services experienced. The comments will show the level of satisfaction or dissatisfaction of the guests and attract others to experience the products and services. In fact, it can reinforce the hotel guests' attitudes, values, habits, and consumption, which leads to citizenship behavior. Even if the results are not visible overnight, it is very important to educate the hotel guests, especially the young generation, as they will inherit the future.

While the future generation is being prepared, policymakers such as MOTAC and MAH can also take this responsibility to strengthen their promotion and advertising

by using the right promotional method and content. Nowadays, there are various ways and methods of promoting the products and services. This can be seen with the advancement of social media and other digital marketing methods, such as YouTube and TikTok. Promotional activities are much easier, cheaper and more effective. Even so, the policymakers and government could assist in terms of training and financial support to the tourism industry to benefit from digital marketing.

While such undertakings can be directed at the MOTAC and MAH at large, specifically, the government could assist in the privacy, safety and security issues. The findings reveal that hotel guests are afraid of the privacy, safety and security of the data and information that has been shared with the hotel. The historical data includes how often guests stay with the hotel, average daily spend, trip type, the type of room guests prefer, and length of stay. Hence, the government and policymakers should take an active role in ensuring the safety and security of the data history of the hotel guests. Data privacy is one of the factors of concern when using technology among guests. Hence, the government can liaise with the special bodies in charge of ensuring the privacy of the data. Therefore, it is more important than ever for the government to work with Jabatan Perlindungan Data Peribadi (PDP). This is to ensure that the privacy and safety of the data is in good condition.

Lastly, as for the regulatory approach, the government may also want to revise the needs of technology and digitalisation in the hotel industry. The luxury hotel is well known for its personalised service delivery and human touch even though technology and digitalisation are getting in the business environment, including the service industry. According to the findings of the study, guests prefer to have a combination

of humans and technology. Hence, the policymakers could highlight these special attributes to the government to get appropriate incentives. For instance, the increment of the hotel employees' salaries to get back the interest of local people to join the industry. Hence, the service delivery of the hotel will meet the preferences of hotel guests, which combine humans and technology. This will benefit not only the hotel and tourism industry but also other business that intends to shift to a digitalized operation or combination of human and technology.

6.5 Research Limitations

This study has theoretically evaluated the relationship between servicescapes (physical, social, and smart), VCC and guest satisfaction leading to CCB. The study has also confirmed the operationalisation of the constructs involved. Nonetheless, some limitations should not be neglected while conducting the research. The discussion further explains the limitations of the research.

The generalisation issue is the first limitation of the research. The respondents selected for the study are guests of four- and five-star hotels in Malaysia. They should have experience staying at the hotel for at least the last two years (2021-2022). Hence, this limits the generalisation of results to only these types of hotels and specific years of staying experience. Moreover, the closure of international borders due to the COVID-19 pandemic has decreased the number of tourist arrivals, which meant fewer guests for hotels. Hence, the study could focus on local guests or domestic tourists who stayed at luxury hotels in Malaysia.

Furthermore, the measurement of the guest satisfaction construct has limitations. In this context, the satisfaction is limited to the experience and value of servicescapes (physical, social, and smart). The satisfaction mainly focused on the non-financial elements. Moreover, the occurrence of the COVID-19 pandemic at the beginning process of the research made the study use the online method for distributing the questionnaire survey. This is because most guests do not prefer to be approached face-to-face because of health and hygiene issues. Other than that, the research is focusing on only the quantitative method. Then, the period of data collected was the next limitation. The researcher needs to prolong the time frame for data collection to get sufficient respondents for the study.

In addition, the research was limited to collecting and analysing data from a single source: hotel guests. The issue of common method bias might occur when a single source is used to answer the question. For this study, the results show that the Variance Inflation Factor (VIF) for a single factor is below the 4.4 threshold. Therefore, a single source response to the questionnaire for this study does not affect the data used.

6.6 Research Recommendations

In Malaysia's competitive and diverse hospitality industry, understanding and optimizing the physical, social, and smart servicescape elements can be particularly beneficial. Tailoring the servicescape to align with local cultural expectations and preferences is crucial for cultural sensitivity. This includes ensuring that social servicescape elements respect and integrate with Malaysian hospitality norms. Additionally, integrating technology into the smart servicescape to meet local needs and tech adoption levels is essential. By focusing on these aspects, hotels can enhance

guest satisfaction and encourage positive customer citizenship behavior, leading to better reviews, increased loyalty, and a stronger competitive position in the market.

Possible improvements can be applied for future research. Several potential avenues of recommendations for future research are illustrated. Future research may consider conducting a survey that includes other types of accommodation, such as three-star hotels, budget hotels, air B&B and homestays, which have gained popularity among tourists nowadays. Future research may also focus on different geographical areas (Ali et al., 2021). This is proven now as there is a term “revenge tourism”, whereby people plan for a holiday almost whenever they can make it (Oktaviani & Sutisna, 2021; Panzer-Krause, 2022; Zaman et al., 2021). This happens when tourists view a trip as a gift and travel opportunity when they are allowed to do so. They bring their family and friends to experience exciting and unique hotels and other local accommodations. The word “staycation” (a two-day, one-night stay concept) is now becoming a trend in the hotel market (Irfan et al., 2022; Moon & Chan, 2022), which if properly marketed, will bring in a lot of profits for hotels.

The respondents of the study are local hotel guests who have experienced staying at a luxury hotel. This study did not include international guests as they could not enter Malaysia from 2020 to 2021 due to the pandemic. In addition, the study focuses on local respondents to ensure that the insights and perspectives are closely aligned with the specific geographic and cultural context of the region (Riyanto et al., 2023). This approach allows for a more relevant and detailed examination of factors affecting the CCB within the local environment. Therefore, future studies could collect more representative data that includes international guests who stayed at four- and five-star

hotels in Malaysia to see the effect on CCB. It is believed that the participation of international respondents provides more knowledge and experience with the development of the industry (Kim et al., 2021). This is one of the recommended ways to improve the generalisation of the analysis in this area. Hence, a better understanding of the international guest interest phenomenon can be gained.

Besides that, future studies may focus on guest satisfaction from the financial element perspective. For instance, the antecedents may include those that considered the value of pricing towards the generation of CCB. In addition, it will boost occupancy and optimise hotel revenue. Furthermore, this value can be used as a good approximation for charging enough to make a profit or setting a fair price to avoid losing customers to the competition. The operation of satisfaction level for the financial segment may have resulted inversely.

In addition, future research can integrate face-to-face and online data collection methods. Other than that, the combination of quantitative and qualitative methodologies to gain in-depth data collection can be applied. The studies could get information from the managers and employees of the hotels regarding the servicescape and guest behaviour. By incorporating the perspective of the hoteliers in the study, the findings regarding the hotel environment are comprehensive and holistic (Yang et al., 2021).

Furthermore, future research can consider the longitudinal approach whereby the role of servicescape could be seen before and after guests have experienced it. This method can reduce biases and validate the relationships (Gong & Wang, 2022). A longitudinal

study will capture guest VCC activities. Additionally, future research should collect data from different sources, such as managers and hotel employees. Also, the survey could use other scale endpoints and formats for the predictor and criterion measures (Podsakoff et al., 2003). This way may reduce the potential of high value in common method bias. Finally, future research on this subject area would want to consider using probability sampling for better results (Asghar Ali et al., 2021).

6.7 Conclusions

In summary, this study investigates the role of servicescape (physical, social and smart), VCC, and guest satisfaction towards CCB. Social servicescape showed the highest relationship with CCB due to the nature of the hotel industry, which was preferably human-oriented. There was an essential relationship between the servicescape experience and the value and satisfaction of hotel guests. The combination of these elements could significantly influence guest behaviour, such as CCB engagement, in how they portrayed the hotel's servicescape. Most of Malaysia's four- and five-star hotels have a structured and attractive environment that provides excellent value. As a result, guests will recommend the hotel to others and help them. With proper planning and management, the hotel can offer more new value and excitement in their environment for better performance and get the guests to work together with the hotel.

Huge advances in technology have made this feasible in practice. Technology usage, particularly in Malaysia's hotel industry, is still in its infancy. Even though the technology revolution is reaching Industry 4.0 and moving towards 5.0, Malaysia is still at Industry 2.0. This is due to the infrastructure provided (Wong & Kee, 2022),

the exposure of the stakeholders involved in the industry (Jayashree et al., 2021), and the culture of considering humans to be part of the business operation makes the technology need some time to be implemented in the country compared to other developed countries such as European countries. There is much evidence regarding the negative impact of the pandemic on the global tourism sector; there are specific positive impacts, such as identifying technological solutions (Streimikiene & Korneeva, 2020). There are several ways to improve the balance between economic, environmental, and social dimensions, even though the COVID-19 pandemic has motivated the tourism industry to evolve into a more sustainable model (Seabra & Bhatt, 2022).

In order to survive, much attention has been given to the revival of local tourism (Sharma et al., 2021). This includes the Malaysian government that promoted domestic travelling when cases of Covid-19 began to subside nationwide due to vaccinations (2021-2022). It was supported by the previous minister of tourism, arts and culture, who announced a detailed recovery plan that emphasised three central cores to boost the country's tourism campaign, which includes restoring confidence in travel, reviving domestic tourism and maximising resources (Tourism Malaysia, 2020).

Align with the above discussion, this study proves that the smart servicescape is essential in four- and five-star hotels in Malaysia. With that, the luxury hotel must consider combining humans and technology for service delivery. Examples of technologies used in hotels are Wi-Fi, robots and infrared sensors, smart room keys and smart curtains. Technology can improve operational efficiencies and help hotel

management reduce costs by replacing human labour. Additionally, it will help improve customer service by facilitating smooth employee engagement and communication. It aligns with the latest trends that emphasise the importance of human capital in the hotel industry (Slavković et al., 2023). Hence, the role of technology cannot be ignored since it provides advantages in business operations. Given the unique characteristics of the hotel industry, smartness should be tailored specifically to this sector, rather than directly adopting approaches from other technology-oriented sectors. This presents an even more significant challenge because even with the technology, the existing service delivery still needs to retain a “personal touch” to maintain the service level that guests are used to. This is where the role of social servicescape comes into the picture. For instance, personal contact from trained personnel will help to strengthen the hotel brand.

Furthermore, Malaysia’s food and beverage (F&B) industry has become familiar with and educated diners to use the technology step by step. For instance, McDonald’s introduced an order kiosk during the pandemic recovery period of 2021 and 2022 for diners besides the drive-thru method. It also introduced an app where diners could order and pay through their mobile phones without lining up at counters. This was part of the “new normal” physical distancing and safety reasons. With the step-by-step implementation and education provided by the restaurant, customers are happy to learn and adapt to the new methods introduced. This is very important to avoid the customer feeling uncomfortable and becoming resistant to the new ordering and payment system, which definitely costs a lot for McDonald’s to implement.

In considering the dimensions of the constructs in the study, findings have disclosed that (1) ambient condition, (2) space/function layout, and (3) sign/symbol/artifacts serve as a component of the physical servicescape and (1) perceived similarity, (2) physical appearance, and (3) suitable behavior are dimensions for social servicescape. Meanwhile, (1) aesthetics, (2) social presence, (3) superior functionality, (4) perceived interactivity, and (5) perceived personalisation represent the smart servicescape. Furthermore, VCC consists of (1) knowledge, (2) equity, (3) interaction, (4) experience, (5) personalisation, and (6) relationship. Then, the study includes guest satisfaction. Lastly, the results revealed that CCB has four components, namely (1) feedback, (2) advocacy, (3) helping, and (4) tolerance. Theoretical contributions mentioned that this study adds knowledge to the previous literature by examining the relationship between the constructs. In addition, the study looks into the inter-construct and intra-construct approaches.

The findings further offered helpful information and guidelines for hotel management regarding technology usage in the service-based industry. Due to the 4th Industrial Revolution, various industries, including hospitality and tourism, have adopted internet technologies such as RAISA (Robots, Artificial Intelligence, and Service Automation). Eventually, the industry traditionally provides services through manual labour. RAISA has slowly been adopted in the form of chatbots, delivery robots, conveyor restaurants, robot concierges, self-service information/check-in/check-out kiosks and many others (F. Wu et al., 2023). Furthermore, it will also help the government and the Ministry of Tourism, Arts and Culture to forecast the expected budget for technology in the tourism and hospitality industry, considering the guests' preferred elements. The Malaysian prime minister also announced that "Visit

Malaysia Year” would be held again in 2025. The VMY 2025 targets 23.5 million international tourist arrivals with RM76.8 billion in projected income. In line with this, all hotels not luxury ones only should prepare with a tremendous servicescape to deliver a remarkable experience.



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APPENDICES

Appendix 1.1

Complaint on Physical Servicescape



PK Tan
Singapore
4 likes

Unexpectedly Disappointed for a Marriott Affiliate

Review of Courtyard Penang

●○○○○○ Reviewed Dec 24, 2021

I've stayed in a couple of Marriott and Marriott Affiliated hotels in my past travels. This one was disappointing. The hotel set in a mixed residency tower and despite that I booked and stayed in a premium room, the room had a musty smell including the bed linen and toilet shower area (poor exhaust). One of the day, the hotel dedicated basement 2 car park even had its sewerage pipe broken causing a section of the parking lots filled with disgusting sewerage and the smell of the sewerage reaches the car park lift. Terrible experience.

[More](#)

Date of stay: December 2021

●○○○○○ Value
●○○○○○ Service

●○○○○○ Cleanliness

👍 1 Thank PK Tan

Appendix 1.2

Complaint on Physical Servicescape



Hizwan
1 like 3 likes

Bad Facility Safety & Ruined My Honeymoon!

Review of Resorts World Langkawi

●○○○○○ Reviewed Nov 1, 2021

My wife and I went here for our honeymoon but it became a nightmare as i fell into the floor near Infinity Pool the first night we were there. The floor was not in great condition and very fragile as it collapsed after i step on it! (The next day only we realized that there were many holes along the Zest Boardwalk). Means that there has been similar accidents happened but they didn't even repair them.

My shin was badly wounded and became swollen. The staff brought us to clinic the same night in Cenang and what's worse; the clinic was closed! We had to go all the way to Kuah for treatment.

After we went back to the hotel, I spoke to the General Manager (Mr. Isaac) regarding this accident. He promised to give us free 3d2n stay in the future as a compensation and give us free room upgrade with meal. We got our room upgrade and meal but he didn't keep his promise on the 3d2n future stay. Tried to call them after checking out, but to no avail.

Even though they gave me room upgrade, my honeymoon was totally ruined which i can't walk properly and enjoy the water activity in Langkawi (the main reason i go there).

[Show less](#)

Date of stay: October 2021

Room Tip: Premier Suite:large but very outdated, sliding door can't open smoothly & slow water flow.

Appendix 1.3

Complaint on Social Servicescape



Farhan N
Kuala Lumpur,
Malaysia
4 13

Terrible customer service

Review of InterContinental Kuala Lumpur, an IHG Hotel

Reviewed Dec 18, 2020

1. My wife and I had dinner at the Serena Brasserie, InterContinental Hotel. We had no complaints on the food despite it being just average. But the problem came when we were about to leave the restaurant, where there was some miscommunication occurred among the staff that nearly cost me additional RM 50. The restaurant staff (a Malay lady and a Malay man) rudely said to us that we should bear the cost even though we already made it clear that it was the error and miscommunication at their end that had caused the extra charge. In the end I didn't pay for it but they made the impression that I simply wanted to avoid from paying for it. I never got any apology from them and in the end, they made it look like I was in the wrong.

2. When I checked in, I was informed by the receptionist that the breakfast can be requested to be served at my room. But when I tried to call the room service, it took several tries before the they answered my call. And then, they told me (rudely) that they cannot serve it to my room unless I am too sick to go downstairs and I must come down to your restaurant for the breakfast. Why was there different message given by the receptionist and room service?

3. I had to check out at 3 a.m because the guest next to my room made so much noise that I couldn't sleep. The hotel security had asked him to quiet down after I complained to the front desk. He did reduce the noise but I could still hear the loud music. That was when I decided to check out and I was extremely disappointed that the receptionist only casually apologized that I had to check out at the hour. It was like checking out at 3 a.m. is a very common thing happening at this hotel.

From my experience, the staff at Intercontinental Hotel is the core problem that needs an urgent fix. They did not deliver a good service to their customers. The hotel needs to train their staff the basics in customer service in order for it to survive in this challenging time and improve in the long run. I can only commend one Thai lady working at the IVIV lounge and Seri Brasserie for her great attitude. All of the hotel staff have a lot to learn from her. This is only my 2nd time staying at the hotel and I surely and confidently say that I will not stay at this hotel again. I wasted one day of my annual leave staying at this hotel.

[More](#)

Date of stay: December 2020

[See all 4,208 reviews](#)

Appendix 1.4

Complaint on Smart Servicescape

Article: Guest Online Review x Guest Online Review x 19999-70968-1-PB x W KUALA LUMPUR x One

Lumpur_Wilayah_Persekutuan.html



One of the worst hotel experiences I've ever had

Review of EQ Kuala Lumpur
Reviewed 14 Sept 2023

So to this point after traveling so much, I recently only post if I'm blown away or horrified. This time horrified.

Booked the hotel's airport transfer at premium price as after 20h travel I wanted smooth sailing - had to wait after arrival for 15-20 min as he was not there waiting for me, no sign with my name at all, it's not even the hotel's car its a random transfer service. Got in the car parched, no water in the car like you normally get. Wondered what did I paid premium for?!

No communication between teams, it's a joke, like it's a brand new hotel but it is not. Ask concierge, no, ask spa, no ask pool attendant... so on, and noone knows what's going on. No attempt to be helpful, ask for a drink at pool, no unless it is the room service menu its not available - don't even try to ask if it is possible, keep getting straight NO from everyone here. So not a luxury hotel, they don't cater to intolerance/allergies either. I asked for a simple request to accommodate my meal at the rooftop restaurant, but again a NO, I only asked if i could get the two appetisers instead of the desert as I am intolerant to the ingredients in the desert options. I could not get the menu at lower cost without desert, and could not get a substitute. Suggested I take the vegetarian menu which was much bigger and more expensive, which at least 3-4 courses included ingredients of my intolerance. I'm amazed not just at they're attitude, but as the restaurant is never fully booked, they give up revenue for a so called principle. Unfair to other guests, well, unfair to me who unfortunately can't enjoy the foods I used to love, and now you can't try to accompany me.

Spa receptionist stated that I looked really tired, thank you, I need that compliment. Suggested I get some ice for the dark circles around my eyes, not that she brought me any. Spa therapist had a stuffed nose and kept sniffing, it was not only annoying, but she didn't wear a face mask, so now as I am leaving the hotel for the next of my 3 week holiday, I'm getting the flu. Treatments not great, feels like something your partner would give you, not someone who's educated in the field, rushed and not mindful like you'd expect.

Wifi poor, everything you try to watch is blurred and pixels are horrible.

Asked maybe 10 times for dairy milk substitute for the room, had to keep asking. And when I put do not disturb on and said I'm going to bed, they kept coming (with dairy milk first of all) and knocking on my door.

Went to get a check out the evening before to avoid having to get up earlier than necessary, this was an issue. The cab I had ordered no-one knew about, had to wait till they spoke to concierge. The, concierge comes, and again I'm asked to wait. I said, I came down to make it easier for my departure, if I have to sit here and wait an hour tonight what's the point?

After a lot of complaining/suggestions, yes, I do complain if it is too much, I'm used to hotel staff going above and beyond in luxury hotels/resorts, so I tried to overlook it in the beginning, but when it is on and on bad service I need to voice my opinion. I got a wine sent to my room an apology after asking

Appendix 1.5

Complaint on Smart Servicescape



Worst 5-star hotel in KL

Review of Grand Hyatt Kuala Lumpur
Reviewed May 10, 2020 via mobile

Possibly the worst 5-star hotel in town as they never fail to disappoint.

Had a terrible experience with them last year where their F&B staff misused my personal data and used it to enrol me in their loyalty program without my knowledge or consent. What I got was a half-assed apology from their management even though it was a serious violation of PDPA. Utterly discomforting to know that their staff freely abuse customer details.

Thought I could give them a second chance so I called in yesterday to enquire about their Mother's Day afternoon tea. I couldn't get through to THIRTY8 so the operator told me to leave my details and the restaurant would call me back. Of course they did not call me back to follow up on my enquiry so I made arrangements elsewhere. Only for THIRTY8 to call me today to ask me if I'm coming to pick up my order?? Nothing was even confirmed as nobody bothered to return my call.

Will never stay or dine at this hotel as they clearly can't uphold service standards.

[More](#)

Date of stay: May 2020

[See all 6,165 reviews](#)

Appendix 1.6

Complaint on Smart Servicescape

Booking.com

MYR

Semarakkan penginapan anda

Tammi Sabrina

Penginapan

Penerbangan

Penerbangan + Hotel

Sewaan kereta

Tempat tarikan

Tiket lapangan terbang

Laman utama rewi hotel → rewi hotel di Malaysia → rewi hotel di Pulau Pinang → rewi hotel di Georgetown → Reviu tentang The Granite Luxury Hotel Penang

Reviu untuk The Granite Luxury Hotel Penang ★★★★★

191 jalan Magazine, 10300 Georgetown, Malaysia

4.5 dan 188 hotel di Georgetown

Pilihan Pelanggan

Bahasa: Bahasa Melayu

Reviu pelancong: Semua pelancong

Rujukan: Semua rujukan

OK

Skor ulasan
Berdasarkan 10 ulasan hotel

8.4

Reviu yang disahkan 100%
Tetamu sebenar. Penginapan sebenar. Pendapat sebenar.
[Baca selatannya](#)

Kami Pada: Tulis rewi

Daftar masuk

Tarikh daftar masuk

Daftar keluar

Tarikh daftar keluar

Reviu diberikan: 11 Disember 2022

Skor ulasan
Berdasarkan 10 ulasan hotel

8.4

Pecahan skor

Kategori	Skor
Kebersihan	8.9
Keselesaan	8.9
Lokasi	9.0
Kemudahan	8.6
Staf	9.1
Nilai untuk wang	8.5
WiFi percuma	8.7

Amira
Malaysia
6 ulasan

10 "Terbaik"

Tujuan pelancongan: Santai
Suite Classic
2 malam
Keluarga dengan anak yang muda
dihantar melalui mobile

Tiada servis sarapan di hotel.
Bilik luas dan selesa
Menginap pada Oktober 2022

Reviu diberikan: 19 September 2022

Paksu
Malaysia
10 ulasan
5 mendapat berguna

2.0 Sangat lemah

Tujuan pelancongan: Santai
Suite The Splendor
1 malam
Keluarga dengan anak yang muda
dihantar melalui mobile

Wifi x boleh guna...Hampehhh. Daftar pukul 3 ptg suruh chatout pukul 11.00pg... x padan dgn harga... Indah khabaq dari rupq...
Parking auto terbaik... staf jaga pintu masuk terbaik...
Menginap pada Disember 2021

Reviu diberikan: 2 Januari 2022

Nur
Malaysia
1 ulasan

9.0 Hebat

Tujuan pelancongan: Santai
Suite The Deluxe
1 malam
Keluarga dengan anak yang muda
dihantar melalui mobile

Tiada komen disediakan untuk rewi ini
Menginap pada Januari 2024

Reviu diberikan: 17 Januari 2024

Appendix 1.7

Table 1.1 : Mapping of Research Problems, Gaps, Objectives, Significance and Hypotheses

Research Problem	Research Gap	Research Objectives	Research Significance	Main & Sub Hypothesis
The role of servicescape needs attention from hotel management, especially with the emergence of the pandemic (Bonfanti et al., 2021).	Value co-creation behavior, which is new in the industry, has received little research attention, especially in the hotel industry (Roy et al., 2019).	RO1: To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	This study highlights the smart servicescape for the service industry, specifically the hotel industry, as suggested by Kang et al. (2017), Kang et al. (2019) and Roy et al. (2019). It is also applicable to the retail industry.	H1: There is a significant relationship between antecedents (physical, social, and smart servicescape) and value co-creation. H1a: There is a relationship between physical servicescape and value co-creation. H1b: There is a positive relationship between social servicescape and value co-creation. H1c: There is a positive relationship between smart servicescape and value co-creation.
It is proposed that if hotel guests do not spread good information about the servicescape, the hotel may lose around US\$100,000.00 in business opportunities (Keshavarz & Ali, 2015). Value co-creation does not necessarily lead to customer	There is still a lack of research to examine value co-creation and its impact on customer satisfaction (Jin & Chen, 2021). In general, the outcomes of value co-creation remain unclear (Busser	RO1: To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	The study will provide input for the management of hotels on how they can benefit from customers' roles as a "partial employee".	H2: There is a significant relationship between value co-creation and customer satisfaction.

satisfaction, as the relationship has a dark side (Gligor & Maloni, 2021).	& Shulga, 2018). An increase of 2 % in positive guest reviews may enhance the hotel's profitability by 10 % (Keshavarz & Ali, 2015).			
Customer citizenship behaviors (CCB) are profitable but challenging to attain (Chan et al., 2017)	There is a need to investigate the causal relationship between value co-creation and CCB as it is underexplored (Assiouras et al., 2019; Sugathan & Ranjan, 2019) There is a missing link between the customer and value co-creation as a previous study focused on an OCB (organization behavior citizenship) study (Al Halbusi et al., 2020).	RO1: To examine the relationships between servicescapes, (physical, social and smart servicescapes), value co-creation and CCB.	Hotel management needs to appreciate and have good relationships (working together) with hotel guests to get future benefits.	H3: There is a significant relationship between value co-creation and customer citizenship behavior (CCB).
While recovering from the pandemic, gaining the trust and satisfaction of hotel guests is a big challenge. It is suggested that future studies on guest satisfaction are needed in Malaysia (Aminudin & Jamal, 2021).	Satisfaction will generally result in the guests offering to play an extra role or behavior (Al-Halbusi, 2020), for instance, CCB. Hence, the study aims to examine the relationship between customer satisfaction and CCB.	RO2: To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	Hotel management needs to focus on satisfying their guests' demands as it positively influences CCB.	H4: There is a significant relationship between customer satisfaction and customer citizenship behavior (CCB).
To promote satisfaction among	It is being emphasized that	RO2: To examine the	Hotel management	H5: There is a significant

guests at the hotel level, the need to develop a good relationship with guests is essential. Sharing and utilizing knowledge is the critical dimension for the hotel to identify the attributes that generate the highest level of satisfaction among the customers related to the activities of the hotel industry in Malaysia (Aminudin & Jamal, 2021). Hence, it is vital to have a good rapport with the customer. Nevertheless, common complaints regarding servicescapes offered to hotel guests include false advertising of the hotel rooms (Agoda, 2021).	good servicescape will result in high guest satisfaction (Lin, 2016) The hotel industry is becoming customer-orientated as it aims to develop a positive and satisfying relationship with guests (Hassan et al., 2013)	interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	needs to enhance their servicescape as it is the primary resource for guests. The study will benefit the hotels' return on investment (ROI). Productivity and quality will increase by delivering services expected by guests. This is very important, especially during the post-pandemic period, as most hotels would want to recover their business and attract guests. The hotel industry can improve its servicescape efficiently by focusing on the most critical aspects that suit its operation and the demand of guests.	relationship between antecedents (physical, social, and smart servicescape) and customer satisfaction. H5a: There is a significant relationship between physical servicescape and customer satisfaction. H5b: There is a significant relationship between social servicescape and customer satisfaction. H5c: There is a significant relationship between smart servicescape and customer satisfaction.
In marketing, practitioners and academics look at factors promoting CCB as a notable driver of business success (Abdelmoety et al., 2022). During the pandemic, the hotel management must focus on servicescape (Bonfanti et al., 2021) because it has been highlighted as one of the antecedents contributing to the	Gong & Yi (2019) suggested that one future research direction is to consider the servicescape element as the potential CCB antecedent. Xu et al. (2021) mentioned that servicescape's effects on CCBs of helping other customers and providing feedback to an organization are	RO2: To examine the interrelationships between servicescapes, (physical, social and smart servicescapes), customer satisfaction and CCB.	In addition, it is suggested that hotel management pay attention to customers who display CCB so that the behaviors may be reciprocated and extended to other guests in the service encounter (Yi et al., 2014). Hence, the hotel will benefit from this consumer behavior. This study further explores	H6: There is a significant relationship between antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB). H6a: There is a significant relationship between physical servicescape and customer

CCB (Gong & Yi, 2019). Integrating robots and service automation into the hotel's service delivery process is critical in gaining a competitive advantage. However, the human touch is still required for a more personalized guest experience (Davari et al., 2021). Hence, there is a need to identify the role of smart servicescape (high-tech and high-touch) in CCB.	completely neglected. The antecedents of CCB studied by previous researchers were focused on perceptions of the relationship between organizations (Bettencourt, 1997; Bove et al., 2009), good social support (Zhu et al., 2016), corporate social responsibility (CSR) (Abdelmoety et al., 2022; Aljarah, 2020) and customer love (Hossain et al., 2020). But the element of servicescape, which is one of the primary resources of the hotel, is still unexplored. There are limited studies investigating the role of servicescape in influencing CCB (Li & Wei, 2021).		the direct relationship between physical, social and smart servicescape and CCB in four- and five-star hotels, as research in this area is limited.	citizenship behavior (CCB). H6b: There is a significant relationship between social servicescape and customer citizenship behavior (CCB). H6c: There is a significant relationship between smart servicescape and customer citizenship behavior (CCB).
Limited knowledge and lack of understanding of the role of servicescape towards CCB. Moreover, understanding value co-creation between servicescape and CCB has largely been ignored. Hotel management does not care about their guests' feedback.	Studies on value co-creation and servicescape have drawn attention mainly to retail stores, restaurants, theme parks, and hotels (Al Halbusi et al., 2020). Unfortunately, the study on hotel guests of 4 and 5-star in	RO3: To investigate the mediation effect of value co-creation between servicescapes (physical, social and smart servicescapes), and CCB.	The study will provide input for hotel management on how they can benefit from guest roles. For instance, operating costs in promotions may be reduced when guest co-creation and CCB take place. The happy guests will act as hotel	H7: Value co-creation mediates the relationship between antecedents (physical, social, and smart servicescape) and customer citizenship behavior (CCB).

They fail to appreciate their guests' contributions in giving feedback and complaints that may help the hotel improve its services.	Malaysia is receiving scant attention.		“salespersons” in sharing their experiences with other people (Hur et al., 2018).	H7a: Value co-creation mediates the relationship between physical servicescape and customer citizenship behavior (CCB). H7b: Value co-creation mediates the relationship between social servicescape and customer citizenship behavior (CCB). H7c: Value co-creation mediates the relationship between smart servicescape and customer citizenship behavior (CCB).
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Appendix 2.1

Guideline for Star Rated

Star Rating	hoteltechreport1	Expedia Star Rating2	European Hotelstars Union Rating System2
1-star	Basic accommodation, small room, do not ensure ensuite bathrooms, 24-hour reception, or daily cleaning.	Basic motels and hostels No-frills accommodation Daily housekeeping and 24-hour reception may not be available Rooms may not have private bathrooms, TV or telephones.	All rooms feature ensuite bathrooms Daily-room cleaning offered TVs and Wi-Fi in all rooms Table and chair in all rooms Soap/body wash and bath towels provided Toiletries available on request Reception service Cashless payment available Extended breakfast offered
2-star	24-hour reception or daily cleaning and a basic ensuite bathroom. Limited amenities – telephone and television	Simple but clean budget accommodations 24-hour reception Daily housekeeping service Rooms with private bathrooms No on-site dining except for Continental breakfast	Breakfast buffet Bedside reading light Body wash or shower gel Linen Shelves Bath and hand towels Bilingual staff Serving kit and shoe polish utensils available
3-star	Room service, ensuite bathrooms, daily cleaning, a desk or table, and Wifi	On-site restaurant and bar Baggage assistant available More spacious guest rooms with comfortable seating and good-quality bedding Large bathrooms with shower/tub combinations	In-person reception is available at least 10 hours per day, and remote reception is available 24 hours. Common lounge area Luggage service available Drinks available in-room Hair dryer and mirror in-room Luggage racks Laundry and ironing services available Extra pillows and blankets are available Complaint management system in place
4-star	Nice guest room and enormous lobby. Wi-fi with higher speed. On-site swimming pool, gym, bar/restaurant, or valet parking	24-hour room service Rooms with large beds, extra seating, minibars, safes, pillowtop mattresses, bathrobes Upscale toiletries Resorts feature spas, tennis courts, poolside food service	In-person reception is available 24 hours Hotel bar or lounge area Breakfast buffet with service or seated breakfast Minibar/room service available Armchair or couch and side table in all rooms

			Bathrobes and slippers available Amenity kit (shower cap, nail file, etc) The vanity mirror in the bathroom International TV channels
5-star	Nice guest room with comfortable beds. WI-fi with higher speed. On-site swimming pool, gym, bar/restaurant, or valet parking	Fine dining on-site Luxury spa Full-service health clubs Well-trained staff Welcome amenities Butler service available Elegant guestroom décor Oversized bathrooms with premium features Electronic features in rooms, such as remote-controlled shades Resorts feature golf courses, tennis courts with a variety of playing surfaces, health clubs with personal trainers, and luxurious spas	24-hour reception service Valet parking Concierge Shuttle or limousine service Personalized in-room greeting for each guest Minibar and room service available 24 hours In-room safe Ironing shoe polish and sewing service available Turndown service

[Source: hoteltechreport (Hollander, 2022), Smarter Travel 2023 (Morse Teel, 2023)]

Appendix 4.1

Questionnaire Assessment Guideline

REVIEWER'S NAME:

INSTRUCTIONS

- (1) Kindly use the following criteria to review the questions.
- (2) For each criterion, please list (if any) affected question numbers and write briefly remedial suggestions.

Guideline	Instruction
1. Questionnaire instructions	Problems with an introduction, instructions, or explanations from the respondent's point of view a. Conflicting or inaccurate introductions, instructions, or explanations b. Complicated introductions, instructions, or explanations
2. Clarity	Identify problems related to communicating the intent or meaning of the question to the respondent. a. Wording – Lengthy questions, grammatical errors, awkward, or contain complicated structure b. Technical term(s) – unclear, undefined, or complicated c. Vague – The question can be interpreted in multiple ways to decide what should be included or excluded d. Reference period – Missing, in conflict, or not well specified
3. Assumptions	Identify problems with assumptions or the underlying logic. a. Inappropriate assumptions – Questions that relate to the respondents' situation b. Assumes constant behavior – Experience questions that vary c. Double-barreled – Contains more than one constant questions
4. Knowledge / Memory	Make sure respondents have no trouble remembering the information. a. Knowledge may not exist – Difficult for the respondent to know the answer b. Attitude may not exist – Respondent has no attitude to answer the question - c. Recall failure – Respondent cannot remember the information needed d. Computation problem – Respondent needs to do some calculation
5. Sensitivity / Bias	Check for sensitivity (wording or bias) of the questions. a. Sensitivity – The question asks something that is embarrassing, very private, and can lead to the identification of the respondent b. Desirability response – The question implies it
6. Response Categories	Evaluate the adequacy of the sample of respondents to be collected. a. Mismatch – Between question and respondent b. Technical term(s) – undefined, unclear, or complex c. Vague – Respondents are subject to different interpretation d. Overlapping – The respondents' categories e. Missing – Eligible responses in respondent categories f. Illogical order – The respondent categories

Appendix 4.4

Reliability Test for Pilot Study

Physical Servicescape

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.865	9

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance	N of Items
Items Means	4.174	4.045	4.273	.227	1.056	.008	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C1.1	33.52	13.837	.318	.240	.873
C1.2	33.36	13.586	.507	.493	.851
C1.3	33.30	13.004	.666	.550	.837
C1.4	33.32	13.152	.589	.458	.844
C1.5	33.50	11.605	.731	.650	.828
C1.6	33.36	13.539	.629	.572	.842
C1.7	33.30	13.515	.587	.430	.845
C1.8	33.48	11.744	.686	.662	.834
C1.9	33.41	12.945	.650	.672	.838

Social Servicescape

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.886	.890	7

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance	N of Items
Items Means	4.162	3.932	4.295	.364	1.092	.018	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C2.1	24.89	8.801	.689	.533	.867
C2.2	25.20	9.376	.663	.529	.871
C2.3	24.84	9.346	.661	.685	.871
C2.4	25.00	9.721	.490	.577	.890
C2.5	24.86	8.353	.873	.901	.844
C2.6	25.09	8.178	.632	.559	.882
C2.7	24.93	8.530	.802	.871	.853

Smart Servicescape

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.905	.908	11

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/ Minimum	Variance	N of Items
Items Means	3.925	3.659	4.227	.568	1.155	.029	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C3.1	47.27	31.133	.638	.537	.897
C3.2	46.91	30.968	.747	.724	.892
C3.3	47.00	30.837	.666	.720	.895
C3.4	46.98	32.255	.662	.494	.897
C3.5	47.07	30.530	.831	.787	.889

C3.6	47.07	30.437	.704	.609	.894
C3.7	47.14	30.539	.718	.720	.893
C3.8	47.05	30.556	.668	.632	.895
C3.9	47.36	31.307	.555	.594	.901
C3.10	47.25	30.890	.683	.600	.895
C3.11	47.05	31.998	.506	.415	.902

Value Co-Creation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.873	.872	12

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance	N of Items
Items Means	4.008	3.727	4.341	.614	1.165	.027	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
D1.1	44.32	23.013	.042	.354	.892
D1.2	44.02	20.534	.476	.389	.868
D1.3	44.02	21.325	.442	.405	.870
D1.4	43.75	21.541	.369	.382	.873
D1.5	44.07	20.577	.608	.597	.861
D1.6	44.20	19.050	.642	.610	.858
D1.7	44.00	19.395	.727	.830	.853
D1.8	43.98	19.232	.797	.813	.849
D1.9	44.18	18.478	.761	.677	.849
D1.10	44.07	18.949	.731	.693	.852
D1.11	44.36	19.772	.513	.437	.867
D1.12	44.02	19.046	.674	.541	.856

Guest Satisfaction

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.952	7

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance	N of Items
Items Means	4.127	3.955	4.227	.273	1.069	.008	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
E1.1	24.66	10.928	.807	.718	.944
E1.2	24.73	11.691	.793	.792	.947
E1.3	24.80	10.911	.815	.744	.943
E1.4	24.77	10.552	.893	.853	.937
E1.5	24.73	10.575	.842	.792	.941
E1.6	24.93	10.158	.847	.783	.941
E1.7	24.70	10.492	.846	.835	.941

Customer Citizenship Behavior

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.802	.816	12

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance	N of Items
Items Means	3.860	3.432	4.273	.841	1.245	.065	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
F1.3	42.50	16.814	.504	.560	.784
F1.2	42.34	16.881	.399	.426	.792
F1.3	42.14	17.051	.447	.474	.789
F1.4	42.05	17.347	.374	.657	.794
F1.5	42.11	16.987	.498	.703	.786
F1.6	42.48	16.395	.569	.914	.778
F1.7	42.50	16.581	.560	.928	.780
F1.8	42.52	16.209	.581	.776	.777
F1.9	42.68	15.524	.450	.654	.791
F1.10	42.64	17.121	.273	.427	.807
F1.11	42.89	14.615	.547	.653	.779
F1.12	42.66	16.974	.339	.385	.798

PART A

STATEMENT OF CONSENT

I have read the above information, and I understand it completely. By clicking the “Yes” button below, I confirm that I am Malaysian, 18 years old, and willing to participate in this study.

- ☐ Yes
☐ No

PART B

SCREENING QUESTION

These screening questions determine whether you meet the required demographic or eligibility criteria to participate in this study.

1. Do you have any experience staying at a 4- or 5-star hotel in Malaysia for the past three years (from 2019 to 2022)?

- ☐ Yes
☐ No

(If YES, kindly proceed to the next question)

(If NO, THANK YOU FOR YOUR TIME)

PART C

A. DEMOGRAPHIC PROFILE

1. Gender

- ☐ Male
☐ Female

2. Age

- ☐ 18 – 24
☐ 25 – 34
☐ 35 – 44
☐ 45 – 54
☐ 55 and above

3. Race

- ☐ Malay
- ☐ Chinese
- ☐ Indian
- ☐ Bumiputera (Sabah/Sarawak)

4. Occupation

- ☐ Government sector
- ☐ Private sector
- ☐ Self-employed
- ☐ Retired
- ☐ Others

5. Monthly Income

- ☐ Less than RM1000
- ☐ RM1000 – RM1999
- ☐ RM2000 – RM2999
- ☐ RM3000 – RM3999
- ☐ RM4000 – RM4999
- ☐ RM5000 and above

6. When was your last stay at a hotel?

- ☐ less than a week
- ☐ less than a month
- ☐ less than six months
- ☐ less than 12 months
- ☐ 12 months and above

7. Length of stay

- ☐ less than three days
- ☐ Three days to 1 week
- ☐ 1 to 2 weeks
- ☐ more than two weeks

8. What was the primary purpose of your most recent hotel stay?

- ☐ Business
- ☐ Visiting friends
- ☐ Visiting family
- ☐ Vacation
- ☐ Attending event

9. On most of your travel trips, with whom are you traveling?

- ☐ Alone
- ☐ Family members
- ☐ Spouse
- ☐ Friends

10. In a year, how frequently do you stay in a hotel (in a normal situation)?

- ☐ 1 to 3 times
- ☐ 3 to 6 times
- ☐ 6 to 10 times
- ☐ More than ten times

11. I prefer the hotels to provide service based on the below method

- ☐ more human, less technology
- ☐ more technology, less human
- ☐ a balance between both (human and technology)

12. Technology that I would want to see in the hotel

- ☐ Hotels provide robots to greet hotel guests.
- ☐ The hotel room is covered with sensors.
- ☐ The hotel room uses a tablet to adjust lights, temperature, door, and curtain.
- ☐ The hotel room uses a smartphone as the peephole (hole at the door to see outside)
- ☐ The hotel uses smartphones to communicate with the hotel employees (E.g., through the WhatsApp platform)
- ☐ Check-in process to be fully automated (done through an app).
- ☐ The check-out process is fully automated (done through an app).
- ☐ A voice/movement assistant controls hotel room amenities.

- ☐ The hotel collects various personal data from me upon check-in.
- ☐ Automated machines or robots perform the Food & Beverage (F&B) task.
- ☐ Automated machines or robots perform housekeeping tasks.

13. I am afraid of the below factors when using technology that needs me to reveal my data to the hotel (MAY CHOOSE MORE THAN ONE (1) ANSWER).

- ☐ Privacy of the data
- ☐ Safety of the data
- ☐ Hacks on the data

THE FOLLOWING SECTIONS DEPICT YOUR ‘RECENT STAY’ EXPERIENCE AT A 4- OR 5-STAR HOTEL.

D1. PHYSICAL SERVICESCAPE

Definition: *Physical servicescape describes the environments where hotels deliver services to their guests—for example, hotel lobby, hotel layout, and hotel signage.*

Below are statements that refer to the physical servicescape of the hotel. Respondents were asked to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from “strongly disagree” through “strongly agree,” with a midpoint labeled “neutral.”

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

	QUESTIONS	1	2	3	4	5	6	7
B1.1	The aroma in the hotel is attractive. <i>Aroma di dalam hotel adalah menarik.</i>							
B1.2	The background music in the hotel makes me feel relaxed. <i>Muzik latarbelakang yang dimainkan di dalam hotel memberi ketenangan.</i>							
B1.3	The temperature in the hotel is comfortable. <i>Suhu di dalam hotel memberi keselesaan.</i>							
B1.4	The architecture of the hotel is attractive. <i>Senibina bangunan hotel adalah menarik.</i>							
B1.5	The facilities of the hotel are up to date. <i>Kemudahan di hotel adalah yang terkini.</i>							
B1.6	The layout of the facilities makes it easy to use. <i>Kemudahan yang disusun atur dengan baik menjadikannya mudah digunakan.</i>							

B1.7	The signage displayed provided adequate directional information. <i>Papan tanda yang dipaparkan memberikan petunjuk yang secukupnya.</i>						
B1.8	The décor of the hotel is fashionable. <i>Dekorasi di dalam bangunan hotel adalah mengikut fesyen terkini.</i>						
B1.9	In general, the hotel environment is attractive. <i>Secara keseluruhan, persekitaran hotel ini adalah menarik.</i>						

B2. SOCIAL SERVICESCAPE

Definition: *Social servicescape can be defined as the environment of social elements in the hotel—for example, communication between hotel guests and employees and hotel employees' appearance.*

Below are statements that refer to the social servicescape of the hotel. Respondents need to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from “strongly disagree” through “strongly agree,” with a midpoint labeled “neutral.”

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

NO	QUESTIONS	1	2	3	4	5	6	7
B2.1	The hotel employees are friendly. <i>Pekerja hotel adalah ramah.</i>							
B2.2	I get along well with the hotel employees. <i>Saya serasi berhubung dengan pekerja hotel.</i>							
B2.3	The hotel employees are neatly dressed. <i>Pekerja hotel berpakaian kemas.</i>							
B2.4	I liked the appearance of the hotel employees. <i>Saya suka penampilan pekerja hotel.</i>							
B2.5	The hotel employees are polite. <i>Pekerja hotel berbudi bahasa.</i>							
B2.6	The hotel employees give hotel guests personal attention. <i>Pekerja hotel memberikan layanan tersendiri kepada setiap tetamu hotel.</i>							
B2.7	The relationship with the hotel employees was good during my stay. <i>Secara keseluruhan, perhubungan komunikasi dengan pekerja hotel adalah baik.</i>							

B3. SMART SERVICESCAPE

Definition: *A smart servicescape is an environment where physical and digital communications between hotel guests, employees, supporting devices, and other elements exist in the hotel that fit its operations.*

For example, the environment where devices and the internet are used in the hotel, such as:

- 1. Room key card*
- 2. Mobile or kiosk check-in and check-out*
- 3. Sensor, control panel, or tablet used in the room (to control lights, curtain, and room temperature)*
- 4. Smartphones to communicate with hotel employees via social media platforms and unique Apps provided by the hotel.*
- 5. QR code for room service*
- 6. Wi-Fi*

Below are statements that refer to the smart servicescape in the hotel. Respondents were asked to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from “strongly disagree” through “strongly agree,” with a midpoint labeled “neutral.”

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

NO	QUESTIONS	1	2	3	4	5	6	7
B3.1	The smart environment in the hotel attracts me. <i>Persekitaran pintar di hotel menarik perhatian saya.</i>							
B3.2	The smart environment in the hotel satisfies me. <i>Persekitaran pintar di hotel memuaskan hati saya.</i>							
B3.3	The smart environment in the hotel makes me comfortable. <i>Persekitaran pintar di hotel memberi keselesaan kepada saya.</i>							
B3.4	The technology used in a smart environment still has a sense of human touch. <i>Persekitaran pintar di hotel masih mempunyai elemen sentuhan manusia.</i>							
B3.5	The smart environment in the hotel is user-friendly. <i>Persekitaran pintar di hotel adalah mesra pengguna.</i>							

B3.6	The smart environment in the hotel allows me to view the vital information needed. <i>Persekitaran pintar di hotel membolehkan saya melihat informasi penting yang diperlukan.</i>							
B3.7	The smart environment in the hotel responds to my specific needs quickly. <i>Persekitaran pintar di hotel memberi maklumbalas kepada keperluan saya dengan pantas.</i>							
B3.8	I control the technology used in the smart environment (E.g., the control panel or tablet used in the hotel room). <i>Saya masih dapat mengawal teknologi yang digunakan di dalam persekitaran pintar di hotel (Contohnya., alat kawalan atau tablet yang digunakan di dalam bilik hotel)</i>							
B3.9	The technology used in a smart environment in the hotel knows what I want. <i>Teknologi yang digunakan di dalam persekitaran pintar di hotel memahami kehendak saya.</i>							
B3.10	The smart environment provides extra services based on my preferences (E.g., guests can order room service via QR code, WhatsApp, and F&B Apps). <i>Persekitaran pintar di hotel menyediakan servis tambahan berdasarkan keperluan saya (Contohnya, tetamu boleh memesan makanan melalui kod QR, WhatApps dan aplikasi F&B)</i>							
B3.11	In general, I prefer a hotel that can provide suitable technology via a smart environment to the hotel guests. <i>Secara keseluruhan, saya lebih memilih hotel yang menyediakan penggunaan teknologi bersesuaian di dalam persekitaran pintar kepada tetamu hotel.</i>							

C. VALUE CO-CREATION

Definition: Value co-creation can be defined as the actions of multiple stakeholders, often unaware but benefiting each other—for example, the relationship between hotel guests and employees.

Below are statements that refer to the value co-create by the hotel guests of servicescape in the hotel. Respondents were asked to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from “strongly disagree” through “strongly agree” with a midpoint labeled “neutral.”

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

NO	QUESTIONS	1	2	3	4	5	6	7
C1.1	In most hotels, I stayed open to ideas and suggestions for service improvement. <i>Hotel terbuka kepada idea dan cadangan untuk penambahbaikan.</i>							
C1.2	The hotel provides sufficient information on its facilities (e.g., brochure, catalog, and online information). <i>Hotel menyediakan informasi yang mencukupi berkenaan fasiliti kepada tetamu hotel (cthnya, brosur, katalog and informasi dalam talian).</i>							
C1.3	The hotel environment met my requirements. <i>Persekitaran hotel adalah selari dengan keperluan saya.</i>							
C1.4	The role of hotel guests is vital to improve service. <i>Peranan tetamu hotel adalah penting untuk tambahbaik perkhidmatan.</i>							
C1.5	The employees conveyed relevant information about the hotel facilities. <i>Pekerja hotel menyampaikan informasi berkenaan fasiliti hotel kepada tetamu.</i>							
C1.6	I could conveniently express my specific requirements to the hotel. <i>Saya boleh menyuarakan kehendak kepada hotel dengan mudah.</i>							
C1.7	I have a good experience in using the hotel facilities during my stay. <i>Saya mempunyai pengalaman yang baik dalam menggunakan fasiliti hotel sepanjang penginapan saya.</i>							
C1.8	I had a good experience being served by hotel employees during my stay. <i>Saya mempunyai pengalaman yang baik dilayan oleh pekerja semasa menginap di sini.</i>							

C1.9	The hotel provided me with a memorable experience. <i>Hotel memberikan saya pengalaman yang sukar dilupakan.</i>							
C1.10	The hotel tried its best to serve my personal needs. <i>Hotel cuba sebaiknya memberikan perkhidmatan berdasarkan keperluan saya.</i>							
C1.11	I felt a bond or relationship with the hotel. <i>Saya dapat rasakan ikatan dan perhubungan baik antara tetamu dan hotel.</i>							
C1.12	In addition to the facilities offered, the hotel provided an excellent overall experience. <i>Secara keseluruhan, di samping menyediakan fasiliti, hotel memberikan pengalaman yang menyenangkan.</i>							

D. GUEST SATISFACTION

Definition: *It is a perspective in which guests' needs, wants, and expectations throughout the product or service have been met and lead to good behavior. For example, promote the hotel.*

Below are statements that refer to the guest satisfaction of servicescape in the hotel. Respondents were asked to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from “strongly disagree” through “strongly agree,” with a midpoint labeled “neutral.”

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

NO	QUESTIONS	1	2	3	4	5
D1.1	I am satisfied with the hotel facilities (physical servicescape). <i>Saya berpuashati dengan fasiliti hotel ini (persekitaran fizikal).</i>					
D1.2	I am satisfied with the appearance of the hotel employees (social servicescape). <i>Saya berpuashati dengan penampilan staf hotel ini (persekitaran sosial).</i>					
D1.3	I am satisfied with the technology used in the hotel (e.g., check-in using the hotel system). <i>Saya berpuashati dengan teknologi yang digunakan di hotel ini (persekitaran pintar).</i>					
D1.4	My stay at this hotel has met my expectations. <i>Penginapan di hotel ini telah memenuhi jangkaan saya.</i>					
D1.5	In general, I was satisfied with the hotel stay. <i>Secara keseluruhan, saya berpuashati dengan penginapan di hotel ini.</i>					

E. CUSTOMER CITIZENSHIP BEHAVIOR (CCB)

Definition: CCB is a voluntary action by hotel guests that will benefit the guests and the hotel, such as improving guests'sense of belonging and free employees for the hotel. For example, guests promote and say good things about the hotel.

Below are statements that refer to customer citizenship behavior (CCB). Respondents were asked to indicate their agreement or disagreement with each of the items listed, using a 7-point scale ranging from "strongly disagree" through "strongly agree," with a midpoint labeled "neutral."

1	2	3	4	5	6	7
Strongly disagree	Slightly disagree	Disagree	Neutral	Slightly agree	Agree	Strongly agree

NO	QUESTIONS	1	2	3	4	5	6	7
E1.1	I will let the hotel employee know if I have a valuable idea for improving service. <i>Sekiranya saya ada idea untuk memperbaiki perkhidmatan, saya akan sampaikan kepada pekerja hotel.</i>							
E1.2	When I receive good service, I comment about it. <i>Saya berikan komen sekiranya saya menerima perkhidmatan yang baik.</i>							
E1.3	When I experience a problem, I let the hotel employee know about it. <i>Saya maklumkan kepada staf hotel sekiranya saya menghadapi sebarang masalah.</i>							
E1.4	I recommended the hotel to others. <i>Saya mengesyorkan hotel kepada orang lain.</i>							
E1.5	I encouraged friends and relatives to experience the service of this hotel. <i>Saya menggalakkan rakan dan keluarga untuk mencuba perkhidmatan di hotel ini.</i>							
E1.6	I assist other hotel guests if they need help. <i>Saya bantu tetamu hotel sekiranya mereka memerlukan bantuan.</i>							
E1.7	I help other hotel guests if they seem to have problems. <i>Saya bantu tetamu hotel sekiranya mereka menghadapi masalah.</i>							
E1.8	I help other hotel guests to use the service correctly. <i>Saya bantu tetamu hotel untuk menggunakan perkhidmatan dengan betul.</i>							
E1.9	I am patient if the service is not delivered as expected. <i>Saya bersabar sekiranya perkhidmatan yang diberikan tidak sama dengan jangkaan.</i>							
E1.10	I am patient if the hotel employee makes a mistake. <i>Saya bersabar sekiranya pekerja hotel membuat kesilapan.</i>							

E1.11	I can adapt if I must wait longer for the service. <i>Saya boleh menyesuaikan diri sekiranya perlu menunggu lama untuk perkhidmatan diberikan.</i>							
E1.12	In general, I am willing to help the hotel. <i>Secara keseluruhan, saya bersedia untuk menghulurkan bantuan kepada pihak hotel.</i>							

THE END

SEKIAN

THANK YOU

TERIMA KASIH



Appendix 5.1

The Invitation to Respondents to Participate in the Survey

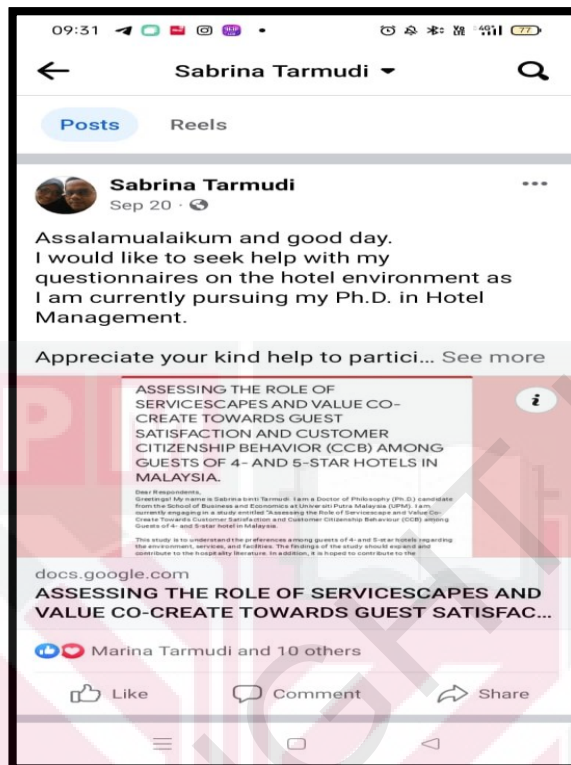


Figure: Online Survey Invitation

Appendix 5.2

Front Cover of Google Form for the Survey

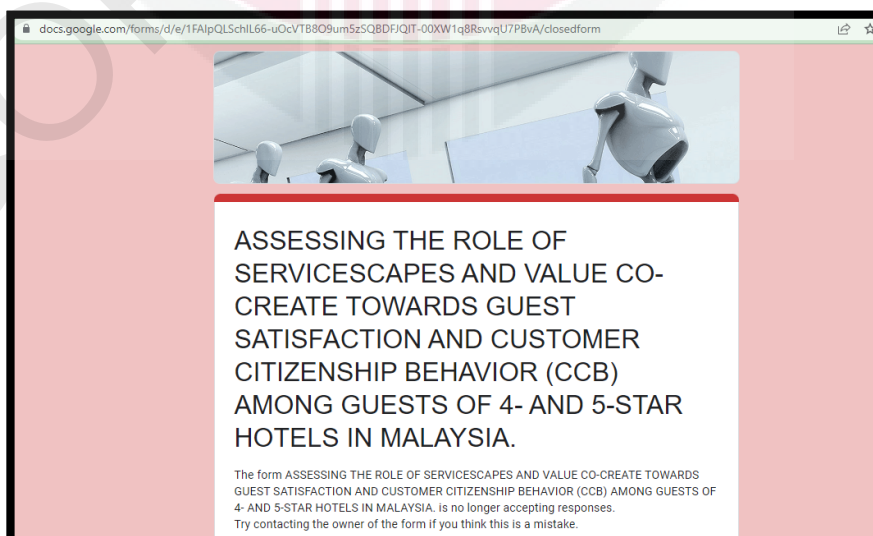


Figure: Front cover of Google Form for the survey

Appendix 5.3

Google Form Responses from the Respondent

The screenshot shows the Google Forms interface for a form titled "2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE". The form has 344 responses. The "Who has responded?" section lists the following email addresses: rhil208@gmail.com, afizah1412@gmail.com, and aj.asfiar@gmail.com. The form is currently in the "Responses" tab, and the "Accepting responses" toggle is turned on.

1-18

A1	B	C	D	E	F	G	H	I	J
Timestamp	Email address	I have read the above info	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was
	rhil208@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6
	afizah1412@gmail.com	Yes	No						
	aj.asfiar@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
	nubimaga@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
	haizamasri@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
	mohdazuan1976@gmail.com	Yes	Yes	Male	45 - 54	Malay	Government sector	More than RM10,000	less than 6
	zetaruslan@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 6
	ikramtarmud79@gmail.com	Yes	Yes	Male	35 - 44	Malay	Self-employed	RM2,001 - RM4,000	less than 6
	bellidandyanase@yahoo.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM6,001 - RM8,000	less than 6
	mrsalham@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	12 months
	wanrozliantieruslan@gmail.com	Yes	Yes	Female	25 - 34	Malay	Self-employed	RM8,001 - RM10,000	less than 6
	rikhasusanty@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than 6
	truepengyu@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM2,001 - RM4,000	less than 6
	knnoxx@yahoo.com	Yes	No						
	sabrina_zax@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
	razibimportedcar@gmail.com	Yes	Yes	Male	35 - 44	Malay	Self-employed	RM8,001 - RM10,000	less than 6
	shuhazayusof@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	More than RM10,000	less than 6

19-35

A1	B	C	D	E	F	G	H	I	J
Timestamp	Email address	I have read the above info	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was
	mohdyat8895@gmail.com	Yes	Yes	Male	55 and above	Malay	Retired	RM6,001 - RM8,000	12 months
	sarahsazwani3103@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
	cairulhisam@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than 6
	muhammadayubabdulha	Yes	No						
	feeda3358@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4,001 - RM6,000	12 months
	anisms78@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	less than 6
	gs62608@student.upm.edu	Yes	Yes	Female	55 and above	Bumiputera (Sabah/Sara	Others	RM4,001 - RM6,000	12 months
	rosdiahafri76@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4,001 - RM6,000	less than 6
	shuhaily0105@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM2,001 - RM4,000	12 months
	azlanams@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	12 months
	norazlan.motobina@gmail	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
	zyant1405@gmail.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	Less than RM2,000	less than 6
	ronmalimz@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	less than 6
	sabrinayacob@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	RM2,001 - RM4,000	less than 6
	rutilay7476@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM2,001 - RM4,000	12 months
	nurulnajahsueo@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than 6
	nryazwani20@gmail.com	Yes	No						

36-52

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📄 📁									
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1	Email address	I have read the above inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When w
36	kepolisanamlog.prk@gmail.com	Yes	No						
37	shalezy82@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	More than RM10,000	less than a
38	norazvamohamadysufi	Yes	Yes	Female	35 - 44	Malay	Private sector	More than RM10,000	less than a
39	saaidanah@tnb.com.my	Yes	Yes	Male	45 - 54	Malay	Private sector	More than RM10,000	less than a
40	fikzys@gmail.com	Yes	Yes	Male	55 and above	Malay	Private sector	More than RM10,000	less than 6
41	nordilmiyah@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM8,001 - RM10,000	less than a
42	maznahusman86@gmail.com	Yes	No						
43	g-66318916@moe-dl.edu	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	12 months
44	rohana2378@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	More than RM10,000	less than a
45	syahsyah80@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	12 months
46	akmal@lotuswest.com.my	Yes	No						
47	ni.lbrahim09@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	Less than RM2,000	less than a
48	ahurururur@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a
49	amirakmalnor@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than a
50	ameerajay1307@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	More than RM10,000	12 months
51	qistinaazid@gmail.com	Yes	Yes	Female	25 - 34	Bumiputera (Sabah/Sara	Others	Less than RM2,000	less than a
52	ainnurain06@gmail.com	Yes	Yes	Female	18 - 24	Malay	Others	Less than RM2,000	less than a

53 – 69

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📄 📁									
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Timestamp									
1	Email address	I have read the above inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When w
53	pandaezha@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	12 months
54	ayien_nor@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM4,001 - RM6,000	less than a
55	mywayask@gmail.com	Yes	Yes	Female	25 - 34	Malay	Self-employed	RM2,001 - RM4,000	12 months
56	wtie9996@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than a
57	ameupm@gmail.com	Yes	Yes	Female	35 - 44	Chinese	Government sector	RM8,001 - RM10,000	12 months
58	akmal@uthm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than a
59	natasymohtarudin@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
60	azuharu.mohamado@gmail.com	Yes	No						
61	nuraqilahmohdroseli4b@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
62	zahariah202@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4,001 - RM6,000	12 months
63	farakins@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
64	noorainisabri83@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	12 months
65	sitishakirah@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
66	myerah8724@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	12 months
67	noryati@malaysiaairports.com	Yes	Yes	Female	45 - 54	Malay	Private sector	More than RM10,000	12 months
68	gmah27427@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than 1
69	sabrina960820@gmail.com	Yes	Yes	Female	18 - 24	Malay	Government sector	RM2,001 - RM4,000	less than 1

70 – 86

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📄 📁									
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A1	B	C	D	E	F	G	H	I	J
Timestamp									
1	Email address	I have read the above inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When w
53	pandaezha@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	12 months
54	ayien_nor@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM4,001 - RM6,000	less than a
55	mywayask@gmail.com	Yes	Yes	Female	25 - 34	Malay	Self-employed	RM2,001 - RM4,000	12 months
56	wtie9996@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than a
57	ameupm@gmail.com	Yes	Yes	Female	35 - 44	Chinese	Government sector	RM8,001 - RM10,000	12 months
58	akmal@uthm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than a
59	natasymohtarudin@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
60	azuharu.mohamado@gmail.com	Yes	No						
61	nuraqilahmohdroseli4b@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
62	zahariah202@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4,001 - RM6,000	12 months
63	farakins@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
64	noorainisabri83@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	12 months
65	sitishakirah@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
66	myerah8724@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	12 months
67	noryati@malaysiaairports.com	Yes	Yes	Female	45 - 54	Malay	Private sector	More than RM10,000	12 months
68	gmah27427@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than 1
69	sabrina960820@gmail.com	Yes	Yes	Female	18 - 24	Malay	Government sector	RM2,001 - RM4,000	less than 1

87 – 103

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📧 📁

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A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above info	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When will you start?
87	nuraisyah4769@gmail.com	Yes	Yes	Female	18 - 24	Malay	Private sector	Less than RM2,000	less than 1
88	abid.kamaruddin@yahoo.com	Yes	Yes	Male	25 - 34	Malay	Self-employed	Less than RM2,000	less than 1
89	fazlurrahmanmohdazli@gmail.com	Yes	Yes	Male	35 - 44	Malay	Others	Less than RM2,000	less than 1
90	ismawati@utm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 1
91	dahliamusa0059@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
92	syana7779@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	RM4,001 - RM6,000	12 months
93	noraqlah.mustapha@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
94	iredzuan138@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than 1
95	salina.bakar@gmail.com	Yes	Yes	Female	55 and above	Malay	Private sector	More than RM10,000	less than 1
96	jenggoe@gmail.com	Yes	Yes	Male	45 - 54	Malay	Private sector	RM8,001 - RM10,000	12 months
97	nazri.edham@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than 1
98	lanzib76@gmail.com	Yes	Yes	Male	45 - 54	Malay	Private sector	RM8,001 - RM10,000	less than 1
99	elynn.ismail@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	less than 1
100	amryanapohan@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM2,001 - RM4,000	less than 6
101	hazrat@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
102	lynnadexter@gmail.com	Yes	Yes	Female	25 - 34	Bumiputera (Sabah/Sarawak)	Private sector	RM2,001 - RM4,000	less than 6
103	puteri_nabila94@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 1

Form responses 1

104 – 120

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📧 📁

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A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above info	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When will you start?
104	abuhardoh@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6
105	nadia_mohar@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than 1
106	zetty089@utm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	12 months
107	suriesuria81@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than 6
108	zaharah_zmi@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 1
109	nurhasyiahmahazah@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6
110	norza319@utm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
111	aina_mavaddah@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than 1
112	arifliq27@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	Less than RM2,000	12 months
113	salvahanim89@gmail.com	Yes	Yes	Female	25 - 34	Malay	Self-employed	RM2,001 - RM4,000	less than 6
114	kelypearlroo@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Others	More than RM10,000	less than 1
115	minhaslinda.mohdSaleh@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
116	flizahkassim@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6
117	norsalfida@yahoo.com	Yes	Yes	Female	45 - 54	Malay	Private sector	RM4,001 - RM6,000	less than 6
118	iqmalmustapha@gmail.com	Yes	Yes	Male	25 - 34	Malay	Private sector	Less than RM2,000	less than 1
119	shahrulhussni84@gmail.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
120	aidanizam@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 6

Form responses 1

121 – 137

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ 📧 📁

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A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above info	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When will you start?
121	norli1974@utm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
122	arifa@utm.edu.my	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
123	norrmust@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM4,001 - RM6,000	less than 1
124	aziean@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 1
125	haslinda_sahlan@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
126	farid.ramli@gmail.com	Yes	Yes	Male	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 1
127	syida2309@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	More than RM10,000	less than 1
128	yuzatryusof87@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
129	xylenepark@gmail.com	No	No						
130	hanisahzaman@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 1
131	huzierazraai@gmail.com	Yes	Yes	Male	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 1
132	ledajeff@yahoo.com	Yes	No						
133	synobysna@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 1
134	ticeyana1304@gmail.com	Yes	Yes	Female	35 - 44	Bumiputera (Sabah/Sarawak)	Government sector	RM4,001 - RM6,000	less than 6
135	puterisayang30@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than 1
136	melorcantik@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 1
137	jziana81@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 1

Form responses 1

138 – 154

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ Share									
File Edit View Insert Format Data Tools Extensions Help Last edit was 18 minutes ago									
A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above Inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When wi
138	taufikzami@gmail.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 1
139	akmazamr90@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than 6
140	illaz_wan@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6
141	zulfazamri@icloud.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	Less than RM2,000	less than 6
142	rk.firdausulainan@gmail.com	Yes	Yes	Male	35 - 44	Malay	Self-employed	RM6,001 - RM8,000	less than 6
143	shahrizan85sam@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6
144	lanriduan77@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6
145	surianatalia0805@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6
146	birkha77@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	RM6,001 - RM8,000	less than 6
147	wan_nazrah@unisel.edu.my	Yes	Yes	Female	45 - 54	Malay	Private sector	RM4,001 - RM6,000	less than 1
148	noah.qss12@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	RM2,001 - RM4,000	less than 6
149	sithajaryasin@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 6
150	nurulakmalothman10@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 1
151	nain901@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than 6
152	aminazulkufl@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM6,001 - RM8,000	less than 1
153	fiezal87@yahoo.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than 6
154	julinizam@gmail.com	Yes	Yes	Female	35 - 44	Malay	Others	RM4,001 - RM6,000	less than 6

155 – 171

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ Share									
File Edit View Insert Format Data Tools Extensions Help Last edit was 19 minutes ago									
A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above Inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When wi
155	marissakidshop@gmail.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM8,001 - RM10,000	less than 6
156	savine_7@hotmail.com	Yes	Yes	Female	35 - 44	Indian	Private sector	RM4,001 - RM6,000	less than 6
157	dicenaa@gmail.com	Yes	No						
158	pphp12@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	12 months
159	azreemalek@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	12 months
160	pu3elysya@gmail.com	Yes	Yes	Female	35 - 44	Malay	Others	RM8,001 - RM10,000	less than 6
161	noorbanonmuj16@gmail.com	Yes	Yes	Female	55 and above	Malay	Government sector	More than RM10,000	less than 1
162	miamunirah@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
163	nisabuha@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
164	nafizlikeyou579@gmail.com	Yes	Yes	Male	18 - 24	Malay	Others	Less than RM2,000	12 months
165	nazarudindaran@gmail.com	Yes	Yes	Male	45 - 54	Malay	Government sector	RM8,001 - RM10,000	less than 6
166	mofazz@gmail.com	Yes	Yes	Male	35 - 44	Malay	Self-employed	More than RM10,000	less than 6
167	wnbayah@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	12 months
168	lzzat1254@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
169	zalkhaothman@ulm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
170	fara1801@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
171	nazru2923@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 1

172 – 188

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER... ☆ Share									
File Edit View Insert Format Data Tools Extensions Help Last edit was 20 minutes ago									
A1	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above Inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When wi
172	chris822@ulm.edu.my	Yes	No						
173	azleesarahmat@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
174	shahrimuln@gmail.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
175	azreen07@ulm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 6
176	slitorah@ulm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
177	cj730617@gmail.com	Yes	Yes	Female	45 - 54	Bumiputera (Sabah/Sara	Government sector	RM8,001 - RM10,000	less than 1
178	onn@ulm.edu.my	Yes	Yes	Male	45 - 54	Malay	Government sector	RM8,001 - RM10,000	12 months
179	arsyady@ulm.edu.my	Yes	Yes	Male	25 - 34	Bumiputera (Sabah/Sara	Government sector	RM4,001 - RM6,000	less than 6
180	asinda@ulm.edu.my	Yes	Yes	Female	45 - 54	Malay	Government sector	More than RM10,000	less than 6
181	zurena511@ulm.edu.my	Yes	Yes	Female	45 - 54	Malay	Government sector	RM8,001 - RM10,000	less than 6
182	shafni.mohamad@ulm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than 1
183	azra.amrudin@gmail.com	Yes	Yes	Female	25 - 34	Malay	Self-employed	RM4,001 - RM6,000	less than 6
184	alifai31@gmail.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	12 months
185	meow@meowbeans.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
186	megat260@ulm.edu.my	Yes	Yes	Male	55 and above	Malay	Government sector	RM4,001 - RM6,000	less than 6
187	amirulhakim@ulm.edu.n	Yes	Yes	Male	25 - 34	Malay	Government sector	RM2,001 - RM4,000	12 months
188	nizwan@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than 6

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER SATI...

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H196 *fx* Government sector

	B	C	D	E	F	G	H	I	J
1	Email address	I have read the above inf	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When wi
189	mfaeez@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8.001 - RM10.000	less than a
190	mnaazmin@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6.001 - RM8.000	less than 6
191	norhayati.my@ulm.edu.i	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8.001 - RM10.000	less than 6
192	zubaidah.tan@ulm.edu.i	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6.001 - RM8.000	less than 6
193	chemah@ulm.edu.my	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6.001 - RM8.000	less than 6
194	fatihahmazlan@ulm.edu	Yes	Yes	Female	25 - 34	Malay	Government sector	RM4.001 - RM6.000	less than a
195	sabal393@ulm.edu.my	Yes	Yes	Female	55 and above	Malay	Government sector	More than RM10.000	12 months
196	mhaliff@ulm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6.001 - RM8.000	less than 6
197	fara1234@ulm.edu.my	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4.001 - RM6.000	less than 1
198	aminahaminah99@gmail	Yes	Yes	Female	45 - 54	Malay	Government sector	More than RM10.000	less than a
199	zulkifisadon@gmail.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM4.001 - RM6.000	less than 1
200	nikmzdulfadi@gmail.co	Yes	Yes	Male	35 - 44	Malay	Others	RM2.001 - RM4.000	less than 6
201	linda_yeop85@yahoo.co	Yes	No						
202	maslina535@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM8.001 - RM10.000	less than a
203	roslinanorbudiman@gma	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6.001 - RM8.000	less than 6
204	pah758@yahoo.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM8.001 - RM10.000	less than a
205	syahzarinaabdullah@yh	Yes	Yes	Female	45 - 54	Malay	Government sector	RM8.001 - RM10.000	less than a

+ Form responses 1 <

Explore

1	Email address	I have read the above info	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When wi
206	linda_yeop85@yahoo.co	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	12 months
207	marinimaktar6006@gm	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than a
208	neerzhaz26@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than a
209	nshahirahazmi@gmail	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 1
210	vanzama@ultim.edu.my	Yes	Yes	Female	25 - 34	Malay	Government sector	RM4,001 - RM6,000	less than 6
211	azdel@ultim.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than a
212	nurulnzakaria@gmail.co	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
213	nurul706@ultim.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than 6
214	nurzaifahghazali@gmail	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM8,000	less than a
215	nurulidaabd.rahim@gm	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than a
216	amzar.nagoya@gmail.co	Yes	Yes	Male	25 - 34	Malay	Private sector	RM8,001 - RM10,000	less than a
217	norliza@ultim.edu.my	Yes	Yes	Female	55 and above	Malay	Government sector	More than RM10,000	less than 6
218	xanthomas@gmail.com	Yes	Yes	Female	25 - 34	Bumiputera (Sabah/Sara	Self-employed	RM2,001 - RM4,000	less than 6
219	rozana.me@gmail.com	Yes	No						
220	faizalchef75@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than a
221	nozemyliza@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 - RM6,000	less than a
222	khadijahsazli@gmail.co	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6

2nd ASSESSING THE ROLE OF SERVICESCAPES AND VALUE CO-CREATE TOWARDS CUSTOMER SATISFACTION										
File Edit View Insert Format Data Tools Extensions Help Last edit was 3 days ago										
A1 B Timestamp C D E F G H I J										
	B	C	D	E	F	G	H	I	J	
1	Email address	I have read the above info	Do you have any experie	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When visited	
223	dysandra76@gmail.com	Yes	Yes	Female	55 and above	Malay	Government sector	RM6,001 – RM8,000	less than 1	
224	ainothman@ultim.edu.my	Yes	Yes	Female	55 and above	Malay	Government sector	More than RM10,000	less than 1	
225	nurul831@ultim.edu.my	Yes	Yes	Female	35-44	Malay	Government sector	RM4,001 – RM6,000	less than 6	
226	aida52142@yahoo.com	Yes	Yes	Female	45-54	Malay	Private sector	RM4,001 – RM6,000	less than 6	
227	put@ultim.edu.my	Yes	Yes	Female	45-54	Malay	Government sector	More than RM10,000	less than 6	
228	nor_ajlin@yahoo.com	Yes	No							
229	muhdshareen57@gmail.com	Yes	Yes	Male	25-34	Malay	Private sector	RM2,001 - RM4,000	less than 6	
230	azm_yn@yahoo.co.uk	Yes	Yes	Male	25-34	Malay	Self-employed	RM8,001 – RM10,000	less than 6	
231	hambalydm.sepin@gmail.com	Yes	Yes	Male	25-34	Malay	Private sector	RM4,001 – RM6,000	less than 6	
232	fonglokhong@gmail.com	Yes	Yes	Male	18-24	Chinese	Others	RM2,001 - RM4,000	less than 6	
233	risalitzah@gmail.com	Yes	No							
234	risalitzah@gmail.com	Yes	Yes	Female	25-34	Malay	Self-employed	RM2,001 - RM4,000	less than 6	
235	sitisalwaarshad01@gmail.com	Yes	Yes	Female	55 and above	Malay	Retired	RM4,001 – RM6,000	less than 6	
236	geehanirm91@gmail.com	Yes	Yes	Female	35-44	Malay	Government sector	RM6,001 – RM8,000	less than 6	
237	tuannahmad2017@gmail.com	Yes	Yes	Male	45-54	Malay	Government sector	RM8,001 – RM10,000	less than 1	
238	hanimhamiruddin@yahoo.com	Yes	Yes	Female	35-44	Malay	Government sector	RM2,001 - RM4,000	less than 6	
239	chuiun1919@gmail.com	Yes	Yes	Male	35-44	Chinese	Private sector	More than RM10,000	less than 1	

240 – 256

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any experience	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
242	9/20/2022 17:24:50	krylongue@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM6,001 – RM8,000	less than a week
243	9/20/2022 17:40:01	nabilaqstina282@gmail.com	Yes	No						
244	9/20/2022 20:21:17	noewan@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM2,001 - RM4,000	less than 6 months
245	9/20/2022 20:41:50	suhaimeerahman01@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM4,001 – RM6,000	less than a month
246	9/20/2022 23:04:49	sitimaissarahnooree@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM6,001 – RM8,000	less than 6 months
247	9/21/2022 7:12:48	nadhilahzolkiffi@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a month
248	9/21/2022 9:11:07	azmieraahmad@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 – RM6,000	less than a week
249	9/21/2022 9:30:28	zieta_zulkarnian@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM2,001 - RM4,000	less than a week
250	9/22/2022 8:21:52	tahwoon@gmail.com	Yes	No						
251	9/22/2022 8:33:15	iiimancho@yahoo.com	Yes	Yes	Female	55 and above	Malay	Retired	More than RM10,000	less than a month
252	9/22/2022 8:36:25	ilani_ibrahim@yahoo.com	Yes	Yes	Female	55 and above	Malay	Retired	More than RM10,000	less than 6 months
253	9/22/2022 8:39:05	bajierobanzai@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM8,001 – RM10,000	less than 6 months
254	9/22/2022 8:50:54	ahhing@hotmail.com	Yes	Yes	Male	45 - 54	Chinese	Government sector	RM6,001 – RM8,000	less than 6 months
255	9/22/2022 8:51:41	saidas09@utm.edu.my	Yes	No						
256	9/22/2022 8:56:46	yati2121@gmail.com	Yes	Yes	Female	55 and above	Malay	Private sector	RM4,001 – RM6,000	less than 6 months
257	9/22/2022 8:58:15	kadira74@gmail.com	Yes	Yes	Male	45 - 54	Malay	Private sector	RM8,001 – RM10,000	12 months and above
258	9/22/2022 9:00:08	azuan@utm.edu.my	Yes	Yes	Male	35 - 44	Malay	Government sector	More than RM10,000	less than a month
259	9/22/2022 9:02:32	norzu161@utm.edu.my	Yes	Yes	Female	45 - 54	Malay	Government sector	More than RM10,000	less than a month
260	9/22/2022 9:08:28	nrozana.me@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 – RM8,000	less than a month
261	9/22/2022 9:09:57	ipensidek@rocketmail.com	Yes	Yes	Male	55 and above	Malay	Self-employed	RM4,001 – RM6,000	less than a month

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	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any exper	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
262	9/22/2022 9:10:21	wanatie25@utm.edu.my	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 – RM8,000	less than a week
263	9/22/2022 9:24:16	juhaiserbani@gmail.com	Yes	Yes	Male	55 and above	Malay	Self-employed	More than RM10,000	less than 12 months
264	9/22/2022 9:32:27	sabsidek8@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM4,001 – RM6,000	less than a week
265	9/22/2022 9:37:44	amyazira_mv@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 – RM8,000	less than a month
266	9/22/2022 10:30:04	azfarsyukri@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM2,001 – RM4,000	less than a month
267	9/22/2022 10:38:22	fzm2u@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM2,001 – RM4,000	less than a week
268	9/22/2022 10:42:44	masythohmdzuber@syes	Yes	Yes	Female	35 - 44	Malay	Government sector	RM4,001 – RM6,000	less than a month
269	9/22/2022 11:04:55	nismo75@gmail.com	Yes	Yes	Male	45 - 54	Malay	Private sector	RM8,001 – RM10,000	less than 6 months
270	9/22/2022 14:58:44	rahman.mimi@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Others	RM6,001 – RM8,000	less than a month
271	9/22/2022 16:11:05	am.dayanghabibah@gmail	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 – RM4,000	less than a month
272	9/22/2022 16:48:06	qistina.zaraawliya@gmail	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 – RM4,000	less than 6 months
273	9/22/2022 16:50:42	nunulasmau15@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 – RM8,000	12 months and above
274	9/22/2022 18:36:41	yasyiqah@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	Less than RM2,000	less than 6 months
275	9/22/2022 18:41:47	mshafrol@gmail.com	Yes	No						
276	9/22/2022 19:19:24	afniaebu@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 – RM6,000	less than a month
277	9/22/2022 19:56:37	ninasayifa@gmail.com	Yes	No						
278	9/22/2022 20:32:29	Gmujtaba2760@gmail.com	No	No						
279	9/22/2022 20:32:38	esmadayu@gmail.com	Yes	Yes	Male	25 - 34	Malay	Private sector	RM8,001 – RM10,000	less than a month
280	9/22/2022 22:22:53	norlindahusni@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 – RM4,000	12 months and above
281	9/22/2022 22:24:33	serihajar@gmail.com	Yes	Yes	Female	35 - 44	Malay	Others	RM8,001 – RM10,000	less than 6 months

274 – 290

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any expe	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
282	9/22/2022 22:51:51	suekhaiul79@gmail.com	c	Yes	Female	35 - 44	Malay	Private sector	RM2,001 - RM4,000	less than 6 months
283	9/22/2022 23:17:30	sweetbaby_1808@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a week
284	9/22/2022 23:27:52	myshazlee69@gmail.com	c	Yes	Male	45 - 54	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
285	9/23/2022 0:03:41	atizu6164@gmail.com	Yes	Yes	Female	55 and above	Malay	Retired	RM2,001 - RM4,000	less than a month
286	9/23/2022 8:51:06	nor.amalia@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than a week
287	9/23/2022 8:51:37	syuhadaismyname@gmail.com	Yes	No						
288	9/23/2022 8:57:57	rosmuhammed@gmail.com	c	Yes	Male	45 - 54	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
289	9/23/2022 9:05:42	sheda9787@gmail.com	Yes	No						
290	9/23/2022 9:12:24	nadia_najwani@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
291	9/23/2022 9:17:57	izzizaidasawal@gmail.com	Yes	Yes	Female	25 - 34	Malay	Others	RM2,001 - RM4,000	12 months and above
292	9/23/2022 10:40:45	nurfariha90@gmail.com	Yes	No						
293	9/23/2022 10:49:09	ninie5252@gmail.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than a month
294	9/23/2022 12:27:55	nurhidayahrosely@gmail.com	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than 6 months
295	9/23/2022 13:34:29	anorazlina13@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Others	Less than RM2,000	less than a month
296	9/23/2022 14:47:57	rafidahmtahar@gmail.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
297	9/23/2022 15:42:10	eja_6884@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than a month
298	9/23/2022 17:18:31	norlizarisalmi87@yahoo.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than a month
299	9/23/2022 21:37:37	SITINORFAHANA@un.com	Yes	Yes	Female	35 - 44	Malay	Government sector	RM2,001 - RM4,000	less than a month
300	9/24/2022 8:47:35	abmuham@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	RM4,001 - RM6,000	less than 6 months
301	9/24/2022 9:04:50	wanahmadashraf@stu.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than a month

Form responses 1

Accessibility: Good to go

Type here to search

33°C 3:02 PM 17/10/2022

291 – 307

1	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any expe	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
302	9/24/2022 13:38:58	zaidibrahim@icloud.c	Yes	Yes	Female	35 - 44	Malay	Others	RM2,001 - RM4,000	less than a month
303	9/24/2022 15:23:22	hfh.vlog@gmail.com	Yes	Yes	Male	35 - 44	Indian	Self-employed	More than RM10,000	less than a month
304	9/24/2022 19:04:11	jasnadx@yahoo.com	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM2,001 - RM4,000	less than 6 months
305	9/24/2022 21:51:38	syukumagoro@gmail.c	Yes	Yes	Male	35 - 44	Bumiputera (Sabah/S	Government sector	RM2,001 - RM4,000	less than 6 months
306	9/25/2022 1:19:03	aq.tetap.aq95@gmail.c	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than 6 months
307	9/25/2022 11:24:31	najihahshahizat@gm	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than a month
308	9/25/2022 16:41:57	zsuzieta@gmail.com	Yes	Yes	Female	45 - 54	Malay	Private sector	More than RM10,000	less than 6 months
309	9/25/2022 19:35:06	syafawatinoorhafizah	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than a month
310	9/25/2022 21:27:54	muhammadamir87@g	Yes	Yes	Male	35 - 44	Bumiputera (Sabah/S	Private sector	RM2,001 - RM4,000	less than a week
311	9/25/2022 23:27:22	haslindamohd99@gm	Yes	Yes	Female	45 - 54	Malay	Others	RM2,001 - RM4,000	less than a week
312	9/26/2022 9:02:15	burhanazmin@gmail.c	Yes	Yes	Male	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than a month
313	9/26/2022 9:06:18	aida7228@gmail.com	Yes	Yes	Female	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than a week
314	9/26/2022 9:50:03	shidazaid@gmail.com	Yes	Yes	Female	25 - 34	Malay	Government sector	RM2,001 - RM4,000	less than a month
315	9/26/2022 10:22:51	azlin.khalid03@gm	Yes	Yes	Female	25 - 34	Malay	Private sector	RM2,001 - RM4,000	less than 6 months
316	9/26/2022 13:26:54	muhammadysuf85@gn	Yes	Yes	Male	35 - 44	Malay	Self-employed	RM4,001 - RM6,000	12 months and above
317	9/26/2022 15:57:38	cikgufiq9@gmail.com	Yes	Yes	Male	25 - 34	Malay	Government sector	RM4,001 - RM6,000	less than a week
318	9/27/2022 0:47:19	m.khamis@cranfield.a	Yes	Yes	Male	25 - 34	Malay	Private sector	RM4,001 - RM6,000	12 months and above
319	9/27/2022 17:18:44	fsharif@utm.edu.my	Yes	Yes	Female	55 and above	Malay	Government sector	More than RM10,000	less than 6 months
320	9/29/2022 10:29:39	affuddinb@gmail.com	Yes	Yes	Male	45 - 54	Malay	Private sector	More than RM10,000	less than 6 months
321	9/29/2022 10:47:38	syirasviros93@gmail.c	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a week

308 – 324

1	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any expe	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
322	9/29/2022 14:02:53	ezwanmokhtar@gmail	Yes	Yes	Male	45 - 54	Malay	Government sector	RM8,001 - RM10,000	12 months and above
323	9/29/2022 15:47:52	qistinahafee@gmail.c	Yes	No	Female	35 - 44	Malay	Private sector	RM6,001 - RM8,000	less than a week
324	9/30/2022 14:05:45	naimhuzairi@yahoo.c	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than a month
325	10/3/2022 23:38:54	aidamaria@gmail.com	Yes	Yes	Female	45 - 54	Malay	Others	RM2,001 - RM4,000	less than a week
326	10/4/2022 11:01:04	helmizaaba69@gmail.	Yes	Yes	Male	25 - 34	Malay	Private sector	Less than RM2,000	less than a week
327	10/4/2022 11:02:27	liyana.cuckoo92@gm	Yes	Yes	Female	25 - 34	Malay	Others	RM2,001 - RM4,000	less than a month
328	10/4/2022 11:02:52	nur_hidayah9041@ya	Yes	Yes	Female	25 - 34	Malay	Private sector	Less than RM2,000	less than a month
329	10/4/2022 11:30:28	ainaimal93@gmail.co	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a month
330	10/5/2022 8:04:33	suriagisfani@hotmail.c	Yes	Yes	Female	25 - 34	Malay	Private sector	Less than RM2,000	less than a week
331	10/6/2022 12:00:10	soonjohan@gmail.co	Yes	Yes	Male	35 - 44	Chinese	Private sector	RM6,001 - RM8,000	less than a week
332	10/6/2022 12:04:41	danialfafiqan@gmail.c	Yes	Yes	Male	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 12 months
333	10/6/2022 12:26:38	yeemaie03@gmail.co	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6 months
334	10/6/2022 12:43:37	azlinabdulaziz@ym	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than a week
335	10/6/2022 16:44:20	adiazlan@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	12 months and above
336	10/6/2022 19:11:27	ghairinisha@gmail.co	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
337	10/8/2022 6:00:38	ruzita.jamaludin@gma	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than a month
338	10/9/2022 18:27:59	hankokheng@newera.	Yes	Yes	Male	35 - 44	Chinese	Private sector	RM4,001 - RM6,000	less than 6 months
339	10/9/2022 23:04:20	giyo911@yahoo.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than a week
340	10/10/2022 7:24:26	noreenfanisha@gmail.c	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM2,001 - RM4,000	less than a week
341	10/11/2022 18:27:35	anizay@yahoo.com	Yes	Yes	Female	45 - 54	Malay	Government sector	More than RM10,000	less than a week

325 – 341

1	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above	Do you have any expe	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
322	9/29/2022 14:02:53	ezwanmokhtar@gmail	Yes	Yes	Male	45 - 54	Malay	Government sector	RM8,001 - RM10,000	12 months and above
323	9/29/2022 15:47:52	qistinahafee@gmail.c	Yes	No	Female	35 - 44	Malay	Private sector	RM6,001 - RM8,000	less than a week
324	9/30/2022 14:05:45	naimhuzairi@yahoo.c	Yes	Yes	Male	35 - 44	Malay	Private sector	More than RM10,000	less than a month
325	10/3/2022 23:38:54	aidamaria@gmail.com	Yes	Yes	Female	45 - 54	Malay	Others	RM2,001 - RM4,000	less than a week
326	10/4/2022 11:01:04	helmizaaba69@gmail.	Yes	Yes	Male	25 - 34	Malay	Private sector	Less than RM2,000	less than a week
327	10/4/2022 11:02:27	liyana.cuckoo92@gm	Yes	Yes	Female	25 - 34	Malay	Others	RM2,001 - RM4,000	less than a month
328	10/4/2022 11:02:52	nur_hidayah9041@ya	Yes	Yes	Female	25 - 34	Malay	Private sector	Less than RM2,000	less than a month
329	10/4/2022 11:30:28	ainaimal93@gmail.co	Yes	Yes	Female	25 - 34	Malay	Others	Less than RM2,000	less than a month
330	10/5/2022 8:04:33	suriagisfani@hotmail.c	Yes	Yes	Female	25 - 34	Malay	Private sector	Less than RM2,000	less than a week
331	10/6/2022 12:00:10	soonjohan@gmail.co	Yes	Yes	Male	35 - 44	Chinese	Private sector	RM6,001 - RM8,000	less than a week
332	10/6/2022 12:04:41	danialfafiqan@gmail.c	Yes	Yes	Male	25 - 34	Malay	Private sector	RM4,001 - RM6,000	less than 12 months
333	10/6/2022 12:26:38	yeemaie03@gmail.co	Yes	Yes	Female	35 - 44	Malay	Private sector	RM4,001 - RM6,000	less than 6 months
334	10/6/2022 12:43:37	azlinabdulaziz@ym	Yes	Yes	Female	45 - 54	Malay	Government sector	RM6,001 - RM8,000	less than a week
335	10/6/2022 16:44:20	adiazlan@gmail.com	Yes	Yes	Male	35 - 44	Malay	Private sector	RM4,001 - RM6,000	12 months and above
336	10/6/2022 19:11:27	ghairinisha@gmail.co	Yes	Yes	Female	35 - 44	Malay	Private sector	RM8,001 - RM10,000	less than 6 months
337	10/8/2022 6:00:38	ruzita.jamaludin@gma	Yes	Yes	Female	35 - 44	Malay	Government sector	RM6,001 - RM8,000	less than a month
338	10/9/2022 18:27:59	hankokheng@newera.	Yes	Yes	Male	35 - 44	Chinese	Private sector	RM4,001 - RM6,000	less than 6 months
339	10/9/2022 23:04:20	giyo911@yahoo.com	Yes	Yes	Male	35 - 44	Malay	Government sector	RM8,001 - RM10,000	less than a week
340	10/10/2022 7:24:26	noreenfanisha@gmail.c	Yes	Yes	Female	35 - 44	Malay	Self-employed	RM2,001 - RM4,000	less than a week
341	10/11/2022 18:27:35	anizay@yahoo.com	Yes	Yes	Female	45 - 54	Malay	Government sector	More than RM10,000	less than a week

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Email address	I have read the above i	Do you have any expe	1. Gender	2. Age	3. Race	4. Employment	5. Monthly Income	6. When was your last
342	10/11/2022 22:42:27	fadzlinhasani@gmail.c	Yes	Yes	Male	25 - 34	Malay	Private sector	More than RM10,000	less than a week
343										
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361										

Appendix 5.4

Abbreviation for Constructs and Their Dimensions

Table: Abbreviation for Its Constructs and Its Dimensions

Abbreviation	Constructs	Abbreviation	Dimensions
PSS	Physical	AC	Ambient condition
	Servicescape	SF	Space/Function layout
		SSA	Sign/Symbol/Artefacts
SOSS	Social	PS	Perceived Similarity
	Servicescape	PA	Physical Appearance
		SB	Suitable Behavior
SMSS	Smart Servicescape	AE	Aesthetics
		SP	Social Presence
		SF	Superior Functionality
		PI	Perceived Interactivity
		PP	Perceived Personalisation
VCC	Value Co-Create	KN	Knowledge
		EQ	Equity
		IN	Interaction
		EX	Experience
		PE	Personalization
		RE	Relationship
SAT	Guest Satisfaction	SAT	
CCB	Customer	AD	Advocacy
	Citizenship	FE	Feedback
	Behavior	HE	Helping
		TO	Tolerance

Appendix 5.5

Harman Single-Factor Test (Total Variance Explained)

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	25.238	45.068	45.068	24.721	44.144	44.144
2	3.698	6.604	51.672			
3	3.561	6.358	58.030			
4	2.111	3.769	61.800			
5	1.950	3.482	65.282			
6	1.445	2.581	67.863			
7	1.119	1.998	69.861			
8	1.056	1.886	71.746			
9	.977	1.744	73.491			
10	.835	1.490	74.981			
11	.817	1.459	76.440			
12	.728	1.301	77.740			
13	.708	1.264	79.005			
14	.665	1.188	80.192			
15	.634	1.132	81.324			
16	.581	1.037	82.361			
17	.552	.985	83.346			
18	.516	.922	84.268			
19	.498	.889	85.157			
20	.455	.812	85.969			
21	.436	.779	86.748			
22	.426	.761	87.510			
23	.421	.751	88.261			
24	.407	.726	88.987			
25	.376	.671	89.657			
26	.361	.644	90.301			
27	.333	.594	90.895			
28	.316	.564	91.459			
29	.302	.540	91.999			
30	.286	.510	92.509			
31	.283	.505	93.014			
32	.268	.479	93.493			
33	.258	.460	93.953			
34	.247	.441	94.394			
35	.235	.419	94.813			
36	.216	.385	95.198			
37	.212	.378	95.576			
38	.207	.370	95.946			
39	.190	.340	96.286			
40	.177	.315	96.601			
41	.175	.312	96.913			
42	.164	.292	97.205			
43	.158	.283	97.488			
44	.149	.266	97.754			

45	.145	.260	98.014			
46	.140	.249	98.263			
47	.134	.239	98.502			
48	.123	.219	98.721			
49	.115	.206	98.927			
50	.109	.194	99.121			
51	.102	.183	99.304			
52	.098	.175	99.479			
53	.094	.168	99.647			
54	.072	.129	99.776			
55	.063	.113	99.889			
56	.062	.111	100.000			
Extraction Method: Principal Axis Factoring.						

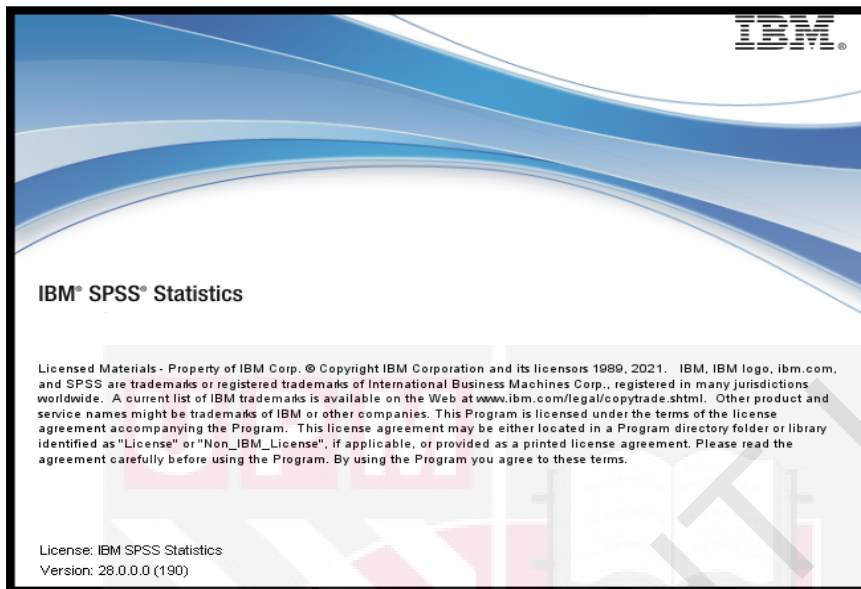
Appendix 5.6

Coefficients Table (Full Collinearity)

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.341	.333		4.030	<.001		
	PS	-.010	.078	-.009	-.132	.895	.405	2.472
	SS	.010	.074	.010	.138	.890	.401	2.494
	SMS	.120	.056	.136	2.145	.033	.500	2.001
	VCC	.364	.105	.328	3.473	<.001	.225	4.451
	SAT	.254	.101	.237	2.520	.012	.227	4.413
a. Dependent Variable: CCB								

Appendix 5.7

SPSS Version 28.0.0.0 (190)



Appendix 5.8

The SMARTPLS Version 4.0.9.2 That Used for the Data Analysis



Appendix 5.9

Cronbach's Alpha, Composite Reliability, and Average Variance Extracted for the Constructs

	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
AC_PS	0.81	0.883	0.715
AD_CCB	0.891	0.948	0.902
AE_SMS	0.902	0.953	0.911
EQ_VCC	0.669	0.857	0.75
EX_VCC	0.88	0.926	0.807
FE_CCB	0.743	0.85	0.655
HE_CCB	0.943	0.963	0.897
IN_VCC	0.843	0.927	0.865
KN_VCC	0.757	0.892	0.805
PA_SS	0.895	0.95	0.905
PI_SMS	0.858	0.934	0.875
PP_SMS	0.832	0.9	0.75
PS_SS	0.877	0.942	0.891
RE_VCC	0.859	0.934	0.877
SAT_	0.92	0.94	0.759
SB_SS	0.915	0.946	0.854
SF_SMS	0.911	0.957	0.918
SL_PS	0.802	0.883	0.717
SP_SMS	0.86	0.935	0.877
SSA_PS	0.84	0.903	0.757
TO_CCB	0.875	0.913	0.724

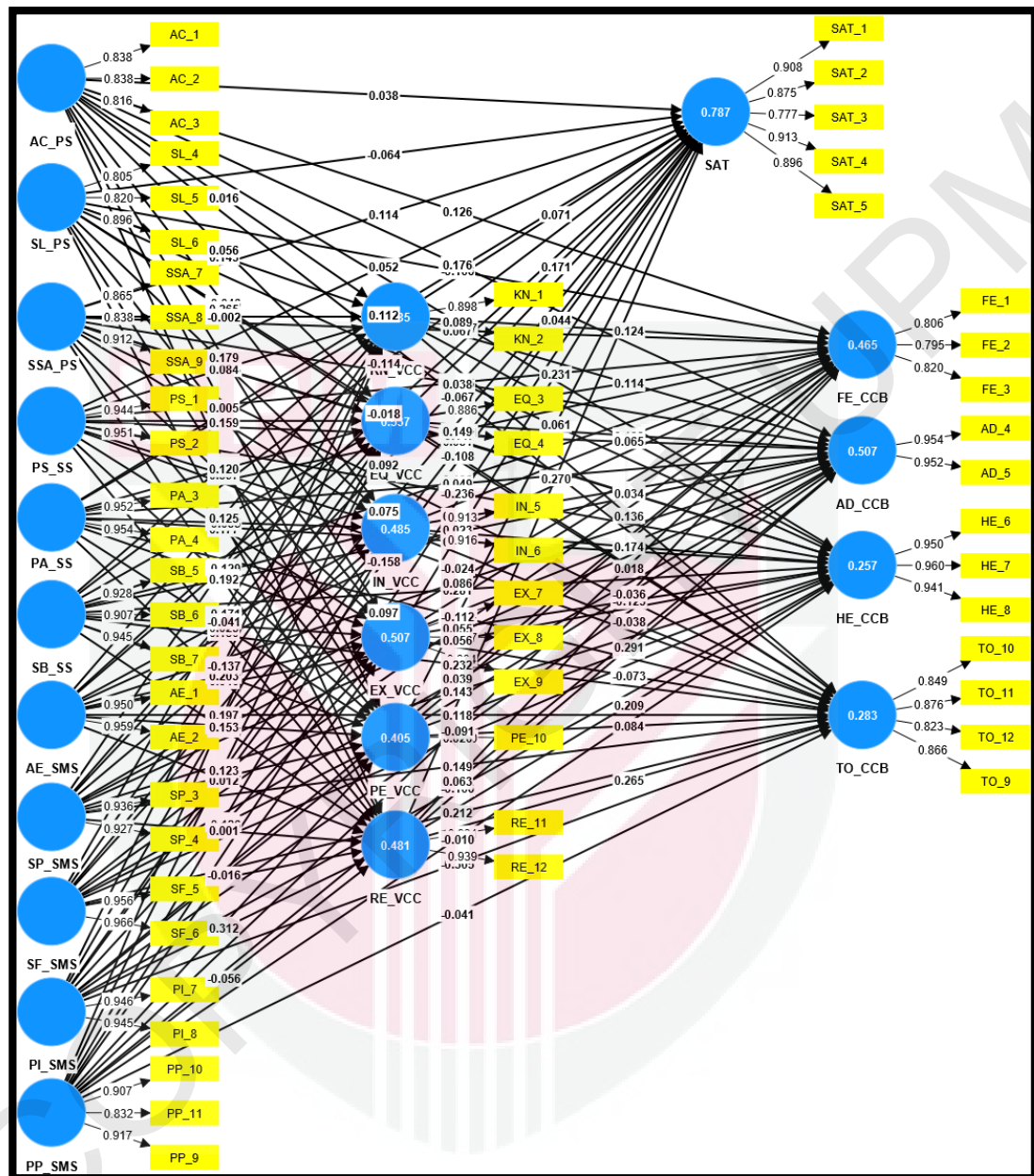
Appendix 5.10

Factor Loadings

Factor Loadings	
AC_PS	0.826
SL_PS	0.897
SSA_PS	0.971
PS_SS	0.923
PA_SS	0.877
SB_SS	0.957
AE_SMS	0.89
SP_SMS	0.874
SF_SMS	0.923
PI_SMS	0.95
PP_SMS	0.915
KN_VCC	0.786
EQ_VCC	0.885
IN_VCC	0.851
EX_VCC	0.907
PE_VCC	0.802
RE_VCC	0.918
SAT_1	0.906
SAT_2	0.865
SAT_3	0.785
SAT_4	0.905
SAT_5	0.89
FE_CCB	0.846
AD_CCB	0.916
HE_CCB	0.579
TO_CCB	0.581

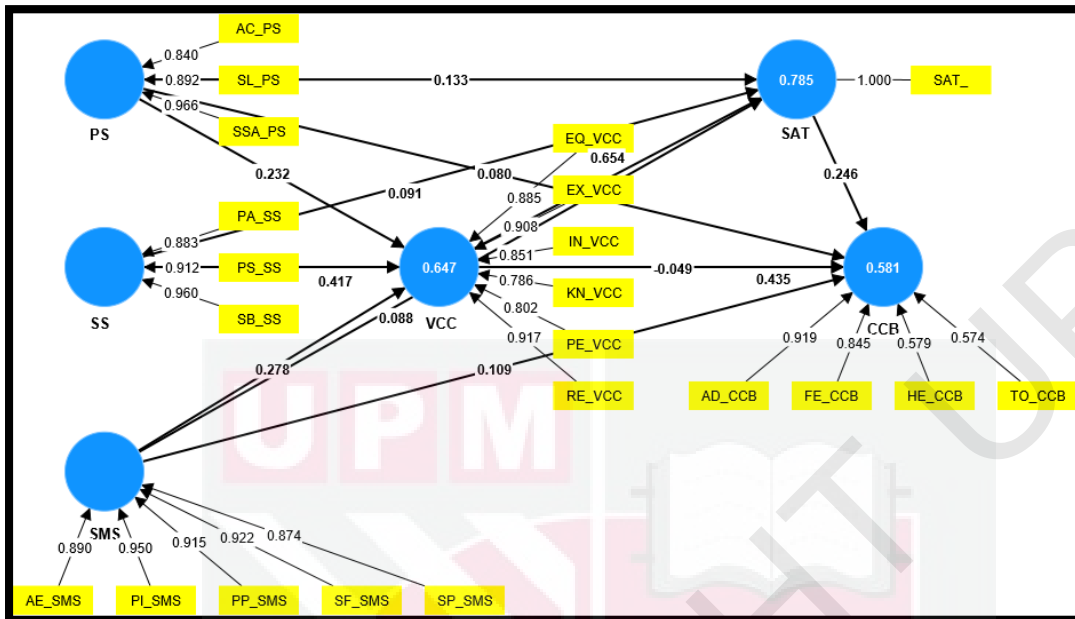
Appendix 5.11

Measurement Model



Appendix 5.12

Structural Model



Appendix 5.13

MV Prediction Summary

	Q ² predic t	PLS- SEM RMSE	PLS- SEM MAE	LM_RMS E	LM_MA E
AD_CC B	0.337	0.816	0.622	0.835	0.63
FE_CCB	0.325	0.824	0.653	0.842	0.657
HE_CCB	0.139	0.93	0.691	0.956	0.702
TO_CCB	0.129	0.936	0.753	0.943	0.759
SAT_	0.618	0.62	0.483	0.626	0.485
EQ_VC C	0.528	0.69	0.537	0.686	0.534
EX_VC C	0.524	0.692	0.543	0.699	0.552
IN_VCC	0.47	0.731	0.566	0.733	0.563
KN_VC C	0.358	0.804	0.614	0.806	0.61
PE_VCC	0.397	0.779	0.614	0.79	0.616
RE_VCC	0.507	0.704	0.557	0.713	0.563

Appendix 5.14

PLS-SEM LV Error Histogram: CCB Predict Histogram

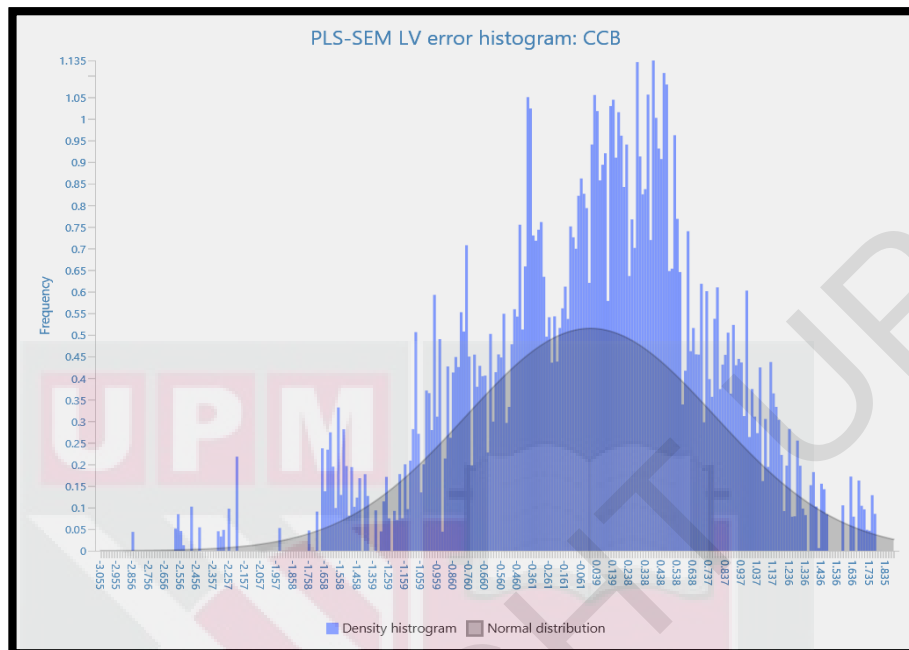


Figure: Error histogram

Appendix 6.1

Pictures of Technology Used in Smart Hotel in Malaysia (Hotel Crockford, Genting Highland)



Figure: Electronic Housekeeping Cart (e-HK cart)



Figure: Mobile key



Figure: Mobile peephole



Figure: Smart Chair



Figure: Tablet used to control the room facilities



Figure: Tablet shows the lighting category

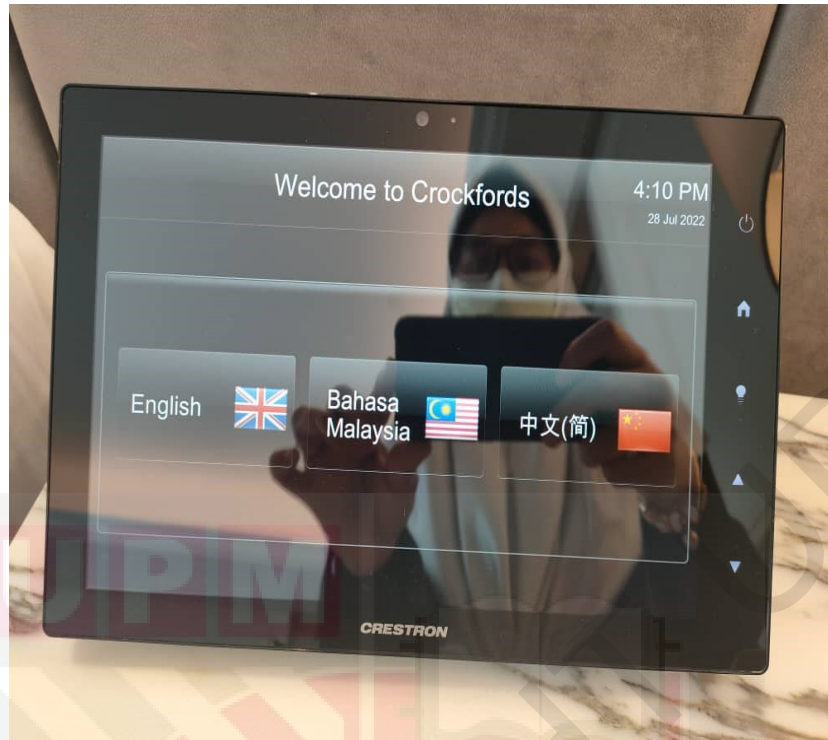


Figure: Selection of language in the tablet



Figure: Self-Service Ticketing (e.g., Bus service)



Figure: Order kiosk Mcdonald's Malaysia

LIST OF PUBLICATIONS

- Tarmudi, S., & Jaharuddin, N., (2021). The Relationship Between Servicescape and Value Co-Creation Behavior Among Hotel Guests in Malaysia. *Technology, Science, Social Sciences and Humanities International Conference 2021: THE VIRTUAL SERIES (TeSSHI 2021)*. pg: 196-204.
- Tarmudi, S., & Jaharuddin, N. (2021). Servicescape, Guest Satisfaction, and Intention to Book a Hotel Room. *International Journal of Academic Research in Business and Social Sciences*, 11(9), 852–862.
- Tarmudi, S., & Jaharuddin, N., (2021). To Book A Hotel Room: Role Of Physical Servicescape And Guest Satisfaction. *Social Science And Technology Toward Performance Improvement: Research Concept, Effect And Agenda*. eISBN:9789671854693. pg: 197-202.
- Tarmudi, S., & Jaharuddin, N. (2022). A Study of Hotel Lobby Physical Servicescape and Guest Impression Towards Hotel. *Malaysian Journal of Sustainable Environment*, 9 (2), 279–298.