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From Traditional to Digital: The Evolution of Business Models in Hospitality Through Platforms

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Abstract: The hospitality business model has undergone profound changes influenced by successive waves of technological advances and platforms. This paper explores how different waves of technologies and platforms are shaping the evolution of the hospitality business model. Employing a systematic literature review, this research analyzes how platform innovation has driven significant shifts in the industry. The analysis yielded four key findings. Firstly, the incorporation of digital technologies resulted in a radical transformation of conventional business models, prompting substantial alterations in marketing strategies, distribution processes, and consumer behavior patterns. Secondly, the industry has undergone five significant technological revolutions, evolving from steam-powered transportation to the integration of artificial intelligence (AI) and the Internet of Things (IoT), thereby driving a shift towards innovation-centric business models. Thirdly, the advent of digital platforms, most notably online travel agencies (OTAs), posed a challenge to traditional hospitality models by introducing personalized experiences and disrupting established market norms. While digital platforms offer advantages such as enhanced convenience and customization, they also present challenges, including intensified competition and declining profit margins. Nonetheless, technological advancements such as AI, virtual reality (VR), and augmented reality (AR) present a potential avenue for redefining value propositions and enhancing customer experiences. Fourth, the future of the hospitality business model is poised for further disruption, influenced by the emergence of new virtual platforms and services. This could potentially result in a reshaping of the industry's value chain and value proposition.

Keywords: platforms; hospitality; business model transformation; technological advances; digital disruption

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1. Introduction

The hospitality sector is undergoing a period of rapid transformation, driven by digitalization, technological advancements, and the emergence of new digital platforms. The evolution of business models in the hospitality industry had a profound impact on the manner in which services are offered, marketed, and consumed, reflecting broader shifts in the global economy. In recent years, technological progress, including the introduction of digital platforms, AI, and Industry 4.0 technologies, redefined traditional approaches to customer engagement and service delivery within the hospitality sector. This shift is not exclusive to the hospitality industry; it is part of a broader trend of platformization and digital disruption affecting numerous industries. This underscores the necessity for companies to adapt or risk obsolescence.

Recent literature on the evolution of the business models emphasizes two primary notions. First, it posits that as technologies advance, business models must transform and adapt to new developments. This perspective of techno-determinism in different sectors has been extensively discussed in several studies [1–4]. Second, the emergence of new players, referred to as "platform actors", introduced new strategies as a result of technological advances, thus triggering the evolution of business models. A significant

body of literature focused on the strategic maneuvers of technology providers and platform actors [5–7]. However, certain specialized industries, such as the hospitality sector, have not been thoroughly studied in terms of the interplay between technology development and business model evolution. Few studies try to explore the innovation and changes in the tourism business model due to the new technologies [8–10]. The strategic changes in the business model within the hospitality industry influenced by different waves of technology have not been clearly articulated, highlighting a research gap in addressing this issue.

Digital platforms, defined as online digital arrangements in which algorithms play a central role in organizing and structuring economic and social activities [7,11–14], have become instrumental in connecting stakeholders, facilitating transactions, and enabling new forms of interaction and value creation. However, the conceptualization of business models evolved over time. Initially equated with strategic formulations [15,16] or seen as components of corporate strategy [17], more recent studies describe business models as the logic behind value creation and the orchestration of corporate resources. Some scholars advocate a more nuanced perspective, viewing business models as configurations of various elements or "building blocks", including product, customer interface, infrastructure management, and financial aspects [18–20].

Technologies of Industry 4.0 are reshaping notions of experience and consumption, leading to the emergence of new business models in tourism [21,22]. Digital platforms are central to this transformation, significantly impacting the traditional hospitality business model by altering value creation mechanisms and business processes [9,23,24]. The operational dynamics of digital platforms are different from those of traditional business models, which necessitates a change in the direction of transformation of companies when moving to a digital platform model [25]. These advancements facilitate the rapid development of personalized consumption patterns and innovative tourism consumption scenarios, providing significant support to the luxury tourism sector [26].

This paper attempts to fill this gap by elucidating how different waves of digital technologies induced platform players to take strategic actions, thereby introducing new business models and influencing the competitive landscape. Using a systematic literature review, this study draws on the literature on the trajectory of different waves of technological change [27–29] to understand the evolution of business models. While the current importance of technology is undeniable, its direction plays a non-neutral role in shaping competition, the future of work, and societal benefits. Consequently, this research poses the following research questions: How have different waves of technologies and platforms impacted the evolution of the hospitality business model? What are the potential future disruptions that the industry might face as it continues to evolve?

The primary objective of this research is to analyze how different technological waves and platform innovations have driven the evolution of hospitality business models. Specifically, this paper aims to (1) identify the major technological advancements that influenced business models in hospitality, (2) explore the role of digital platforms in transforming market dynamics and customer experiences, and (3) assess the implications of emerging technologies for the future of hospitality. These objectives provide a structured approach to understanding the strategic shifts within the industry and addressing the gaps highlighted in existing literature.

The remainder of the paper is organized as follows: Section 2 presents a literature review. Section 3 describes the methodology used in the paper. Section 4 shows how the different waves of technologies and platforms have impacted the evolution of the hospitality business model. Section 5 presents the main results. Finally, Section 6 concludes the paper by discussing its limitations and the policy implications derived from the study.

2. Literature Review

There is a first stream of work examining the links between the hospitality industry and the various pillars of Industry 4.0 such as the IoT [30], VR [31], AR [32], big data [33], and AI and robotics [34]. Most of these studies focus on reshaping the hospitality industry as a

result of implementing Industry 4.0 technologies and providing personalized experiences and digitized services. Ref. [30] underscore the significant potential of the IoT in creating interconnected and smart environments that automate and personalize services, leading to improved customer satisfaction. Ref. [31] illustrate how VR can engage customers through immersive experiences, such as virtual tours of hotel facilities, which influence booking decisions and foster customer loyalty. Ref. [32] explore the applications of AR in hospitality, demonstrating how AR can deliver interactive and informative experiences, such as virtual concierge services and immersive travel guides, enriching the guest experience. Ref. [33] focus on big data analytics, highlighting its critical role in enabling personalized services and data-driven decision-making. Ref. [34] discuss the integration of AI and robotics in the industry, showcasing how these technologies automate routine tasks and enhance service delivery. These works emphasize that by embracing IoT, VR, AR, big data, AI, and robotics, the hospitality industry can offer digitized, personalized, and efficient services that meet the evolving expectations of modern travelers.

A second strand of the literature focuses on the innovation of business models in response to the introduction of frontier technologies, highlighting the central role of digital technologies in facilitating unprecedented forms of technology-mediated interactions between economic entities. This evolution has significant implications for the selection and development of business models [2,4,35]. In the tourism sector, comprehensive reviews by [36] suggest a predominant focus on topics related to business models rather than the specific transformation of hospitality business models due to technological change. Research largely examined the business models of airports and airlines [36,37], with relatively little examination of business models in the broader tourism and travel context [38]. In addition, technology remains a key factor in shaping customer relationship management and guest services in the hospitality industry, noting differences in how different firms implement and use technology.

Another strand of the literature explores the development of platforms as central actors in different sectors [14,39,40]. Studies on platform governance and ecosystem innovation highlighted the strategic importance of actors in influencing public policy instruments [14], shedding light on how a range of stakeholders, including states, NGOs, and corporations, contribute to the governance of online platforms. In addition, research on how platforms catalyze innovation within service ecosystems reveals the orchestration of processes such as matching, resourcing, and valuation by key actors on innovation platforms [39]. A review of the literature on platform competition highlights the reconfiguration of industries around digital platforms, transforming firms into either platform sponsors or providers of complementary goods within a platform ecosystem [40].

Nevertheless, there is a notable gap in the literature that addresses how the different direction of Industry 4.0 can empower platforms to transform hospitality business models. This paper aims to fill this gap by analyzing how the direction of Industry 4.0 has driven platforms to innovate business models in the hospitality industry. The following sections present a comprehensive analysis of this transformation.

3. Methodology

This paper is based on a systematic literature review to explore how digital platforms and technological innovations are transforming business models in the hospitality industry. A systematic literature review allows for a broader and more flexible examination compared to empirical studies. While an empirical approach often restricts analysis to specific contexts or cases, a literature review enables the exploration of larger patterns and connections among multiple empirical findings. This approach provides the flexibility to address theoretical questions that exceed the limitations of single empirical studies [41].

The goal of a systematic literature review is to define a focused research question and conduct a comprehensive quantitative and qualitative analysis of relevant evidence, sometimes accompanied by a meta-analysis [42]. Key strengths of systematic literature reviews include the ability to concentrate on a unique research question, retrieve articles system-

atically, and provide objective summaries and evidence-based inferences [43]. However, systematic literature reviews also have limitations, such as the heterogeneity of selected studies, potential biases from individual studies, and possible publication bias [44].

The literature on digital transformation and platform-driven innovation in hospitality is varied, covering topics from technological advancements to shifts in customer behavior and business model adaptations. To address this diversity, we aimed to identify the most relevant studies while minimizing bias. Our search strategy involved using keywords such as "digital platforms", "hospitality business models", "platform innovation", "customer experience in hospitality", "smart tourism", "Industry 4.0", and "digital transformation".

We used the snowballing technique to expand our corpus of literature, which is particularly effective for identifying additional relevant studies when initial sources are sparse. Starting from a core set of articles, we reviewed reference lists and citations to uncover further research on the topic. This iterative process allowed us to refine our search terms and continually expand the scope of relevant articles across fields such as tourism, digital innovation, and business strategy. Ref. [45] notes that snowballing can effectively extend a systematic literature study, as new studies often reference previously identified relevant research. Thus, snowballing is a valuable supplement to traditional database searches in building a robust literature base for systematic reviews.

4. Results

4.1. Traditional Hospitality Business Models and the Challenges of Technological Transition

The traditional hospitality business model primarily relied on offline marketing and distribution channels, such as travel agents, tour operators, and direct bookings made via phone or fax. This heavy reliance on intermediaries led to inefficiencies, as businesses faced high transaction costs and reduced profit margins. The inability to build direct customer relationships and the manual nature of booking processes further added to operational costs, limiting the efficiency and scalability of traditional hospitality operations [46,47].

Furthermore, traditional marketing practices in hospitality were largely based on localized print advertising and travel expos, which restricted the geographical reach of the hospitality businesses. The lack of digital tools to collect and analyze customer data further limited their ability to understand customer preferences and offer personalized services. This data deficit resulted in standardized guest experiences, which lacked the tailored approach increasingly demanded by modern consumers. As the expectations of travelers evolved towards more customized and experience-driven offerings, the traditional model struggled to adapt quickly, highlighting its rigidity and inability to meet new market demands [48–50].

The shortcomings of the traditional business model underscored the necessity for transformation, driven by the emergence of new digital technologies. As competition intensified and consumer expectations shifted, the need for a more efficient, customer-centric, and scalable model became evident. The introduction of digital tools, such as OTAs, provided the hospitality sector with direct access to customers, improved efficiency, and allowed businesses to offer a more personalized experience. These early technological disruptions marked the beginning of a significant shift, setting the stage for the evolution of the industry towards a digitally integrated and customer-focused business environment [36].

4.2. The Impact of Technological Revolutions on Hospitality Business Models

Research suggests that the hospitality industry experienced five technological revolutions, parallel to industrial revolutions, each of which significantly changed the business model, as shown in Figure 1 [51]. The fourth revolution, inspired by Industry 4.0 technologies such as AI, chatbots, IoT, AR, VR, and big data [52], had a profound impact on transforming the hospitality business model. This ongoing transformation is further driven by the emergence of Hospitality 5.0, which focuses on sustainability, enhancing the tourist experience, and strengthening the resilience of the sector, setting the stage for disruptive business models in the future of the tourism industry [51,53].

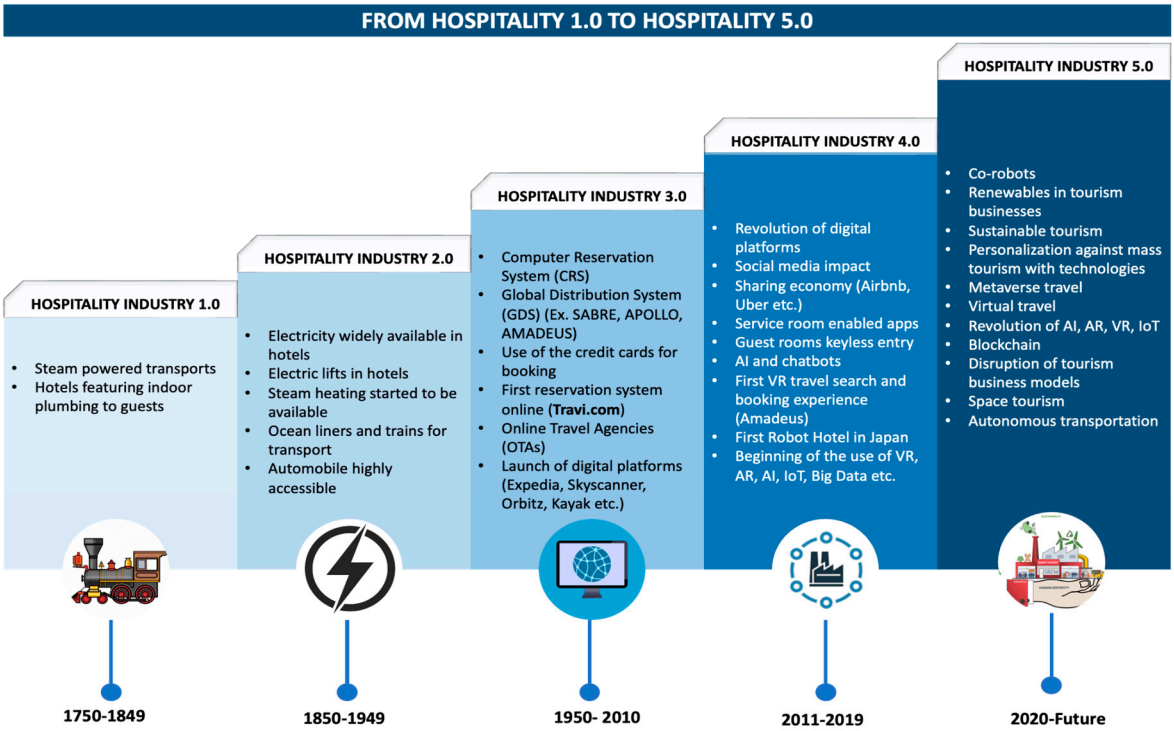


Figure 1. Technological revolutions of the hospitality industry (source: Zeqiri et al., 2024 [51]).

The digitalization of the travel and tourism sector paved the way for the emergence of innovative business models characterized by enhanced value propositions, improved network building, and more effective customer relationship management [38]. This shift is focused on meeting the evolving demands and requirements of travelers [24], acting as a catalyst for the industry's transition from a resource-driven to an innovation-driven approach. This transition facilitates the modernization of traditional cultural and tourism businesses [54], leading to the refinement of business models and processes, improved communication within the tourism market, and increased resilience and commitment to leveraging technology for future growth and sustainability, which was particularly evident during the COVID-19 pandemic [22,55].

The transformation of the hospitality business model is multifaceted. On the one hand, technologies associated with the Fourth Industrial Revolution, such as the Internet IoT, big data, and AI, fundamentally changed the way hospitality organizations operate and interact with their customers [56]. To improve operational efficiency and customer experience, the sector adopted a more consumer-centric approach, embracing self-service technologies [57] and smart technology applications [58,59]. On the other hand, technology also revolutionized customers' behavior and decision-making processes regarding their tourism and travel activities, indicating a profound impact on both the industry and its customers.

4.3. Digital Platforms and Their Role in Redefining Hospitality Business Models

The evolution of hospitality platforms, illustrated through five stages of development that parallel industrial revolutions, reveals a trajectory toward increased digitization and sustainability. This trajectory is visualized in Figure 2, which outlines the transformation of the hospitality business model through the emergence of platforms. Initially, the Hospitality Platform 1.0 and 2.0 phases were characterized by the absence of digital platforms, with the rise of travel agencies in the latter phase marking the beginning of Platform 2.0. Subsequently, Platform 3.0 heralded the arrival of digital platforms with the introduction of global distribution systems (GDS) and OTAs such as Expedia and Priceline. The next phase, Platform 4.0, saw the integration of Industry 4.0 technologies, including big data

and AI, which further advanced the sector. Platform 5.0, the most recent phase, focuses on the digital and sustainable platformization of the hospitality industry.

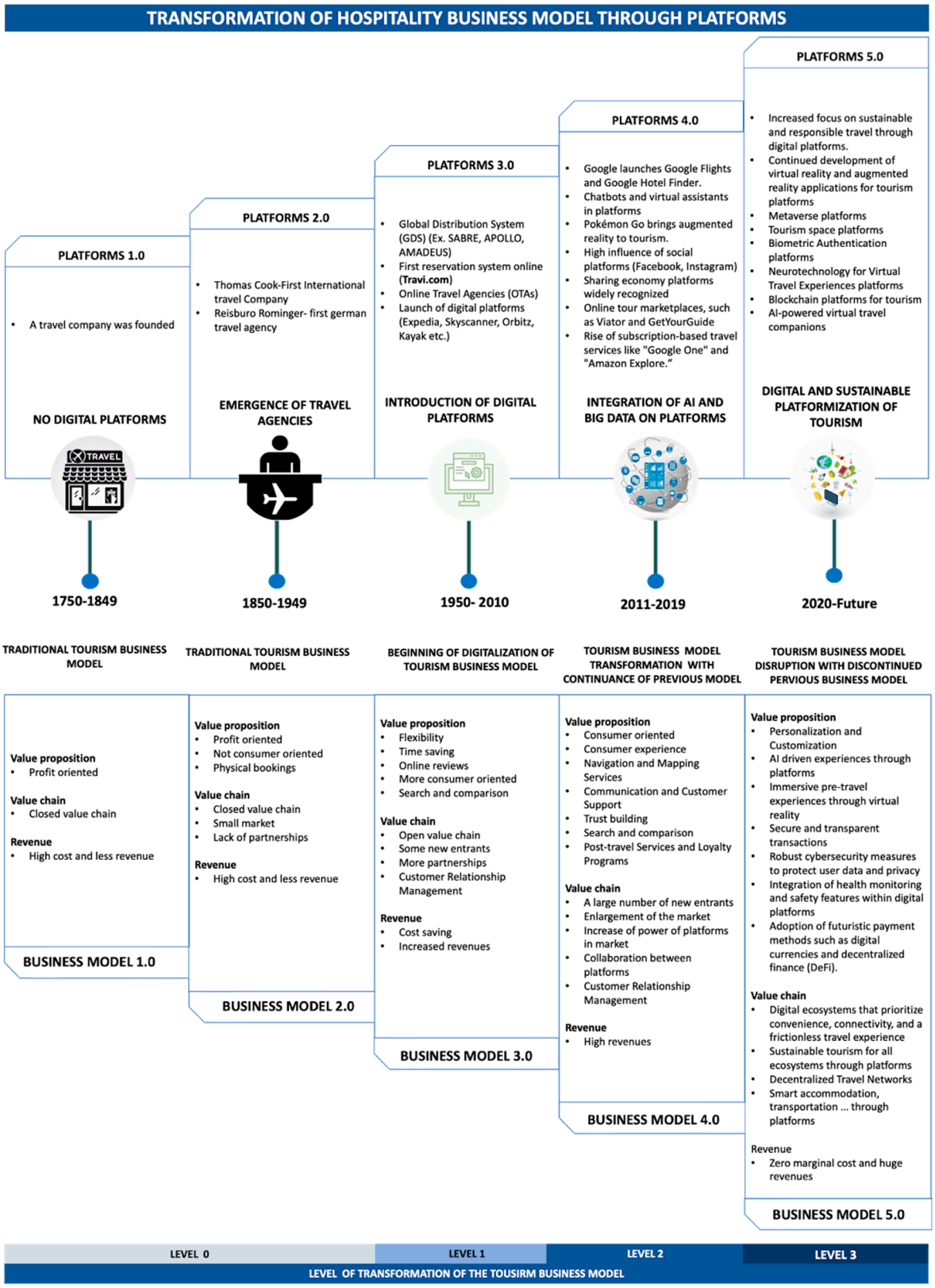


Figure 2. Transformation of hospitality business model driven by platforms.

The introduction and evolution of OTAs significantly changed the hospitality business model. The early 1980s witnessed the emergence of platforms that synthesized adaptability and signaled a shift towards alternative tourism development strategies aimed at maximizing benefits, minimizing costs, and mitigating the impacts of mass tourism [60]. OTAs have become central to hotel room sales and online bookings, underscoring a commitment to meeting customer needs and possessing significant growth potential [61]. This rise in OTA dominance led to increased competition and reduced profit margins for the hotel industry [62]. Within key tourism subsectors, the rise of OTAs disrupted traditional corporate hegemonies and intensified trends toward online market concentration. While independent hotels often lack their own booking engines and rely solely on OTAs for reservations, larger hotel chains managed to reduce their dependence on these distribution channels.

The evolution of platforms in the tourism sector has seen remarkable developments since the inception of OTAs. Initially, the focus was on the creation of online tourism platforms to attract more users and promote the expansion of the tourism economy [63]. Subsequent developments saw the integration of intelligent digital platforms that facilitated the visualization, articulation, and aggregation of tourism products and services. This integration provided personalized tourism experiences [64] that emphasized consumer-centric services, convenience, and transparent pricing [65].These platforms streamlined the booking process, allowing travelers to effortlessly compare options, read reviews, and make informed decisions. In addition, they allowed companies to collect and analyze customer data, resulting in customized services and personalized recommendations [24]. By incorporating digital platforms into various facets of hospitality, from booking accommodations to in-room technology, companies are striving to increase customer satisfaction and ensure seamless experiences throughout the travel journey.

Digital platforms introduced new players to the hospitality industry, significantly expanding the market and changing the nature of service encounters [66]. They emerged as central figures in the global sharing economy, exemplified by companies such as Airbnb, which oversee and profit from the majority of transactions [67,68]. The integration of AI, big data, cloud computing, and machine learning further led to the creation of intelligent tourism platforms. These platforms enhance the tourism service experience and management efficiency [69], establishing their market dominance. Their seamless user interface and the generation of network effects, where the value of the platform increases as more users join, solidified their influence. This dominance poses challenges for new entrants trying to compete, as established platforms already have a critical mass of users that is essential for value creation. As a result, digital platforms exert significant control over the market, making them essential for hospitality companies to navigate the competitive landscape.

Despite the evolving landscape, certain fundamental elements of the hospitality business model remained steadfastly the same [70]. The basic services of providing lodging, food and beverage options, and customer service continue to form the foundation of the industry. Guest expectations for comfortable accommodations, quality dining experiences, and attentive service have not wavered, and these facets remain central to the hospitality value proposition. One notable evolution within the hospitality value chain is the extensive integration of technology into every facet of the guest experience. The emergence of online booking platforms, mobile check-in capabilities, keyless entry systems, and the creation of personalized guest profiles collectively transformed the operational and service dynamics of hotels and restaurants [22,24]. This wave of digital transformation not only streamlined service delivery processes, but also significantly increased operational efficiency and enhanced customer convenience.

4.4. The Future of Hospitality Business Models: Virtual Tourism and Sustainable Innovations

The advancement of AI and machine learning within hospitality platforms will enable predictive analytics to anticipate customer preferences even before travelers express them. This capability will lead to hyper-personalized experiences, from tailored recommenda-

tions for activities to optimizing room settings based on previous visits, thereby enhancing customer loyalty and satisfaction [71]. Moreover, AI is expected to streamline back-end operations by automating routine tasks, such as reservation management and guest inquiries, allowing staff to focus more on personalized guest interactions and strategic service quality improvements.

AR and VR are also poised to become integral components of the future business model. AR technologies will augment physical travel experiences, such as overlaying historical information on a tourist site via smart glasses, while VR allows guests to explore potential destinations virtually before booking. By providing risk-free, immersive previews, VR will significantly influence the decision-making process for potential travelers, particularly for those seeking assurances about safety and amenities [72–74]. This shift towards virtual experiences will play an essential role in attracting customers post-pandemic, promoting destinations by providing vivid, interactive insights.

Another major aspect is the incorporation of the metaverse into the tourism experience, allowing individuals to explore a virtual destination, engage in local activities, or even participate in events—without ever physically being there [75]. This move toward virtual engagement offers an alternative for customers who either cannot travel or prefer sustainable alternatives to physical tourism, thus creating a new paradigm of virtual tourism [76]. Such innovations represent a unique opportunity for the industry to reduce the environmental impact associated with mass tourism and promote green travel initiatives that align with the growing trend towards sustainability and responsible consumption.

Sustainability will be a core focus in the future evolution of hospitality business models, with Industry 5.0 technologies promoting sustainable accommodation, transportation, and experiences [53]. Platforms such as the metaverse, and other forms of virtual tourism, allow travelers to explore destinations while reducing the environmental footprint of their journeys. Additionally, smart technologies will play a significant role in reducing energy and water usage across hospitality operations. Smart accommodation systems that automate lighting, heating, and water systems based on real-time usage will contribute significantly to minimizing resource consumption, thereby promoting environmentally sustainable tourism practices.

The integration of decentralized travel networks is anticipated to revolutionize interactions between tourists and local communities, reducing reliance on traditional intermediaries such as large OTAs [77]. Through blockchain technology and decentralized booking systems, travelers will be able to connect directly with service providers, ensuring greater transparency, cost efficiency, and a more authentic tourism experience. Decentralization could also foster economic inclusivity by enabling local hosts and service providers to directly access a global market, thereby supporting community-based tourism and ensuring a fair distribution of the economic benefits of tourism.

The future of hospitality business models also lies in embracing smart mobility and integrated digital ecosystems. Smart transportation systems, enabled by AI and IoT, will provide seamless travel experiences for tourists, optimizing travel routes, reducing congestion, and enhancing overall efficiency. For instance, connected cars and autonomous shuttles within tourist cities can provide convenient and eco-friendly transportation solutions that align with the concept of smart tourism destinations. The push for smart mobility and sustainable tourism practices reflects the growing emphasis on building resilient tourism ecosystems that can adapt to future challenges while maintaining customer satisfaction and environmental stewardship.

5. Discussion

The transformation observed in the hospitality industry serves to illustrate the broader trend of digital disruption, which is reshaping service sectors on a global scale. The advent of digital technologies and platform innovations ushered in a new era for the industry, wherein traditional business practices are being supplanted by data-driven and customer-centric approaches. However, the accelerated pace of this transformation presents

both opportunities and significant challenges. A significant challenge arises from the growing reliance on platform intermediaries, such as OTAs, which fundamentally altered the competitive landscape. Although platforms provide visibility and access to broader markets, they also create a dependency that can impede profitability and restrict strategic control for smaller businesses.

Furthermore, the transition towards digital platforms intensified the emphasis on data analytics as a means of personalizing services and enhancing customer experiences. This trend represents a notable shift in business strategy, moving from a product-centric focus to an experience-driven value proposition. Nevertheless, this data-centric approach gives rise to significant ethical and regulatory concerns, particularly with regard to data privacy and consumer protection. As hospitality businesses leverage customer data for competitive advantage, they must navigate evolving privacy laws and ensure transparent data practices to maintain consumer trust [14]. Failure to address these concerns could result in adverse effects on the company's reputation and increased regulatory scrutiny.

The advent of new technologies offers promising avenues for innovation, yet they also present significant implementation challenges. Although these technologies have the potential to enhance operational efficiency and create immersive customer experiences [59,71,74,78], they necessitate substantial investment and a workforce with the requisite skills to fully leverage their capabilities. The unequal uptake of these technologies across the industry may intensify existing discrepancies between large, well-resourced firms and smaller, independent operators, resulting in a digital divide that could impact market inclusivity.

The future trajectory of the hospitality industry is becoming increasingly shaped by the growing demand for sustainable and responsible business practices. The incorporation of smart technologies into business models provides a potential avenue for reducing the environmental impact of operations and enhancing resource efficiency. Nevertheless, attaining genuine sustainability necessitates more than merely incorporating green technologies; it entails a thorough reimagining of business models to prioritize long-term environmental and social impacts over immediate financial gains [53]. This transition towards sustainability is not only a strategic imperative, but also a response to mounting consumer awareness and demand for eco-friendly travel alternatives.

The hospitality industry finds itself at a crossroads, where the integration of digital innovation and sustainability into a cohesive strategy is imperative. Those businesses that successfully navigate the challenges of platform dependency, data ethics, technological adoption, and sustainable practices are likely to gain a competitive edge. It would be beneficial for future research to focus on exploring specific case studies of successful adaptation, examining the long-term effects of digital transformation, and investigating the potential risks associated with the rapid adoption of new technologies. By addressing these areas, the industry can develop a more resilient and inclusive framework that balances innovation with ethical and sustainable growth.

6. Conclusions, Limitations, and Future Research Directions

6.1. Conclusions

This paper contributes to the body of research by analyzing the transformation of the hospitality business model in light of advances in digital technologies and the rise of digital platforms. It describes the influence of successive waves of digital technologies on platform players, highlighting their strategic maneuvers and the subsequent evolution of business models and competitive dynamics. Using a systematic literature review, this study explores how the direction of technological progress through platforms is shaping the transformation of the hospitality business model beyond its scope.

Four main conclusions emerge from this study. First, the assimilation of digital technologies fundamentally changed business models within the hospitality industry. From traditional offline marketing and distribution channels to the use of digital platforms, the industry has undergone profound changes to accommodate changing consumer behaviors and preferences. Second, the hospitality industry experienced five technological revolu-

tions, each of which spurred critical adjustments in business operations and customer experiences. From steam-powered transportation to the adoption of Industry 4.0 technologies such as AI and IoT, these revolutions steered the industry toward an innovation-centric model. Third, the emergence of digital platforms, particularly OTAs and smart tourism platforms, disrupted conventional hospitality models. These platforms introduced new value propositions, personalized experiences, and innovative strategies that challenged incumbents and expanded market reach. While digital platforms brought numerous benefits, such as enhanced convenience and personalized services, they also pose challenges, including increased competition and reduced profit margins for traditional entities. Nevertheless, the integration of AI, VR, and AR technologies opens up new opportunities for the industry to redefine value propositions and enrich customer experiences. Finally, the future of the hospitality industry is expected to be characterized by the integration of robotics, AI, and virtual technologies, accelerating the disruption of prevailing business models. These technologies promise to deliver personalized experiences, immersive pre-travel planning, and virtual tours of destinations, transforming the value chain and promoting sustainable tourism practices.

6.2. Limitations and Future Research Directions

This paper, while comprehensive in its analysis, acknowledges certain limitations. First, it is primarily a systematic literature review that lacks empirical validation. Future studies should aim to incorporate data-driven methodologies to provide empirical evidence of how the hospitality business model evolved due to various technological advancements. This empirical approach could provide a more concrete understanding of the impact of technology on the industry. Second, the analysis presented is somewhat general, covering the transformation of the business model in the hospitality industry as a whole. Future research should aim to narrow this scope by focusing on specific countries and platforms. Such targeted analyses could provide nuanced insights into how different regions and platforms uniquely contribute to, and are affected by, the transformation of the industry. Third, while the paper highlights the potential benefits of digitization and platformization in the hospitality industry, it falls short of thoroughly examining the potential challenges, risks, or unintended consequences that may arise from these technological shifts. Future research should go beyond the benefits and critically assess the challenges and risks associated with digitization and platformization. Particular attention should be paid to the ethical dimensions of platform use, including privacy concerns, data security, and the broader societal impact of these technologies on the hospitality industry.

By addressing these limitations, future research can provide a more balanced and in-depth exploration of the dynamic relationship between technology and the hospitality industry, offering valuable insights for both practitioners and academics.

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References

1. Müller, J.M.; Buliga, O.; Voigt, K. Fortune favors the prepared: How SMEs approach business model innovations in Industry 4.0. *Technol. Forecast. Soc. Chang.* **2018**, *132*, 2–17. [CrossRef]
2. Frank, A.G.; De Sousa Mendes, G.H.; Ayala, N.F.; Ghezzi, A. Servitization and Industry 4.0 convergence in the digital transformation of product firms: A business model innovation perspective. *Technol. Forecast. Soc. Chang.* **2019**, *141*, 341–351. [CrossRef]

3. Khan, N.R.; Khan, M.R.; Ghouri, A.M. Industry 4.0 on the way to companies' performance. In *Quality Management, Value Creation, and the Digital Economy*; Routledge: London, UK, 2023; pp. 99–120. [CrossRef]
4. Ancillai, C.; Sabatini, A.; Gatti, M.; Perna, A. Digital technology and business model innovation: A systematic literature review and future research agenda. *Technol. Forecast. Soc. Chang.* **2023**, *188*, 122307. [CrossRef]
5. Beverungen, D.; Kundisch, D.; Wünderlich, N.V. Transforming into a platform provider: Strategic options for industrial smart service providers. *J. Serv. Manag.* **2020**, *32*, 507–532. [CrossRef]
6. Cozzolino, A.; Corbo, L.; Aversa, P. Digital platform-based ecosystems: The evolution of collaboration and competition between incumbent producers and entrant platforms. *J. Bus. Res.* **2021**, *126*, 385–400. [CrossRef]
7. Madanaguli, A.; Parida, V.; Sjödin, D.; Oghazi, P. Literature review on industrial digital platforms: A business model perspective and suggestions for future research. *Technol. Forecast. Soc. Chang.* **2023**, *194*, 122606. [CrossRef]
8. Cranmer, E.E.; Urquhart, C.; tom Dieck, M.C.; Jung, T. Developing augmented reality business models for SMEs in tourism. *Inf. Manag.* **2021**, *58*, 103551. [CrossRef]
9. Ku, E.C.S.; Chen, C.D. Artificial intelligence innovation of tourism businesses: From satisfied tourists to continued service usage intention. *Int. J. Inf. Manag.* **2024**, *76*, 102757. [CrossRef]
10. Imtiaz, S.; Kim, D.J. Digital transformation: Development of new business models in the tourism industry. *Culin. Sci. Hosp. Res.* **2019**, *25*, 91–101. [CrossRef]
11. Kenney, M.; Zysman, J. The rise of the platform economy. *Issues Sci. Technol.* **2016**, *32*, 61–69.
12. Ben Youssef, A. Introducing platforms: A transdisciplinary journal on platform management, services, and policy and all related research. *Platforms* **2023**, *1*, 1–4. [CrossRef]
13. Dahmani, M.; Ben Youssef, A. Unraveling the determinants of platform economy adoption in developing countries: An extended application of the UTAUT2 model with a privacy calculus perspective. *Platforms* **2023**, *1*, 34–52. [CrossRef]
14. Vlassis, A. Platform governance and the politics of media regulation: The review of the European audiovisual media services directive. *J. Digit. Media Policy* **2023**, *14*, 29–46. [CrossRef]
15. Porter, M. Strategy and the internet. *Harv. Bus. Rev.* **2001**, *79*, 63–78.
16. Magretta, J. Why business models matter. *Harv. Bus. Rev.* **2002**, *80*, 86–133.
17. Chesbrough, H. The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies. *Ind. Corp. Chang.* **2002**, *11*, 529–555. [CrossRef]
18. Morris, M.H.; Schindehutte, M.; Allen, J.A. The entrepreneur's business model: Toward a unified perspective. *J. Bus. Res.* **2005**, *58*, 726–735. [CrossRef]
19. Osterwalder, A.; Pigneur, Y. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*; John Wiley & Sons: Hoboken, NJ, USA, 2010.
20. Osterwalder, A.; Pigneur, Y.; Tucci, C.L. Clarifying business models: Origins, present, and future of the concept. *Commun. Assoc. Inf. Syst.* **2005**, *16*, 1. [CrossRef]
21. Alonso, A.D.; Vu Thi Kim, O.; Tran, T.D.; Le, T.M.; Nguyen, T.D.; Nguyen, T.T. Exploring the relationships between Industry 4.0 adoption and business model: The case of Vietnamese hospitality organizations. *Int. J. Hosp. Tour. Adm.* **2024**, *12*, 103837. [CrossRef]
22. Ben Youssef, A.; Redžepagić, S.; Zeqiri, A. The key changes to the hospitality business model under COVID-19. *Strateg. Manag.* **2022**, *27*, 55–64. [CrossRef]
23. Umukoro, I.O.; Onuoha, R.O. Africa's platform and the sharing economy: Introduction, definitions, and conceptualisations. In *Africa's Platforms and the Evolving Sharing Economy*; IGI Global: Hershey, PA, USA, 2021; pp. 1–17.
24. Zeqiri, A.; Dahmani, M.; Ben Youssef, A. Digitalization of the tourism industry: What are the impacts of the new wave of technologies? *Balk. Econ. Rev.* **2020**, *2*, 63–82.
25. Kovalenko, B.; Kolyshkin, A.; Kovalenko, E. Platforms as the terms of organizational leadership in the digital economy. In Proceedings of the 6th International Conference on Social, Economic, and Academic Leadership (ICSEAL-6-2019), Prague, Czech Republic, 3–14 December 2019; Atlantis Press: Amsterdam, The Netherlands, 2020.
26. Maslova, T.; Pletneva, N.; Althonayan, A.; Tarasova, E.; Krasnov, A. Transformation of consumer behavior in the tourism industry in the conditions of digital economy. *IOP Conf. Ser. Mater. Sci. Eng.* **2020**, *940*, 012070. [CrossRef]
27. Acemoğlu, D. Distorted innovation: Does the market get the direction of technology right? *AEA Pap. Proc.* **2023**, *113*, 1–28. [CrossRef]
28. Antonelli, C.; Feder, C. The new direction of technological change in the global economy. *Struct. Chang. Econ. Dyn.* **2020**, *52*, 1–12. [CrossRef]
29. Ben Youssef, A. How can Industry 4.0 contribute to combatting climate change? *Rev. d'Econ. Ind.* **2020**, *170*, 45–67. [CrossRef]
30. Kansakar, P.; Munir, A.; Shabani, N. Technology in the hospitality industry: Prospects and challenges. *IEEE Consum. Electron. Mag.* **2019**, *8*, 60–65. [CrossRef]
31. Kim, M.J.; Lee, C.-K.; Preis, M.W. 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. *Telemat. Inform.* **2020**, *49*, 101349. [CrossRef]
32. Nayyar, A.; Mahapatra, B.; Le, D.N.; Suseendran, G. Virtual reality (VR) & augmented reality (AR) technologies for tourism and hospitality industry. *Int. J. Eng. Technol.* **2018**, *7*, 156. [CrossRef]

33. Nadkarni, S.; Kriechbaumer, F.; Christodoulidou, N.; Rothenberger, M. Industry 4.0 applications towards sustainability in hospitality: First waves in the guest room. *Glob. J. Bus. Res.* **2023**, *8*, 31–48. [CrossRef]
34. Ivanov, S.H.; Webster, C.; Berezina, K. Adoption of robots and service automation by tourism and hospitality companies. *Rev. Tur. Desenvolv.* **2017**, *27/28*, 1501–1517.
35. Lee, M.; Sisson, A.D.; Costa, R.; Bai, B. Disruptive technologies and innovation in hospitality: A computer-assisted qualitative data analysis approach. *J. Hosp. Tour. Res.* **2023**, *47*, NP47–NP61. [CrossRef]
36. Reinhold, S.; Zach, F.; Laesser, C. E-business models in tourism. In *Springer eBooks*; Springer Nature: Berlin, Germany, 2020; pp. 1–30. [CrossRef]
37. Magdalina, A.; Bouzaima, M. An empirical investigation of European airline business models: Classification and hybridization. *J. Air Transp. Manag.* **2021**, *93*, 102059. [CrossRef]
38. Perelygina, M.; Küçükusta, D.; Law, R. Digital business model configurations in the travel industry. *Tour. Manag.* **2022**, *88*, 104408. [CrossRef]
39. Tronvoll, B.; Edvardsson, B. Explaining how platforms foster innovation in service ecosystems. In Proceedings of the 53rd Hawaii International Conference on System Sciences, Maui, HI, USA, 7–10 January 2020. [CrossRef]
40. Rietveld, J.; Schilling, M.A. Platform competition: A systematic and interdisciplinary review of the literature. *SSRN Electron. J.* **2020**, *47*, 1528–1563. [CrossRef]
41. Baumeister, R.F.; Leary, M.R. Writing narrative literature reviews. *Rev. Gen. Psychol.* **1997**, *1*, 311–320. [CrossRef]
42. Ferrari, R. Writing narrative style literature reviews. *Med. Writ.* **2015**, *24*, 230–235. [CrossRef]
43. Yuan, Y.; Hunt, H.R. Systematic reviews: The good, the bad, and the ugly. *Am. J. Gastroenterol.* **2009**, *104*, 1086–1092. [CrossRef]
44. Collins, J.A.; Fauser, C.J.M.B. Balancing the strengths of systematic and narrative reviews. *Hum. Reprod. Update* **2005**, *11*, 103–104. [CrossRef]
45. Wohlin, C. Guidelines for snowballing in systematic literature studies and a replication in software engineering. In Proceedings of the 18th International Conference on Evaluation and Assessment in Software Engineering, London, UK, 13–14 May 2014; pp. 321–330. [CrossRef]
46. Weiermair, K.; Peters, M.; Schuckert, M. Destination development and the tourist life-cycle: Implications for entrepreneurship in alpine tourism. *Tour. Recreat. Res.* **2007**, *32*, 83–93. [CrossRef]
47. Navickas, V.; Petrokė, I.; Bačiulienė, V.; Ključnikov, A. Development of sharing economy-based business models in the tourism sector. *Mark. Manag. Innov.* **2021**, *5*, 43–52. [CrossRef]
48. Ben Youssef, A.; Dahmani, M.; Zeqiri, A. Do e-skills enhance the use of e-services in the hospitality industry? A conditional mixed-process approach. *Int. J. Data Netw. Sci.* **2021**, *5*, 519–530. [CrossRef]
49. O'Regan, M.; Choe, J. Airbnb and cultural capitalism: Enclosure and control within the sharing economy. *Anatolia* **2017**, *28*, 163–172. [CrossRef]
50. Zeqiri, A.; Dahmani, M.; Youssef, A.B. Determinants of the use of e-services in the hospitality industry in Kosovo. *Int. J. Data Netw. Sci.* **2021**, *5*, 369–382. [CrossRef]
51. Zeqiri, A.; Mejri, I.; Ben Youssef, A. *Metaverse and Virtual Reality in Tourism and Hospitality: A Bibliometric Study and Research Agenda*; GREDEG Working Paper; Université Côte d'Azur: Nice, France, 2024.
52. Ben Youssef, A.; Zeqiri, A. Hospitality industry 4.0 and climate change. *Circ. Econ. Sustain.* **2022**, *2*, 1043–1063. [CrossRef] [PubMed]
53. Ben Youssef, A.B.; Mejri, I. Linking digital technologies to sustainability through Industry 5.0: A bibliometric analysis. *Sustainability* **2023**, *15*, 7465. [CrossRef]
54. Liu, Q.; Gao, J.; Li, S. The innovation model and upgrade path of digitalization-driven tourism industry: Longitudinal case study of OCT. *Technol. Forecast. Soc. Chang.* **2024**, *200*, 123127. [CrossRef]
55. Sanjeev, G.; Tiwari, S. Responding to the coronavirus pandemic: Emerging issues and challenges for Indian hospitality and tourism businesses. *Worldw. Hosp. Tour. Themes* **2021**, *13*, 563–568. [CrossRef]
56. Balasubramanian, K.; Ragavan, N. What are the key challenges faced by the Malaysian hospitality and tourism industry in the context of industrial revolution 4.0? *Worldw. Hosp. Tour. Themes* **2019**, *11*, 194–203. [CrossRef]
57. Schrier, T.; Erdem, M.; Brewer, P. Merging task-technology fit and technology acceptance models to assess guest empowerment technology usage in hotels. *J. Hosp. Tour. Technol.* **2010**, *1*, 201–217. [CrossRef]
58. Abdelmoaty, G.; Soliman, S. Smart technology applications in tourism and hospitality industry of the new administrative capital, Egypt. *J. Assoc. Arab Univ. Tour. Hosp.* **2020**, *19*, 102–129. [CrossRef]
59. Ogbeide, G. Generation Y and Z perceptions of hospitality self-service technology. *Events Tour. Rev.* **2022**, *5*, 30–38. [CrossRef] [PubMed]
60. Triarchi, E.; Karamanis, K. The evolution of alternative forms of tourism: A theoretical background. *Bus. Entrep. J.* **2017**, *6*, 39–59.
61. Wei, J.; Hou, Z.; Zhou, X. Research on the influence of emotional intelligence and emotional labor on the service recovery effect of online travel agencies. *Front. Psychol.* **2021**, *12*, 735756. [CrossRef] [PubMed]
62. Lv, X.; Li, N.; Xu, X.; Yang, Y. Understanding the emergence and development of online travel agencies: A dynamic evaluation and simulation approach. *Internet Res.* **2020**, *30*, 1783–1810. [CrossRef]
63. Jin, L.; Hu, B. Influencing factors of online product decision-making oriented to tourism economy under the guidance of consumer psychology. *Front. Psychol.* **2022**, *13*, 950754. [CrossRef]

64. Maquera, G.; da Costa, B.B.F.; Mendoza, Ó.; Salinas, R.A.; Haddad, A.N. Intelligent digital platform for community-based rural tourism: A novel concept development in Peru. *Sustainability* **2022**, *14*, 7907. [CrossRef]
65. Marino, A.; Pariso, P.; Picariello, M. Digital platforms and entrepreneurship in the tourism sector. *J. Entrep. Sustain. Issues* **2022**, *9*, 282–303. [CrossRef]
66. Högberg, K. Strategic Responses to Digital Disruption: An Exploratory Study of Digital Transformation in Hospitality. *Association for Information Systems*. 2021. Available online: https://aisel.aisnet.org/amcis2021/org_transform/org_transform/10/ (accessed on 15 July 2024).
67. Gössling, S.; Hall, C. Sharing versus collaborative economy: How to align ICT developments and the SDGs in tourism? *J. Sustain. Tour.* **2019**, *27*, 74–96. [CrossRef]
68. Gandia, R.; Parmentier, G. Managing open innovation through digital boundary control: The case of multi-sided platforms in the collaborative economy. *J. Innov. Econ.* **2020**, *32*, 159–180. [CrossRef]
69. Wang, W. Design of cloud computing database and tourism intelligent platform based on machine learning. *J. Cloud Comput.* **2023**. [CrossRef]
70. Breier, M.; Kallmuenzer, A.; Clauß, T.; Gast, J.; Kraus, S.; Tiberius, V. The role of business model innovation in the hospitality industry during the COVID-19 crisis. *Int. J. Hosp. Manag.* **2021**, *92*, 102723. [CrossRef] [PubMed]
71. Kazak, A.; Chetyrbok, P.; Oleinikov, N. Artificial intelligence in the tourism sphere. *IOP Conf. Ser. Earth Environ. Sci.* **2020**, *421*, 042020. [CrossRef]
72. Yenny, M.; Wiweka, K.; Wachyuni, S.; Adnyana, P. How are holiday photography startups "disrupting" Indonesia tourism business? *South Asian J. Soc. Stud. Econ.* **2020**, *6*, 62–77. [CrossRef]
73. Pahlevi, A.; Sayono, J.; Hermanto, Y. Design of a virtual tour as a solution for promoting the tourism sector in the pandemic period. *Kne Soc. Sci.* **2021**, *5*, 368–374. [CrossRef]
74. Zeqiri, A. Virtual tourism as a substitute for physical tourism during COVID-19 pandemic. *Environ. Econ. Policy Stud.* **2024**, *26*, 125–144. [CrossRef]
75. Filimonau, V.; Ashton, M.; Stankov, U. Virtual spaces as the future of consumption in tourism, hospitality, and events. *J. Tour. Futures* **2022**, *10*, 110–115. [CrossRef]
76. Go, H.; Kang, M. Metaverse tourism for sustainable tourism development: Tourism agenda 2030. *Tour. Rev.* **2022**, *78*, 381–394. [CrossRef]
77. Volchek, K.; Brysch, A. Metaverse and tourism: From a new niche to a transformation. In *Tourism Studies*; Springer: Cham, Switzerland, 2023; pp. 300–311. [CrossRef]
78. Zeqiri, A.; Dahmani, M.; Maherzi, T. The City as a Service: Unlocking the Potential of Augmented Reality in Tourism and Hospitality. In *AI, Blockchain, and Metaverse in Hospitality and Tourism Industry 4.0: Case Studies and Analysis*; Chapman and Hall/CRC: Boca Raton, FL, USA, 2024; pp. 118–129. [CrossRef]

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