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CHALLENGES IN DIGITALIZATION PRACTICES OF SMALL AND MEDIUM-SIZED HOTELS

UMUT GERMEYAN

THESIS ADVISOR: ASSOCIATE PROFESSOR GÖKÇE ÖZDEMİR UMUTLU

DEPARTMENT OF TOURISM MANAGEMENT

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ABSTRACT

CHALLENGES IN DIGITALIZATION PRACTICES OF SMALL AND MEDIUM-SIZED HOTELS

Germeyan, Umut
Tourism Management Master Program
Advisor: Associate Prof. Gökçe Özdemir Umutlu
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Digitalization and digital transformation shape world economies and create disruptive innovations. The development of global digitalization has an impact on every sector, including tourism. Although these megatrend changes transform many industries, they bring opportunities and challenges unique to the tourism industry. Digitalization is expected to radically transform the tourism industry. However, due to the complexity and cost of digitalization, especially small and medium-sized enterprises experience problems in the implementation process. Despite its practical importance, the concept of digitalization is not yet fully understood by small and medium-sized hotels. Many small and medium-sized hotels are not profitable due to their inability to implement digitalization correctly. The purpose of this study is to create an understanding of how digital technologies are applied in the context of small and medium-sized hotels and the present state of digital transformation in the tourism industry. For this purpose, through a qualitative methodology, semi-structured in-depth interviews were conducted with 8 small and medium-sized hotel managers in order to understand the effects of digitalization on the tourism sector, and the factors affecting the digitalization process were determined. A significant improvement in operational efficiency and guest experience has been observed within small and medium-sized hotels as a result of digitalisation, according to the research findings. In integrating digital technologies into existing business models, improving guest experiences was not given as much priority as operational efficiency due to cost factors, specifically resource limitations and expertise constraints. Small and medium-sized hotels are not

maximizing the potential of digital technologies. However, they can address this issue by investing in digital solutions that can reduce costs and improve guest experiences. Studies addressing the digitalization process in the context of small and medium-sized hotels are limited in the literature. Therefore, this study can provide an understanding of the factors affecting digitalization practices. The research contributes to small and medium-sized hotel managers and practitioners by providing various theoretical and practical implications. The research findings are aimed to guide small and medium-sized hotel managers to create sustainable digital strategies in a practical context.

Keywords: Digitalization, Digital transformation, Tourism, 4.0

ÖZ

KÜÇÜK VE ORTA ÖLÇEKLİ OTELLERİN DİJİTALLEŞME UYGULAMALARINDAKİ ZORLUKLAR

Germeyan, Umut
Turizm İşletmeciliği Yüksek Lisans Programı
Danışman: Doç. Dr. Gökçe Özdemir Umutlu
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Dijitalleşme ve dijital dönüşüm dünya ekonomilerini şekillendirmekte ve yenilikleri de beraberinde getirmektedir. Küresel dijitalleşme süreci tüm sektörleri etkilediği gibi turizm sektörünü de etkilemektedir. Bu mega trend, birçok sektörü değiştirip dönüştürmekle birlikte turizm sektörüne özgü hem fırsatlar ve hem de zorluklar doğurmaktadır. Dijitalleşmenin turizm sektörünü kökten dönüştürmesi beklenmektedir. Bununla birlikte, dijitalleşmenin karmaşık yapısı ve maliyetli olması dolayısıyla, özellikle küçük ve orta ölçekli işletmeler uygulama sürecinde sorunlar yaşamaktadır. Pratik önemine rağmen, dijitalleşme konsepti küçük ve orta ölçekli oteller tarafından henüz tam olarak anlaşılamamıştır. Çoğu küçük ve orta ölçekli otel, dijitalleşmenin doğru şekilde uygulanamamasından dolayı kâr fırsatlarını kaçırmaktadır. Bu çalışmanın amacı, küçük ve orta ölçekli otellerin dijital teknolojileri uygulama düzeylerini tespit etmek ve turizm sektöründe dijital dönüşüme ilişkin mevcut durum hakkında bakış açısı geliştirmektir. Bu amaca yönelik olarak dijitalleşme uygulamalarının turizm sektörüne etkilerinin anlaşılabilmesi için 8 küçük ve orta ölçekli otel yöneticisi ile yarı-yapılandırılmış derinlemesine görüşmeler gerçekleştirilmiş ve dijitalleşme sürecinde etkili olan unsurlar saptanarak yorumlanmıştır. Dijitalleşmenin bir sonucu olarak, küçük ve orta ölçekli otellerde operasyonel verimlilik ve misafir deneyiminde önemli bir iyileşme gözlemlenmiştir. Dijital teknolojilerin mevcut iş modellerine entegre edilmesinde, maliyet faktörleri, özellikle de kaynak sınırlamaları ve uzmanlık kısıtlamaları nedeniyle misafir

deneyimlerinin iyileştirilmesine operasyonel verimlilik kadar öncelik verilmemiştir. Ek olarak, küçük ve orta ölçekli oteller dijital teknolojilerin potansiyelini en üst düzeye çıkaramamaktadır; ancak, maliyetleri azaltabilecek ve misafir deneyimlerini iyileştirebilecek dijital çözümlere yatırım yaparak bu sorunu çözebilecekleri tespit edilmiştir. Literatürde küçük ve orta ölçekli oteller bağlamında dijitalleşme sürecini ele alan çalışmalar sınırlı sayıdadır. Bu nedenle, bu çalışma turizm sektöründe, özellikle küçük ve orta ölçekli işletmeler kapsamında dijitalleşme uygulamalarını etkileyen unsurların anlaşılmasını sağlamayı hedeflemektedir. Araştırma, küçük ve orta ölçekli otel yöneticilerine ve uygulayıcılarına dijital dönüşüm hakkında çeşitli teorik ve pratik çıkarımlar sağlayarak katkıda bulunmaktadır. Araştırma bulgularının, küçük ve orta ölçekli otel yöneticilerinin sürdürülebilir dijital stratejiler oluşturmalarına rehberlik etmesi hedeflenmektedir.

Anahtar Kelimeler: Dijitalleşme, Dijital dönüşüm, Turizm, 4.0

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Umut Germeyan

İzmir, 2024

TEXT OF OATH

I declare and honestly confirm that my study, titled “CHALLENGES IN DIGITALIZATION PRACTICES OF SMALL AND MEDIUM-SIZED HOTELS” and presented as a Master's in Art Thesis, has been written without applying to any assistance inconsistent with scientific ethics and traditions. I declare, to the best of my knowledge and belief, that all content and ideas drawn directly or indirectly from external sources are indicated in the text and listed in the list of references.

Umut Germeyan

Jaunary, 2024

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1. CHAPTER: INTRODUCTION

Technological changes and the impact of the pandemic have forced societies and industries to cope with uncertainty (Sharma et al., 2020). Dynamic sectors such as tourism had to respond quickly to emerging challenges and threats in order to continue their activities (Kaushal and Srivastava, 2021). Today, technological changes are increasingly affecting almost every aspect of society. The digital age creates value for companies and offers a number of benefits (Parida et al., 2019). Additionally, the digital transformation, which continues with the development of new technologies, affects the digitalization processes of small and medium-sized enterprises. Therefore, for companies working in the tourism sector to keep their competitive advantage, new business models and processes must be developed (Haerting et al., 2019).

Small and medium-sized hotels are known to be late adopters of digital technology solutions (Strebinger & Treiblmaier). Compared to huge companies, small and medium-sized businesses use digital technologies far less frequently (OECD, 2017). According to Li, Su, Zhang, and Mao (2018), small and medium-sized businesses are not adopting digitalization at a high pace. Digital transformation is slow for small and medium-sized businesses Sommer (2015) states that makes the small and medium-sized businesses have a lack of digital competence with a lack of understanding and ability to use new technologies in the service industry (Marques et al., 2017). The essential elements that must be addressed to establish an efficient digitalization framework in the tourism industry are not covered by the current literature. Despite the practical importance of the subject, studies examining the digital applications of small and medium-sized hotels are limited (Kruja et al., 2019; Mohanty, 2019). Therefore, in order to fill this gap in the literature, the challenges experienced in the digitalization process of small and medium-sized enterprises will be examined with the aim of creating a roadmap for the managers with the practical implications outlined in this study.

First and foremost, the concept of digitalization was discussed in line with the scope of the study, as well as digital transformation and digital technology tools that are

significant for businesses. Then, the benefits of digitalization in the tourism sector in addition to the importance are outlined within the current context in the literature. Moreover, the findings of the research are provided derived from the qualitative methodology that is employed. Finally, various practical implications for the small and medium enterprises are presented.

2. CHAPTER: DIGITALIZATION

2.1. Definition of Digitalization

Digitalization is the increased use of digital technologies in communication, business activities, and business structures (Verhoef et al., 2020). Digitalization, according to Tomte et al. (2019), is used to innovate and improve tasks, products, and services. According to Piccoli and Pigni (2019), adoption of information technologies also changes the organization and how it performs business. The use of digital technologies businesses primarily aims to boost productivity, save costs, and increase sales. Additionally, small, and medium-sized enterprises gain more control over consumers with digital applications (Scuotto et al., 2017). Although the surroundings and manner in which businesses compete are greatly influenced by digital platforms and service providers, many small and medium-sized hotels lack the necessary IT expertise.

Research on digitization has shown that digital platforms have the potential to drive innovation in businesses because they are cost-effective as well as user-friendly (Sedera et al. 2016). However, Parida et al. (2019) underlines that sophisticated business model innovation is necessary to use digitalization. Furthermore, Parida et al. (2019) states that companies should develop their business models based on digital technologies such as artificial intelligence, digital platforms, and big data analytics and leverage the strengths of digitalization. Thereby, the purpose of digital platforms is not to provide a platform to automate the entire business cycle, but to innovate on a particular system to develop functions that will give the company full innovation capability (Sedera et al. 2016).

Digital technologies are changing business models by creating great opportunities for entrepreneurs with mobile devices that provide access to information through smart machines (Demirkan, Spohrer, & Welser, 2016). Digitalization, according to Verhoef et al. (2021), is a requirement for digital transformation. Digital transformation is precisely defined by Parviainen et al. (2017) as adjustments to working practices, job descriptions, and responsibilities brought on by the use of digital technologies in a company or its operating environment. In that regard, digitalization has the ability to

create new business opportunities and business models and even destroy existing businesses (Bouwman, Nikou, & Reuver, 2019). Therefore, digitalization is the key to small and medium business economies to remain competitive.

The growth of the tourism industry depends on mainly the integration of information technology and travel. Among the benefits of information and communication technologies related to the tourism sector are the rapid dissemination of information, the reduction of distance between countries, and the increase in transparency (Shanker, 2008). Hojeghan & Esfangareh (2011) highlights the significance of digitalization for airlines, hotels, car rental agencies, and tour operators to accept new technology and adapt their modes of operation. Milović (2012), in his research on the impact of websites, social media, and other electronic marketing campaigns on hotel business performance, examined and found that digitalization in the hospitality industry has gradually improved customer relationship management. Nevertheless, using online reservation services significantly increased the number of reservations (Aramendia-Muneta & Ollo-Lopez, 2013; Chang & Jang, 2014). Moreover, research on the impact of digitalization in the tourism industry showcases that stakeholders' adoption of digitalization would also boost customer satisfaction (Rajamohamed, 2016; Alexis, 2017). Furthermore, Bilghan & Nejad (2015) state that consumers are now making more demands for digitalization.

2.2. Digital Transformation

Thereby, the digital transition has grown in importance among scholars in recent years. According to Fitzgerald et al. (2014), digital transformation entails using digital technology to significantly alter a company's business model. The concept of digital transformation affects people, businesses, and society on a large scale (Vial, 2019). Kane (2014) argues that organizations need to find new ways to generate value because of digital technologies. The process of employing digital technology to have a disruptive effect on people, organizations, and society in order to advance the growth of an industry is known as "digital transformation" (Vial, 2019). The digital transformation process includes changes in companies' business models, which may include operational culture, resources, and processes, and therefore is a critical strategic decision to meet the changing demands of the market (Henriette et al. 2016). According to Demirkan et al. (2016), digital transformation will allow businesses to

respond to market demands more quickly than in the past, which will lead to increased innovation.

Table 2.1. Digital Transformation Goals

Perspective	Social	Economic
Objective	Foster the development of a more innovative and collaborative culture in industry and society	Increase income generation, productivity, and value addition in economy
	Create and maintain digital communication infrastructures and ensure their governance, accessibility, quality of service, and affordability	Improve the regulatory framework and technical standards
	Improve the accessibility and quality of digital services offered to the population	Implement new and innovative business models

Source: Ebert & Duarte (2018).

The development and implementation of new applications to realize the digitalization of business processes and management in the tourism sector is also a kind of digital transformation. The development of digital technology in hotels and travel has received the majority of attention in recent research on digital transformation in the tourism sector. For instance, Shin (2022) investigated robotics in business management, while Tussyadiah (2020) looked at artificial intelligence, robotics, and the Internet of Things (IoT). Recently, several studies have concentrated on smart hotels (Law, Ye, & Chan, 2021) and smart tourism. (Mehraliyev et al., 2020).

However, in the case of small and medium-sized businesses, they are struggling with digital transformation due to their limited resources and knowledge. When it comes to digitalization, small and medium-sized enterprises usually lag behind larger businesses that result with the decline in their businesses.

2.3. The Impact of Digital Transformation

Companies that adopt digital transformation see an increase in consumers, higher turnover rates, and better reputation (Alrawadieh, Alrawadieh & Cetin, 2021; Japutra & Situmorang, 2021) which proves that the hospitality industry is benefiting from the

effects of the digital revolution. In line with the benefits that digitalization provides to the tourism industry, consumers, staff, and hotel managers are all impacted by the digital transformation. The tourist experience is improved by the digital transformation and digitalization of hotels and tourism (Lin & Mattila, 2021). Hotels that offer contactless services make visitors feel more secure (Pillai et al., 2021).

Digital transformation has various effects at individual, institutional, and sectoral levels as showcased in Table 2. Digital transformation enriches the perceived experience at the individual level and increases the total value (Pelet et al., 2021). In the institutional context, it increases customer satisfaction and loyalty (Vo-Thanh et al. 2022). Alrawadieh, Alrawadieh, & Cetin (2021) found that digital transformation supports the decision-making process by saving time in organizations. In the context of the industry, digitalization also provides cost savings (Vo-Thanh et al. 2022), increase in information sharing (Buhalis & Leung, 2018) and competitive advantage (Iranmanesh et al., 2022).

Table 2.2. Impact of the digital transformation

Impact of the digital transformation	**Source**
Overall value	Cuomo et al. (2021)
Perceived experience	Pelet et al. (2021)
Satisfaction and loyalty	Chang et al. (2022)
Employee performance	Vo-Thanh et al. (2022)
Saving time	Alrawadieh et al. (2021)
Reputation	Japutra and Situmorang (2021)
Financial competitiveness	Iranmanesh et al. (2022)
Innovation	
Service quality	
Cost benefit	Vo-Thanh et al. (2022)
Information sharing	Buhalis and Leung (2018)

Source: Cuomo et al. (2021); Pelet et al. (2021); Chang et al. (2022); Vo-Thanh et al. (2022); Alrawadieh et al. (2021); Japutra and Situmorang (2021); Iranmanesh et al. (2022); Buhalis and Leung (2018).

2.4. Digital Technologies in the Hospitality Industry

The hospitality industry has a great impact on the world economy. In 2022, the number of international travellers was more than 960 million (UNWTO, 2023). The size of the world's tourist market increased by almost 41% compared to 2022 and the market size

of international tourism is expected to reach approximately $2.29 trillion in 2023 (Statista, 2023). The development of leading technologies in the tourism sector is radically changing the way services are delivered. Therefore, it is crucial for tourism businesses to adapt to current developments and take advantage of the potential of innovative technological development in order to provide individualized experiences that anticipate and fulfill the expectations of today's hotel customers (Neuhofer, Buhalis & Ladkin, 2015).

Today, many hotel businesses use digital innovations to meet consumer expectations, provide a competitive advantage, and attract new customers. With the focus on customer experience in the tourism sector, new technology is the key to reaching the increasing expectations of customers.

Tourism businesses have several opportunities thanks to digital technologies to improve their performance and hence stand out from the competitors in a market subject to rapid changes and fluctuations. However, fully reaping all the benefits achieved though digital technologies poses a complex transformation process. It is known that achieving a successful digital transformation is challenging, even for companies with the necessary resources and experience. According to McKinsey's research findings, less than 30% of companies that started the digital transformation process were able to sustain success over time (McKinsey, 2020).

Technologies that support decision-making and the processing of business information are referred to as digitalization technologies. With recent advancements in mobile and analytical technology (Soroka, Liu, Han, & Haleem, 2017), social networks (Ainin et al., 2015), and cloud computing (Ross & Blumenstein, 2015), digitalization technologies are gaining traction. Adoption of the digitalization technologies strengthens organizational performance (Wu, 2016) by creating customer and company value and optimizing business processes (Pagani & Pardo, 2017; Verhoef et al., 2021). However, the ability of small and medium-sized enterprises to rapidly adopt new technologies and reap the benefits of the digital economy is quite weak. Despite these obstacles, the development of new digital tools and digitalization technologies has made it possible for small and medium-sized businesses to access technology affordably (Assante et al., 2016). In summary, digitalization technologies present an unprecedented opportunity to establish a scalable high-quality information technology infrastructure.

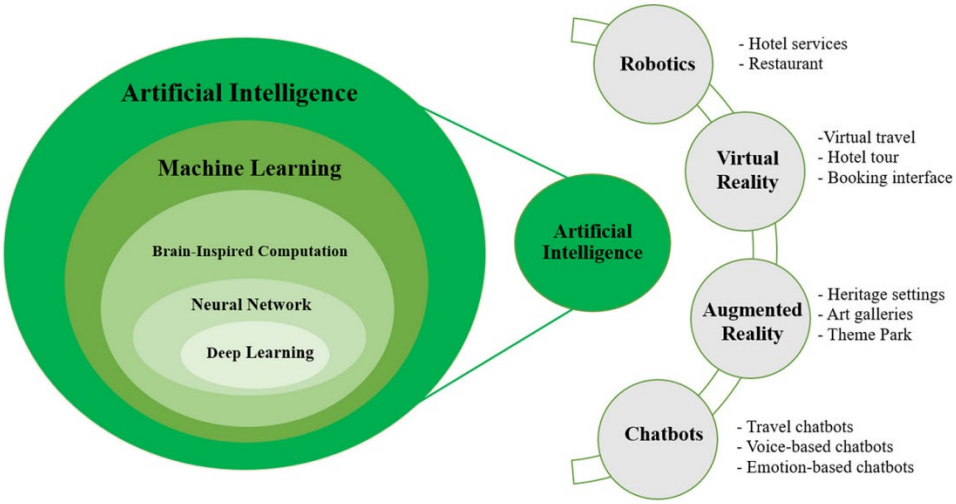

Figure 2.1. Digitalization technologies and applications in hospitality and tourism

Sources: Doborjeh et al. (2022).

Figure 1 shows digitalization technologies and applications in hospitality and tourism. Augmented reality, virtual reality, robotics, big data, chatbots are among the digital technology applications. Robotics is mainly used in hotel and restaurant services. Virtual reality is used in virtual travels, hotel tours and booking interfaces. The primary objective of using the augmented reality in heritage settings, art galleries and theme parks is to attract tourists. Furthermore, travel chatbots, voice-based chatbots and emotion-based chatbots are highly used by hotel managers as well as travel agencies.

2.4.1 Artificial Intelligence

Artificial intelligence has been defined by various scholars in different ways in the literature. In general terms, artificial intelligence is the concept used for technologies that machines can learn much faster than humans, make them experts in their field, and thus find and apply the best solution methods by making the machines smart (Roetzer, 2017). Bostrom (2018) defines artificial intelligence as systems that convey the outputs obtained by presenting positive concepts from the data presented by the sense organs to the brain and internal processes, to a logical and intuitive reasoning system, and transform this into a presentation with various combinations.

Sterne (2017) mentions about the artificial intelligence having three features of which the first one is the ability of artificial intelligence to avoid data complexity. According to this feature, artificial intelligence can find the important ones among many complex

data sets and eliminate the unimportant ones. In this way, it provides fast access to the right data. The second feature of the artificial intelligence is that it can compare many sets of data with each other in every aspect, analyse the compatibility of the data with each other, reach the right conclusions, and thus produce a result. The third feature is that artificial intelligence can continuously improve itself with every new piece of information. He can blend every new knowledge he learns with old knowledge and thus continuously improve itself (Sterne, 2017).

Artificial intelligence services provide data collection and new technologies to improve guest preference profiles. With its learning feature, artificial intelligence learns the preferences of potential customers and offers products and services in line with these preferences. Furthermore, it allows advertising services (Hospitalitytech, 2015). By using data, tourism businesses can analyse their customer profiles and carry out more effective personalized marketing activities. For instance, it allows generating personalized suggestions through chatbots (Zsarnoczky, 2017).

Figure 2.2. Tuscany+ (the first app built specifically for tourism)

Source: Nayyar et al. (2018)

2.4.2 Augmented Reality

Users' engagement with and perception of the real world are improved by augmented reality, which is the rising value of the digital world (Santulli, 2019). Through technology, augmented reality (AR) enables the incorporation of digital aspects into the actual environment. Augmented reality is the direct or indirect physical

transmission of digital content created by a computer to the real world in real time. According to Milgram & Kishino (1994), augmented reality is "a reality environment in which products belonging to the digital world environment are used instead of real objects in the world".

By adding images, text, URL links, video, and audio content to the real environment, augmented reality enhances it (Vaughan-Nichols, 2009). Augmented reality technology can be easily accessed with the help of phones or other hand-held devices (Alimamy, Deans, & Gnoth, 2018). The ability to connect with the physical environment in a more meaningful and useful way is augmented reality's main benefit (Alimamy, Deans, & Gnoth, 2018). Augmented reality ensures that the real and the virtual exist together in the same environment by adding both images and objects and all other digital content to the real-world environment. In the tourism sector, augmented reality technologies are included in the hotel system and offer guests opportunities such as digital sightseeing tours, in-room updates, and digital restaurant menus with food previews (Tussyadiah, Jung & Dieck, 2017).

2.4.3 Virtual Reality

The concept of virtual reality was first used by Jaron Lanier (1989). Virtual reality gives the user the feeling of being real by emphasizing a physical environment that exists in reality or an environment that does not exist in reality, making the person feel as if they are in that environment (Skilton & Hovsepian, 2018). In the virtual reality universe, the individual can take on the character he desires or create his own universe. Thus, the person establishes a connection with the virtual universe. As VR technologies continue to develop, the possibilities of using VR in the tourism sector are progressively expanding. VR has a significant impact on tourism and has been rapidly adopted by tourism professionals. VR is extensively used by the tourism industry, in planning and management, marketing, entertainment, and training.

VR allows the creation of realistic strategies that tourism professionals can use in evaluating potential developments in the tourism sector. VR also allows tourism plans to be communicated to target group members. In addition to being used to plan and manage a destination, VR can also be used as a destination marketing tool. Additionally, VR can enable create enjoyable tourist experiences. In addition, VR can be used as an educational tool (Guttentag, 2010). In order to provide a virtual visit

experience, the tourism industry excessively uses virtual reality (VR) and augmented reality (AR) technologies (Kwok & Koh, 2021). Virtual reality (VR) in tourism is also called "VR travel" (Kim et al., 2020) that stands for an environment created using three-dimensional computer technology for tourists that allows tourists to experience a destination virtually without going to that place physically (Guttentag, 2010).

2.4.4. Internet of Things (IoT)

The Internet of Things refers to giving everyday objects detection, validation, and processing capabilities so that they can interact with other services and devices over the Internet (Whitmore et al., 2015). According to Gubbi et al. (2013), the Internet of Things (IoT) is the networked interconnection of "things," such as sensors and mobile devices, that communicate and work together. Many hotel businesses today use smart lighting, temperature control systems, LED lights, etc. Energy-saving technologies are used with devices such as (Lee & Cheng, 2018). Therefore, IoT technology facilitates an increase in energy savings in the tourism sector. In addition, with the help of the internet of things, hotel employees can monitor whether there is a problem with the smart devices used in the hotel (Hsiao & Chuang & Huang, 2018). While IoT technology enhance guest experience at hotels visa keyless entry to hotel rooms, automatic check-in, and check-out and so forth, it can also increase guest satisfaction and loyalty. Moreover, IoT technology increases operational efficiency in hotels. For example, in-room monitoring systems can be useful in determining whether a room is vacant and cleaning services can be scheduled, or in scheduling maintenance services for appliances (Vermesan & Friess, 2014). Internet of Things enables hotel staff to track customer invoicing in real time (Pillai et al., 2021). With the Internet of Things, anything can communicate with the internet to provide any service to anyone, from anywhere, at any time, over any network as showcased in Figure 3. The Internet of Things can provide services such as communication, automation, and entertainment in smart hotels. (Saranya & Nitha, 2015).

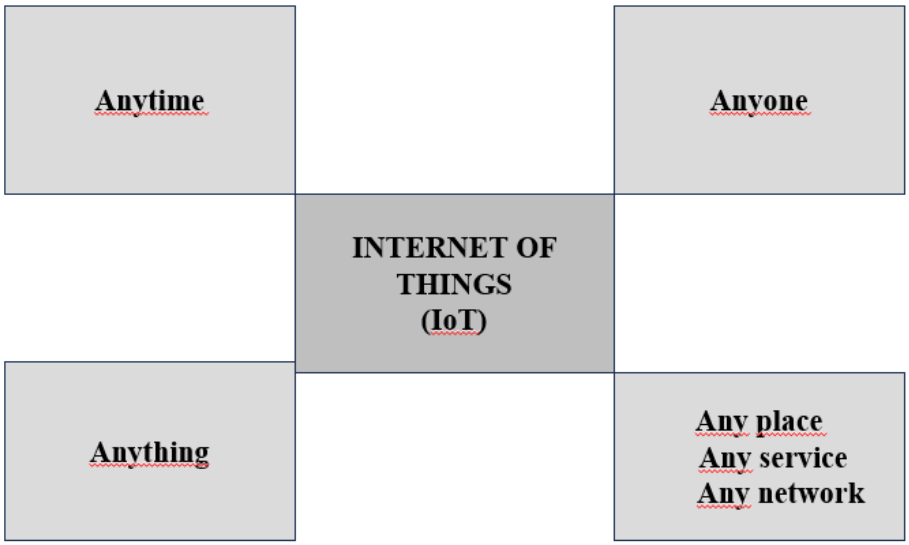

Figure 2.3: Concept of Internet of Things

Source: Car, Stifanich, & Šimunić, (2019).

2.4.5. Robotic

Another form of artificial intelligence that is beginning to be applied in the tourism sector is robots. Robots are now being deployed in the tourism industry to carry out repetitive activities like cleaning and sterilizing as well as employee responsibilities. Robotic technology is used by hotels to improve customer satisfaction and maintain their competitiveness. The number of hotels utilizing autonomous robot equipment for contactless services gradually increased in the Covid-19 era (Kim et al., 2021). Improved consumer experiences, simplified business processes, and increased efficiency in the tourism industry are some of the key benefits of robotics (Samala et al., 2020). The entry of artificial intelligence into the tourism industry is a fact of the age we live in.

Service robotics is considered one of the most transformative technological innovations in the hospitality service context (Ivanov & Webster, 2019). In recent years, the number of service robots for the hospitality industry has been rapidly increased (Murphy et al., 2017). Robots that cook food, robots that serve customers, and security robots are among these robotic advancements in the hospitality industry (Bowen & Morosan, 2018). According to Tuomi et al. (2021), service robots can take on the roles of employees who do security, housekeeping, food service, and other

service activities. In hotel businesses, cleaning robots can clean and automatically disinfect rooms (Figure 4). In addition, robot receptionists like Alexa robot in Marriott Hotels are used to enhance the guest experience.

Figure 2.4. Robots in the Hospitality Industry

Source: https://hoteltechnologynews.com/

2.4.6. Big Data

Data availability for the hotel industry is increased by big data analytics that is a key information technology in business analysis and decision support. Big data produces high-speed, high-volume, and high-variety data (Lee, 2017). Big data technologies enable organizations to gain economic value by discovering and analyzing a wide variety of data in huge volumes (Ghobakhloo, 2018). Big data analytics provides a competitive advantage by optimizing the operations, income, and cost of hotels in the tourism sector. Big data uses predictive models to calculate better solutions for businesses (Pillai et al., 2021). According to the big data obtained, hotel managers can understand the service preferences of consumers and develop strategies suitable for their wants and needs (Mariani, 2019).

Processing and analyzing the big data obtained about customers is very important in terms of developing personalized service offerings and tourism marketing. According to Talón-Ballestero et al. (2018), big data is particularly helpful for enhancing

customer relationship management in the hospitality industry. As stated by Padilla-Melendez and Garrido-Moreno (2014), customer relationship management is a crucial tactic to boost client retention and satisfaction, particularly in the hospitality industry.

2.4.7. Cloud Computing

Cloud computing is Internet-based computing where customers can access software, infrastructure, and platforms from shared virtual computers. With the help of cloud computing, hotel companies can concentrate on what they do best (Armburst et al., 2009). Cloud computing improves the efficiency of managing tourism resources in the tourism industry (Buhalis & Amarangna, 2014). Additionally, it enables tourism organizations to use it as a management system for a variety of geographic information services that hold enormous amounts of data (Wang, 2016).

Cloud computing is primarily used for big data processing, and data stored in the cloud can be accessed at any time and without a time or size constraint. Cloud computing is also used by the hospitality sector. For instance, it is possible to gather statistics on hotels and tourism companies at any time (Buhalis & Leung, 2018). Big data analytics are suitable for processing big data on the cloud by the hotels since they offer standardized compliance criteria for data integration. Cloud computing allows employees to work remotely like in the case of Covid-19 pandemic through incorporation of the data could via cloud files.

Table 2.1. Cloud Computing Characteristics

On-Deman self-service	User can access IT capabilities as and when needed
Resource Pooling	Cloud computing pools IT resources such as storage, processing, memory, bandwidth to serve multiple consumers
Broad network access	Services are delivered over a network and are accessed through web-based devices/technologies such as mobile phones, laptops etc
Rapid elasticity	IT Capabilities can be quickly and elastically provisioned, in some cases automatically adapted to the varying demands of users at any time
Measure service	The usage of IT resources can be tracked, controlled and monitored by metrics to provide transparency for both the provider and consumer of cloud service

Source: Imhanwa, Greenhill, & Owrak (2015)

Depending on their business cycle, travel agencies can also expand or contract their cloud storage. Additionally, a range of travel-related software can be hosted in the

cloud, negating the need to create new apps to address specialized requirements. The applications provided by cloud software providers range from booking services to itinerary creation to lodging and flight planning customized for the demands of the travel sector (Mastorakis et al., 2014).

2.4.8. Mobile applications

Mobile applications are software programs designed explicitly to perform specific functions on a mobile device's operating system (Purcell et al., 2010). Without utilizing a web browser, consumers can access a range of services using mobile applications (Yang, 2013). A growing variety of benefits have led to mobile apps being a popular choice for shopping. Mobile applications help users complete daily tasks more quickly and efficiently (Kim, Lin, & Sung, 2013).

Consumers use mobile applications to compare prices, obtain discounts, and obtain information about products and services (Wang & Wang, 2010). Mobile applications are now being utilized regularly in the tourism industry for check-in, check-out, food ordering, reservations, and contactless services (Pillai et al., 2021). Hotel guests facilitate their activities, such as travel plan planning and hotel information search, with mobile applications (Buhalis & Leung, 2018). Mobile applications increase customer loyalty and the effectiveness of promotions (Cameron et al., 2012) and improve the tourist experience (Dieck & Jung, 2015).

2.4.9. Chatbots

The use of chatbots in the travel and tourism sectors is crucial. The words "chat" and "robot" are combined to form the name "chatbot". Chatbots are computer algorithms that encourage human speech in natural language (Wang & Petrina, 2013). According to Oh et al. (2017), chatbots are computer programs that are typically designed to respond to queries from customers. Travel chatbots enhance the travel experience of tourists at every stage of their journey, from booking to general travel advice (Newgenapps, 2019). Chatbots aim to increase customer engagement and experience (Nagaraj & Singh, 2019).

The hospitality industry is the sector with the second highest premium for excellent customer experience, with a premium margin of 14% (PwC, 2023). Due to the rapid growth in potential of chatbots, their use in the tourism industry is constantly

increasing. Digital channels that enable consumers to receive quick responses are critical components of the customer experience. Accessing chatbots at any time of the day is the biggest feature that they utilize for the customers. Using travel chatbots, the majority of hotel operators give their customers a unique experience. Nowadays, many hotels use chatbots to communicate with their customers 7/24. Reservations for any of Marriott's 4,700 hotels can be made with a chatbot on Facebook Messenger (Phaneuf, 2020). The fact that guests need information about hotel facilities increases the use of chatbots.

2.5. The Digital Strategy of the Hospitality Industry

According to research on digital strategies, businesses that digitally transform their organizational structure and business processes have a defined and consistent digital strategy (Kane, Palmer, Phillips, Kiron, & Buckley, 2015). Digital resources are recognized as a whole in a digital strategy (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013), which helps the company acquire additional resources (Fisher et al., 2016). A digital strategy, in other words, goes beyond acknowledging the dominance of digital resources in functional areas like operations, purchasing, and marketing (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013). Moreover, digital technologies can accelerate their development and spread if they are shared among organization members (Bouncken & Barwinski, 2020).

A digital strategy encompasses the transformation of goods and services through digital technology (Matt et al., 2015). According to Kane et al. (2015), businesses require a digital strategy to coordinate the necessary resources in order to increase and attain competitiveness. Digital technologies affect many sectors, such as transportation services, the retail sector, and the hospitality industry. For this reason, hotel managers should constantly search for the best new ways to generate revenue, maintain company operations, take positions in new industries, and rethink the dimensions of customer experience, internal operations, and the new business model (Prihanto & Kurniasari, 2019). In order to give small and medium-sized enterprises a competitive edge, the employment of a digital strategy is crucial.

2.6. Digitalization and Competitiveness

In order to maintain their competitive position in the industry, businesses must strive to be both appropriate and the preferred choice for clients. To be favourable in the minds of potential customers, businesses must be able to provide services and experiences that meet the expectations. It must have the tools as well as the expertise required to deliver high-quality goods and services. Therefore, an organization must continuously innovate to stand out from its rivals and provide a distinctive value proposition if it is to win the customer's business and achieve sustainable competition (Rantala et al., 2019).

Today, in order to be qualified in the tourism sector, as in other sectors, companies must include digital technologies in business management due to its impact on their economic performance (Kane et al., 2015). Digital technologies enable the company to reach more customers, reduce costs, manage relations with suppliers more smoothly, and differentiate in the eyes of customers (Rotondo & Fadda, 2019). Digitalization enables it to provide better services to customers (Koo, Yu, & Han, 2020). In addition, it facilitates the hotel-related transactions of the customers. The customer demands adherence to the service quality supplied by businesses that have implemented digital technologies into the administration of their business in the tourism industry (Lam & Law, 2019). It's important to differentiate services and look beyond the norm to favorably influence the decision-making of the tourist. The business must strategically leverage digital technology to develop novel value for its customers in order to face this challenge.

Verhoef et al. (2021) states that businesses can enhance their current business processes through digitalization by enhancing user experiences and adding value for customers. The digitalization of corporate operations boosts productivity while cutting costs (Bley, Leyh, & Schäffer, 2016). According to Albano, Antellini, Castaldi, & Zampino (2015), digitalization is favorably correlated with financial performance. To build, deploy, and integrate new and current digital systems, talented personnel are needed (Berman, 2012; Matt et al., 2015). Continuous learning is endorsed by Nylén and Holmström (2015) as a crucial component of developing digital competencies. According to Sousa & Rocha (2019), digitalization enhances employees' knowledge and abilities, particularly their capacity for network collaboration.

Leue, Jung, & Dieck (2014) found that digitalization enhances the tourist experience. Digital applications allow tourists to have uninterrupted access to travel-related information during their visit. For example, the location detection features of mobile devices can be adapted to the needs of travellers, making it easier to access travel information. Therefore, digital applications are of great importance for the tourism sector (Kourouthanassis, Boletsis, Bardaki, & Chasanidou, 2015). According to Tussyadiah (2020), digital technologies increase the perceived quality of the tourism experience. In the tourism sector, it is possible to improve customer happiness by enhancing customer experience and service quality through the employment of artificial intelligence-supported robots. Therefore, it must be noted that tourism businesses including small and medium enterprises need to be able to employ digital technologies effectively and integrate them into their management processes. In addition, the features of artificial intelligence are primarily used for marketing activities by the tourism businesses.

3. CHAPTER: DIGITALIZATION AMONG SMES WITHIN THE HOSPITALITY INDUSTRY

3.1. Small and Medium-sized Enterprises (SMEs)

In the literature, SMEs have been defined from many different perspectives (European Commission, 2020). The definition of SMEs varies from country to country due to economic, cultural, and social differences. SMEs are generally defined according to their asset values or number of employees (Chege &Wang, 2020). The European Commission defines SMEs as businesses employing fewer than 250 people (European Commission, 2003). SMEs play an important role in the management of limited global social and environmental resources (Zhu, Zou, & Zhang, 2019). SMEs play a critical role in sustainable growth and make significant contributions to the economic development of the regions in which they operate (OECD, 2019).

3.2. Characteristics of Small and Medium-sized Enterprises (SMEs)

SMEs vary in terms of company size and age, ownership type and legal form, geographical location, industrial sector, and asset structure. The size of the company has an impact on the activities of SMEs and the growth potential of SMEs. The size of the company affects the decision-making process regarding which type of financing will be selected and used (Cassar, 2004). Petersen & Rajan (1994) measured the availability of financing provided to a company by the size of the company and revealed that as companies grow, they develop financial resources from which they can borrow. Hence, the young age of companies can often lead to the reluctance of banks and other financial institutions to provide loans to these companies (Berger & Udell, 1998). Therefore, a company's age has a positive impact on the ability to access external financing. It has also been found that SMEs that have been operating for more than five years have a much higher chance of being successful in their loan applications (Quartey, 2003).

There is a positive relationship between the ownership structure and organizational structure of SMEs. The lack of distinction between the company and the owner affects the company's financing choices (Petty & Bygrave, 1993). In terms of legal form, Cassar (2004) states that joint-stock companies have a very advantageous advantage in receiving external financing compared to companies without legal entities.

The geographic region in which a company is located has an impact on the company's ability to obtain external financing. Fatoki & Asah (2011) revealed in their research that the geographical location of SMEs close to their banks gives them an advantage in terms of better strengthening their lending relationships with these banks. However, SMEs operating outside major cities experience greater difficulties in obtaining external financing than SMEs operating in city centers (Abor, 2008).

In addition to the abovementioned characteristics of SMEs, the industrial sector in which a company operates also has an impact on capital structure and financial decisions (Mackay & Phillips, 2005). For instance, companies operating in the service sector may differ from companies operating in other sectors in terms of financial needs and decisions. Sector structure may differ depending on the short- and long-term debts of SMEs (Michaelas et al., 1999).

Providing collateral is crucial in enabling small and medium enterprises (SMEs) to secure debt financing due to its significance. The requirement for providing collateral varies depending on the structure of the assets. SMEs with more assets tend to use higher financial leverage because they can borrow money at lower interest rates (Bradley, Jarrell, & Kim, 1984).

3.3. Small and Medium-sized Enterprises in the Hospitality Industry (SMEs)

Small and medium-sized enterprises are seen by policymakers as the economic lifeblood of the sector (Thomas et al., 2011). The hospitality and tourism industries are dominated by small and medium-sized enterprises (SMEs) (Middleton, 1998). With the realization of the positive impact of such businesses in the tourism sector, more importance has begun to be given to SME businesses.

The tourism sector has also received its share from the dominance of small and medium-sized hotel businesses in the economy. Various definitions of small and

medium-sized enterprises (SMEs) can be found in the literature. Every researcher has taken into account multiple criteria when defining these businesses. Those definitions have been created based on specific criteria, including personnel number annual sales revenue, fixed asset value, and management structure. Specifically, in the service sector, small businesses are defined as organizations with 100 or fewer employees (Atkins & Lowe, 1997). In the literature, the size of a hotel is generally defined by the number of rooms and the number of full-time employees. Given that, small and medium-sized hotels generally have fewer than 50 rooms and employ fewer than 10 people (Buhalis, 1995). In addition, Wong (1999) defines hotel businesses according to the number of employees identifying small-scale hotels with 9 or fewer employees working in their operations, and medium-sized hotel businesses have with 10 to 99 employees.

In general, a hotel can be described as a small to medium-sized hotel if it receives a 3-star rating or lower. According to the general definition, hotels operating in the tourism industry with up to 100 rooms and fewer than 250 employees are called small and medium-sized hotels (Ingram et al., 2000). Table 4 shows various definitions of small and medium-sized hotels.

Table 3.1. Definitions of Small and Medium-Sized Hotels in the Hospitality Industry

Author(s)	**Definitions**
Halcro, Buick, and Lynch (1998)	Fewer than 15 rooms
Middleton (1998)	Small enterprise: 10–49 employees Medium enterprise: 50–250employees
Ingram et al. (2000)	Small sized: 50 rooms Medium sized: 51–100 rooms
Beeton and Graetz (2001)	Fewer than 20 employees

Source: Halcro, Buick, & Lunch (1998); Middleton (1998); Ingram et al. (2000); Beeton & Graetz (2001).

The two most important factors in the success of tourism SMEs are human resources and marketing networks. Since small-scale tourism businesses are generally family-managed, they rely on interpersonal marketing such as word of mouth. Marketing is

closely related to the entrepreneur's strategic thinking and risk management abilities (Aghapour et al., 2012).

SME hotels have less bargaining power than large hotels (Shiels et al., 2003). They also face various challenges in the context of digital transformation. Hill (2001) states that SMEs are inadequate at strategic marketing and may incorrectly plan the marketing plans necessary for strategy and long-term viability. Nevertheless, small, and medium-sized enterprises (SMEs) are crucial components of the tourism industry, and their influence on generating employment and fostering economic growth is too significant to disregard. Entrepreneurship generates a revenue stream for the individual business owner while simultaneously fostering the growth and progress of the destination, so benefiting the local residents.

3.4. Hospitality Industry 4.0

The developments in the field of technology, which is expressed as 'next generation industry' or 'Industry 4.0', offer better quality and sophistication. Emerging from the Industry 4.0 paradigm, Tourism 4.0 is the trend of processing big data from large numbers of travellers to create personalized travel experiences. It is possible to describe artificial intelligence as one of the most important systemic innovations that make up the technological revolution today. Industry 4.0 in hotel businesses increases service quality by providing effective customer interaction (Kuo et al., 2017). The quality of services forms the basis of successful and reliable tourism development (Belias, 2020). In hotel businesses where customer expectations are high, Industry 4.0 also affects customer satisfaction, loyalty, and perceived service quality (Shamim et al., 2017).

The digital transformation of the travel and tourism sectors has given rise to concepts like tourism 4.0 and smart tourism. According to Gretzel et al. (2015), the term "smart tourism" refers to the provision of digital destinations and smart experiences based on big data. Tourism is one of the most digitally advanced industries (McKinsey France, 2014). The tourism industry, moving to Tourism 4.0 to create more personalized and digitized services for tourists, has been severely impacted by consumers' decreased travel and tourism activities because of COVID-19. The use of augmented reality (AR) and artificial intelligence (AI) technology in hotels however has increased (Hao et al.,

2020) due to the constraints during the pandemic. Today, more consumers prefer smart hotels that have high quality standarts (Kim et al., 2021).

Most studies on tourism 4.0 concentrate on smart hotels, with theoretical research concentrating on smart tourism (Pillai et al. 2021). Using digital platforms, Buhalis and Leung (2018) defines smart tourism as an interoperable and connected system that facilitates information sharing and adds value for the entire ecosystem of stakeholders. The internet of things (IoT), virtual reality (VR), augmented reality (AR), big data (Nadkarni et al., 2019), artificial intelligence (AI), and robotics have all been discussed in the literature in relation to smart tourism (Car et al., 2019; Nadkarni et al., 2019; Guttentag, 2010; Ja Kim et al., 2020; Nayyar et al., 2018). Consumers are no longer content with the availability of basic amenities, (Ben Youssef and Zeqiri, 2020) prompting hotel operators to embrace technological advancements in order to meet the increased guest expectations. Overall, Industry 4.0 has the potential to completely transform the hotel sector thanks to IoT, AR, VR, AI, robotics, and big data.

3.5. Effects of Digitalization on the Tourism Industry

Digitalization has affected the tourism industry, just like other industries. Dubey (2017) states that tourism sector is one of the first sectors to be included in the digitalization trend. According to Dubey (2017), digitalization has diversified tourist preferences and experiences, and utilizing 3D printers and the virtual reality concept, travellers can now unique and tailor-made experiences thanks to these advanced technologies.

Innovations that emerged in the field of digital marketing and the tourism sector were seen primarily in travel agencies, tour operators and airlines. For example, with the creation of the augmented reality application, an additional income of 17 thousand dollars was obtained from flights and accommodations in the first three months (Hughes, 2016). The effects of digitalization in the tourism sector are widespread across various tourism businesses.

The first common examples of digital information technologies in accommodation businesses are the websites of businesses. Accommodation businesses carry out many marketing activities, such as providing service information, informing customers, communicating with customers, and advertising and promoting through their websites (Ma et al., 2003). Today, many hotels have started to use service robots (Buhalis &

Leung, 2018). With the increase in digital technologies, the emergence of unmanned smart hotels improves the contactless accommodation experience with the use of robots. Thanks to the contactless experience, consumers can quickly make online reservations, check-in, and check-out transactions.

However, smartphone apps offer guests a keyless entry experience (Torres, 2018). Many hotels are not very digital, even though most hotels choose to embrace digital technologies to help with daily operations and management. To keep up with the developments of the digital age and to compete more effectively, hotels need to undergo digital transformation. However, digital transformation requires capital investment, and digital transformation is not easy for every hotel (Lam & Law, 2019).

The use of digital technologies in accommodation businesses affects the competitive environment between businesses and gives medium and small-sized businesses more opportunity to hold on in the competitive environment (Kozak, 2014). Wang and Qualls (2007) determine that the use of digital technologies in accommodation businesses affects the decision-making processes of consumers.

The intimacy and adaptability of small and medium-sized hotels contribute to the positive impact of digitalization, particularly if senior executives identify favourably with the digital technology they share with their staff. However, despite all these benefits, Morgan-Thomas (2016) indicates that small and medium-sized hotel operations are more likely to be concerned about digital technologies.

3.6. Digitalization and Business Innovation in the Tourism Industry

The hospitality industry is being transformed by digital transformation from a labor-intensive to a technology-intensive one (Alrawadieh, Alrawadieh, & Cetin, 2021). In the hospitality industry, digital transformation increases service quality, lowers costs, and gives businesses a competitive edge. Business innovation and digitalization are essential components of the service experience. Digital solutions are used in a wide range of contexts, including interactions with hotel guests, website features, and integrating new technologies into each company's operational procedures.

In the hospitality sector, new information technologies contribute to sustainability by promoting business innovation. In addition, it improves the quality of business processes in hotels. Innovations brought by digitalization practices in proposing value

to customers, changes in core business processes, and reviewing the use of competitive resources are critical to success. The ability of hotels to innovate is boosted by digital transformation in the hospitality industry.

3.7. Digital Technology Adoption in the Hospitality Industry

Today, technology is linked to a simpler life, and the demand for an easier life grows. As a result, any mobile application or linked device's capabilities are continually evolving, as are consumer expectations. This trend is observed across all industries, but notably in the hospitality business. With an emphasis on the customer experience in this market, new technology may be the key to achieving customers' increased expectations.

The hospitality industry is embracing technology to keep up with rising customer demands. Technology adoption is a process of bringing change to an organization, and the technology's nature determines the impact of that change (Wang & Qualls, 2007). Hospitality Technology's Study (2017) surveyed hotel operators to determine whether new technologies have the potential for real-world use in hotels (Kazandzhieva et al., 2017). Hotel businesses may leverage innovation to satisfy consumer expectations, differentiate themselves from the competition, and ultimately attract new customers. In order to create customized experiences that anticipate and meet the needs and preferences of today's hotel consumers, tourist organizations must adapt to current advancements and take advantage of the possibilities of developing innovative technologies (Neuhofer et al., 2015).

With the emergence of online hotel booking, companies like Expedia, Kayak, Booking.com, and Airbnb make it even easier for customers and provide access to new experiences and adventures at ever-lower costs. However, competition among online booking platforms has grown so strong that every online merchant is doing all they can to attract new customers (Schuckert et al., 2015). While online platforms are advantageous, they also pose a threat to hoteliers who use technology to differentiate themselves from the competitors.

Technological developments in the travel and tourism industries affect hotel businesses' ability to effectively connect with customers and market their products and services. In the context of tourism, smart technologies increase efficiency and improve the customer experience in hotels (Buhalis et al., 2019). With the impact of Covid-19,

the accommodation industry has become one of the most financially risky sectors (Ntounis et al., 2022). Hotels have reconsidered their digital strategies due to the pandemic. For instance, hotels have adopted contactless mobile applications to avoid direct contact with their guests (Chan, Gao & McGinley, 2021).

With the emergence of online hotel booking, companies like Expedia, Kayak, Booking.com, and Airbnb make it even easier for customers and provide access to new experiences and adventures at ever-lower costs. However, competition among online booking platforms has grown so strong that every online merchant is doing all they can to attract new customers (Schuckert et al., 2015). While online platforms are advantageous, they also pose a danger to hoteliers who use technology to differentiate themselves from the competition.

Hoteliers are increasingly collaborating with data analysts to put themselves in their customers' shoes to gain a deeper understanding of them. However, to give consumers a truly unique and hyper-personalized experience, hotel management must first understand their customers' interests, preferences, and dislikes.

A pleasant experience during a guest's stay will affect their attitude toward the brand and the reviews they submit afterwards. When a consumer makes a purchase choice, interpersonal influence and word-of-mouth are considered the essential sources of information (Litvin et al., 2008). Despite the emergence of various marketing techniques, word of mouth remains a powerful marketing instrument.

Hotels have a variety of excellent alternatives for communicating their captivating brand stories, particularly those that center on the unique experiences they offer and drive conversions on their websites and in critical online marketing venues. Additionally, hotels use digital advertising to boost their online presence and increase conversions. Two primary reasons hotels use digital advertising are to have a solid online presence and increase conversions.

3.8. Benefits of Digitalization in the Hospitality Industry

The hospitality industry has a reputation for being slow to adopt new technologies (Mihalic & Buhalis, 2013). However, many hotels have recognized the benefits of digitalization for their long-term business performance. The adoption and use of mobile technologies by hotel visitors has expanded as a result of COVID-19. For

instance, Hilton deployed a facial recognition system-based contactless check-in technique. In the hospitality sector, social media platforms are a common strategic tool for communicating with customers directly (Kwok, Lee, & Han, 2022), lowering operational costs, and fostering stronger customer relationships and loyalty (Pateli, Mylonas, & Spyrou, 2020).

Innovative CRM applications are very important for hotels to establish long-term relationships with guests (Chi, 2021). Systems for managing customer relationships (CRM) have made detailed information regarding hotel patronage available (Sigala, 2005). In order to automate client interactions and reply to their demands, hotels have recently begun to use chatbots (Ivanov, Webster, & Berezina, 2020).

Studies clearly demonstrates the advantages of utilizing cutting-edge innovative technologies, including big data (Loebbecke & Picot 2015), the Internet of Things (Bresciani et al., 2018), and blockchain (Liu et al., 2018) that boost client loyalty as well as satisfaction (Serravalle et al., 2019). While, digitalization increases customer satisfaction and loyalty, in tourism (Chen et al., 2021; Hailey Shin et al., 2021; Shin & Jeong, 2022), it boosts employee motivation and satisfaction (Torres & Zhang, 2021).

Consumers are now more likely to immediately search for products and conduct online transactions as a result of the rise in digital platform transactions and commerce. In order to contact customers, this has compelled enterprises to embrace digital platforms (Meyer & Cennamo, 2019). For instance, online travel portals have displaced traditional travel companies by enabling users to create unique trip itineraries (Akbar & Tracogna, 2018). In addition, IoT technology in hotels collects data that allows guests to anticipate their needs without calling reception (Shallcross, 2016). Recently, many hotels have benefited from digital technologies. For instance, Marriott Hotels, an international chain, has improved the guestroom experience using IoT technology. Similarly, Sheraton and Hilton, other international chain hotels, have expanded their digital guest experiences by implementing smartphone applications for door opening, digital check-in, and room selection. Those hotels also offer guest services such as digital systems, digital guided tours, touristic site recommendations, and food recommendations. All the above-mentioned digital services enable hotels to generate additional income.

Approximately 90% of tourists today base their choice of accommodation on reviews they discover online. Therefore, negative evaluations might result in a significant drop in client loyalty. The provision of live chat assistance, which promptly addresses consumer problems, exemplifies how digital technology may proactively rectify issues for customers and alleviate the adverse consequences of a bad image. With live chat technology, it can increase customer satisfaction by giving quick feedback to guests' questions and complaints (Altın, Schwartz & Uysal, 2017).

From a customer perspective, digital technologies have improved customers' accommodation options. Thus, it has made market access more attractive to new competitors such as Airbnb, HomeAway and Wimdu. Previous studies reveal that websites, mobile, and other digital technology applications can increase hotel reservations (Lwin & Phau, 2013; Khanra, Dhir, & Kaur, 2021). Thanks to smart technologies, the industry has become much more competitive, and according to Popescu, Nicolae & Pavel (2015), increasing competition has forced companies in the sector to improve their performance.

3.9. Barriers to Digitalization in the Hospitality Industry

The adoption and usage of digital technology in the tourist sector encounters challenges, just like in all other digital transformation processes (Lam & Law, 2019). Digitalization is hindered by factors like management's skill and experience (Zhu & Zhang, 2021), organizational culture and attitude (Lam & Law, 2019), tourist needs (Zhang et al., 2022), and employees' roles (Hsu & Tseng, 2022). For instance, Jaremen (2016) highlights the use of digitalization in the tourism sector and identifies capital requirements as a major barrier to digitalization. However, acquiring the competencies or skills required to achieve the cultural change process and digital transformation poses an additional challenge (Evans, 2017). Nevertheless, cultural adoption of the digitalization process by business employees is important for the success of businesses (Hemerling et al., 2018).

Another barrier is the potential negative health effects of digitalization overload (Merkx & Nawijn, 2021). In addition, customers may prefer to stay away from digital technologies in terms of data security and privacy problems (Morosan & DeFranco, 2015). The hotel website should thereby give visitors accurate and current information on all services and costs to prevent these issues. Hotel management's weak digital

technologies can lead to losing target customers to competing accommodation providers.

Given all the barriers mentioned above, it is recommended that small and medium-sized businesses purchase practical, affordable systems that take into account their specific needs (Anckar & Walden, 2001). Leung, Lee, and Law conducted a study on the implementation of digital technologies in both chain and independent hotel websites of which the findings indicate a growing trend of hotels embracing these technologies. However, Kansakar et al. (2019) mentions in their study that data management, security, and privacy concerns hinder digitalization. Additionally, government support is among the barriers to digitalization (Ezzaouia & Bulchand-Gidumal, 2020).

Implementing the digital transformation plan for hospitality and tourism in terms of management necessitates dealing with numerous management issues. To achieve digital transformation in the future, the hotel's IT team needs to make changes to technology, processes, culture, staff, and mindset (Lam & Law, 2019). In that sense, managers must develop the necessary digital management skills to assist the company's digital transformation in order to advance the process (Busulwa et al., 2022). Moreover, one of the elements influencing digital transformation is employee digital competency (Hsu & Tseng, 2022). Furthermore, he decision of businesses to transition digitally is influenced by their financial resources (Leung, 2019).

3.10. Innovation in Small and Medium-Sized Enterprises

OECD (2017) states that digitalization has many benefits for small and medium-sized businesses. Digitalization increases the skills and abilities of businesses and their access to new markets, saving time and reducing costs. Therefore, small, and medium-sized hotels have unprecedented opportunities to improve their technological infrastructure due to the digital advances (Audretsch, Heger & Veith, 2015), which are helping to expand the value proposition of small and medium-sized hotels (Ainin et al., 2015). According to Katz et al. (2010), the majority of small and medium-sized enterprises don't have a defined innovation strategy, which proves the cruciality of SMEs to adopt digital technologies. According to Scuotto et al. (2017), digital platforms can help small and medium-sized companies add value to their commercial connections with clients. Zhu et al. (2012) posits in their research that small and

medium-sized businesses have advantages such as flexibility, entrepreneurial dynamism, and reactivity to changing situations. Because there is less hierarchy in small and medium-sized enterprises, they are more adaptable (Pierre & Fernandez, 2018). In order to take advantage of new market opportunities, small and medium-sized companies should provide a smooth transition to new strategies (Borch & Madsen, 2007).

Rosenbusch et al. (2011) argue that small and medium-sized enterprises should allocate additional resources to the innovation process. They claim that consistent engagement in innovation activities is crucial for long-term entrepreneurial success and gaining a competitive edge. In terms of economic development, Schumpeter (2017) asserts that dynamic inventions and the implementation of new ideas by entrepreneurs foster fierce competition.

Due to their limited personnel and financial resources, SMEs struggle to implement innovations (Kaufmann & Todtling, 2002). In SMEs, innovations are more unpredictable and riskier (Zhu et al. 2012). Despite having limited resources, SMEs frequently innovate successfully (Rosenbusch et al., 2011). According to Parida, Westerberg, and Frishammar (2012), many small and medium-sized businesses (SMEs) rely on their innovative capabilities to establish and sustain a competitive advantage. SMEs can generate new demand and compete with rivals by providing cutting-edge digital products (Rosenbusch et al., 2011).

Small and medium-sized hotels must embrace digital technology strategies to prioritize innovation in hotel management in the current competitive business environment (Dieguez et al., 2022). Budgets for information systems should be set out for small- and medium-sized hotels so that they can keep up with technological advancements while maintaining data management procedures (Buhalis & Leung, 2018). Small and medium-sized hotels, unlike chain hotels, have less potential to gain from global marketing initiatives (Ivanova & Rahimi, 2016). As a result, hotels that are unable to change with the market may experience operational problems.

3.11. The Digital Future of the Tourism and Hospitality Industry

Digitalization is a highly notable trend in the fast-expanding tourism business. The tourism sector relies on the collaboration of various services and products, making the benefits of the digital revolution evident. Every day, fresh and creative solutions are

brought to the digital tourism industry thanks to the rapid expansion of the internet. The widespread use of smart devices has transformed planning, management, and finance. It has also created new opportunities for the tourism sector to adopt cutting-edge sales and marketing techniques. International tourist development trends as a result of the digital revolution have prepared the way for new solutions, including exchanging knowledge and expertise through cloud-based reservation sites or digital platforms.

Beyond mass tourism, there is a constantly growing demand for customized offers in accordance with emerging travel trends, as discerning customers desire solutions that are tailored to their specific needs. Most participants in the tourism industry currently have access to comprehensive consumer data and can actively monitor changes in consumer behaviour.

Cloud-based CRM customer database systems that analyse historical sales data and demographic information to produce offers have advanced quickly. As of today, it can use big data analysis and scaling approaches to examine massive datasets anonymously and affordably while looking for significant event points (Stadler, 2015).

Websites that offer travel information and systems that compare prices have begun to face off against one another. Consumers are now a key component of their business model, thanks to the use of cookies. Expedia and other new travel advice websites were developed to help travellers make decisions, but many tourist service providers had to leave the market because they were unable to meet the new demands.

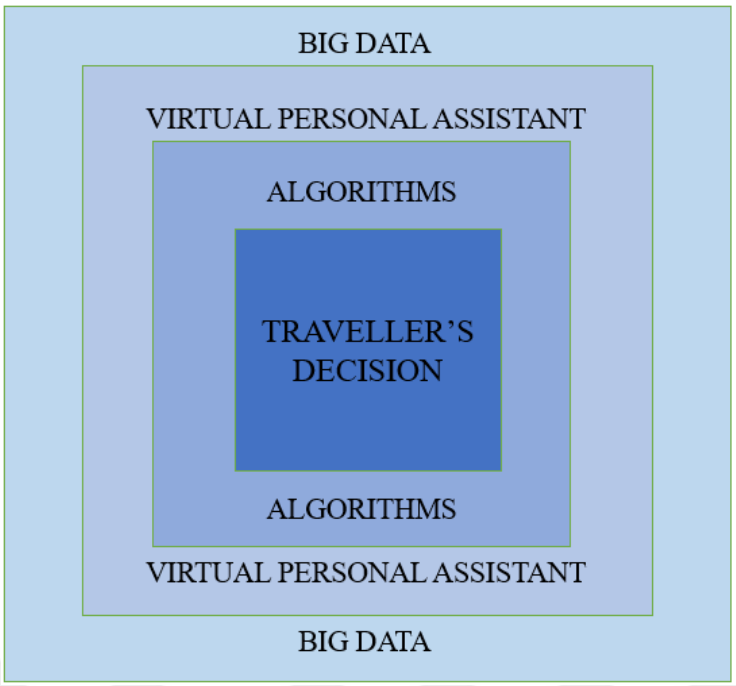

Figure 3.1: Virtual Personal Assistant

Source: Zsarnoczsky (2017)

Big data, virtual personal assistants, and algorithms influence traveller decisions (Zsarnoczky, 2017). A new payment system has been established in the tourism industry as a result of the advent of Bitcoin and other cryptocurrencies. In order to prevent fraud and data tampering, the blockchain payment system uses a shared database that keeps track of an expanding list of data blocks (Zsarnoczky, 2017).

3.12 In-House Digital Marketing and In-House Agencies

Any sales initiative that is not outsourced to a third party is considered in-house digital marketing. In small businesses, in-house selling is sometimes referred to as guerrilla marketing. The term "in-house agency" refers to a brand's internal team responsible for advertising and selling the brand's product or service (Bursk & Sethi, 1976). The in-house agency is responsible for all aspects of a brand's sales and advertising, including the following:

- Account management
- Advertising campaigns
- Asset creation

- Brand consistency
- Brand management
- Brand electronic messaging
- Brand storytelling
- Content selling
- Community management
- Digital selling
- Direct selling
- Social media selling

Digital marketing is now integrated into nearly every critical company decision, from product development and pricing to public relations and even staffing (Kingsnorth, 2019). Therefore, in-house agency members spend most of their time working within the team. However, they are frequently members of cross-functional teams or have processes involving other departments. In most cases, the in-house agency reports to the chief sales officer.

3.12.1. Advantages of In-House Digital Marketing

In-house digital marketing is no longer uncharted territory. Indeed, it is now firmly established in many businesses. However, the question is why businesses have chosen to adopt in-house selling. One of the answers could be that there are several approaches to utilizing digital marketing platforms and, therefore, numerous ways to tailor the offering message to the decision makers' objectives (Ryan, 2016).

3.12.1.1. Cost-Saving

Cost savings are a significant driver for in-housing, as cost reduction is a primary factor in incorporating digital platforms into the marketing approach (Taiminen & Karjaluoto, 2015). On the other hand, cost savings were classified separately since they were the key reason why many organizations brought their digital marketing in-house. With agencies frequently defending work made unachievable by small businesses in recent years, it is natural that in-housing has become a comprehensive

action. Indeed, full accountability becomes a lot simpler if they take control of media procurement, creativity, and development.

3.12.1.2. Agility

Agility in organizations is a construct of an endogenous variable that refers to a variety of factors (Kosasi et al., 2017). For many of our small businesses, prudence was one of the primary reasons for the in-housing trend. Finally, it is simpler to stay current with the campaigns if they have their creative processes in-house. Brands are free to react to current events and trends as they like. The time between strategy and execution is drastically decreased with the proper technology and, consequently, the right in-house staff.

3.12.1.3. Transparency

Increased pricing transparency would primarily benefit businesses that have successfully changed their business models to provide the best value to customers (Leeflang et al., 2014). Unexpectedly, marketers were engaged in determining the amount of transparency. So naturally, this has raised the quality of service for the client-agency model. However, many businesses must need back-end administration and reintroduce transparency to digital selling.

3.12.1.4. Harnessing the Knowledge

When too many actors are involved, the road between information and improvement might get tangled. Purchasing knowledge from outside sources was once thought to be a legitimate strategy for developing and maintaining external communications (Taiminen & Karjaluoto, 2015). However, some small businesses have chosen to keep their marketing in-house. Possessing control of first-party knowledge enables a smooth path to inventiveness. Indeed, for numerous in-house organizations, information is critical to their marketing strategy, and it makes organizational sense to require ownership of that expertise.

3.12.1.5. Owning Complete Electronic Communication

Digital marketing is a form of electronic communication that marketers utilize to promote their products and services to the marketplace (Ramya & Kartheeswaran, 2019). One of the difficulties that businesses face is a lack of knowledge about the whole. With in-housing, marketers will conduct extensive research on the products

they are selling. Ultimately, this decreases the time required to produce each campaign and, perhaps, increases its success. However, it is all about regaining control of the necessary elements for success. Electronic communications appear to be a critical component.

3.12.1.6. Building a Team of Internal Consultants

It is insufficient to comprehend the complete or most straightforward method to promote a small business in today's advertising industry. Notably, it is conceivable to assert that digital marketing communication tools have grown in popularity in the housing industry over the last several years (Çizmeci & Ercan, 2015). Indeed, employing consultants in digital processes enables inventiveness and financial success for in-house producers. Additionally, establishing an in-house staff enables the operations to cherry-pick the best for their entire.

Nonetheless, the development of digital marketing agencies has aided in advancing the in-housing trend. The present full-service model is declining and may become increasingly competent at giving buyers cooperative solutions, so this may be a very successful sweet spot, integrating the most specific aspects of both sides. In addition, small businesses employ the agency for more technical or complicated jobs that are too scarce or specialized to justify recruiting in-house teams.

3.12.2 The Challenges of In-House Digital Marketing

Digital marketing focuses on direct engagement with the customer, as opposed to television or print advertising. It is an associate degree engagement system that has the potential to be an enticing route for generating customer loyalty. As we all know, digital advertising is relatively cost-efficient compared to various channels; it is a cost-effective and efficient solution. However, the issue is whether it should be done in-house or outsourced. There are many digital marketing agencies on the market, each offering services at a different price level. Therefore, businesses need to consider some issues with in-house digital marketing staff.

3.12.2.1. High Cost

For established organizations, transitioning to the digital era may be lengthy and costly (Kingsnorth, 2019). Numerous small businesses cannot afford the cost of recruiting new employees, let alone the risk involved. Such an investment in a service provider

or a non-performing individual demonstrates a danger to the organization. On the other hand, if they hire fully-fledged professionals, this price will grow further. However, a retail digital marketing company will provide a variety of services at a reasonable price and save time by weeding out the best-fit employees.

3.12.2.2. Time Spent on Marketing Instead of the Core Business

The advent of internet technology has rewritten the norms of marketing globally (Kaur, 2017). As a consequence, digital transformation needs appropriate timing. By picking an outsourced team that utilizes cutting-edge technology, small businesses can focus on the core tasks that make their organization lucrative while maintaining service. As an example, it is necessary to recognize that social media is a beneficial addition to their business and current communication in the hearts of their users and audience. However, the approach to properly using social media channels is a full-time associate degree career. It craves copious amounts of phone time, creativity, ideas, and digital tools. When handled properly, social channels are an excellent source of leads.

Nevertheless, it is too easy to let them fall and get bitten on the behind. There are various active channels, each requiring a unique set of skills and procedures; this is accomplished by rapid, innovative, and organic process upgrades. To take advantage of these technical breakthroughs and make the best use of social media platforms, they should outsource their marketing to a professional digital marketing agency, as certain previously outsourced digital operations, such as consumer data analysis and digital content generation, have lately gained strategic relevance (Kazandzhieva et al., 2017).

3.12.2.3. Lack of Experience / Expertise

The most significant impediments to digital marketing adoption in businesses are a lack of human resources, time, and experience (Taiminen & Karjaluoto, 2015). Sorting out the best and most influential talent is difficult in the contemporary economic environment. Many market leaders would claim that they cannot achieve the optimal blend of personnel and talents. It is challenging enough to market to a single individual. Additionally, small businesses must examine the diverse collection of abilities required to produce a roaring sales campaign. This experience comprises SEO, style and production, marketing research and analysis, and writing and pieces of writing.

In comparison, various companies can simultaneously manage all of the business's selling responsibilities. This implies that they gain access to a qualified team of executives for a fixed fee, either on a retainer agreement or for a specific project. Effective marketing requires knowledge and extensive expertise in various areas, which an experienced company provides. As the most often used digital marketing platforms were the company's website, search engine optimization, and social media (Taiminen & Karjaluoto, 2015), they will need to obtain competent web designers, SEO experts, content writers, and social media professionals through specialists. Hiring an in-house digital selling team may be costly, and the individual may or may not be capable of handling all of the selling needs. Roaring sales initiatives require a team of advisors because they are unattainable for a single expert. A digital marketing agency stays current on the latest trends and develops strategies based on their experience.

3.12.2.4. Impact of Delay and Failure

Creating an in-house digital marketing team is not a straightforward undertaking since each member will be responsible for their tasks. Additionally, if small businesses use an in-house digital sales staff, they may struggle to meet the goals and aims of alternative businesses on a timely basis, as digital marketing is all about leveraging internet technology to connect with and engage existing and new audiences (Kaur, 2017). As a result, everything may become a complete failure. On the other hand, agencies that provide web and application development services operate full-time and rely on marketing strategies. Therefore, they will tackle it with an incredibly superior attitude and handle things much more efficiently.

3.12.2.5. Access to Tools and Platforms

While marketing products and services is undoubtedly essential, there are a few other things that each business owner should spend on to ensure success. Selling is critical to any campaign because it enables small businesses to learn about customer behaviour, shape procedures, and save money. Marketers get access to many unique tools and several channels. When they outsource the selling effort to a professional agency, they may relax about intangible costs, pick the best solution, and train their staff.

3.12.2.6. Outsourcing in Digital Marketing

Outsourcing digital marketing comprises attracting competent personnel and a team of consultants willing to take a step back and examine the small business's internal and external environment. The four reasons for choosing outsourcing as a business model are:

Analyzing the company's environment will take time and maybe resources. Indeed, it is more sophisticated to take a step back, assess the hospitality industry's strengths and shortcomings, and identify possibilities and dangers.

Small businesses may focus on their core competencies by outsourcing their sales department while using their partner's multi-sector knowledge. On the other hand, outsourcing the selling activity does not require the ability to create all options. Although sales consultants advise and pioneer the science and engineering parts, the ultimate decisions are made by businesses. Therefore, a sales plan should be lengthy in order to be executed correctly.

Marketing consultants can investigate the industry since they are constantly looking for and catching up on new trends across all industries. Additionally, they want excellent technologies that enable them to examine data and develop the requirements swiftly. Finally, they are typically surrounded by an executive network that enables them to possess trustworthy knowledge and avoid wasting time.

Implementing new sales techniques is comparable to innovation. Businesses frequently request permission to operate outside the confines to identify and accomplish their primary objective. This is why the consultants are there to inform the small businesses about the latest news and provide them with solutions that have not yet been implemented in the related field of business. They can suggest new lines of communication and new paths for prospecting while remaining mindful of the corporation's business. They enable businesses to become more dynamic by incorporating new activities like websites, e-mailing, social media, and location advertising. The objective is to improve communication and visibility with shoppers. Many digital marketing agencies specialize in 360-degree selling consultancy and can aid in achieving the goals by giving excellent responses. Nowadays, many small businesses outsource both their operations and sales. This practice entails delegating half or all of the selling activities to organizations that specialize in sales strategy.

Today, many small and medium-sized businesses rely on services to do activities for which they lack the necessary skills. Risks must be considered by every organization that intends to outsource a section of its operations, as failure may be quite costly (Dinu, 2015). Here are seven clever angles to consider when sourcing digital marketing activities:

Time is considered money in any business were working on a digital marketing campaign takes quite a long time (Deflorian, 2016). Small businesses must be willing to learn new approaches and examine how competition is organized at this level. Technology is incredibly dynamic, and tactics are dynamic as well. What was effective yesterday is ineffective today. To ensure efficient technological oversight, the business will save time by delegating it to a cost-effective team that has the time to investigate new technologies and implement the most successful tactics available.

Outsourcing digital marketing practices enables small businesses to focus on the activities that generate the most revenue for their brand. It is pointless for them to spread themselves over a lengthy process in which they will squander time due to a lack of facts. To effectively reach the core business, delegating this task to a professional while maintaining control of their digital marketing strategy would be the best strategy. They stay as the primary contractor by actively participating in implementing the plan.

By establishing a marketing team within the organization, small businesses are more likely to attend before the epidemic becomes widespread and costly. They are essentially acquiring a fully working workforce by outsourcing their digital marketing. Additionally, they may eliminate a complete series of costs (premises, equipment, training, etc.) from their budget and recruitment limitations. Additionally, outsourcing enables them to align their budget with their objectives. Similarly, by customizing the duration and conditions of an external service, they have extra freedom.

A digital marketing service provider might develop into a real partner. Additionally, the marketer may provide a fresh perspective on the organization by using the field's acquired skills. As a result of his prior experiences, he avoids the mistakes that small businesses are guaranteed to make if they go on the digital marketing road alone. Additionally, outsourcing imposes a particular mindset on them concerning

their activities and the industry in which they operate. An external eye is frequently a source of new ideas.

It is difficult for an indoor marketing team to bring all the profiles together. On the other hand, today's promotional vision is exceedingly broad and encompasses a diverse range of professions. A customized advertising strategy needs to be willing to be featured on most contemporary media outlets and understand how to utilize the many levers. A whole marketing team will work on developing a website and its SEO, optimizing the presence on social media, ensuring the quality of the packaging, and organizing the booth at a trade fair. Today, the promotional combination necessitates the employment of specialized professionals. By partnering with an external marketing team, small businesses have access to specialized expertise and a complete understanding of the subject.

The promoting agency picked might have initiatives for both the organization and the power. By working alongside the production teams and sales personnel, the service provider may absorb the company's mindset and become one of its most influential and dedicated spokespersons. By acting as both an internal and external actor for the business, the advertising agency delivering the service addresses and anticipates all needs.

4. CHAPTER: METHODOLOGY

4.1. Significance of the Study

First and foremost, the significance of this research lies in embracing digitalization practices in regard to the survival of small and medium-sized hotels, which is not a simple task in the online marketplace, with more competitors bolstering their digital marketing efforts than ever before. Moreover, the research will demonstrate the most important and up-to-date hotel digital marketing tools, as they are crucial to keeping up with the latest and most effective strategies. Furthermore, the research also aims to offer practical implications that would facilitate in-house digital marketing activities whether to keep it in-house and build an internal marketing team, or to outsource part or all of the digital marketing to an agency. Ultimately, the study aims to both theoretically advance the subject of hospitality management literature related to tourism and hotels, as well as practically offer hotel managers a road map for developing successful digital marketing strategies.

Despite the vast number of studies on digitalization, the literature lacks in terms of the challenged primarily faced by small and medium-sized hotels in the digitalization process and the determination of the benefits of digital applications. In addition, managers' perspectives on the adoption of digital technologies remain relatively unexplored. Also, few studies (Eller et al., 2020; Fjellström et al., 2020) have focused on managers' perspectives, although they are decision makers when it comes to digital technology within the hotel. Therefore, this study contributes to both information systems and tourism management literature.

Today, many large companies operating in the field of accommodation have adopted digitalization in their processes. Due to the competitive nature of the hotel industry, hotel digital marketing is critical to long-term success. However, small and medium-sized hotels do not have the power to spend on marketing and brand promotion as

much as large hotel chains. Therefore, the majority of small and medium-sized hotels lack digitalization in their day-to-day operations, which directly affects their business.

The digitalization process offered by developing information technologies to the whole world has affected the tourism sector as well as many other fields and sectors. The processes of the digitalization process of the tourism sector, which is changing every year with digital technologies, and the effects of these processes on the tourism sector constitute the subject of this research.

According to the research's aims the first step will be to ascertain how small and medium-sized hotels employ digital apps to maintain their competitiveness in the digital marketplace. Subsequently, the function of digitalization within the framework of small and medium-sized hotels will be explored.

4.2. Methodology

In this study, a qualitative research method was used to examine digital applications in the tourism sector, to understand the digital development of the sector in terms of themes and contexts, and to search for possible opportunities for future research (Elkhwesky and Elkhwesky, 2022). The qualitative approach “emphasizes empathic understanding of the 'how' and 'why' of tourism-related phenomena and experiences” (Dwyer et al., 2012, p.312).

To examine the application of digitalization applications in small and medium-sized hotels, case study analysis through semi-structured interviews as a qualitative research design was preferred. A case study is a research strategy that focuses on understanding the current dynamics in a single environment (Yi, 2009). According to Maxwell (1998), case studies have been a fundamental form of research in the social sciences. In this context, small and medium-sized hotels operating in Turkey were examined as a case study by conducting semi-structured interviews with 8 small and medium sized hotels who have at least 5 years of experience in the tourism sector.

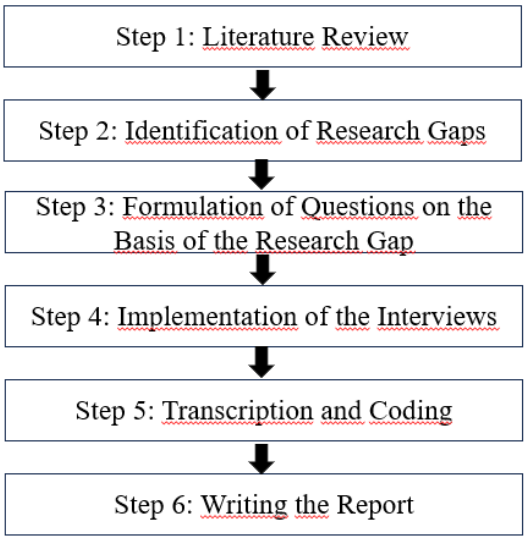

Figure 4.1. Methodological Approach

In the research, semi-structured in-depth interviews were conducted with small and medium-sized hotel managers in order to investigate the effects of the digitalization process on the tourism sector. The purpose of the in-depth interview is not to get answers to questions, test hypotheses, or evaluate. The basis of in-depth interviewing is the interest in understanding other people's experiences and making sense of those experiences (Seidman, 2006).

Due to the fact that small and medium-sized hotel managers reside in different cities, the interviews were conducted online due to time and cost constraints. In order to conduct the interviews, a draft interview form was first prepared. While creating these draft interview forms, a literature review was used, and an expert opinion from the faculty member was received. Necessary adjustments were made to the interview form in line with the opinions received.

4.3. Data Collection and Sample

Due to the purpose of the study, the purposive sampling strategy (Patton, 2002) was adopted, which allows in-depth insight into digitalization practices. The purposeful sampling method is a method used in qualitative research and applied to subjects that want to be examined in depth (Creswell & Creswell 2017). The purposeful sampling

method greatly benefits researchers in the detailed and in-depth analysis of facts, situations, or events (Patton, 2022).

Data for the study were collected through in-depth interviews. Semi-structured interviews were held online via Zoom on June 12–22, 2023. Each of the interviews lasted approximately one hour. At the beginning of the interview, the researcher was informed that each participant could give up taking part in the research if they wished by giving necessary information about the research. In the interviews in which the semi-structured interview method was adopted, audio and video recordings were taken with the knowledge and consent of the participants. Participants were asked 8 questions. Interview forms are in Appendix 1.

If the answers given by the participants in the sampling in qualitative research consist of answers with a certain repetition or similarity, the sample of the research is sufficient. This situation is called “saturation” (Creswell & Creswell, 2017). In this study, the interviews were ended as data saturation was reached after 8 interviews.

4.4. Data Analysis

Yıldırım & Şimşek (2018) state that reporting the collected data in detail and explaining how the researcher reached the results are among the important criteria of validity in qualitative research. In this direction, the validity of the study is ensured by directly giving place to the opinions of the participants and explaining the results based on them.

The findings obtained with the use of video recordings and a voice recorder were reviewed and checked during the analysis. In order to increase the reliability of the data obtained, notes were taken during the interview and recorded after each interview. As defined by Charmaz (2014), memos are free notes taken by researchers to reveal their thoughts and reflections on data collection and analysis.

In the analysis process, firstly, in-depth interviews were deciphered. As the second step of the analysis, the transcribed interviews were coded, and themes were determined by grouping the interviews. Themes were used to group the same concepts discussed by the respondents. The data obtained in the research were subjected to content analysis in order to be handled more systematically and in depth. Content

analysis is an analysis method that researchers can use to turn the created documents into meaningful data and information (Yıldırım & Şimşek, 2018).

4.5. Findings

A total of 8 hotel managers participated in the in-depth interviews. Each interview took approximately 40–60 minutes as shown by Table 5.

Table 4.1. Length of Interviews

Hotel Manager	**Length of Interview**
H1	45 min.
H2	55 min.
H3	40 min.
H4	60 min.
H5	45 min.
H6	60 min.
H7	40 min.
H8	50 min.

General information about the in-depth interview participants is given in Table 6. Before the in-depth interviews, the managers of small and medium-sized hotels were called, their consent to participate in the study was obtained, and the interview dates and times were planned.

Table 4.2. Profile of the Hotel Managers

Hotel Manager	**Location**	**Position**	**Years of Experience**
H1	Ağva	Manager	6
H2	Bodrum	Manager	7
H3	Çıralı	Manager	5
H4	Datça	Manager	7
H5	Istanbul	Manager	10
H6	Eğirdir	Manager	9
H7	Kaş	Manager	12
H8	Küçükkuyu	Manager	18

Information pertaining to the small and medium sized enterprises representing the case study is tabulated in Table 7.

Table 4.3. Descriptive Information

	Hotel 1	**Hotel 2**	**Hotel 3**	**Hotel 4**	**Hotel 5**	**Hotel 6**	**Hotel 7**	**Hotel 8**
Hotel Category	Special Class	Nonrated	Nonrated	Nonrated	Special Class	Special Class	Nonrated	Nonrated
Number of rooms	11	20	19	17	29	19	22	25
Operating period	All Year Around	All Year Around	All Year Around	May-Oct	All Year Around	All Year Around	May-Oct	All Year Around
Family or Non-family Business	Family	Family	Family	Family	Family	Family	Family	Family

The answers given by hotel managers to the interview questions were examined by content analysis under two headings: themes and codes. For the sake of the confidentiality of hotel managers' information, their names are kept anonymous and each of the managers has been named as H.

At the beginning of the interview, hotel managers were first asked about the barriers to digitalization for SMEs. Table 8 summarizes hotel managers' views on technological barriers. Hotel managers expressed their opinions mainly about the lack of financial experts and resources, concerns about data security, a lack of digital skills and knowledge, and difficulties in customization and integration.

Table 4.4. Codes and Explanations of Technological Barriers

Themes	**Codes**	**Explanations**
Technological Barriers	Lack of financial resources for advanced Technologies Limited technical expertise among staff	**H1**: One significant technological barrier faced by SMEs in the hospitality industry during digitalization is the lack of financial resources to invest in advanced technologies.

	Data security and privacy concerns Customization of digital systems	**H2:** SMEs encounter challenges with data security and privacy when adopting digitalization. Ensuring the protection of guest data is paramount, and adhering to data protection regulations can be demanding for smaller hotels.
	Lack of a unified platform Reliance on third-party vendors	**H3:** One specific technological barrier we face is the lack of a unified platform to manage multiple digital tools. SMEs may use different systems for reservations, guest data, and marketing, which can lead to inefficiencies and data discrepancies. Digitalization in SMEs differs from that in larger hotels, as we may rely on third-party vendors for support and maintenance due to limited in-house IT resources.
	Integration complexities with legacy systems Prioritization of customer-facing technologies	**H4:** For SMEs in the hospitality industry, the complexity of integrating digital technologies with existing legacy systems is a major challenge. We might have older infrastructure and software that needs to be updated or replaced to accommodate digital solutions, especially for customer-facing technologies.
	Concerns about cloud-based Technologies Limited bandwidth and internet connectivity	**H5:** SMEs may encounter difficulties in adopting cloud-based technologies due to concerns about data security and reliability. Storing sensitive guest information on external servers can raise security questions, especially when compared to on-premises solutions.
	Customization and integration challenges Personalized decision-making	**H6:** One specific technological barrier for SMEs is the customization and integration of digital solutions to meet our unique operational requirements. Off-the-shelf software might not cater precisely to our needs, necessitating customizations that can be costly.
	Keeping up with rapid technological advancements Relying on external consultants	**H7:** As technology evolves, it can be challenging for smaller establishments to stay updated with the latest trends and identify the most relevant solutions for their needs. While larger hotels might have dedicated IT departments, SMEs often rely on external consultants or service providers for technology guidance.

	Lack of digital skills and knowledge among the workforces Relying on cost-effective training resources	**H8:** The lack of digital skills and knowledge among the workforce can hinder the successful implementation of digitalization in SMEs. Training staff to effectively utilize digital tools and understand their benefits is essential but can be time-consuming and require ongoing support.

Concerns regarding data security and privacy take precedence in the realm of the tourism sector, especially among hotels. Managers' perspectives on this matter can vary significantly. While some emphasize the critical importance of safeguarding customer data as a top priority for the business, others may voice apprehensions about data security. Particularly in the process of digitalization, hotels are tasked with managing sensitive information such as customer reservation details, payment information, and personal data. Some managers underscore the necessity of protecting this data, while others express concerns stemming from the cost and complexity of this safeguarding process. These diverse viewpoints collectively highlight the need for hotels to be vigilant and proactive in addressing data security and privacy during their digital transformation journey. The opinions of the managers regarding this are as follows:

'Storing sensitive guest information on external servers can raise security questions, especially when compared to on-premises solutions.' (H5)

Privatization and integration challenges were cited as another major barrier to technology adoption. In the realm of the tourism sector, obstacles related to privatization and integration pose significant challenges to adopting technology. Moreover, the integration challenges themselves encompass the complexities of incorporating new technological systems or software into existing hotel infrastructure, databases, or operational procedures. Such integration hurdles can arise due to compatibility issues, training requirements, and the need for substantial changes in organizational workflows, making the adoption of technology a more intricate and demanding process for hotels operating within the tourism sector.

'Off-the-shelf software might not cater precisely to our needs, necessitating customizations that can be costly.'(H6)

Lack of unified platform and financial resources are another problem. Investing in advanced technologies and using unified systems is very costly. Within the spheres of tourism and hotel management, the absence of a unified platform and insufficient financial resources present a noteworthy challenge. This issue revolves around the absence of a singular, cohesive platform that could streamline and consolidate various operational aspects within the hotel industry. The lack of such a unified system often leads to disjointed processes, fragmented data management, and inefficiencies in operations. Additionally, the investment required to adopt and implement advanced technologies and unified systems poses a significant financial burden for hotels. Integrating these sophisticated technologies involves substantial costs not only in acquiring the systems but also in training staff, updating infrastructure, and ensuring seamless compatibility with existing operations. Consequently, the considerable expense involved in this technological advancement hinders many hotels from adopting unified systems, despite the potential benefits of streamlining operations and enhancing guest experiences.

'*Digitalization in SMEs differs from larger hotels as we may rely on third-party vendors for support and maintenance due to limited in-house IT resources.'(H3)*

SMEs have differences compared to other organizations in the accommodation sector. According to the hotel managers, the difference between SMEs and other organizations in the accommodation sector is a gradual approach to digitalization, nimble adaptation to changing market demands, agile implementation, prioritizing customer-facing technologies, quick adaptation, and robust and redundant network connections in larger hotels.

Table 4.5. Codes and Explanations of Digitalization Differences

Themes	**Codes**	**Explanations**
Differences of Digitalization for SMEs	Gradual approach to digitalization Relying on third-party vendors for support	**H1:** Compared to larger hotels, SMEs may take a more gradual approach to digitalization, implementing solutions in stages to manage costs effectively. Larger establishments may have the capital to implement comprehensive digital solutions, while SMEs often struggle to afford such investments.

	Nimble adaptation to changing market demands Agile implementation	**H2:** In contrast to larger establishments, SMEs are often more agile and nimble in adopting new technologies, allowing us to quickly adapt to changing market demands.
	Prioritizing customer-facing Technologies Quick adaptation Gradual modernization of backend operations	**H3:** Limited budgets make it essential for SMEs to carefully select the most impactful technologies to enhance the guest experience, such as user-friendly online booking systems and digital concierge services. Additionally, with smaller teams and fewer resources, SMEs must focus on swift adoption and integration of new solutions to stay competitive in a rapidly evolving digital landscape. **H4:** Unlike larger establishments, SMEs in the hospitality industry may choose to focus their investments on technologies that directly improve the guest experience, such as customer-facing technologies, while gradually updating their backend operations.
	Robust and redundant network connections in larger hotels	**H5:** Additionally, the limited bandwidth and internet connectivity in certain locations can hinder the seamless functioning of cloud-based systems. Larger hotels may have the resources to establish more robust and redundant network connections.
	Hands-on approach Direct feedback-based decisions	**H6:** Digitalization in SMEs can be more hands-on and personalized, with decisions made based on direct feedback from staff and guests.
	Accessing relevant solutions based on direct feedback	**H7:** However, seeking and analyzing direct feedback from the guests has become a valuable tool in overcoming these obstacles. By listening to our guests' preferences and concerns, we can pinpoint the most suitable customer-facing technologies that will enhance their experience while gradually modernizing our backend operations.

	Dedicated IT departments in larger hotels Ongoing support for staff training	**H8**: Unlike larger establishments with dedicated training programs, SMEs may need to rely on cost-effective and easily accessible training resources.

'In contrast to larger establishments, SMEs are often more agile and nimble in adopting new technologies, allowing us to quickly adapt to changing market demands.' (H2)

Due to their limited budgets, it is important for SMEs to find impactful technologies and cost-effective training programs. SMEs often face budget constraints that necessitate a strategic approach in selecting impactful technologies and cost-effective training programs. These limitations compel SMEs to meticulously evaluate and prioritize technologies that offer significant value and tangible benefits within their constrained financial parameters. Given their restricted budgets, SMEs must seek out technologies that not only enhance operational efficiency but also provide a clear return on investment. Moreover, the emphasis on cost-effective training programs becomes crucial for SMEs aiming to optimize their resources. Investing in training that maximizes skill development and proficiency in utilizing these selected technologies becomes imperative. Therefore, the judicious selection of impactful technologies coupled with cost-effective training programs is vital for SMEs within the tourism and hotel industries to navigate their limited budgets while striving for enhanced competitiveness and sustainable growth.

'Unlike larger impactful technology establishments with dedicated training programs, SMEs may need to rely on cost-effective and easily accessible training resources.'*(H8).*

'Limited budgets make it essential for SMEs to carefully select the most to enhance the guest experience, such as user-friendly online booking systems and digital concierge services.'(H3).

Hotel managers stated that they faced various difficulties during digitalization, especially related to organizational challenges. One of the prominent difficulties highlighted by managers revolves around the intricate task of aligning and adapting workflows to effectively integrate new technologies. This necessity to adjust

established workflows to accommodate and optimize the incorporation of digital advancements poses a critical challenge for managers. The intricacies involved in reshaping operational procedures, redefining roles, and ensuring a smooth transition from conventional methods to technology-driven approaches emerge as significant obstacles. Moreover, the process demands meticulous planning, training, and change management strategies to foster a seamless adoption of these technologies without disrupting daily operations. Hence, hotel managers emphasize that these organizational challenges pose substantial barriers during the digitalization journey, demanding strategic solutions to harmonize traditional workflows with evolving technological landscapes.

'Integrating new digital systems with existing processes requires careful planning and adjustments.' (H3)

Table 2. Codes and Explanations of Organizational Challenges

Themes	**Codes**	**Explanations**
Organizational Challenges	Integrating new digital systems with existing processes Ensuring staff training for seamless adoption	**H1:** In our SME hotel, we encounter organizational challenges during digitalization, especially concerning business process changes. Implementing new digital systems often requires us to reevaluate and reengineer our existing processes to ensure seamless integration.
	Employee resistance to change Disruptions in business processes during transition	**H2:** As an SME in the hospitality industry, we face several organizational challenges during digitalization, particularly related to business process changes. Adapting our existing workflows to accommodate new digital systems can be a significant undertaking. We need to ensure that our staff members are on board with the changes and well-trained to utilize the digital tools effectively.
	Adjusting workflows to accommodate new Technologies Training staff to utilize digital tools efficiently	**H3:** During the digitalization implementation in our SME hotel, we encountered organizational challenges primarily concerning business process changes. Integrating new digital systems with existing processes requires careful planning and adjustments. We ensure that our staff members receive comprehensive

		training to embrace the changes and utilize the digital tools efficiently.
	Restructuring existing workflows for seamless integration Staff training for effective utilization	**H4:** As an SME in the hospitality industry, we face organizational challenges during the digitalization process, particularly concerning business process changes. Implementing new digital systems may require us to restructure our existing workflows to ensure a smooth integration. Training our staff members to adapt to these changes is crucial to maximizing the benefits of digitalization.
	Reengineering business processes for digital systems Providing comprehensive staff training	**H5:** In our SME hotel, we encounter organizational challenges related to business process changes during the implementation of digitalization. Integrating new technologies may necessitate adjustments to our existing workflows and training our staff to utilize these systems efficiently.
	Adapting staff roles during digitalization Engaging in online hospitality communities	**H6:** To support our team in this transition, we provide our staff members with extensive training to embrace the changes and leverage the digital tools effectively. Engaging in online hospitality communities further assists us in overcoming challenges by exchanging insights and best practices with industry peers, fostering a collaborative approach to navigate the digital landscape successfully.
	Integrating multiple digital systems Limited IT personnel	**H7:** Integrating new digital systems requires us to reengineer our existing workflows and ensure smooth adoption by our staff members. Limited IT personnel pose an additional obstacle as we seek to implement and manage various technologies effectively.

	Cultural changes in the organization Resistance to new technology	**H8:** Cultural changes in the organization become crucial as we strive to create a tech-friendly environment where staff feel comfortable adapting to the advancements. However, we acknowledge that resistance to new technology can be a common hurdle among employees.

The resistance of the employees to new technologies and the need for training were stated as important problems. 'Adapting our existing workflows to accommodate new digital systems can be a significant undertaking. We need to ensure that our staff members are on board with the changes and well-trained to utilize the digital tools effectively.'*(H2)*

Restructuring existing workflows for seamless integration and reengineering business processes for digital systems are crucial. Implementing new digital systems may require us to restructure our existing workflows to ensure a smooth integration. *(H4)*

'Integrating new technologies may necessitate adjustments to our existing workflows and training our staff to utilize these systems efficiently.'(H5)

When the managers were asked how they were aware of the developments in the industry, they stated that they mostly attended conferences and webinars related to the industry and subscribed to industry newsletters.

Table 4.7. Codes and Explanations for Staying Informed about Developments

Themes	**Codes**	**Explanations**
Staying Informed about Developments	Attending industry conferences, webinars, and workshops	**H1:** To stay informed about the latest developments in the field of digitalization, I actively participate in industry conferences and webinars, where experts share insights on emerging technologies and best practices.

	Subscribing to industry newsletters and online forums Active participation in industry conferences, webinars, and workshops	**H2:** To stay informed about the latest developments in this field, I actively follow industry news, subscribe to relevant newsletters, and engage with online forums where professionals discuss emerging trends and innovative technologies. **H3:** Staying informed about the latest developments in this rapidly evolving field is essential, and I achieve this by attending industry conferences, webinars, and workshops.
	Regularly attending workshops and webinars	**H4:** To stay informed about the latest developments in this dynamic field, I actively participate in industry conferences, webinars, and networking events.
	Following industry news and experts on social media Attending industry conferences and webinars	**H5:** To stay informed about the latest developments in the digitalization field, I subscribe to industry newsletters and follow leading experts on social media platforms. **H6:** To stay informed about the latest developments in the field of digitalization, I actively participate in industry conferences, webinars, and online forums where experts share their insights and experiences.
	Monitoring industry trends through online resources	**H7:** To stay informed about the latest developments in this dynamic field, I actively follow industry news, attend conferences, and engage in knowledge-sharing sessions with other professionals.
	Participating in industry conferences and workshops	**H8:** To stay informed about the latest developments in the field of digitalization, I actively participate in industry conferences and workshops, where industry experts share insights and best practices.

It has been stated that industry conferences, webinars, and workshops are important sources of information about new trends and developments.

'*To stay informed about the latest developments in this dynamic field, I actively participate in industry conferences, webinars, and networking events.'(H3)*

'I actively follow industry news, attend conferences, and engage in knowledge-sharing sessions with other professionals.' (H7)

The Small and Boutique Hotels Association and other non-governmental organizations offer guidance and support to small and medium-sized hotels in their digital transformation journey.

Table 4.8. Codes and Explanations of Organizations' Guidance and Support

Themes	Codes	Explanations
Organizations' Guidance & Support	Small and Boutique Hotels Association workshops and resources	**H1:** Additionally, organizations like the Small and Boutique Hotels Association provide valuable guidance and support through workshops and resources, enabling us to navigate the complexities of digitalization effectively.
	Non-governmental organizations' guidance and support	**H2:** Moreover, organizations like the Small and Boutique Hotels Association play a pivotal role in supporting SMEs like ours with valuable guidance, workshops, and best practice sharing, helping us navigate the digital transformation journey successfully.
	Small and Boutique Hotels Association workshops and best practice sharing	**H3:** Non-governmental organizations' resources and peer networks, such as the Small and Boutique Hotels Association, also provide valuable insights and guidance by sharing the best practices, helping us navigate the ever-changing landscape of smart tourism.
	Non-governmental organizations' guidance and support resources	**H4:** External support from organizations like the Small and Boutique Hotels Association provides us with valuable support and resources to navigate the complexities of digitalization in the context of smart tourism effectively.
	Small and Boutique Hotels Association workshops and industry updates	**H5:** Moreover, organizations like the Small and Boutique Hotels Association offer invaluable guidance and support through workshops and knowledge-sharing events, helping us navigate the industry's complexities of digitalization successfully.

	Non-governmental organizations' support and best practice sharing	**H6:** Additionally, non-governmental organizations like the Small and Boutique Hotels Association provide valuable guidance and support through workshops and resources where best practices are shared, which significantly aid us in overcoming digitalization challenges.
	Small and Boutique Hotels Association workshops and expert advice	**H7:** Furthermore, organizations like the Small and Boutique Hotels Association offer invaluable support and guidance, providing us with access to workshops and best practices by experts that help us navigate the complexities of digitalization effectively.
	Non-governmental organizations' resources and peer networks	**H8:** Additionally, non-governmental organizations' resources and peer networks, such as the Small and Boutique Hotels Association, offer valuable guidance and support, providing us with additional resources that assist us in overcoming digitalization challenges effectively.

Managers frequently mentioned the importance of the Small and Boutique Hotels Association.

'*Small and Boutique Hotels Association offer invaluable support and guidance, providing us with access to workshops and best practices by experts that help us navigate the complexities of digitalization effectively.'(H7)*

'Small and Boutique Hotels Association offers valuable guidance and support, providing us with additional resources that assist us in overcoming digitalization challenges effectively.'(H8)

External factors such as regulatory frameworks and market conditions present organizational challenges to small and medium-sized hotels undertaking digitalization efforts in the context of smart tourism. The initial challenges include compliance with data protection laws, managing employee resistance, restructuring workflows, and integrating multiple digital systems.

Table 4.9. Codes and Explanations of Organizational Challenges

Themes	Codes	Explanations
Organizational Challenges	Compliance with data protection laws Aligning digital strategies with market trends	**H1:** Furthermore, changes in regulatory requirements can affect the implementation of specific technologies, adding complexity to the process. Market conditions also play a crucial role, as customer preferences and demands evolve rapidly.
	Managing employee resistance Embracing agile strategies	**H2:** Managing employee resistance becomes crucial as we implement new digital technologies and processes. Embracing agile strategies allows us to adapt quickly to changing market conditions, including fluctuations in demand and competition, impacting our investment decisions in digital technologies.
	Integrating digital systems with existing processes Embracing customer-driven changes	**H3:** Integrating digital systems with existing processes becomes essential to ensure seamless operations and maximize efficiency. Moreover, embracing customer-driven changes becomes crucial as market conditions can affect the demand for specific digital technologies.
	Restructuring workflows for seamless integration Aligning technology with market demands	**H4:** Restructuring workflows for seamless integration of new digital systems becomes a priority to ensure efficient operations and enhance guest experiences. Market conditions, including shifts in customer preferences and competitive forces, drive our decisions to adopt specific digital technologies.
	Reengineering processes for digitalization Adapting digital strategies to market trends	**H5:** For SMEs in the hospitality industry undertaking digitalization efforts for smart tourism, external factors like regulatory frameworks and market conditions have a profound impact on our strategies.

	Adapting staff roles during digitalization Engaging in industry insights	**H6:** Adapting staff roles during digitalization becomes essential to ensure that team members can effectively utilize the new technologies and contribute to improved guest experiences. Engaging in industry insights helps us stay informed about shifts in consumer preferences and industry trends, guiding our adoption of specific digital solutions that align with the evolving needs of our guests.
	Integrating multiple digital systems Adapting to changing market conditions	**H7:** Compliance with data protection regulations and privacy laws is paramount, requiring us to invest in secure digital systems. Moreover, market conditions influence our adoption of digital technologies, as we seek solutions that cater to changing guest preferences and enhance their experience.
	Restructuring workflows for digitalization Embracing technological changes	**H8:** Restructuring workflows for digitalization becomes a priority as we embrace technology changes to enhance operational efficiency and guest experiences.

Employee resistance is at the forefront of organizational challenges. *'Managing employee resistance becomes crucial as we implement new digital technologies and processes.'(H2)*

Hotel managers emphasized that workflows should be restructured for digitalization.

'Restructuring workflows for digitalization becomes a priority as we embrace technology changes to enhance operational efficiency and guest experiences.' (H8)

'Restructuring workflows for seamless integration of new digital systems becomes a priority to ensure efficient operations and enhance guest experiences.' (H4)

External factors, such as regulatory frameworks and market conditions, play a pivotal role in shaping digitalization efforts for smart tourism among SMEs in the hospitality industry.

Table 3. Codes and Explanations of Regulatory and Market Impact

Themes	Codes	Explanations
Regulatory & Market Impact	Adapting to regulatory changes Navigating dynamic market demand	**H1:** Adherence to data protection and privacy regulations is of utmost importance, and SMEs need to invest in secure and compliant digital systems to safeguard guest information. SMEs must stay agile and adapt their digital strategies to meet changing market trends.
	Ensuring data protection and compliance Adapting to changing market preferences	**H2:** Additionally, compliance with data protection laws and privacy regulations remains paramount, requiring careful management of guest data to ensure security and trust. To succeed, we must align our digitalization efforts with customer expectations and preferences to enhance their experience and stay competitive in the evolving digital landscape.
	Meeting data privacy regulations Adjusting digital strategies to market conditions	**H3:** Compliance with data protection and privacy regulations is a top priority, and we allocate resources to ensure that our digital systems meet these requirements while safeguarding guest information. SMEs must be nimble in adopting innovations that align with guest preferences to enhance their experience and maintain a competitive edge in the dynamic digital landscape.
	Complying with data protection laws Monitoring market trends	**H4:** Compliance with data protection regulations and privacy laws is essential to safeguarding guest information, and we invest in secure and compliant digital solutions. We stay informed about regulatory updates and market trends by following industry news, attending conferences, and engaging with experts.
	Prioritizing data privacy and compliance Aligning with changing market preferences	**H5:** Additionally, market conditions, such as changes in consumer behavior and demand, influence our digitalization priorities.
	Ensuring data protection and privacy compliance Navigating market dynamics	**H6:** As SMEs in the hospitality industry embark on digitalization efforts for smart tourism, external factors such as regulatory frameworks and market conditions significantly impact our strategies.

	Adhering to data protection regulations Aligning digital strategies with market trends	**H7:** External factors, such as regulatory frameworks and market conditions, play a pivotal role in shaping digitalization efforts for smart tourism among SMEs in the hospitality industry.
	Complying with data protection laws Adapting to market shifts	**H8:** Compliance with data protection laws and privacy regulations is critical to safeguarding guest data, driving our investment in secure digital solutions. Additionally, staying engaged with industry insights helps us navigate shifts in consumer behavior and industry trends, shaping our digitalization strategies to meet the ever-changing needs of our guests and maintain a competitive edge in the market.

It is important to attend industry events, workshops, and conferences in order to follow new developments in the industry and regulatory updates.

'Staying informed about the evolving regulatory landscape and market trends is crucial, and we achieve this by actively engaging with industry forums, attending workshops, and participating in networking events.' (H2)

Table 4.11. Codes and Explanations for Staying Informed and Support

Themes	**Codes**	**Explanations**
Staying Informed & Support	Industry conferences, webinars, and Small and Boutique Hotels Association workshops	**H1:** Engaging with industry associations, such as the Small and Boutique Hotels Association's conferences, webinars, or workshops, and staying informed about market dynamics allows us to make informed decisions that align with the current smart tourism landscape.
	Active participation in forums, workshops, and networking events	**H2:** Staying informed about the evolving regulatory landscape and market trends is crucial, and we achieve this by actively engaging with industry forums, attending workshops, and participating in networking events.

	Subscribing to industry newsletters and non-governmental organizations' guidance	**H3:** To stay informed about regulatory changes and market dynamics, I actively participate in industry conferences, subscribe to newsletters, and engage with industry experts. Organizations like the Small and Boutique Hotels Association also provide valuable insights and guidance, helping us navigate the ever-changing landscape of smart tourism.
	Following industry news and Small and Boutique Hotels Association workshops	**H4:** We stay informed about regulatory updates and market trends by following industry news, attending conferences, and engaging with experts. External support from organizations like the Small and Boutique Hotels Association provides us with valuable support and resources to navigate the complexities of digitalization in the context of smart tourism effectively.
	Regularly attending workshops and non-governmental organizations' support resources	**H5:** To stay informed about regulatory updates and market dynamics, I actively participate in industry seminars and webinars and subscribe to newsletters from reputable sources. Collaborating with organizations like the Small and Boutique Hotels Association offers valuable support, providing us with insights and best practices to ensure a successful digital transformation.
	Attending industry conferences, webinars, and non-governmental organizations' support	**H6:** Staying informed about regulatory changes and market dynamics is essential, and I achieve this by actively participating in industry conferences and webinars. Organizations like the Small and Boutique Hotels Association provide valuable guidance and support, enabling us to make informed decisions and navigate the evolving landscape of smart tourism.
	Monitoring industry trends and Small and Boutique Hotels Association workshops	**H7:** To stay informed about regulatory updates and market trends, I actively engage in industry forums, attend workshops, and participate in networking events. Non-governmental organizations like the Small and Boutique Hotels Association offer valuable guidance and support, equipping us with the knowledge needed to navigate the complexities of smart tourism digitalization.

	Participating in conferences, workshops, and non-governmental organizations' resources	**H8:** Participating in conferences, workshops, and non-governmental organizations' resources is crucial to staying updated with the latest developments and best practices in digitalization.

Financial constraints and resource constraints force small and medium-sized hotels to find cost-effective solutions.

Table 4.12. Codes and Explanations of Financial Constraints and Resource Limitations

Themes	**Codes**	**Explanations**
Financial Constraints and Resource Limitations	Limited financial resources Relying on cost-effective solutions	**H1:** Limited financial resources often restrict our ability to invest in high-end digital technologies, leading us to opt for cost-effective solutions.
	Budget constraints Limited in-house technical expertise	**H2:** Budget constraints often limit our access to sophisticated digital technologies, making it essential for us to choose solutions that fit our budget while still meeting our operational needs.
	Limited funds for advanced Technologies Resource allocation challenges	**H3:** As an SME, we might face challenges in allocating substantial funds to invest in cutting-edge digital technologies, and this affects the pace of our digital transformation.
	Budget constraints Limited resources for integration	**H4:** Financial constraints and resource limitations pose challenges for SMEs like us in the hospitality industry when it comes to adopting digitalization, especially in the realm of smart tourism.

	Budget considerations Limited in-house technical expertise	**H5:** As an SME in the hospitality industry, financial constraints and resource limitations significantly influence our digitalization efforts, particularly in adopting smart tourism initiatives.
	Careful budget allocation Limited in-house IT resources	**H6:** We must carefully allocate our budget to invest in technologies that align with our business goals and deliver tangible benefits.
	Limited financial resources Relying on cost-effective solutions	**H7:** Limited financial resources may restrict us from investing in high-end digital technologies, and we need to carefully select cost-effective solutions that still yield significant benefits.
	Budget considerations Limited in-house IT capabilities	**H8:** Our budget considerations require us to prioritize digital solutions that offer the most immediate value and align with our strategic goals.

Managers stated that the budget constraint made it difficult to invest in advanced digital infrastructure.

'Limited financial resources often restrict our ability to invest in high-end digital technologies, leading us to opt for cost-effective solutions.' (H1)

'Limited financial resources may restrict us from investing in high-end digital technologies, and we need to carefully select cost-effective solutions that still yield significant benefits.' (H7)

Table 4.13. Codes and Explanations of Approach to Digitalization

Themes	**Codes**	**Explanations**
Approach to Digitalization	Gradual implementation Prioritizing guest experiences	**H1:** Despite these challenges, we adopt a strategic approach by prioritizing digital tools that directly enhance guest experiences and operational efficiency.

	Pragmatic approach Gradual implementation and staff training	**H2:** Despite these challenges, we embrace a pragmatic approach by gradually implementing digital solutions and focusing on continuous staff training to optimize their utilization.
	Incremental investments in impactful technologies	**H3:** To mitigate financial constraints, we prioritize incremental investments in technologies that have a tangible impact on guest experiences and operational efficiency.
	Prioritizing cost-effective solutions	**H4:** Our budget constraints may restrict us from investing in advanced digital technologies, making it necessary to identify cost-effective solutions that still yield significant benefits.
	Focusing on technologies with immediate impact	**H5:** Budget considerations can limit our ability to invest in comprehensive digital solutions, leading us to prioritize technologies that offer the most immediate impact on guest experiences.
	Prioritizing technologies with measurable benefits	**H6:** However, we prioritize digital initiatives that enhance guest experiences and streamline operations, making the most of our available resources and financial capabilities.
	Focusing on technologies to enhance the guest experience	**H7:** Despite these challenges, we remain committed to digital transformation, prioritizing technologies that drive operational efficiency and enhance the guest experience.
	Prioritizing technologies that drive operational efficiency	**H8:** Our focus on incremental and targeted digital initiatives allows us to make the most of our available resources and achieve meaningful progress in enhancing guest experiences.

Managers emphasized that they are trying to invest in technologies that create tangible effects by improving the guest experience despite budgetary difficulties.

'To mitigate financial constraints, we prioritize incremental investments in technologies that have a tangible impact on guest experiences and operational efficiency.' (H3)

'Despite these challenges, we remain committed to digital transformation, prioritizing technologies that drive operational efficiency and enhance the guest experience.' (H7)

Limited in-house technical expertise slows down the digitalization process, and outsourcing is mostly done for digital integration.

'Limited in-house resources necessitate outsourcing aspects of our digitalization journey, including technical support and software development.' (H3)

'We rely on external consultants for digital integration' (H2)

Table 4.14. Codes and Explanations of IT Support & Outsourcing

Themes	**Codes**	**Explanations**
IT Support & Outsourcing	Collaborating with external vendors for technical support	**H1:** By carefully allocating resources and collaborating with technology partners, we aim to stay competitive in the smart tourism landscape and offer enhanced services to our guests.
	Reliance on external consultants for digital integration	**H2:** Additionally, our limited in-house technical expertise may slow down the implementation process, requiring us to rely on external consultants for digital integration.
	Outsourcing aspects of digitalization journey	**H3:** Additionally, limited in-house resources necessitate outsourcing aspects of our digitalization journey, including technical support and software development.
	Collaborating with external service providers for support	**H4:** Resource limitations can impact the speed of implementation and integration of digital tools into our existing systems, requiring careful planning and collaboration with external service providers.
	Outsourcing certain aspects of digital integration	**H5:** Additionally, our limited in-house technical expertise may require us to outsource certain aspects of digital integration and maintenance.
	Partnering with external service providers for expertise	**H6:** Moreover, our limited in-house IT resources may require us to partner with external service providers to implement and maintain digital tools effectively.

	Engaging external partners for technical support	**H7:** Our in-house IT capabilities may not be extensive, necessitating the engagement of external partners for technical support and expertise.
	Seeking partnerships with providers catering to SMEs	**H8:** Despite these challenges, we are proactive in seeking partnerships with technology providers that cater to SMEs and offer flexible pricing models.

Security and privacy concerns faced by small and medium-sized enterprises in the hospitality industry, especially with the implementation of digitalization in the field of smart tourism, are grouped under four themes: security and privacy concerns; cybersecurity measures; compliance with data protection; staff training and education.

Table 4.15. Codes and Explanations of Security and Privacy Concerns

Themes	**Codes**	**Explanations**
Security and Privacy Concerns	Protecting guest data from unauthorized access Complying with data protection regulations	**H1:** Protecting personal information, such as payment details and contact information, is crucial to maintaining guest trust and complying with data protection regulations.
	Ensuring confidentiality, integrity, and availability of guest data Complying with privacy laws	**H2:** Ensuring the confidentiality, integrity, and availability of guest data is a top priority, leading us to implement robust cybersecurity measures and access controls. We also comply with data protection regulations and privacy laws to protect sensitive guest information.
	Protecting sensitive data from unauthorized access Complying with data protection regulations	**H3:** As we adopt smart technologies to deliver personalized guest experiences, protecting sensitive data from unauthorized access and cyber threats becomes a top priority. Additionally, we adhere to data protection regulations and industry standards to ensure compliance with privacy laws.

	Safeguarding sensitive data Complying with data protection regulations	**H4:** As we embrace digital technologies to enhance guest services and operations, protecting sensitive data is a top priority. Adherence to data protection regulations and privacy laws is critical, and we regularly review our policies to ensure compliance.
	Protecting guest data from cyber threats Complying with privacy laws	**H5:** As we adopt digital technologies to optimize guest experiences, protecting guest data from cyber threats is a top priority. Adhering to data protection regulations and privacy laws is non-negotiable, and we regularly update our policies to stay compliant.
	Safeguarding sensitive data Complying with data protection regulations	**H6:** As we integrate digital technologies into various aspects of guest services and operations, safeguarding sensitive data is a top priority. Complying with data protection regulations and privacy laws is essential, and we regularly audit our systems to ensure security compliance.
	Protecting guest data from potential cyber threats Complying with data protection regulations	**H7:** We implement robust cybersecurity measures, such as firewalls, secure networks, and regular vulnerability testing, to protect guest information from potential cyber threats. Compliance with data protection regulations and privacy laws is a priority, and we keep our staff updated on data security practices.
	Safeguarding guest data Complying with data protection regulations	**H8:** As we embrace digital technologies to enhance guest services and improve operational efficiency, safeguarding guest data is paramount. Complying with data protection regulations and privacy laws is a top priority, and we conduct regular audits to ensure compliance.

Protecting guest data is at the forefront of security and privacy concerns. Administrators have expressed concerns about unauthorized access to guest data, protecting sensitive data, and cyber threats.

'Complying with data protection regulations and privacy laws is essential, and we regularly audit our systems to ensure security compliance.' (H6)

'As we embrace digital technologies to enhance guest services and operations, protecting sensitive data is a top priority. Adherence to data protection regulations

and privacy laws is critical, and we regularly review our policies to ensure compliance.' (H4)

Table 4.16. Codes and Explanations of Cybersecurity Measures

Themes	Codes	Explanations
Cybersecurity Measures	Robust cybersecurity infrastructure Encryption protocols	**H1:** Therefore, we invest in robust cybersecurity measures and encryption protocols to prevent data breaches and unauthorized access.
	Robust cybersecurity measures Regular risk assessments	**H2:** To address these concerns effectively, we conduct regular risk assessments and vulnerability testing, allowing us to identify and address potential security gaps.
	Robust cybersecurity infrastructure Access controls	**H3:** We invest in robust cybersecurity infrastructure, including firewalls, encryption, and intrusion detection systems, to safeguard guest information and maintain their trust.
	Robust cybersecurity measures Regular audits	**H4:** We employ robust cybersecurity measures, including network security, encryption, and access controls, to prevent unauthorized access and data breaches. Moreover, we conduct regular audits and vulnerability assessments to identify and address potential security risks.
	Robust cybersecurity measures Secure payment gateways	**H5:** We invest in robust cybersecurity measures, implement secure payment gateways, and encrypt sensitive information to prevent data breaches.
	Advanced cybersecurity measures Multi-factor authentication	**H6:** We invest in advanced cybersecurity measures, including multi-factor authentication, encryption, and regular data backups, to protect guest information from unauthorized access and cyber threats.
	Robust cybersecurity measures Regular security audits	**H7:** As we adopt digital technologies to enhance guest experiences and streamline operations, safeguarding guest data is a critical responsibility. Regular security audits and risk assessments enable us to identify and address potential vulnerabilities effectively.

	Robust cybersecurity solutions Regular audits	**H8:** We invest in robust cybersecurity solutions, such as encryption, firewalls, and intrusion detection systems, to protect guest information from cyber threats. Complying with data protection regulations and privacy laws is a top priority, and we conduct regular audits to ensure compliance.

Managers stated that they use cyber security measures such as network security, encryption, and access controls to prevent unauthorized access, and they carry out regular controls to prevent security vulnerabilities.

'To address these concerns effectively, we conduct regular risk assessments and vulnerability testing, allowing us to identify and address potential security gaps.' (H2)

'We invest in robust cybersecurity solutions, such as encryption, firewalls, and intrusion detection systems, to protect guest information from cyber threats.' (H8)

All of the managers stated that they give priority to security and privacy and try to create a safe and secure digital environment for their guests.

'We strive to provide our guests with a safe and secure digital experience during their interactions with our smart tourism initiatives.' (H2)

'We aim to provide a safe and trustworthy digital experience for our guests, ensuring their confidence in our smart tourism initiatives.' (H4)

Table 4.17. Codes and Explanations of Compliance with Data Protection

Themes	**Codes**	**Explanations**
Compliance with Data Protection	Ensuring adherence to data protection laws	**H1:** By prioritizing security and privacy, we aim to create a safe and trustworthy digital environment for our guests in the context of smart tourism.
	Adhering to data protection regulations	**H2:** By taking proactive measures to enhance security and privacy, we strive to provide our guests with a safe and secure digital experience during their interactions with our smart tourism initiatives.
	Ensuring compliance with privacy laws	**H3:** By prioritizing security and privacy, we strive to create a safe and secure digital environment for our guests, enhancing their smart tourism experience.

	Ensuring adherence to data protection laws	**H4:** By taking a proactive approach to security and privacy, we aim to provide a safe and trustworthy digital experience for our guests, ensuring their confidence in our smart tourism initiatives.
	Adhering to data protection regulations	**H5:** By maintaining a strong focus on security and privacy, we aim to provide our guests with a seamless and secure digital experience in the context of smart tourism.
	Ensuring compliance with privacy laws	**H6:** By prioritizing security and privacy, we aim to create a safe and trustworthy digital environment for our guests, fostering confidence in our smart tourism initiatives.
	Adhering to data protection laws	**H7:** By placing a strong emphasis on security and privacy, we aim to build trust with our guests, ensuring a safe and seamless digital experience in the realm of smart tourism.
	Ensuring adherence to privacy laws	**H8:** By taking a proactive approach to security and privacy, we aim to provide our guests with a secure and seamless digital experience during their interactions with our smart tourism initiatives.

The importance of employee training on data security and privacy was emphasized. Managers stated that they are given regular training on data privacy.

'We conduct regular staff training on data privacy and cybersecurity practices to ensure all team members are vigilant in safeguarding guest information.' (H1)

'Regular staff training on data security practices ensures that our team is equipped to handle potential threats effectively.' (H3)

Table 4.18. Codes and Explanations of Staff Training & Education

Themes	**Codes**	**Explanations**
Staff Training & Education	Regular staff training on data privacy and cybersecurity practices	**H1:** Additionally, we conduct regular staff training on data privacy and cybersecurity practices to ensure all team members are vigilant in safeguarding guest information.

	Relying on external consultants for digital integration expertise	**H2:** Relying on external consultants for digital integration expertise becomes essential as we seek to implement robust security measures and ensure compliance with privacy regulations.
	Regular staff training on data security practices	**H3:** Regular staff training on data security practices ensures that our team is equipped to handle potential threats effectively.
	Regular staff training on data privacy and security	**H4:** Adherence to data protection regulations and privacy laws is critical, and we regularly review our policies to ensure compliance.
	Staff training on data security best practices	**H5:** Furthermore, staff training on data security and privacy best practices ensures that our team is well-prepared to handle potential security incidents.
	Educating staff on cybersecurity best practices	**H6:** Additionally, we educate our staff on cybersecurity best practices to minimize the risk of human error in data protection.
	Educating staff on data security practices	**H7:** Compliance with data protection regulations and privacy laws is a priority, and we keep our staff updated on data security practices.
	Educating staff on cybersecurity best practices	**H8:** Educating our staff on cybersecurity best practices and potential risks plays a crucial role in maintaining data security.

Considering customer expectations and preferences regarding smart tourism technologies in the hospitality industry, cost factors for SMEs to implement digitalization are grouped under four themes: customer expectations and preferences; cost factors; digitalization approach; and resource optimization.

It has been stated that the digitalization applications necessary to satisfy customer expectations and preferences are costly, and small and medium-sized hotels have difficulties due to budget constraints.

Table 4.19. Codes and Explanations of Customer Expectations & Preferences

Themes	Codes	Explanations
Customer Expectations & Preferences	Adopting advanced technologies to meet guest demands Budget considerations	**H1:** Adopting advanced smart tourism technologies can be expensive, and as an SME, budget considerations play a crucial role in our decision-making process.
	Embracing smart technologies to meet guest expectations Financial constraints	**H2:** Integrating smart tourism technologies can require substantial investments, and as an SME, we need to carefully manage our resources.
	Meeting guest demands for seamless experiences Budget constraints	**H3:** As guests demand more seamless and tech-driven experiences, we recognize the importance of adopting digital solutions to meet their needs. However, cost factors indeed present significant challenges for SMEs like ours.
	Adopting smart technologies for personalized experiences Cost-benefit evaluation	**H4:** As guests seek enhanced experiences and seamless interactions, we understand the significance of adopting smart technologies to meet their demands. However, cost factors do pose notable challenges for SMEs when it comes to digitalization.
	Integrating tech-driven experiences Cost considerations	**H5:** However, cost factors present significant challenges for SMEs during digitalization. Implementing advanced smart tourism technologies can be costly, and we must carefully evaluate the impact on our financial resources.
	Embracing tech-savvy experiences Financial feasibility	**H6:** However, cost factors indeed present significant challenges for SMEs during the implementation of digitalization. We must carefully assess the financial feasibility of adopting smart tourism technologies that align with guest expectations.
	Meeting guest demands for tech-enabled experiences Capital-intensive adoption	**H7:** However, cost factors indeed present notable challenges for SMEs when adopting digitalization strategies. Integrating smart tourism technologies can be capital-intensive, and we need to carefully evaluate the return on investment for each initiative.

	Meeting guest expectations for seamless interactions Budget considerations	**H8:** As guests seek enhanced experiences and seamless interactions, we recognize the importance of adopting digital solutions to meet their demands. Moreover, we explore collaborative opportunities and partnerships to share resources and mitigate costs.

It has been stated that the adoption of digital technologies is mandatory in the hospitality industry to satisfy guests. In this direction, it is understood that costly digital applications are pushing small and medium-sized hotels.

'Today's guests increasingly seek seamless, connected experiences, which drives us to adopt digital technologies to meet their needs. However, cost factors pose notable challenges for SMEs like ours.' (H2)

Table 4.20. Codes and Explanations of Cost Factors

Themes	**Codes**	**Explanations**
Cost Factors	Phased approach to digitalization Prioritizing cost-effective solutions	**H1:** While customers increasingly seek personalized and tech-driven experiences, cost factors pose significant challenges for us.
	Prioritizing guest-centric Technologies Regular cost-benefit analyses	**H2:** Today's guests increasingly seek seamless, connected experiences, which drives us to adopt digital technologies to meet their needs. However, cost factors pose notable challenges for SMEs like ours.
	Gradual implementation of cost-effective technologies	**H3:** To overcome this challenge, we focus on a phased approach to digitalization, gradually implementing technologies that align with guest expectations and deliver operational efficiencies.
	Focusing on cost-effective digital solutions	**H4:** Implementing cutting-edge smart tourism technologies may require substantial investments, and as an SME, budget considerations are crucial.

	Prioritizing cost-effective solutions with long-term benefits	**H5:** We prioritize cost-effective digital solutions that deliver value to our guests and enhance their experiences while remaining within budget constraints.
	Investing in technologies with long-term value	**H6:** This may involve exploring cost-effective alternatives and investing in technologies that offer long-term benefits.
	Evaluating the return on investment for each initiative	**H7:** We prioritize technologies that deliver the most value to our guests while optimizing costs through efficient resource allocation.
	Conducting thorough cost-benefit analyses	**H8:** Implementing cutting-edge smart technologies can require substantial investments, and as an SME, we must prioritize our spending strategically. We conduct thorough cost-benefit analyses for each technology and prioritize those that offer the most value to our guests and operations.

Managers stated that they adopted cost-effective digital solutions due to budget constraints.

'To overcome this challenge, we focus on a phased approach to digitalization, gradually implementing technologies that align with guest expectations and deliver operational efficiencies.' (H3)

It has been stated that they cooperate with their providers in order to benefit from economies of scale and reduce financial budgets.

'Moreover, we collaborate with technology providers and leverage economies of scale to negotiate favorable pricing and minimize financial strain.' (H7)

'We explore partnerships with technology providers and leverage economies of scale to reduce implementation costs.' (H2)

Table 4.21. Codes and Explanations of Digitalization Approach

Themes	Codes	Explanations
Digitalization Approach	Evaluating return on investment Partnering with technology providers	**H1:** We carefully evaluate the return on investment for each digitalization initiative to ensure it aligns with guest expectations and enhances their experiences.
	Exploring partnerships for cost-sharing Leveraging economies of scale	**H2:** Additionally, we explore partnerships with technology providers and leverage economies of scale to reduce implementation costs.
	Evaluating the cost-benefit ratio for each initiative	**H3:** Integrating cutting-edge smart tourism technologies can be financially demanding, and we need to carefully assess the cost-benefit ratio.
	Exploring collaborative approaches for cost-sharing	**H4:** Additionally, we explore collaborative approaches, such as partnering with other SMEs, to pool resources and share costs.
	Exploring scalable Technologies Managing costs efficiently	**H5:** Moreover, we seek technology providers that offer scalable solutions, allowing us to adapt to changing customer demands without incurring significant additional costs.
	Exploring collaborative resource sharing	**H6:** To overcome cost challenges, we also consider collaborative approaches, such as sharing resources with other SMEs, to collectively implement smart technologies and optimize costs.
	Collaborating with technology providers Leveraging economies of scale	**H7:** Moreover, we collaborate with technology providers and leverage economies of scale to negotiate favorable pricing and minimize financial strain.
	Collaborating with and sharing resources with other SMEs	**H8:** We conduct thorough cost-benefit analyses for each technology and prioritize those that offer the most value to our guests and operations.

One of the cost-effective solutions is resource optimization. In this context, cloud-based technologies are effective in providing resource optimization.

'We also leverage cloud-based solutions and outsourcing options to optimize costs while ensuring we remain competitive in the smart tourism landscape.' (H3)

Cost-benefit analysis is important for comprehensive digital approaches.

'To address this, we conduct thorough cost-benefit analyses for each digital initiative, ensuring it aligns with customer expectations while remaining financially viable.' (H4)

Table 4.22. Codes and Explanations of Resource Optimization

Themes	**Codes**	**Explanations**
Resource Optimization	Exploring cost-effective alternatives Collaborating with external vendors	**H1:** Moreover, we explore cost-effective alternatives and prioritize technologies that offer tangible benefits without exceeding our budget constraints.
	Managing costs strategically Negotiating favorable pricing	**H2:** By aligning our digitalization efforts with customer preferences and balancing cost considerations, we strive to provide exceptional smart tourism experiences that resonate with our guests and meet their expectations.
	Collaborating with other SMEs for resource pooling	**H3:** We also leverage cloud-based solutions and outsourcing options to optimize costs while ensuring we remain competitive in the smart tourism landscape.
	Partnering with scalable technology providers	**H4:** To address this, we conduct thorough cost-benefit analyses for each digital initiative, ensuring it aligns with customer expectations while remaining financially viable. Additionally, we explore collaborative approaches, such as partnering with other SMEs, to pool resources and share costs.
	Opting for technology providers offering flexible pricing	**H5:** Moreover, we seek technology providers that offer scalable solutions, allowing us to adapt to changing customer demands without incurring significant additional costs.

	Prioritizing cost-effective digital solutions	**H6:** This may involve exploring cost-effective alternatives and investing in technologies that offer long-term benefits.
	Optimizing costs through efficient resource allocation	**H7:** We prioritize technologies that deliver the most value to our guests while optimizing costs through efficient resource allocation.
	Partnering with technology providers offering favorable pricing	**H8:** Moreover, we explore collaborative opportunities and partnerships to share resources and mitigate costs.

Managers were asked what the most effective best practices and strategies were for tackling the challenges of digitizing their operations for smart tourism. In this context, it is frequently stated that customer-oriented technologies, employee training, following developments in the sector, and conducting continuous customer research are frequently mentioned. The most important strategy to be implemented for digitalization is the adoption of customer-oriented practices.

'Successful SMEs in the hospitality industry utilize effective best practices such as prioritizing guest-centric technologies.' (H3)

'Effective strategies for successful SMEs in the hospitality industry involve prioritizing guest-centric technologies, encouraging staff adaptability, and incorporating customer feedback.' (H5)

Table 4.23. Codes and Explanations of Best Practices for Digitalization

Themes	**Codes**	**Explanations**
Best Practices for Digitalization	Guest-centric Technologies Staff training Staying informed about industry trends	**H1:** Firstly, they focus on guest-centric digital solutions that enhance the guest experience and streamline operations. Secondly, they invest in staff training and education to ensure their workforce is proficient in using digital tools effectively. Thirdly, they actively stay informed about industry trends through networking events and conferences.

	Prioritizing guest-centric Technologies Adaptable organizational culture Seeking customer feedback	**H2:** To overcome challenges related to digitalizing operations for smart tourism, successful SMEs in the hospitality industry adopt best practices such as prioritizing guest-centric technologies, fostering an adaptable organizational culture, and actively seeking customer feedback.
	Guest-centric Technologies Continuous staff training Engaging with customer feedback	**H3:** Successful SMEs in the hospitality industry utilize effective best practices such as prioritizing guest-centric technologies, continuous staff training, and engaging with customers for feedback.
	Investing in guest-centric Technologies Staff training Customer research	**H4:** In the hospitality industry, successful SMEs adopt best practices such as investing in guest-centric technologies, providing staff training, and conducting customer research.
	Guest-centric Technologies Staff adaptability Customer feedback	**H5:** Effective strategies for successful SMEs in the hospitality industry involve prioritizing guest-centric technologies, encouraging staff adaptability, and incorporating customer feedback.
	Prioritizing guest-centric Technologies Continuous staff training Customer feedback	**H6:** To overcome challenges related to digitalization, successful SMEs in the hospitality industry focus on guest-centric technologies, provide staff training, and actively seek guest feedback.
	Guest-centric Technologies Continuous staff training Seeking customer feedback	**H7:** Effective best practices for successful SMEs in the hospitality industry include adopting guest-centric technologies, providing continuous staff training, and seeking customer feedback.

	Guest-centric Technologies Staff training Customer engagement	**H8:** Successful SMEs in the hospitality industry prioritize guest-centric technologies, invest in staff training, and engage with customers for feedback to overcome digitalization challenges.

Strategies to overcome challenges include cooperation and cost sharing; outsourcing; and internal management and control. Outsourcing is often mentioned.

'Regarding achieving desired outcomes, outsourcing can bring expertise.' (H7)

'In terms of achieving desired outcomes, outsourcing can provide technical expertise.'(H5)

Table 4.24. Codes and Explanations of Strategies to Overcome Challenges

Themes	**Codes**	**Explanations**
Strategies to Overcome Challenges	Collaboration and cost-sharing Phased implementation	**H1:** By partnering with specialized vendors, SMEs gain access to expertise and cutting-edge solutions without significant upfront investments.
	Outsourcing specialized tasks In-house management	**H2:** In terms of achieving desired outcomes, outsourcing specialized technical tasks can bring valuable expertise and efficiency.
	Outsourcing specialized tasks In-house capabilities	**H3:** Regarding achieving desired outcomes, outsourcing certain technical aspects can provide valuable expertise and save resources, but maintaining in-house capabilities is essential for better control.
	Maintaining in-house capabilities Outsourcing technical expertise	**H4:** When it comes to achieving desired outcomes, outsourcing can bring specialized expertise, but maintaining in-house capabilities is vital for seamless integration.
	Outsourcing for specialized expertise In-house control	**H5:** Staying informed about industry trends allows them to choose relevant digital solutions. In terms of achieving desired outcomes, outsourcing can provide technical expertise, but in-house capabilities are important for maintaining control.

	Outsourcing for technical expertise In-house management	**H6:** Regarding achieving desired outcomes, outsourcing certain tasks can provide expertise, but retaining in-house capabilities is crucial for effective management.
	Outsourcing specialized tasks In-house capabilities	**H7:** Regarding achieving desired outcomes, outsourcing can bring expertise, but maintaining in-house capabilities is important for seamless integration.
	Balancing outsourcing and in-house capabilities	**H8:** In terms of achieving desired outcomes, outsourcing can provide specialized expertise, but retaining in-house capabilities is essential for effective management.

Another question asked of managers is whether outsourcing or using traditional marketing tools is effective in achieving the desired results. All of the managers stated that the use of digital and traditional methods together would have an impact.

'In marketing, a balanced approach combining digital tools to reach tech-savvy guests and traditional marketing to connect with local customers is the most effective strategy.' (H3)

'Regarding marketing, a blend of digital tools to reach wider audiences and traditional methods to engage local clientele yields the best results.' (H4)

Table 4.25. Codes and Explanations for Achieving Desired Outcomes (Outsourcing vs. Traditional Marketing)

Themes	**Codes**	**Explanations**
Achieving Desired Outcomes (Outsourcing vs. Traditional Marketing)	Outsourcing brings expertise Balance between digital and traditional marketing	**H1:** Digital marketing reaches tech-savvy guests, while traditional marketing fosters connections with local clientele and older demographics.

	Blend of digital and traditional marketing for broader reach	**H2:** For marketing a property, a blended approach is effective, using both digital marketing tools to reach tech-savvy travelers and traditional marketing methods to connect with local communities and older generations.
	Balanced marketing approach for diverse customer segments	**H3:** In marketing, a balanced approach combining digital tools to reach tech-savvy guests with traditional marketing to connect with local customers is the most effective strategy.
	Combination of digital and traditional marketing for effective outreach	**H4:** Regarding marketing, a blend of digital tools to reach wider audiences and traditional methods to engage local clientele yields the best results.
	Balanced marketing using digital tools and traditional methods	**H5:** For marketing, a balanced approach using both digital and traditional tools is most effective, targeting tech-savvy guests and local clientele.
	Mix of digital and traditional marketing for wider audience Blending digital and traditional marketing to reach different segments	**H6:** In marketing, a combination of digital tools and traditional methods helps reach a broader audience while maintaining local connections.
	Blending digital and traditional marketing to reach different segments	**H7:** A blended marketing strategy using both digital and traditional tools is effective for targeting different customer segments
	Combination of digital and traditional marketing strategies	**H8:** A balanced marketing approach using digital and traditional tools helps reach diverse customer segments.

Among the potential benefits and competitive advantages that small and medium-sized enterprises in the hospitality industry can derive from digitalization, especially in the context of smart tourism, are personalized and enhanced guest experiences and optimized operational efficiency.

'Digitalization enhances guest experiences through personalization and seamless services. '(H3)

'Digitalization optimizes operational efficiency and resource management.' (H4)

Table 4.26. Codes and Explanations of the Potential Benefits of Digitalization in Smart Tourism

Themes	**Codes**	**Explanations**
Potential Benefits of Digitalization in Smart Tourism	Enhanced guest experiences through personalization and seamless interactions Optimized operational efficiency and resource allocation	**H1:** Firstly, it enhances guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource allocation.
	Personalized guest experiences Streamlined operations and cost-effectiveness	**H2:** Firstly, it allows for enhanced guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource management.
	Improved guest experiences through personalization and seamless services Optimized operational efficiency and resource utilization	**H3:** Firstly, it enhances guest experiences through personalization and seamless services. Secondly, digitalization optimizes operational efficiency and resource utilization.
	Enhanced guest experiences through personalization Streamlined operations and resource management	**H4:** Firstly, it enables improved guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource management.

	Personalized guest experiences Optimized operational efficiency and resource management	**H5:** Firstly, it allows SMEs to enhance guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource management.
	Enhanced guest experiences through personalization Streamlined operations and resource allocation	**H6:** Firstly, it enables SMEs to enhance guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource management.
	Improved guest experiences through personalization Optimized operational efficiency and resource allocation	**H7:** Firstly, it allows for enhanced guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource allocation.
	Personalized guest experiences Streamlined operations and resource utilization	**H8:** Firstly, it enhances guest experiences through personalization and seamless interactions. Secondly, digitalization optimizes operational efficiency and resource utilization.

Finally, it was asked which of the digitalizations in management and marketing is of greater importance for SMEs.

Table 4.27. Codes and Explanations of the Importance of Digitalization in Management and Marketing for SMEs

Themes	**Codes**	**Explanations**
Importance of Digitalization in Management and Marketing for SMEs	Greater importance of digitalization in management Efficient management systems lay the foundation for successful marketing efforts	**H1:** Efficient management systems form the foundation for successful operations and guest service, allowing SMEs to effectively implement marketing strategies.
	Both management and marketing are crucial Efficient management complements marketing efforts	**H2:** Efficient management systems ensure smooth operations and service delivery, while digital marketing strategies enable SMEs to reach a wider

		audience and promote their unique offerings.
	Digitalization in management holds greater importance Well-managed operations ensure effective marketing implementation	**H3:** The bedrock of prosperous operations, guest service, and the execution of digital marketing strategies is established by effective management systems.
	Both management and marketing are vital Well-managed operations drive successful marketing strategies	**H4:** Successful operations, guest service, and the utilization of digital marketing strategies rest upon well-organized management systems.
	Greater importance of digitalization in management Efficient management systems enable effective marketing strategies	**H5:** The groundwork for triumph in operations, guest service, and the adoption of digital marketing strategies is paved by efficient management systems.
	Digitalization in management holds greater significance Well-managed operations ensure successful marketing efforts	**H6:** Efficient management systems form the basis for achievement in operations, guest service, and the implementation of digital marketing strategies.
	Greater importance of digitalization in management Efficient management facilitates effective marketing strategies	**H7:** Effective management systems are the building blocks for accomplishing successful operations, guest service, and the integration of digital marketing strategies.
	Greater importance of digitalization in management Efficient management systems complement marketing efforts	**H8:** Flourishing operations, guest service, and the incorporation of digital marketing strategies are made possible through the use of efficient management systems.

Some managers stated that digitalization and marketing are equally important in management, while others stated that digitalization is more important in management.

'Efficient management systems ensure smooth operations and service delivery, while digital marketing strategies enable SMEs to reach a wider audience and promote their unique offerings.' (H2)

'The groundwork for triumph in operations, guest service, and the adoption of digital marketing strategies is paved by efficient management systems.' (H5)

5. CHAPTER: CONCLUSION

The digitalization process affects all sectors, as well as the tourism sector. The digitalization process has sector-specific opportunities and challenges. Especially small and medium-sized hotels face various difficulties in the implementation process. Despite its practical importance, the concept of digitalization is not yet fully understood by practitioners. In the study, digitalization applications are discussed in the context of small and medium-sized hotels, and the opportunities that digitalization offers to hotels and the difficulties encountered in this process are discussed. In this direction, in-depth semi-structured interviews were conducted with 8 small and medium-sized hotel managers.

According to the research results, several key insights have surfaced, shedding light on the challenges, strategies, and implications of digital transformation within small and medium-sized hotels (SMEs). The research findings reveal that employee resistance to new technologies and the need for comprehensive training programs stand out as significant hurdles in the digitalization journey. Managers emphasize the importance of aligning existing workflows with new digital systems, often citing challenges in restructuring operations and ensuring staff readiness for the technological shift.

Industry-related events such as conferences, webinars, and workshops emerge as crucial sources of information for managers to stay abreast of industry trends. Organizations like the Small Hotels Association play pivotal roles in offering guidance and support to SMEs navigating the complexities of digital transformation. External factors like regulatory frameworks and market conditions significantly influence the digitalization efforts of SMEs, while budget constraints pose challenges in investing in advanced digital infrastructure. Despite financial limitations, prioritizing technologies that create tangible guest impacts remains a focal point for managers. Limited in-house technical expertise often leads to outsourcing digital integration efforts, with data security and privacy concerns taking precedence. Managers emphasize rigorous cybersecurity measures to safeguard guest data and ensure a secure digital environment.

In light of guest expectations, cost factors for SMEs to implement digitalization are significant hurdles. Collaborations with providers, cost-effective solutions, and resource optimization, including cloud-based technologies, emerge as pivotal strategies to mitigate budget constraints. Amid these challenges, strategies involving customer-oriented technologies, employee training, continuous industry monitoring, and customer research are vital for successful digitalization. The integration of both digital and traditional marketing methods proves effective in achieving desired results, enhancing outreach, and engaging a diverse clientele.

The potential benefits of digitalization for SMEs in the hospitality industry encompass personalized guest experiences and optimized operational efficiency. While opinions vary on the significance of digitalization versus marketing in management, it is evident that both aspects play critical roles in ensuring efficient operations, guest satisfaction, and broader market outreach.

Insights derived from this extensive research underscore the multifaceted nature of challenges, strategic approaches, and competitive advantages associated with digital transformation within SMEs in the hospitality industry. Addressing employee readiness, leveraging industry resources, navigating external influences, and maximizing technological investments are key elements crucial for successful digitalization in the ever-evolving landscape of smart tourism. Overall, the findings of the study provide useful information to hotel owners, managers, and policymakers and highlight approaches for future work.

The research includes some limitations as well as its theoretical and practical contributions. The first limitation of the study is sample selection and the generalizability of the data. The research universe is limited to small and medium-sized hotel managers operating in cities with high tourist intensity; hotel managers in other cities were not included in the research. The second limitation is related to the sample size of the study. Since it is not possible to reach the whole population in terms of time and budget costs, the study is limited to a certain sample size. In the study, only eight hotel managers of small and medium-sized businesses residing in Turkey were interviewed. The third limitation of the study is the inability to generalize the research findings, which are specific to the qualitative method.

Future studies may explore wider populations and different cultures. For example, by conducting interviews with the managers of tourism enterprises operating abroad, it can be ensured that the researched subject is discussed in a wider framework. Future studies may collect data with different data collection methods to examine the impact of digital transformation at the organizational level with a qualitative or quantitative approach. Research findings can be generalized by using the quantitative data collection method in future studies.

6: REFERENCES

Abor, J. (2008). Determinants of the Capital Structure of Ghanaian firms. African Economic Research Consortium.

Aghapour, H., Hojabri, R., & Mahmoud, S. H. Behind Ambiguities of Tourism Entrepreneurship Tourism; Illumination of Different Aspects. *International Journal of Innovative Ideas (IJII) ISSN*, 2232-1942.

Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N. I., & Mohd Shuib, N. L. (2015). Factors influencing the use of social media by SMEs and its performance outcomes. *Industrial Management & Data Systems, 115*(3), 570–588.

Akbar, Y.H. and Tracogna, A., 2018. The sharing economy and the future of the hotel industry: Transaction cost theory and platform economics. *International Journal of Hospitality Management, 71,* 91-101.

Albano, G. L., Antellini, R. F., Castaldi, G., & Zampino, R. (2015). Evaluating small businesses' performance in public e-procurement: Evidence from the Italian government's e-marketplace. *Journal of Small Business Management, 53*(3), 229–250.

Alexis P. (2017). R-Tourism: Introducing the potential impact of robotics and service automation in tourism. *"Ovidius"* University Annals, Economic Sciences Series*, 17*(1), 211–216.

Alimamy, S., Deans, K. R., & Gnoth, J. (2018). The role of augmented reality in the interactivity of co-creation: A critical review. *International Journal of Technology and Human Interaction (IJTHI)*, *14*(3), 88-104.

Alrawadieh, Z.; Alrawadieh, Z.; Cetin, G. (2021). Digital transformation and revenue management: Evidence from the hotel industry. Tour. Econ. 27, 328–345.

Altinay, L., Paraskevas, A. and Jang, S.S. (2015), Planning Research in Hospitality and Tourism, Routledge, London.

Anckar, B., & Walden, P. (2001) Introducing Web technology in a small peripheral hospitality organization. *International Journal of Contemporary Hospitality Management, 13*(5), 241–250.

Aramendia Muneta, M. E., & Ollo López, A. (2013). ICT Impact on tourism industry. *International Journal of Management Cases 2013; 15 (2). 87-98*.

Assante, D., Castro, M., Hamburg, I., & Martin, S. (2016). The use of cloud computing in SMEs. *Procedia Computer Science*, 83, 1207–1212.

Atkins, M., & Lowe, J. (1997). Sizing up the small firm: UK and Australian experience.International Small Business Journal,15(3), 42–55.

Audretsch, D., Heger, D., & Veith, T. (2015). Infrastructure and entrepreneurship. *Small Business Economics, 44*(2), 219–230.

Belias, D. (2020). Research Methods on the Contribution of Robots in the Service Quality of Hotels. *In Strategic Innovative Marketing and Tourism* (939-946). Springer, Cham.

Berger, A. N., & Udell, G. F. (1998). The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle. Journal of Banking and Finance, 22, 613-673.

Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. *Strategy & Leadership, 40*(2), 16–24.

Bharadwaj, A. S., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly, 37*(2), 471–482.

Bilghan A., Nejad M. (2015). Innovation in hospitality and tourism industry. *Journal of Hospitality and Tourism Technology*, *6*(3), 1–30.

Bley, K., Leyh, C., & Schäffer, T. (2016). Digitization of German enterprises in the production sector: Do they know how "digitized" they are? AMCIS 2016 Proceedings.

Borch, O.J. and Madsen, E.L., 2007. Dynamic capabilities facilitating innovative strategies in SMEs. *International Journal of Technoentrepreneurship, 1*(1), 109-125.

Bostrom, N. (2018) Süper Zeka - Yapay Zeka Uygulamaları, Tehlikeler ve Stratejiler. (F. B. Aydar, Çev.) İstanbul: Koç Üniversitesi Yayınları.

Bouncken, R., & Barwinski, R. (2020). Shared digital identity and rich knowledge ties in global 3D printing - A drizzle in the clouds? *Global Strategy Journal, 55*(2), 1–28.

Bouncken, R., & Barwinski, R. (2020). Shared digital identity and rich knowledge ties in global 3D printing - A drizzle in the clouds? *Global Strategy Journal, 55*(2), 1–28.

Bouwman, H., Nikou, S., & de Reuver, M. (2019). Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs?. *Telecommunications Policy*, *43*(9), 101828.

Bowen, J., & Morosan, C. (2018). Beware hospitality industry: The robots are coming. Worldwide Hospitality and Tourism Themes, 10(6), 726–733.

Bradley, M., Jarrell, G. A., & Kim, E. H. (1984). On the Existence of an Optimal Capital Structure: Theory and Evidence. The Journal of Finance, 39(3), 857-878.

Bresciani, S., Ferraris, A., & Del Giudice, M. (2018). The management of organizational ambidexterity through alliances in a new context of analysis: Internet of Things (IoT) smart city projects. *Technological Forecasting and Social Change*, 136, 331–338.

Buhalis, D. (1995). The impact of information telecommunication technologies on tourismchannels: Implications for the small and medium-sized tourism enterprises (Unpublisheddoctoral thesis). University of Surrey, Guildford, UK.

Buhalis, D. and Leung, R. (2018), "Smart hospitality – interconnectivity and interoperability towards an ecosystem", *International Journal of Hospitality Management*, 71, 41-50.

Bursk, E. C., & Sethi, B. S. (1976). The in-house advertising agency. *Journal of Advertising*, *5*(1), 24-27.

Busulwa, R., Pickering, M. and Mao, I. (2022), "Digital transformation and hospitality management competencies: toward an integrative framework", *International Journal of Hospitality Management,* 102, 103-132.

Cameron, D., Gregory, C. and Battaglia, D. (2012), "Nielsen personalizes the mobile shopping app if you build the technology, they will come", *Journal of Advertising Research, (52)*3, 333-338.

Car, T., Stifanich, L. P., and Simunic, M. (2019). Internet OF Things (IoT) in tourism and hospitality: Opportunities and Challenges. ToSEE – *Tourism in Southern and Eastern Europe, 5*, 163–175.

Cassar, G. (2004). The Financing of Business Start-Ups. Journal of Business Venturing, 19(2), 261-283. http://dx.doi.org /10.1016/S0883-9026(03)00029-6

Chan, J.; Gao, Y.L.; McGinley, S. (2021). Updates in service standards in hotels: How COVID-19 changed operations. *Int. J. Contemp. Hosp. Manag*. 33, 1668–1687.

Chang S. E., Jang Y.-T. J. (2014). Tourism goes mobile: A study on young and literate mobile users' adoption of smartphone enabled tourism product booking services. *Journal of Applied Science and Engineering*, *17*(1), 59–72.

Charmaz, K. (2014). Constructing grounded theory (2nd ed.). Sage.

Chege, S.M.; Wang, D. (2020). The influence of technology innovation on SME performance through environmental sustainability practices in Kenya. Technol. Soc., 60, 101210.

Chen, S., Law, R. and Zhang, M. (2021), "Review of research on tourism-related diseases", *Asia Pacific Journal of Tourism Research, (26)*1, 44-58.

Chi, N.T.K. (2021), Innovation capability: The impact of e-CRM and COVID-19 risk perception. *Technol. Soc.* 67, 101725.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Çizmeci, F., & Ercan, T. (2015). The Effect of Digital Marketing Communication Tools in the Creation Brand Awareness By Housing Companies. *Megaron*, *10*(2)

Deflorian, A. (2016). For Modern Marketers, Time Is Money. *Forbes.* *https://www.forbes.com/sites/forbesagencycouncil/2016/09/08/for-modern-marketers-time-is-money/?sh=5e89893320c2*

Demirkan, H., Spohrer, J.C. and Welser, J.J., 2016. Digital innovation and strategic transformation. *IT Professional, 18*(6), 14-18.

Dieguez, T., Ly, N.T., Ferreira, L.P. and da Silva, F.J.G. (2022), "Digital customer network strategy influences on hotel business", in Machado, J., Soares, F., Trojanowska, J. and Ivanov, V. (Eds), Innovations in Industrial Engineering. icieng 2021. Lecture Notes in Mechanical Engineering, Springer, Cham,

Doborjeh, Z., Hemmington, N., Doborjeh, M., & Kasabov, N. (2022). Artificial intelligence: a systematic review of methods and applications in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, *34*(3), 1154-1176.

Dubey, A.K. (2017). Future technology and service industry: A case study of travel and tourism industry. Retrieved from https://www.Informaticjournal.com

Dwyer, L., Gill, A. and Seetaram, N. (2012), Handbook of Research Methods in Tourism: Quantitative and Qualitative Approaches, *Edward Elgar Publishing*, Cheltenham.

Ebert, C., & Duarte, C. H. C. (2018). Digital transformation. *IEEE Softw.*, *35*(4), 16-21.

Elkhwesky, Z., & Elkhwesky, E. F. Y. (2022). A systematic and critical review of Internet of Things in contemporary hospitality: a roadmap and avenues for future research. *International Journal of Contemporary Hospitality Management*.

Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. *Journal of Business Research*, *112*, 119-127.

European Commission. (2017). User Guide to the SME Definition; Enterprise and Industry Publications; European Commission: Brussels, Belgium, https://ec.europa.eu/regional_policy/sources/conferences/state-aid/sme/smedefinitiong uide_en.pdf

European Commission. Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises. Off. J. Eur. Union 2003, 1-6.

Evans, N. Assessing Your Organization's Digital Transformation Maturity. 2017. Retrieved from https://www.cio.com.

Ezzaouia, I. and Bulchand-Gidumal, J. (2020), "Factors influencing the adoption of information technology in the hotel industry. An analysis in a developing country", *Tourism Management Perspectives, 34*, 100675.

Fatoki, O., & Asah, F. (2011). The Impact of Firm and Entrepreneurial Characteristics on Access to Debt Finance by SMEs in King Williams' Town, South Africa. International Journal of Business and Management, 6(8), 170-179.

Fitzgerald, M., Kruschwitz, N., Bonnet, D. and Welch, M. (2014), "Embracing digital technology: a new strategic imperative", *MIT Sloan Management Review, 55*(2), 1-14.

Fjellström, D., Osarenkhoe, A., Pettersson, T., & Tadesse, D. (2020). The Role of Digitalization in SMEs' Strategy Development: The Case of Sweden. *The Changing Role of SMEs in Global Business. 1, Paradigms of Opportunities and Challenges*, 65-88.

Ghobakhloo, M. (2018). The future of manufacturing industry: a strategic roadmap toward Industry 4.0. *Journal of Manufacturing Technology Management, 29*(6), 910-936.

Gretzel, U., Werthner, H., Koo, C. and Lamsfus, C. (2015), "Conceptual foundations for understanding smart tourism ecosystems", *Computers in Human Behavior, 50,* 558-563.

Gubbi, Jayavardhana; Buyya, Rajkumar; Marusic, Slaven et al. (2013): Internet of Things (IoT). A vision, architectural elements, and future directions. In: Future Generation Computer Systems, (29)7, 1645– 1660.

Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management, 31*(5), 637–651.

Haerting, R.-C.; Reichstein, C.; Haarhoff, R.; Haertle, N.; Stiefl, J. (2019): Driver to Gain from Digitalization in Tourism—Insights from South African Experts. In: Yang, X.-S.; Sheratt, S.; Dey, N.; Joshi, A. (Eds), Third International Congress on Information and Communication Technology, Springer Singapore, 293–306.

Hailey Shin, H., Jeong, M. and Cho, M.H. (2021), "The impact of smart tourism technology and domestic travelers' technology readiness on their satisfaction and behavioral intention: a cross-country comparison", *International Journal of Tourism Research, (23)*5, 726-742.

Hao, F., Xiao, Q. and Chon, K. (2020), "COVID-19 and China's hotel industry: impacts, a disaster management framework, and post-pandemic agenda", *International Journal of Hospitality Management, 90,* 102636.

Hemerling, J.; Kilmann, J.; Danoesastro, M.; Stutts, L.; Ahern, C. It's Not a Digital Transformation without a Digital Culture; Boston Consulting Group: Boston, MA, USA, 2018.

Henriette, E., Feki, M. and Boughzala, I., 2016, September. Digital Transformation Challenges. In Tenth Mediterranean Conference on Information Systems (MCIS), Cyprus, 1-8.

Hill, J. (2001), "A multidimensional study of the key determinants of effective SME marketing activity: part 2", International Journal of Entrepreneurial Behaviour and Research, 7(6), 211-35.

Hojeghan S. B., Esfangareh A. N. (2011). Digital economy and tourism impacts, influences and challenges. *Procedia Social and Behavioral Sciences 19*, 308–316.

Hospitalitytech (2015). How Hotels Are Using Beacons and Augmented Reality.Retrieved from https://hospitalitytech.com/how-hotels-are-using-beacons-and-augmented-reality

Hsiao, T.-Y. & Chuang, C.-M. & Huang, L (2018) The contents, determinants, and strategic procedure for implementing suitable green activities in star hotels, *International Journal of Hospitality Management, 69*, 1 – 13

Hsu, H. and Tseng, K.F. (2022), "Facing the era of smartness: constructing a framework of required technology competencies for hospitality practitioners", *Journal of Hospitality and Tourism Technology, 13*(3), 500-526.

Hughes, N.C. (2016). How virtual reality is about to transform the travel industry. Retrieved from https://www.inc.com/neilc-hughes/how-virtualreality-is-ab-transform-the-travel-industry.html

Imhanwa, S., Greenhill, A., & Owrak, A. (2015). Relevance of cloud computing: A case for UK small and medium sized tourism firms. *GSTF Journal on Computing (JoC)*, *4*, 1-6.

Ingram, A., Jamieson, R., Lynch, P., & Bent, R. (2000). Questioning the impact of the'graduatization'of the managerial labour force upon the management of human resourcesin the Scottish hotel industry.Journal of Consumer Studies and Home Economics,24(4),212–222.

Iranmanesh, M., Ghobakhloo, M., Nilashi, M., Tseng, M.L., Yadegaridehkordi, E. and Leung, N. (2022), "Applications of disruptive digital technologies in hotel industry: a systematic review", *International Journal of Hospitality Management, 107*, 103304

Ivanov, S., & Webster, C. (2019). Robots, artificial intelligence, and service automation in travel, tourism and hospitality. Emerald Publishing.

Ivanov, S., Webster, C., and Berezina, K. (2017). Adoption of robots and service automation by tourism and hospitality companies. Revista Turismo and Desenvolvimento, 1501–1517.

Ivanov, S.; Webster, C.; Berezina, K. Robotics in tourism and hospitality. In Handbook of E-Tourism; Springer: Berlin/Heidelberg, Germany, 2020; 1–27

Japutra, A. and Situmorang, R. (2021), "The repercussions and challenges of COVID-19 in the hotel industry: potential strategies from a case study of Indonesia", *International Journal of Hospitality Management, 95*, 102890.

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy, not technology, drives digital transformation. *MIT Sloan Management Review, 57*(14), 1–25.

Kane, G.C. (2014), “The American Red Cross: adding digital volunteers to its ranks”, *MIT Sloan Management Review, 55*(4), 1-6

Katz, B.R., Preez, N.D. and Schutte, C.S.L., 2010. Definition and role of an innovation strategy. In SAIIE conference proceedings (60-74).

Kaufmann, A. and Tödtling, F., 2002. How effective is innovation support for SMEs? An analysis of the region of Upper Austria. *Technovation, 22*(3), pp.147-159.

Kaur, G. (2017). The importance of digital marketing in the tourism industry. *International Journal of Research-Granthaalayah*, *5*(6), 72–77.

Kaushal, V., & Srivastava, S. (2021). Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learnings from India. *International journal of hospitality management*, *92*, 102707.

Kazandzhieva, V., Ilieva, G., & Filipova, H. (2017). *The impact of technological innovations on hospitality service*.

Khanra, S.; Dhir, A.; Kaur, P.; Joseph, R.P. (2021). Factors influencing the adoption postponement of mobile payment services in the hospitality sector during a pandemic. *J. Hosp. Tour. Manag., 46,* 26–39.

Kim, E., Lin, J.S. and Sung, Y. (2013), “To app or not to app: engaging consumers via branded mobile apps”, *Journal of Interactive Advertising, 13*(1), 53-65.

Kim, M. J., Lee, C. K., & Jung, T. (2020). Exploring consumer behavior in virtual reality tourism using an extended stimulus-organism-response model. *Journal of Travel Research, 59*(1), 69–89.

Kim, M. J., Lee, C. K., & Preis, M. W. (2020). The impact of innovation and gratification on authentic experience, subjective well-being, and behavioral intention in tourism virtual reality: The moderating role of technology readiness. *Telematics and Informatics*, *49*, 101349.

Kim, S.S., Kim, J., Badu-Baiden, F., Giroux, M. and Choi, Y. (2021), “Preference for robot service or human service in hotels? Impacts of the COVID-19 pandemic”, *International Journal of Hospitality Management, 93*, 102795.

Kingsnorth, S. (2019). Digital marketing strategy: an integrated approach to online marketing. Kogan Page Publishers.

Koo, B.; Yu, J.; Han, H. (2020). The role of loyalty programs in boosting hotel guest loyalty: Impact of switching barriers. *Int. J. Hosp. Manag.* 84, 102328.

Kosasi, S., Yuliani, I. D. A. E., & others. (2017). Improving organizational agility of micro, small, and medium enterprises through digital marketing strategy. *2017 2nd International Conferences on Information Technology, Information Systems and Electrical Engineering (ICITISEE)*, 68–72.

Kounavis, C. D., Kasimati, A. E., & Zamani, E. D. (2012). Enhancing the tourism experience through mobile augmented reality: Challenges and prospects. *International Journal of Engineering Business Management*, *4*, 10.

Kourouthanassis, P., Boletsis, C., Bardaki, C., & Chasanidou, D. (2015). Tourists responses to mobile augmented reality travel guides: The role of emotions on adoption behavior. *Pervasive and Mobile Computing*, *18*, 71-87.

Kozak, N. (2012). "Türkiye'de Turizm". M. A. Kozak (Ed.), Genel Turizm Bilgisi, T.C. Anadolu Üniversitesi İnternet Yayıncılığı, Eskişehir, 124-144.

Kruja, A. D., Hysa, X., Duman, T., & Tafaj, A. (2019). Adoption of software as a service (SaaS) in small and medium-sized hotels in Tirana. *Enlightening Tourism. A Pathmaking Journal*, *9*(2), 137-167.

Kuo, C.-M., Chen, L.-C. and Tseng, C.-Y. (2017), "Investigating an innovative service with hospitality robots", *International Journal of Contemporary Hospitality Management*, 29(5), 1305-1321

Kwok, A.O. and Koh, S.G. (2021), "COVID-19 and extended reality (XR)", *Current Issues in Tourism, 24(*14), 1935-1940.

Kwok, L.; Lee, J.; Han, S.H. (2022). Crisis communication on social media: What types of COVID-19 messages get the attention? *Cornell Hosp. Q., 63*, 528–543.

Lam, C. and Law, R. (2019), "Readiness of upscale and luxury-branded hotels for digital transformation", *International Journal of Hospitality Management, 79,* 60-69.

Law, R., Ye, H. and Chan, I.C.C. (2021), "A critical review of smart hospitality and tourism research", *International Journal of Contemporary Hospitality Management, 34*(2). 623-641.

Lee, I. (2017). Big data: Dimensions, evolution, impacts, and challenges. *Business Horizons, 60*(3), 293-303.

Lee, W.-H. & Cheng, C.-C. (2018) Less is more: A new insight for measuring service quality of green hotels, International *Journal of Hospitality Management, 68*, 32 – 40.

Leeflang, P. S. H., Verhoef, P. C., Dahlström, P., & Freundt, T. (2014). Challenges and solutions for marketing in a digital era. *European Management Journal*, *32*(1), 1–12.

Leue, M., & Jung, T. H. (2014). A theoretical model of augmented reality acceptance. *E-review of Tourism Research*, *5*.

Leung, D.& Lee, H. A. & Law, R. Adopting Web 2.0 technologies on chain and independent hotel websites: A case study of hotels in Hong Kong. School of Hotel and Tourism Management. The Hong Kong Polytechnic University, Hong Kong

Li, L., Su, F., Zhang, W., & Mao, J.-Y. (2018). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal, 28*(6), 1129–1157.

Lin, I.Y. and Mattila, A.S. (2021), "The value of service robots from the hotel guest's perspective: a mixed-method approach", *International Journal of Hospitality Management, 94*, 102876.

Liu, K., Nakata, K., Li, W., & Baranauskas, C. (2018). Digitalisation Innovation and Transformation. 18th IFIP WG, 8, 16–18.

Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitization and big data analytics: A research agenda. *The Journal of Strategic Information Systems, 24*(3), 149–157.

Lwin, M., & Phau, I. (2013). Effective advertising appeals for websites of small boutique hotels. *Journal of Research in interactive Marketing*, *7*(1), 18-32.

Ma, J. X., Buhalis, D. ve Song, H. (2003). "ICTs And Internet Adoption In China's Tourism Industry". *International Journal of Information Management, 23*(6), 451–467.

MacKay, P., & Phillips, G. M. (2005). How Does Industry Affect Firm Financial Structure? The Review of Financial Studies, 18(4), 1433-1466.

Mariani, M. (2019), "Big data and analytics in tourism and hospitality: a perspective article", *Tourism Review, 75*(1), 299-303.

Marques, Maria; Agostinho, Carlos; Zacharewicz, Gregory et al. (2017): Decentralized decision support for intelligent manufacturing in Industry 4.0. In: Journal of Ambient Intelligence and Smart Environments, *9*(3) 299–313.

Martin, J.F. Unlocking Success in Digital Transformations; McKinsey & Company: New York, NY, USA, 2017.Retrieved from https://www.mckinsey.com

Mastorakis, G., Trihas, N., Mavromoustakis, C. X., Perakakis, E., & Kopanakis, I. (2014). A Cloud Computing Model for Efficient Marketing Planning in Tourism. *International Journal of Online Marketing, 4*(3), 14–30.

Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering, 57*(5), 339–343.

Maxwell, J.A. Designing a qualitative study. In Handbook of Applied Social Research Methods; Bickman, L., Rog, D.J., Eds.; Sage Publications: Thousand Oaks, CA, USA, 1998; 69–100

Mehraliyev, F., Chan, I.C.C., Choi, Y., Koseoglu, M.A. and Law, R. (2020), "A state-of-the-art review of smart tourism research", *Journal of Travel and Tourism Marketing, 37*(1), 78-91.

Merkx, C. and Nawijn, J. (2021), "Virtual reality tourism experiences: addiction and isolation", *Tourism Management, 87*, 104394.

Meyer, T. and Cennamo, C., 2019. For Which Incumbents Are Digital Platforms Really a Threat? -The Role of Asset Ownership. *In Academy of Management Proceedings, 1*(7), 14373-14379.

Michaelas, N., Chittenden, F., & Poutziouris, P. (1999). Financial Policy and Capital Structure Choice in U.K. SMEs: Empirical Evidence from Company Panel Data. Small Business Economics, 12(2), 113-130.

Middleton,V. (1998). Agenda 2010: SMEs in European tourism: The context and a proposedframework for European action.The Tourist Review,53(4), 29–37.

Mihalič, T., & Buhalis, D. (2013). ICT as a new competitive advantage factor–case of small transitional hotel sector. *Economic and Business Review*, *15*(1), 2.

Milgram, P., & Kishino, F. (1994). A taxonomy of mixed reality visual displays. *IEICE TRANSACTIONS on Information and Systems*, *77*(12), 1321-1329.

Milović B. (2012). Social media and ECRM as a prerequisite for hotel success. *Management Information Systems*, 7(3), 26–31.

Mohanty, A.R. Evaluation of Challenges Faced by Irish SMEs in the Hospitality Industry while Adopting Cloud Computing; Dublin Business School: Dublin, Ireland, 2019.

Morgan-Thomas, A. (2016). Rethinking technology in the SME context: Affordances, practices and ICTs. *International Small Business Journal, 34*(8), 1122–1136.

Morosan, C. and Bowen, J.T. (2022), "Labor shortage solution: redefining hospitality through digitization", *International Journal of Contemporary Hospitality Management, 34*(12), 4674-4685.

Murphy, J., Hofacker, C., & Gretzel, U. (2017). Dawning of the age of the robots in hospitality and tourism: Challenges for teaching and research. European Journal of Tourism Research, 15, 104–111.

Nadkarni, S., Kriechbaumer, F., Rothenberger, M., & Christodoulidou, N. (2020). The path to the Hotel of Things: Internet of Things and Big Data converging in hospitality. *Journal of Hospitality and Tourism Technology*, *11*(1), 93-107.

Nayyar, A., Mahapatra, B., Le, D., & Suseendran, G. (2018). Virtual Reality (VR) & Augmented Reality (AR) technologies for tourism and hospitality industry. *International journal of engineering & technology*, *7*(2.21), 156-160.

Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Smart technologies for personalized experiences: a case study in the hospitality domain. *Electronic Markets*, *25*, 243-254.

Newgenapps, "Chatbots in travel". Retrieved from https://www. newgenapps.com/blog/chatbots-in-travel.

Ntounis, N., Parker, C., Skinner, H., Steadman, C., & Warnaby, G. (2022). Tourism and Hospitality industry resilience during the Covid-19 pandemic: Evidence from England. *Current Issues in Tourism*, *25*(1), 46-59.

Nylén, D., & Holmström, J. (2015). Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation. *Business Horizons, 58*(1), 57–67.

OECD (2017). Key issues for digital transformation in the G20. Berlin, Germany. Retrieved from https://www.oecd.org/g20/key-issues-for-digital-transformation-inthe-g20.pdf

Oh, K.J., Lee, D., Ko, B. and Choi, H.J. (2017), "A chatbot for psychiatric counseling in mental healthcare service based on emotional dialogue analysis and sentence generation", 2017 18th IEEE International Conference on Mobile Data Management (MDM), IEEE.

Organisation for Economic Co-operation and Development (2019). OECD SME and Entrepreneurship Outlook 2019; OECD Publishing: Paris, France.

Padilla-Meléndez, A., & Garrido-Moreno, A. (2014). Customer relationship management in hotels: examining critical success factors. *Current issues in tourism, 17*(5), 387-396.

Pagani, M., & Pardo, C. (2017). The impact of digital technology on relationships in a business network. *Industrial Marketing Management, 67*, 185–192.

Parida, V., Sjödin, D. and Reim, W., 2019. Reviewing literature on digitalization, business model innovation, and sustainable industry: Past achievements and future promises. Sustainability, 11(2), 391.

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International journal of information systems and project management*, *5*(1), 63-77.

Pateli, A., Mylonas, N., & Spyrou, A. (2020). Organizational adoption of social media in the hospitality industry: An integrated approach based on DIT and TOE frameworks. *Sustainability*, *12*(17), 7132.

Patton, M. Q. (2002). Qualitative research and evaluation methods. Thousand Oaks: Sage.

Pelet, J.-E., Lick, E. and Taieb, B. (2021), "The Internet of Things in upscale hotels: its impact on guests' sensory experiences and behavior", *International Journal of Contemporary Hospitality Management, 33*(11), 4035-4056

Petersen, M. A., & Rajan, R. G. (1994). The Benefits of Lending Relationships: Evidence from Small Business Data. Journal of finance, 49(1), 3-37.

Petty, J., & Bygrave, W. (1993). What Does Finance Have to Say to the Entrepreneur. The Journal of Small Business Finance, 2(2), 125-137.

Phaneuf, A. (2020). 7 real examples of brands and businesses using chatbots to gain an edge. Retrieved from https://www.businessinsider.com/business-chatbot-examples

Pierre, A. and Fernandez, A.S., 2018. Going deeper into SMEs' innovation capacity: An empirical exploration of innovation capacity factors. *Journal of Innovation Economics Management, (1),* 139-181.

Pillai, S.G., Haldorai, K., Seo, W.S. and Kim, W.G. (2021), "COVID-19 and hospitality 5.0: redefining hospitality operations", *International Journal of Hospitality Management, 94*, p. 102869.

Popescu, M.; Nicolae, F.; Pavel, M. Tourism and hospitality industry in the digital era: General overview. In Proceedings of the 9th International Management Conference "Management and Innovation for Competitive Advantag", Bucharest, Romania, 5–6 November 2015.

Prihanto, J. J. N., & Kurniasari, F. (2019, October). Sustainable digital transformation in the hospitality industry: A study of the hotel industry in Indonesia. In *2019 International Conference on Organizational Innovation (ICOI 2019)* (pp. 217-222). Atlantis Press.

Purcell, K., Entner, R. and Henderson, N. (2010), "The rise of apps culture, internet and American life project", Retrieved from www.pewinternet.org/Reports/2010/The-Rise-of-Apps-Culture.aspx.

Quartey, P. (2003). Financing Small and Medium Enterprises (SMEs) in Ghana. Journal of African Business, 4(1), 37-55.

PwC (2023). The price premium for getting it right is real—and it's big. Retrieved from https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/future-of-customer-experience.html#price-premium

Rajamohamed H. R. (2016). Analyzing the importance of ICT in tourism industry with reference to Thailand. Retrieved from http://ssrn.com/abstract=2739491

Ramya, L., & Kartheeswaran, K. (2019). Future of digital marketing in 2020. Retrieved from Https://Www. Researchgate. Net/Publication/337304612_FUTURE_OF_DIGITAL _MARKETING_IN_2020.

Rantala, T., Ukko, J., Saunila, M., Puolakoski, H., & Rantanen, H. (2019). Creating sustainable customer value through digitality. *World Journal of Entrepreneurship, Management and Sustainable Development*.

Roetzer, P. (2020, Ocak). "The 5Ps of Marketing Artificial Intelligence". Retrieved from: https://www.marketingaiinstitute.com/blog/the-5ps-of-marketing-artificialintelligence.

Rosenbusch, N., Brinckmann, J. and Bausch, A., 2011. Is innovation always beneficial? A metaanalysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing, 26*(4), 441-457.

Ross, P. K., & Blumenstein, M. (2015). Cloud computing as a facilitator of SME entrepreneurship. *Technology Analysis & Strategic Management, 27*(1), 87–101. H

Rotondo, F., & Fadda, N. (2019). The influence of being part of a tourist network on hotels' financial performance. *International Journal of Hospitality Management*, *82*, 335-344.

Ryan, D. (2016). *Understanding digital marketing: marketing strategies for engaging the digital generation*. Kogan Page Publishers.

Samala, N., & Singh, S. (2019). Millennial's engagement with fashion brands: a moderated-mediation model of brand engagement with self-concept, involvement and knowledge. *Journal of Fashion Marketing and Management: An International Journal*, *23*(1), 2-16.

Samala, N., Katkam, B. S., Bellamkonda, R. S., & Rodriguez, R. V. (2020). Impact of AI and robotics in the tourism sector: a critical insight. *Journal of Tourism Futures*, *8*(1), 73-87.

Santulli, M. (2019). The influence of augmented reality on consumers' online purchase intention: the Sephora Virtual Artist case. Unpublished doctoral thesis. Bocconi University, Italy.

Saranya, C.M. & Nitha, K.P. (2015), "Analysis of Security methods in Internet of Things", International Journal on Recent and Innovation Trends in Computing and Communication, 3(4). 1970-1974

Schumpeter, J.A., 2017. Theory of economic development. New York: Routledge.

Scuotto, V., Santoro, G., Bresciani, S. and Del Giudice, M., 2017. Shifting intra-and inter-organizational innovation processes towards digital business: an empirical analysis of SMEs. *Creativity and Innovation Management, 26*(3), 247-255.

Scuotto, V., Santoro, G., Bresciani, S. and Del Giudice, M., 2017. Shifting intra-and inter-organizational innovation processes towards digital business: an empirical analysis of SMEs. *Creativity and Innovation Management, 26*(3), 247-2

Sedera, D., Lokuge, S., Grover, V., Sarker, S. and Sarker, S., 2016. Innovating with enterprise systems and digital platforms: A contingent resource-based theory view. *Information & Management, 53*(3), 366-379.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. Teachers College Press.

Serravalle, F., Ferraris, A., Vrontis, D., Thrassou, A., & Christofi, M. (2019). Augmented

reality in the tourism industry: A multi-stakeholder analysis of museums. *Tourism Management Perspectives*, *32*, 100549.

Shallcross, J. (2016) As Marriott and other brands tap the internet of things, enseo grows. Retrieved from https://www.phocuswire.com/As-Marriott- 82 and-other-brands-tap-the-Internet-of-Things-Enseo-grows

Shamim, S., Cang, S., Yu, H., ve Li, Y. (2017). Examining the feasibilities of Industry 4.0 for the hospitality sector with the lens of management practice. *Energies, 10*(4), 499.

Shanker, D. (2008). ICT and Tourism: Challenges and Opportunities. Proceedings Ohe International Conference on Tourism in India-Challenges Ahead, Indian Institute of Management Kozhikode, 51–58.

Sharma, P., Leung, T. Y., Kingshott, R. P., Davcik, N. S., & Cardinali, S. (2020). Managing uncertainty during a global pandemic: An international business perspective. *Journal of Business Research*, *116*, 188-192.

Shiels, H., McIvor, R. and O'Reily, D. (2003), "Understanding the implications of IT adoption: insights from SMEs", Logistics Information Management, Vol. 16 No. 5, pp. 312-26.

Shin, H.H. and Jeong, M. (2022), "Redefining luxury service with technology implementation: the impact of technology on guest satisfaction and loyalty in a luxury hotel", *International Journal of Contemporary Hospitality Management, 34*(4) 1491-1514.

Sigala, M. (2005). Integrating customer relationship management in hotel operations: Managerial and operational implications. *Int. J. Hosp. Manag. 24*, 391–413.

Skilton, M. ve Hovsepian, F. (2018). The 4th industrial revolution: Responding to the impact of artificial intelligence on business. Switzerland: Springer

Sommer, L. (2015). Industrial revolution-industry 4.0: Are German manufacturing SMEs the first victims of this revolution?. *Journal of Industrial Engineering and Management*, *8*(5), 1512-1532.

Soroka, A., Liu, Y., Han, L., & Haleem, M. S. (2017). Big Data driven customer insights for SMEs in redistributed manufacturing. Procedia CIRP, 63, 692–697.

Sousa, M. J., & Rocha, Á. (2019). Skills for disruptive digital business. *Journal of Business Research, 94,* 257–263.

Stadler, G. (2015). Big data–tömeges adatelemzés gyorsan. *HTE Medianet*, *70*(1), 44-47.

Statista (2023). Market size of the tourism sector worldwide from 2013 to 2022, with a forecast for 2023. Retreved from https://www.statista.com/statistics/1220218/tourism-industry-market-size-global/

Sterne, J. (2017). *Artificial intelligence for marketing:Practical Applications*. John Wiley & Sons.

Strebinger, A.; Treiblmaier, H. (2022). Profiling early adopters of blockchain-based hotel booking applications: Demographic, psychographic, and service-related factors. *Inf. Technol. Tour. 24,* 1–30

Taiminen, H. M., & Karjaluoto, H. (2015). The usage of digital marketing channels in SMEs. *Journal of Small Business and Enterprise Development*, *22*(4), 633-651.

Talón-Ballestero, P., González-Serrano, L., Soguero-Ruiz, C., Muñoz-Romero, S., ve Rojo-Álvarez, J. L. (2018). Using big data from customer relationship management information systems to determine the client profile in the hotel sector. *Tourism Management, 68,* 187-197.

Tom Dieck, M. and Jung, T. (2015), "A theoretical model of mobile augmented reality acceptance in urban heritage tourism", *Current Issues in Tourism, 18*(1), 1-21.

Torres, A.M. (2018), "Using a smartphone application as a digital key for hotel guest room and its other app features", *International Journal of Advanced Science and Technology, 113*, 103-112.

Torres, E.N. and Zhang, T. (2021), "The impact of wearable devices on employee wellness programs: a study of hotel industry workers", *International Journal of Hospitality Management, 93,* 102769.

Tuomi, A., Tussyadiah, I.P. and Hanna, P. (2021), "Spicing up hospitality service encounters: the case of pepper", *International Journal of Contemporary Hospitality Management, 33*(11), 3906-3925.

Tussyadiah, I. (2020), "A review of research into automation in tourism: launching the annals of tourism research curated collection on artificial intelligence and robotics in tourism", *Annals of Tourism Research, 81*, 102883.

Tussyadiah, I. P. & Jung, T. H. & tom Dieck, M. C. (2017) Open and interoperable augmented reality and the ieee," *Journal of Travel Research*, 1 – 15

UNWTO (2023), Tourism on track for full recovery as new data shows strong start to 2023. Retreived from https://www.unwto.org/news/tourism-on-track-for-full-recovery-as-new-data-shows-strong-start-to-2023

Vaughan-Nichols, S. J. (2009). Will mobile computing's future be location, location, location?. *Computer*, *42*(2), 14-17.

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of business research*, *122*, 889-901.

Vermesan, O., & Friess, P. (2014). *Internet of things applications-from research and innovation to market deployment*. Taylor & Francis.

Vial, G. (2019), “Understanding digital transformation: a review and a research agenda”, *The Journal of Strategic Information Systems, 28*(2), 118-144.

Vo-Thanh, T., Vu, T. V., Nguyen, N. P., Nguyen, D. V., Zaman, M., & Chi, H. (2022). COVID-19, frontline hotel employees’ perceived job insecurity and emotional exhaustion: Does trade union support matter?. *Journal of Sustainable Tourism*, *30*(6), 1159-1176.

Wang, C., Luo, J., Lin, S., Zhang, J., Wang, Z., & Luo, A. (2018). Cloud Platform for the Management of Tourism Resources. In 26th International Conference on Geoinformatics, 1-9.

Wang, H.Y. and Wang, S.H. (2010), “Predicting mobile hotel reservation adoption: insight from a perceived value standpoint”, International Journal of Hospitality Management, 29(4), 598-608.

Wang, Y. F., & Petrina, S. (2013). Using learning analytics to understand the design of an intelligent language tutor–Chatbot lucy. *Editorial Preface*, *4*(11), 124-131.

Wang, Y. ve Qualls, W. (2007). "Towards A Theoretical Model Of Technology Adoption In Hospitality Organizations. *International Journal of Hospitality Management, 26*(3),560– 573.

Whitmore, A., Agarwal, A. and Da Xu, L. (2015), “The Internet-of-Things – a survey of topics and trends”, *Information Systems Frontiers, 17*(2), 261-274.

Wong, Y. (1999). Opportunities and challenges for SMEs in Hong Kong. Retrieved fromwww.cpu.gov.hk/english/conference_19991208.htm.

Wu, C.-W. (2016). The performance impact of social media in the chain store industry. *Journal of Business Research, 69*(11), 5310–5316.

Yang, H. (2013), “Bon Appétit for apps: young American consumers acceptance of mobile applications”, *Journal of Computer Information Systems, 53*(3). 85-96

Yıldırım, A. ve Şimşek, H. (2018). Sosyal Bilimlerde Nitel Araştırma Yöntemleri. Seçkin Yayıncılık, Ankara.

Yin, R. K. (2009). Case study research: Design and methods (4th ed). Thousand Oaks, CA: Sage

Youssef, A. B., Zeqiri, A., & Dedaj, B. (2020). Short and long run effects of COVID-19 on the hospitality industry and the potential effects on jet fuel markets. In *IAEE Energy Forum*, 121-124.

Zhang, S.N., Li, Y.Q., Ruan, W.Q. and Liu, C.H. (2022), “Would you enjoy virtual travel? The characteristics and causes of virtual tourists’ sentiment under the influence of the COVID-19 pandemic”, *Tourism Management, 88,* 104429.

Zhou, F., Duh, H. B. L., & Billinghurst, M. (2008), Trends in augmented reality tracking, interaction and display: A review of ten years of ISMAR. IEEE International Symposium on Mixed and Augmented Reality, Bildiriler, 15-18. Cambridge, UK.

Zhu, Q.; Zou, F.; Zhang, P. The role of innovation for performance improvement through corporate social responsibility practices among small and medium-sized suppliers in China. Corp. Soc. Responsib. Environ. Manag. 2019, 26, 341–350

Zhu, R. and Zhang, J. (2021), "Rebounding through the pandemic: towards the digitized and digitalized small hospitality business in China", International Journal of Contemporary Hospitality Management, 33(8), 2676-2694

Zsarnoczky, M. (2018). The Digital Future of the Tourism & Hospitality Industry. Boston Hospitality Review.

7. APPENDIX: Interview Questions

Q1	What specific technological barriers do SMEs in the hospitality industry encounter when adopting digitalization? How does digitalization in SMEs differ from other establishments in the hospitality industry?
Q2	During the implementation of digitalization in the hospitality industry, what organizational challenges do SMEs face, particularly in terms of business process changes? How do you stay informed about the latest developments in this field? Do organizations like the Small and Boutique Hotels Association or other non-governmental organizations offer guidance and support?
Q3	How do external factors such as regulatory frameworks and market conditions impact SMEs in the hospitality industry as they undertake digitalization efforts in the context of smart tourism?
Q4	How do financial constraints and resource limitations affect the adoption of digitalization, specifically smart tourism initiatives, among SMEs in the hospitality industry?
Q5	What are the security and privacy concerns faced by SMEs in the hospitality industry with the implementation of digitalization, especially in the realm of smart tourism?
Q6	In the hospitality industry, considering customer expectations and preferences regarding smart tourism technologies, are cost factors significant challenges for SMEs when it comes to implementing digitalization?
Q7	What are the most effective best practices and strategies employed by successful SMEs in the hospitality industry to overcome the challenges related to digitalizing their operations for smart tourism? In terms of achieving desired outcomes, does outsourcing tend to yield better results, or is it more effective to market a property using traditional marketing tools?
Q8	What are the potential benefits and competitive advantages that SMEs in the hospitality industry can gain from digitalization, particularly in the context of smart tourism? Among digitalization in management and marketing, which one holds greater importance for SMEs?