The Negative Aspects of Digital Transformation Adoption in the Hotel Industry: A Comprehensive Narrative Review of Literature

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Abstract – Digital transformation (DT) in the hotel industry is a major focus for researchers because of its impact on business operation and customer experience. Most studies have looked at the advantages and applications of digitalization. However, there are several emerging challenges that hoteliers need to tackle when adopting DT. This narrative review aims to explore the challenges that DT has brought to the hotel industry. The study focuses on the negative impacts of DT drivers in hotels through a detailed analysis. The articles published between 2010 and 2024 were identified by searching Web of Science, Scopus and Google Scholar. These include concerns about data security and privacy, potential job losses, excessive dependence on technology, disparities in digital access, implementation costs, managing online reviews and reputation, dealing with information overload, facing competition, sustainability, and maintaining personal interactions. Out of 98 identified published documents, only 30 met the criteria for inclusion in the analysis. The findings show that despite the promises of improved efficiency and customer experience, the hotel industry's DT is facing challenges. It is crucial to carefully navigate the integration of digital tools to minimize these negative impacts and maximize the benefits for both guests and hoteliers.

Keywords – Digital Transformation, Negative Aspects, Adoption, Hotel Industry.

1.   Introduction

In the quick-paced technological age, the idea of digital transformation (DT) has become a key focus in almost every industry globally (Omol, 2023; Pascucci et al., 2023). Sectors like banking, construction, energy, media, transportation, retail trade and security are particularly oriented towards technological innovations (Mikheev et al., 2021; Okhrimenko et al., 2019). Companies in different industries are quickly adopting DT strategies to stay competitive and relevant in a time marked by fast technological progress. It is anticipated that businesses would find it difficult to compete in the new digital reality if businesses take time to develop and implement digital (Kraus et al., 2021; Reis and Melão, 2023). DT is not just an option but a necessity for companies aiming to thrive in the era of digital. It is essential for enhancing customer experiences by utilizing data analytics and artificial intelligent (AI) to deliver personalized and efficient services. Streamlining operations through digital tools leads to improved efficiency and cost savings allowing employees to focus on strategic tasks.

The origins of DT may be traced back to the 1980s and early 1990s, when researchers studied the effects of information technology (IT) adoption on performance, organizational structures, hierarchies, and innovation (Besson and Rowe, 2012). As computer technology became more and the Internet grew in popularity, IT-enabled business transformation became a significant focus in the 1990s (El Sawy et al., 1999). DT is the process by which a company uses digital tools to establish a new business model that allows it to generate and appropriate greater value (Kraus et al., 2022; Priyono et al., 2020; Nadkarni and Prügl, 2021). By integrating digital technologies into various aspects of operations, companies can create new revenue streams, improve efficiency, enhance customer experiences, and gain competitive advantages. It is a general term that encompasses the integration of digital technology across various domains (Van Veldhoven and Vanthienen, 2022). DT also leads to significant changes in how companies operate and provide value to customers (Bonnet and Westerman, 2021). The concept of DT may seem relatively new; however, it has been building up for several decades (Stolterman and Fors, 2004). The process of digitization is responsible for the origins of this phenomenon, i.e. transformation information and activities that are in analogue format into a digital format (Henriette et al., 2015), and in digitization, i.e. the adoption of digital technologies on a large scale is a sociotechnical process (Legner et al., 2017).

One industry that has seen significant changes is the hospitality industry (Nikopoulou et al., 2023; Zhu et al., 2021), particularly hotels. Hotels are now using digital technologies to improve guest experiences make operation more efficient and keep up with the digital trends in the market. The appeal of DT in hotel is its potential to transform how hotel interact with guests, improve internal processes and adopt to changing consumer preferences (Lam and Lam, 2019; Youssofi et al., 2024). For example, online booking platforms have transformed how customers find and book accommodation and travel services, making the process more convenient and accessible. Personalized guest experiences are now a key focus for hospitality businesses, using data

analytics to customize services and marketing to individual preferences. More-over, digital communication channel like social media and chatbots are now essential to engaging with guests and collecting feedback (Appel et al., 2020; Dwivedi et al., 2020). Behind the scenes, operational efficiency has been boosted by property management systems and automation, helping busi-nesses optimize resources allocation and improve service quality. The COVID-19 has speed up the use of contactless technologies, leading to the widespread use of mobile check-in/check-out and digital payment options to ensure guest safety and convenience (Hao, 2022).

However, in the midst of the excitement surrounding digital innovation, it is important to recognize that the journey towards DT comes with challenges and pitfalls. While the benefits of digital transformation are well-documented, there is a growing body of literature that already exist underscores the nega-tive aspects and unintended consequences associated with the adoption of technologies in the hotel sector. This comprehensive narrative review of the literature aims to explore in-depth of the darker side of DT in the hotel industry, exploring the difficulties, drawbacks and unintended consequences that the hotel industry may encounter as they navigate the complexities of digitization. Issues such as data security and privacy, potential job losses, excessive de-pendence on technology, disparities in digital access, implementation costs, managing online reviews and reputation, dealing with information overload, facing competition, sustainability, and maintaining personal interactions.

By examining the negative aspects of adopting digital transformation, this study aims to offer valuable insights to hoteliers, hotel industry stakeholders and researchers about potential pitfalls and concern that needs to be ad-dressed in the pursuit of digital innovation. This review, will therefore, contrib-ute to a more nuanced discussion on the implications of digital transformation, encouraging a more thoughtful and strategic approach to its adoption in the hotel industry.

In doing so, this paper underscores the importance of striking a balance between technology advancement and human-centric hospitality, ensuring that digital efforts align with the overarching goal of delivering exceptional guest experience while safeguarding the core values and principles that de-fines the hotel industry. Through a comprehensive examination of the negative aspects of DT adoption in the hotel industry, this study seeks to inform strate-gic decisions-making, spur further research and foster dialogue among indus-try on how to navigate the complexities of digitization in the pursuit of sustain-able growth and competitive advantage. It is significant to be aware of chal-lenges associated with digital transformation which is a good input for the or-ganization to know how to handle these challenges to achieve expected out-comes.

2. Methodology

Articles were selected for this study searching on Web of Science (WoS), Scopus and Google Scholar. WoS is the oldest and most widely used data-base for research publications and citations in the world (Birkle et al., 2020; Li

et al., 2018; Öner and Orbay, 2022). It is considered authoritative in the field. Scopus which is a comprehensive database that includes peer-reviewed literature from various disciplines, such as scientific journals, books, and conference proceedings (Baas et al., 2020). Google Scholar is a widely used online academic search engine that holds anywhere from 2 to 100 million records of academic and grey literature (Halevi et al., 2017). The search covered the period from January 1, 2010, to June 1, 2024. The entry criteria necessitated English language articles, which were identified by using specific search terms "data security and privacy", "job displacement", "overreliance on technology", "digital divide", "costs of implementation", "online reviews and reputation management", "information overload", "competitive pressure", "sustainability and personal interaction". The studies were included if they focus on the negative aspects, challenges and drawbacks of implementing digital transformation in hotel industry. The authors reviewed studies that discussed negative aspects of digital transformation. Table 1. Do not enter manual numbers to your headlines. The styles for main-section and sub-section headlines will add numbering automatically.

3.   Results and Discussion

A total of 98 articles were found, with 30 meeting the inclusion criteria and being in English. The articles included different types such as research (practitioner observation, and use of cultures or surveys), reviews, and case reports. Summaries of the articles can be found in Table 1.
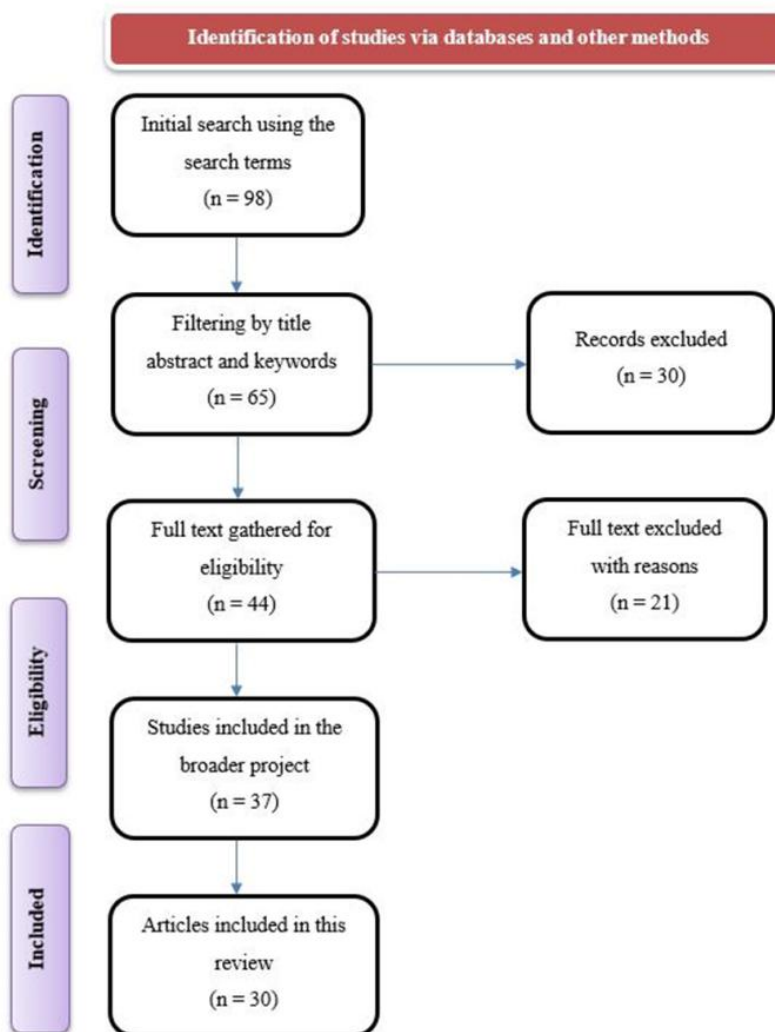
Figure 1: PRISMA flowchart
(Source: Author computation on the available data)

The flow diagram shows the information flow through the several stages of systematic review. It maps out the number of records identified, included and excluded, and the reasons for exclusions.

Table 1: Digital transformation negative aspects in hotel industry

No	Negative Aspects	Author(s)	Topic	Type of study	Publication	Description
1.	Security and Privacy	Kansakar et al., 2019	Technology in the hospitality industry: Prospects and challenges	Exploration study	IEEE Consumer Electronic Magazine	The study discusses some fundamental challenges that must be overcome to institute a lasting, future-proof of solution for hospitality industry.
2.	Security and Privacy	Zhu et al., 2021	Digital transformation in the hospitality industry	Review study	Boston University School of Hospitality Administra	The article highlight the current application of three innovation technology in the hospitality industry and illustrate how technology innovation can transform hospitality business operation and marketing as well as reshape customer experience.
3.	Job Displacement	Kecić, 2019	Is technology stealing our jobs? The impact of the Fourth industrial revolution on the hotel industry workforce	Literature review	Core	The research paper verify whether or not the hotel industry jobs are susceptible to automation.
4.	Job Displacement	Hazal and Mahmut, 2022	Effect of digital transformation human resources planning in hotel businesses		Conference: Scientific trends in the context of Globalization	The study revealed how innovative processes, systems and tools such as new technology smart applications, automation systems, robots, online transaction used in hotel businesses within the scope of digital transformation affect human resource planning qualitatively and

						quantitatively.
5.	Job Displacement	Tian, 2024	Does technology innovation have an impact on employment in the hospitality industry	Empirical study	International Journal of Contemporary Hospitality Management	the study aim to empirically analyze the the impact of technology innovation on the quality and quantity of employment in the hospitality industry.
6.	Overreliance on Technology	Wahl, 2023	Hotel technology – Too much of a good thing can be a bad thing	Review study	Hotel News	The aim of striking the right balance is to integrate technology in a way that enhances the guest experience without sacrificing the human touch, privacy, and sustainability.
7.	Digital Divide	Minghetti and Buhalis, 2010	Digital divide in tourism	Review study	Journal or Travel Research	The article analyze digital divide and proposes an Integrated theoretical framework to explore the relevant factors that lead to unequal access use of ICTs for tourist and destinations.
8.	Digital Divide	Sau et al., 2023	Bridging digital divide: Empirical evidence of the hotel sector in Vietnam	Empirical study	Atlantis Press	The aim study was to assess the current level of digital adoption and among various hotels in Vietnam, identifying key factors contributing to digital divide, and then suggesting evidence base interventions or policies to promote more equitable

						access to digital technologies and resources in hotel sector.
9.	Digital Divide	Shin and Baek, 2023	Unequal diffusion on innovation: Focusing on the digital divide in using smartphones for travel	Empirical study	Journal of Hospitality and Tourism Management	The study comparatively analyze how young and senior travelers adopt smartphones before, during and after travel from the digital divide perspective.
10.	Cost of Implementation	Alrawadieh et al., 2021	Digital transformation and revenue management: Evidence	Empirical study	Tourism Economics	The research examine the extent of technology from the hotel industry adoption in management (RM) operations within the lodging industry on luxury and upscale hotels in Jordan.
11.	Cost of Implementation	Chatzipetrou and Konstantinos, 2024	Managerial digitization cost in the hotel sector: The case of Northern Greece	Empirical study	Administrative Sciences	The aim of the study was to measure the managerial digitalization cost of the hotel industry in Northern Greece.
12.	Online Review of Reputation	Ahmed et al., 2022	Persuasive communication, online reviews and service performances – A study on hotel industry of New Zealand	Empirical study	Australasian Accounting, Business and Finance Journal	This study investigate how the quality of external services impact the performance of hotels in New Zealand.
13.	Online Reviews of Reputation	De Pelsmacker et al., 2018	Digital marketing strategies online reviews and hotel Performance	Empirical study	International Journal of Hospitality Management	The study aims determine how digital marketing strategies, like having a plan, responding to guest reviews and monitoring

						online reviews, impact hotel room occupancy and RevPar.
14.	Online Reviews of Reputation	Gabbard, 2023	The impact of online reviews on hotel performance	Empirical study	Journal or Modern Hospitality	This study's primary goal was to investigate the internet reviews affect hotel performance.
15.	Online Reviews of Reputation	Chen, and Tabari, 2017	A study of negative customer online reviews and managerial Response on social media – Case of the Marriott Hotel Group in Beijing	Review	Journal of Marketing and Consumer Research	This paper aims to investigate the main reasons why hotel customers complain on social media and how hotel managers typically respond to these issues.
16.	Online Reviews of Reputation	Dong et al., 2014	Classification of customer satisfaction attributes: An application of online hotel review analysis	Empirical study	13th Conference on e-Business, e-Service and e-Society	The study examines the factors that contribute to hotel customer satisfaction by analyzing online reviews from actual hotel guests.
17.	Online Reviews of Reputation	Gangananda et al., 2022	Examining the effect of social media on online reputation management of hotels special reference to down south area in Sri Lanka during COVID 19 pandemic	Empirical study	International Journal of Engineering and Management Research	The study aims to investigate the impact of social media on hotel online reputation management, focusing on the southern are of Sri Lanka
18.	Online Reviews of Reputation	Nguyen and Coudounaris, 2015	Understanding customer experience with Vietnamese hotels by analyzing online reviews	Empirical study	Humanities and Social Sciences Communications	The study seek to gain insights into the perceptions, satisfaction levels and preferences of customers regarding hotels in Vietnam.

19.	Online Reviews of Reputation	Perez-Aranda et al., 2019	Hotels' online reputation management: Benefits perception by managers	Empirical study	International Journal of Contemporary Hospitality Management	This study creates a model to assist hotels in handling their reputation online review platforms.
20.	Information Overload	Bawden and Robinson, 2020	Information Overload: An overview	Review	Oxford University press	The aim of the study is to provide a foundation understanding of this pervasive issue and to offer insights into how it can be effectively in today's information-rich environment.
21.	Information Overload	Högberg, 2021	Technology among hotel employees – a longitudinal of media as digital service encouters	Review study	Proceedings of the ENTER 2021 eTourism Conference	The study focus on technostress among employees in an international hotel chain.
22.	Information Overload	Matthes et al., 2020	"Too much to handle": Impact to mobile social networking sites on information overload, depressive symptoms and well-being	Empirical study	Computer in Human Behavior	The study examined how different mobile socials networking sites affect information overload, depressive symptoms, and overall well-being in peoples of various age group.
23.	Information Overload	Saxena and Lamest, 2018	Information overload and coping strategies in the big data context: Evidence from the hospitality sector	Interpretive case study	Journal of Information Science	The aim of the study is to investigate how information overload affects professionals in in the hospitality industry particularly in the big data
24.	Information Overload	Wu et al., 2022	The effect of information overload and perceived risk on tourists' intention to travel	Empirical study	Frontier in Psychology	This study aims to identify the factors that influence Chinese tourists' travel

			in the post-COVID-19 pandemic			intentions after the COVID-19 pandemic. It will consider factors such as information overload and perceived risks.
25.	Competitive Pressure	Balsiger et al., 2023	Coping with digital market re-organization: How the hotel industry strategically respond to digital platform power	Case study	Competition & Change	This study investigate how hotels adapt and respond to the changing dynamics brought about by digital platforms in the market.
26.	Competitive Pressure	Wu et al., 2023	How firms cope with social crisis: The mediating role of digital transformation as a strategic response to the COVID-19 pandemic.	Empirical study	PLOS ONE	The study investigate how businesses navigate and respond to social crises, with a particular focus on the COVID-19 pandemic. This research seeks to understand the strategies that firms employ to address the challenges posed by the pandemic and it's associated disruption to economic, social and operational landscapes.
27.	Sustainability	Djevojić and Vitasovic, 2023	Digital transformation of business in the hotel industry and its impact on sustainable development	Review study	Dubrovnik International Economic Meeting	This research aimed to highlight the necessity of quick digital change in the hotel sector and underscore the significance of sustainable development in tourism by leveraging the advantages of digital transformation.
28.	Sustainability	Prihanto and Kurniasari, 2019	Sustainable digital transformation in hotel industry: Study of hotel	Empirical	Advance in Economic,	This study introduces and analyzes a model that

					industry in Indonesia		Business and Management Research, volume 100	looks into how leaders in the hospitality industry in Indonesia can use resources like digital market capabilities, digital leadership capabilities and digital technology capabilities to achieve sustainable digital transformation and enhance customer engagement strategies.
29.	Decline of Personal Interaction	Das, 2023	Technology an guest experience Innovation reshaping hotel Management	Empirical Study	International Journal for Multidime-sional Research Perspectives	This research delves into the profound impact of technology in hotel management and guest experience, a topic that has gained considerable attention in contemporal hospitality research.
30.	Decline of Personal Interaction	Mandić et al., 2023	Automated service delivery in hotels: Balancing efficiency and human interaction for optimal guest satisfaction	Empirical study	International Scientific Conference on Economy, Management and Information technologies	This paper explore the challenges and opportunities of automated service delivery in hotels. It looks at how reduced human interaction can affect guest satisfaction, including factors like personalization, emotional connection and service

3.1 Digital Transformation Negative Aspects

3.1.1 Data security and privacy concerns in hotel industry

The term data security describe the precautions required to keep information safe from tampering or illegal access throughout its lifecycle, including storage, transmission and processing (Duggineni, 2023). It includes administrative controls, access controls, hardware, software, storage devices as well as procedures and organizational policies. Our society becomes increasingly digitalized, data security and privacy concerns have become a paramount issue for individuals, businesses and governments alike (She et al., 2020; Quach et al., 2022). With the rapid advancements in technology, the amount of personal information being collected and stored has grown exponentially (Iacovitti, 2022). The proliferation on internet-connection devices, social media platforms, online transactions and various digital services, individuals are generating massive amounts of data every day. This data include everything from browsing history and social media interactions to financial transactions and location information. Data security and privacy are critical concerns in any industry including hotel industry undergoing DT (Zhu et al., 2021).

The hotel industry is complex and highly competitive sector that plays a vital part in the global economic growth (Salam et al., 2024). As one of the fundamental element of the hospitality sector, hotels serve tourist with accommodation, dinning, entertainment and various other services. Recent technological advancements have transformed the way hotels operate, with many establishments implementing software solution and reservation system, mobile check-in options and smart room technology to improve guest experiences (Das, 2023). Tourists often unknowingly provide their personal information to hotels through various means for example through the hotel booking system, where guest are required to input their name, contacts details and payment information. Furthermore, many hotels offer free Wi-Fi to guests, tourists must enter personal information like their email address or social network accounts. Hotels also use key cards systems that track guest movement throughout the hotel, gathering data on preferences and behaviors. The hotel industry has a responsibility to protect the personal information of guests, including credit card details, addresses, and contact information of guest. However, cybersecurity has become a major concern for hotels as they adapt to the digital world (Shabani and Munir, 2020). The increasing use of technology in guest services, reservations, and payments makes hotels attractive targets for cyberattacks that aim to access sensitive guest data. Data breaches, ransomware attacks, phishing scams, insider threats, and vulnerabilities in point-of-sale systems all pose significant risks to both guests and hotel operations. Hotels are at risk of cyberattacks that seek to steal guest data, putting visitor trust and legal consequences in jeopardy.

3.1.2 The issue of job displacement within the hotel industry

Job displacement refers to the situation where employees lose their jobs due to various reasons (Baquero, 2022; Michael and Fotiadis, 2022), such as changes in the business environment, technological advancements,

economic downturns, or organizational restructuring (Khan et al., 2021). Displacement affects workers at different levels within the hotel, from front-line staff to managerial positions. Before COVID-19, modern work environments were already facing uncertainty because of technological changes, economic fluctuations, and political instability (Ghani et al., 2022). Automation and digital tools have indeed transformed various industries, including the hotel industry, by streamlining operations, improving the visitor experience, and increasing efficiency (Bilgihan and Ricci, 2024). Hotel automation is the process of converting time-consuming and hotel operations into ones that require little to no human intervention. The use of digital tools ensures that hotels become smarter and more technologically savvy. While these advancements offer numerous benefits, they can also lead to potential job displacement. For example,

- Front desk and check-in/check-out: Self-service kiosks, mobile check-in, and digital key systems have become prevalent in the hotel industry. These tools reduce the need for front desk staff, potentially leading to job displacement (Torres, 2018).
- Room Service and Concierge: Some hotels have implemented automation for room service and concierge services through in-room tablets or mobile apps, reducing the need for human staff in these roles (Stringam and Gerdes, 2021).
- Housekeeping: Robotics and automation can help with tasks like vacuuming, linen changing, and room inspection, which may reduce the number of housekeeping staff needed (Andrabi, 2023).
- Booking and Reservation Systems: Automated reservation and booking systems can manage room availability and pricing, reducing the need for manual oversight and administrative staff (littlehotelier.com 2024).
- Maintenance and Repairs: IoT devices and sensors can monitor the condition of equipment and facilities, enabling predictive maintenance and potentially reducing the number of maintenance staff required (Soori et al., 2023).
- Guest Services: Chatbots and virtual assistants are used for responding to guest inquiries and requests, potentially reducing the workload for customer service staff (Calvaresi et al., 2021).
- Data Analytics: Automation tools can help hotels analyze guest data, preferences, and feedback, allowing them to make informed decisions on services and amenities. This might affect marketing and strategy roles (Said, 2023).

Due to the replacement of human workers by robots, artificial intelligence and other automation technologies, the introduction of automation technology raises concerns about job losses and technologies unemployed (Dengler and Matthes, 2018; Li et al., 2019; Walsh, 2018). According to (Frank et al., 2017; Talwar et al., 2017), automation has the potential to improve people's health, well-being and quality of life in addition to generating value for customer and shareholders. Some other authors agree that automation will alter the nature of employment, the job positions and the skills needed by human employees (Ernst et al., 2019; Webster and Ivanov, 2020; West, 2018). In addition, new

managerial perspectives would be necessary for these new technologies to be adopted by tourist and hospitality businesses, to restructure operational procedures and no overcome employee and customer resistance to change and complacency (Ringberg et al., 2019).

3.1.3 Overreliance on technology in hotel industry

Overreliance on technology is a phenomenon where individuals or organizations become excessively dependent on technological tools and systems to the extent that it hinders the ability to function effectively without technological tools (Grissinger, 2019). This can result in negative outcomes like lower problem-solving abilities, less interpersonal communication and dependence on automated processes that may not be consistently accurate or dependable. The hotel industry is facing a problem with relying too much on technology (Wynn and Jones, 2022). While technology has made hotels more efficient, there is a concern that it is taking away from the personal touch of hospitality. Self-service kiosks, online check-ins, and automated customer service systems can make guests feel disconnected from the personalized experience they expect. Relying too heavily on technology also puts hotels at risk of technical issues and cyber security threats, which can disrupt operations and harm their reputation (Shabani and Munir, 2020). This can result in frustrated guests and lost revenue. Additionally, if hotels rely too heavily on technology, staff may not be properly trained to handle situations without it, which could make the problem worse.

3.1.4 The digital divide in the hotel industry

The digital divide refers to the disparity between individuals, communities or countries that have way in to information and communication technology (ICTs) and those who do not (Ncubukezi and Makola, 2020; Sanders and Scanlon, 2021). This disparity takes on various forms including differences in internet connectivity, device ownership, digital skills and affordability of ICT services (Afzal et al., 2023). The consequences of the digital divide are far-reaching and can exacerbate existing inequalities related to education, employment opportunities, healthcare and civic participation (Lythreatis et al., 2022). It is crucial for the hotel industry to recognize that not all guests are tech-savvy or have access to digital gadgets. While many hotels are increasingly implementing technology-driven solutions such as online check-ins, keyless entry system and mobile apps for guest services, there remains a significant portion of the customer base who struggle with these advancements. These customers prefer traditional methods of communication and service delivery, such as speaking to a front desk receptionist or receiving a physical key upon arrival. It is crucial for hotels to provide options that cater to this demographic by offering personalized assistance and ensuring that customers have access to necessary amenities without relying solely on digital platforms ensuring that accessibility for all is a challenge.

3.1.5 Costs associated with implementing changes in the hotel industry

The costs of implementation refer to the expenses associated with putting a plan, program or strategy into action within an organization. These costs can

encompass a wide range of expenses including financial investments in resources such as technology, equipment and staff training (Gold et al., 2022). In hotel industry, the implementation of digital technology has become increasingly essential to meet the demand for enhanced guest experiences and operational efficiency. However, significant costs are associated with integrating these technologies within a hotel setting (Sun et al., 2020; Verhoef et al., 2021). Initial expenses include hardware and software purchases, installation fee and staff training programs. Additionally, ongoing maintenance costs such as system updates security measures and technical support must be factored in to ensure smooth operation. Small and independent businesses in the hotel industry may struggle to keep up with the costs of adopting and maintaining these technologies (Barquissau et al., 2024; Pillai et al., 2021).

3.1.6 Managing online reviews and reputation is crucial in the hotel industry

Online reviews and reputation management are very crucial aspects of a company's online presence and its success. Online reviews are customer ratings, comments, and feedback posted on different websites, including travel websites (e.g., Expedia, Hotels.com, Orbitz and TripAdvisor) and social media platforms (e.g., Facebook, MySpace and Twitter) (Mudambi and Schuff, 2010; Schlosser, 2011; Pavlou and Dimoka, 2006). Customers can independently review firms on websites including user reviews. More and more customers are relying on online reviews when making purchasing decisions (Chevalier and Mayzlin, 2006; Coulter and Roggeveen, 2012; Zhu and Zhang, 2010). Positive online reputation leads to increased visibility, more interaction with customers, and improved sales (Liu et al., 2018). Customers may rank and discuss businesses online in both formal and informal ways thanks to review websites. In the hotel industry, online reviews and reputation management present significant challenge due to the pervasive nature of social media networks and review websites (Becker and Lee, 2019). Hotels must contend with the immediacy and reach of customer feedback, which can quickly influence potential guests' perception of their business. Positive reviews help create a good brand image, which can attract more customers and ultimately lead to higher occupancy rates. In contrast, negative reviews can have a detrimental impact on hotel reputation, leading to decreased booking and revenue (Gabbard, 2023; Sayfuddin and Chen, 2021). Managing and responding to online reviews has become a critical aspect of DT, and it can be challenging to maintain a positive image.

3.1.7 The hotel industry is experiencing information overload

Information overload is known as the condition of being inundated with too much material to process or to pay attention to (Hong and Kim, 2020; Klapp, 1986; Shahrzadi et al., 2024). The issue of information overload is getting worse due to the increasing digitization of the workplace and the widespread the application of information and communication technology (Arnold et al., 2023). Today, we have access to a lot of information which can make it difficult to distinguish reliable sources from the rest. The excessive amount of information and communication through digital platforms can be overwhelming for

people. In the end, having too much information can harm the quality of decisions and, as a result, impact online shopping habits (Peng et al., 2021). This raises questions about how organizations should shape their brand communication strategies. Providing users with too much information significantly influences their behavior before traveling (Tan and Kuo, 2019). Online users react negatively to an overload of information (Magnini and Dallinger, 2018), which suggests that the tourism and hospitality industry can benefit from focusing on providing a great user experience and maintaining robust emotional connections in the midst Industry 5.0 digital evolution.

3.1.8 The hotel industry is facing intense competition

Competitive pressure refers to the forces and challenges exerted by rival companies within a particular industry to gain a competitive advantage or market share. This pressure can manifest in various forms such as price competition, product innovation, marketing strategies, and enhancements to client service (Altuntaş et al., 2014; Kandampully et al., 2015). In the quickly changing digital world of today, the hotel industry is feeling increased competitive pressure to undergo DT in order to stay relevant and meet the changing demands of tech-savvy consumers. Due to the growth of online reservation systems, social media and review websites influencing consumer choices, hotels are realizing the importance of leveraging technology to enhance their customer experience, streamline operations, and increase efficiency. From implementing online booking systems and mobile check-in services to utilizing artificial intelligence for personalized guest experiences, hotels are under immense pressure to adapt quickly or risk being left behind. Those hotels that fail to adapt risk losing market share and revenue to more digitally savvy competitors who are able to provide a seamless, modernized guest experience. Furthermore, with the global pandemic accelerating trends towards contactless experiences and virtual services, DT has become not just a competitive advantage but a necessity for survival in the increasingly competitive hotel industry.

3.1.9 The hotel industry is facing sustainability concerns

According to Mensah (2019), sustainability is the process of addressing present social demands without endangering the capacity of future generations to address their own needs. It involves utilizing resources in a responsible manner, minimizing waste and negative environmental impacts, and promoting social equity (Hariram et al., 2023). Like other industries, sustainability concerns have become a critical issue in the hotel industry as businesses seek to reduce their environmental footprint and meet growing consumer demands for eco-friendly practices (Kularatne et al., 2019; Pereira et al., 2021; Prakash et al., 2023). Hotels consume vast amounts of energy, water, and produce large amounts of waste, making them significant contributors to climate change and resource depletion (Abdou et al., 2020). The DT era in the hotel industry has raised numerous sustainability concerns, stemming from the increased energy consumption and electronic waste generation associated with technological advancements. As hotels implement smart room controls, AI-powered guest services, and digital check-in/out procedures to

enhance customer experience and operational efficiency, they inadvertently contribute to a higher carbon footprint. The swift obsolescence of digital technology causes an increase in problems related to the disposal of electronic trash. (Jadhao et al., 2022; Prabhu and Majhi, 2023; Shevchenko et al., 2019; Vishwakarma et al., 2020).

3.1.10 The decline of personal interaction in the hotel sector

The lack of personal connection in a work environment means that there is less human interaction and connection between people (Della Longa et al., 2022; Solnet et al., 2019). Providing a personal touch in hotel industry is crucial for ensuring customer satisfaction and loyalty (Harkison, 2017). However, the rise of technology in the hotel industry has inadvertently led to a loss of personal touch, a key aspect that has traditionally set high-quality establishments apart (Tuomi et al., 2021). With the increasing reliance on online booking platforms and automated check-in processes, guests often find themselves navigating their entire stay without ever interacting with a staff member. This shift not only removes the opportunity for hotels to personalize their service and anticipate guest needs but also eliminates the human connection that is essential for creating memorable experiences. The lack of personal touch can also impact productivity, creativity, and overall job satisfaction within a team or organization. Covid-19 has accelerated the DT of the hotel business in unimaginable ways, compelling many hotel practitioners to adopt digital technology that would otherwise not be adopted so quickly.

4. Directions of Future Research

The future research in hotel industry should explore emerging trends and technologies that are rapidly transforming how hotels operation and interact with guests. The next wave of DT is being driven by technologies like automation, blockchain, virtual reality (VR), artificial intelligence (AI), and the Internet of Things (IoT). These developments improve guest experiences, streamline hotel operations, and develop new business models. Research should concentrate on identifying these technologies and investigating their particular uses in the hotel industry, such as blockchain for safe payment systems, IoT-enabled smart rooms, and AI-driven chatbots for customer support.

Additionally, longitudinal studies that evaluate the long-term impacts of digitization on different facets of hotel operations are becoming more and more necessary. Although a lot of research has looked at the immediate advantages of implementing digital tools, little is known about how these technologies will affect hotels in the long run. Operational efficiency, where digitization simplify procedures but also create new complications, and employee dynamics, where automation and digital tools cause changes in job roles, skill requirements, and workplace culture, are important areas for research. Maintaining employee engagement and managing workforce transitions require an understanding of these changes.

Future research studies should examine the long-term effects of digitization on visitor loyalty and satisfaction. It is crucial to assess whether hotels' use of

more individualized digital services like smooth online check-ins or concierge services driven by AI improves visitor experiences over time. In order to examine the relationship between digital innovations and customer expectations, longitudinal studies could monitor guest satisfaction levels over time. To guarantee a balanced approach to DT, future research should also take into account the possible risks, such as privacy issues or an excessive dependence on technology at the expense of human interaction.

The future research should focus on the following questions:

- What are the emerging trends and technology that will shape the future of hotel industry?
- How does digitalization impact hotel industry development?
- What are the effects of digital transformation on employee dynamics in hotel industry?
- How do digitization initiatives impact guest satisfaction and loyalty in the long term?

5.   Recommendation

To successfully navigate the challenges of DT in the hotel industry, it is crucial to prioritize data security and privacy (Zhu et al., 2021). Hotels need to invest in strong cybersecurity measures, such as encryption protocols and access control to protect guest data from potential breaches (Kong et al., 2022). It is also important to provide comprehensive staff training on cybersecurity best practices to reduce the risk of internal threats (Tolossa, 2023). By doing so, hotels create a security-conscious environment by involving all team members in upholding data integrity and confidentiality while addressing the evolving challenges in the field of information security. Collaborating with reputation cybersecurity firms for regular security audits will help identify vulnerabilities and create customized solutions.

As digitization reshape jobs roles within the hotel industry, it's crucial to proactively address concerns related to job displacement (Tian, 2024). Investing in employee reskilling and upskilling programs will equip workers with digital skills needed to adapt to technological changes and secure alternative employment opportunities (Li, 2022). Moreover, fostering a culture of continuous learning and innovation empowers employees to embrace digital tools and automation, ensuring a smooth transition to the digital era (Ogunbukola, 2024). By prioritizing workforce development initiatives that emphasize internal mobility and career advancement, hotels will mitigate the adverse effects of jobs displacement while retaining a skilled and engaged workforce.

Balancing technology adoption with sustainability is paramount for hotel striving to minimize environmental footprint (Abdou et al., 2020). Integrating sustainability consideration into the procurement and development of digital technologies, such as prioritizing energy-efficient solution and eco-friendly material, is essential. Adopting smart energy management systems (SEMS) and Internet-of-Thing (IoT)-enabled devices can optimize resource utilization and reduce environmental impact (Jha et al., 2024). Collaborating with industry partners and stakeholders to share best practices and develop industry-

wide sustainability standards for DT initiatives will further advance sustainability goals while driving innovation and efficiency.

In optimizing guest experiences, hotels must leverage technology to enhance services without sacrificing personalization (Das and Philosophers, 2023). Offering guest a choice between digital and traditional service options allows guests to tailor guest experience based on guest preferences. Empowering staff with tools and training to effectively utilize technology foster meaningful personalized interactions with quests, leading to higher satisfaction and loyalty. Getting feedback from guests regularly assists hotels identify where technology can enhance the guest experience while maintaining a personalized touch. This ensures that DT improves, rather than detracts from the quality of quest interaction.

It is fundamental for hotels to effectively manage online reputation and reviews (Pérez-Aranda et al., 2019). This includes implementing proactive strategies like monitoring online reviews, responding promptly and professionally to guest feedback and encouraging happy guests to leave positive reviews. Encouraging satisfied guests to leave positive reviews and addressing negative feedback constructively demonstrates a commitment to guest satisfaction and fosters a positive online reputation. Leveraging social media and online platforms to engage with guest authentically builds trust and loyalty, ultimate enhancing the hotels brand image and competitiveness in the digital marketplace.

6.   Authors

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IJARBM – International Journal of Applied Research in Business and Management
Vol. 06 / Issue 01, January 2025
ISSN: 2700-8983 | an Open Access Journal by Wohllebe & Ross Publishing

This paper is available online at
www.ijarbm.org

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IJARBM – International Journal of Applied Research in Business and Management
Vol. 06 / Issue 01, January 2025
ISSN: 2700-8983 | an Open Access Journal by Wohllebe & Ross Publishing