

# Technological Mediation and AI for Agility in Hospitality and Tourism: A Sociological Analysis through the Lens of Structuration and Network Theory

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## ABSTRACT

*This study explores how AI and future technologies enhance Agility in the hospitality and tourism sectors, using network and structuration theories. AI-driven solutions, such as predictive analytics and automated customer service, have made these industries more responsive to market demands by transforming customer-provider interactions. Giddens' Structuration Theory reveals how AI shapes and is shaped by human behavior, influencing organizational strategy, consumer engagement, and decision-making. It emphasizes how AI integration creates new norms, power dynamics, and workforce roles. Network Theory highlights the importance of digital connectivity, allowing businesses to adapt quickly to market shifts. The study also examines the social impacts of AI, including changes in labor dynamics and customer experiences. Using secondary research, it offers a sociological perspective on AI's transformative effects, providing valuable insights for academics, industry professionals, and policymakers.*

**Keywords:** Agility, Organizational strategy, Human behavior, Artificial intelligence, Tourism and hospitality.

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# 1. INTRODUCTION

## 1.1 Overview of AI and Technological Mediation in Hospitality and Tourism

The Significant transformation in hotel and tourism sector is due to artificial Intelligence (AI) which increased efficiency and agility. Artificial intelligence (AI)-driven technologies, like chatbots, automated service systems, and predictive analytics, have completely changed how businesses interact with their customers, streamlined processes, and improved decision-making. These technologies create an industry environment that is more dynamic and adaptable by enabling businesses to anticipate and respond to consumer needs with unprecedented speed and precision. To comprehend the impact of artificial intelligence (AI) on the hospitality and tourism industry, it is necessary to analyze how these technologies influence and transform organizational procedures as well as customer experiences.

## 1.2 Purpose and Scope of the Study

This research attempts to investigate, via a sociological perspective, how artificial intelligence (AI) and technological mediation affect agility in the hospitality and tourism industries. The study looks at how these technologies affect industry dynamics, organizational structures, and social interactions by using Structuration Theory and Network Theory. The study's scope encompasses an analysis of how artificial intelligence (AI) alters power dynamics and decision-making processes within organizations, drawing on structural theory, as well as how digital networks promote agility and interconnectedness within the industry, drawing on network theory. The objective is to give a thorough grasp of the interactions between sociological and technological developments, providing insights into the wider ramifications for business practices and societal effects.

## 1.3 Sociological Relevance of Structuration Theory and Network Theory

Artificial Intelligence (AI) has emerged as a transformative force in various sectors, from healthcare and education to governance and finance. (Dinker,2024). For a critical sociological analysis of the impacts of artificial intelligence and technological mediation in hospitality and tourism, structuration theory and network theory provide valuable insights. Anthony Giddens' Structuration Theory highlights how technology is both a shaping force and a byproduct of human agency. This theory contributes to the understanding of how AI technologies, under the constant influence of human behavior within these systems, reconfigure power relations and organizational structures. Conversely, Network Theory concentrates on the intricate web of connections and exchanges made possible by digital technologies. It sheds light on how networks enhanced by AI can become more connected and agile, allowing companies to react quicker to shifts in the market and in the behavior of their customers. When combined, these theories provide a sophisticated comprehension of the sociological implications of technological advancements in the industry, highlighting the transformative impact of AI on social practices and organizational dynamics.

This paper provides a more thorough and theoretically sound examination of the societal ramifications of AI by contrasting Structuration Theory and Network Theory with these alternative viewpoints. It critically analyzes how AI reconfigures labor, governance, and socioeconomic structures in the hotel and tourism industries, moving beyond a functionalist perspective of AI as a neutral enabler of efficiency. A fuller comprehension of the conflicts and power imbalances present in AI-driven changes is made possible by this multifaceted approach.

Some contend that Structuration Theory limits true agency by underestimating the structural limitations placed on AI in the hospitality industry by corporate control. Furthermore, Network Theory may be criticized for ignoring socioeconomic disparities in the adoption of AI and placing too much emphasis on technological connectivity. Large hotel chains may gain disproportionately from the digital divide while small enterprises are marginalized, perpetuating current power imbalances. Additionally, there are worries about job deskilling, human contact degradation, and the commodification of cultural experiences due to AI-driven mediation in tourism. In order to address these criticisms, the hotel industry must incorporate participatory governance models and ethical AI frameworks to strike a balance between equitable, human-centered innovation and technical agility.

## 2. REVIEW OF LITERATURE AND BACKGROUND OF THE STUDY

**2.1. Jacques Bulchand-Gidumal (2020)** *asserts that artificial intelligence is revolutionizing various sectors, particularly tourism and travel. The progress in this field is propelled by big data, enhanced processing capabilities, and sophisticated algorithms. Notable applications of AI within the travel industry include voice recognition, predictive analytics, personal travel assistants, technologies for personalization, and language translation services. The core elements of AI systems encompass hardware, software, data, and connectivity. While AI offers numerous benefits, it also presents challenges such as user acceptance, the potential displacement of human jobs, and ethical considerations. A comprehensive approach will be essential to mitigate risks and optimize benefits.*

**2.2. Bulchand-Gidumal et al. (2023)** *indicate that advancements in artificial intelligence are catalyzing a digital transformation within the tourism sector. AI applications are already influencing various aspects of the travel industry, facilitating automation, personalization, and improved customer engagement. Key impacts of artificial intelligence on marketing include tailored marketing strategies, enhanced customer relationship management systems, and predictive marketing analytics that bolster revenue management. The research utilized a grounded theory approach, which involved three interconnected phases: expert focus groups, follow-up surveys, and interviews. Successful implementation of AI necessitates the integration of technology within organizations.*

**2.3. Dogru et al. (2023)** highlight that generative artificial intelligence (GAI) possesses the capability to create diverse and original content. Among the various GAI tools available are ChatGPT, DALL-E 2, BingAI, Bard, and others. As tools continue to evolve, the hospitality and tourism industries are uniquely positioned to navigate both significant challenges and a multitude of innovative opportunities. This paper critically examines the implications of tools applications for a wide array of industrial and social stakeholders. The study addresses the call for comprehensive models and frameworks for these tools across different sectors, as articulated by Mondal and colleagues.

### 3. OBJECTIVES

- » To examine the impact of digital platforms and artificial intelligence (AI) on decision-making processes and operational flexibility within the hospitality and tourism sectors.
- » To assess the agility frameworks present in the travel and hospitality industries, emphasizing key components that enhance organizational adaptability and responsiveness to evolving market dynamics.
- » To explore how Structuration Theory elucidates the interplay between technology and human agency in shaping organizational structures and practices within the travel and hospitality domains.
- » To analyze the significance of network theory in understanding the interactions and collaborations among stakeholders (including businesses, customers, and technology providers) that drive innovation and agility within the industry.
- » To identify the challenges associated with the integration of AI and technology while also exploring the potential opportunities that arise.

## 4. RESEARCH METHODOLOGY

### 4.1 Research Design

This study adopts a **qualitative research design** using **secondary data analysis** to explore the role of **technological mediation and AI in enhancing agility** in the hospitality and tourism industry. The study is grounded in **Structuration Theory (Anthony Giddens, 1984)** and **Network theory** to analyze how AI mediates human interactions, reconfigures institutional structures, and fosters agility in the tourism sector.

### 4.2 Data Collection Method

The study relies on **secondary data sources**, which include academic literature, industry reports, case studies, and market research reports.

### Academic Literature

To establish a theoretical foundation, the study reviewed **peer-reviewed journal articles** on AI in tourism and hospitality, along with research on sociological theories related to

technology and organizational agility. These sources provided insights into the **sociological impact of AI in reshaping human interactions and institutional frameworks** within the hospitality sector.

## Industry Reports & White Papers

The study examines **key industry reports and white papers** to understand real-world applications and trends in AI-driven hospitality.

## Case Studies

To explore the practical applications of AI in hospitality, the study analyzed case studies from major industry leaders, showcasing how AI-driven decision-making enhances agility, customer satisfaction, and operational efficiency.

These case studies demonstrate how AI is revolutionizing the hospitality industry by improving decision-making, enhancing efficiency, and personalizing services, ultimately leading to better business performance and customer satisfaction.

## 4.3 Data Analysis Approach

The collected secondary data has been analyzed using the following methods:

### A. Thematic Content Analysis

Thematic analysis has used to **identify key themes** in AI-driven agility, technological mediation, and customer interaction. Help of **qualitative coding software has taken** in organizing and analyzing textual data from reports, articles, and case studies.

### B. Comparative Analysis

A **comparative analysis** used to examine **AI adoption trends across different hospitality sectors**, such as hotels, travel agencies, and airlines.

### C. Case Study Approach

A **case study approach** will be used to assess **Hilton, Marriott, and Airbnb** as AI adopters. This will provide deeper insights into how AI has impacted **operational efficiency, customer satisfaction, and overall industry agility**.

## 4.4 Tools of Data Collection

*Case study methods are commonly employed to explore the practical applications of AI technologies and their sociological implications through detailed, context-specific examples. These studies allow researchers to analyze how AI influences interactions among various stakeholders, such as customers, employees, and management, while also examining how these technologies alter organizational routines and power dynamics within specific hotels, travel agencies, or tourism*

platforms.

*The primary aim of online content analysis is to investigate digital materials related to the implementation of AI in the travel and hospitality industries. This research focuses on online forums, reviews, and platforms where both experts and clients share their experiences with artificial intelligence in these sectors.*

*Data sources for this analysis included online customer reviews from platforms like TripAdvisor and Google, which showcase AI-enhanced services, as well as industry forums and blogs where hospitality professionals discuss AI integration. Additionally, social media discussions regarding AI experiences in the hospitality field were also considered.*

## 5. RESULT OF THE STUDY

The growing use of AI in the travel and hospitality industry emphasizes how technology mediates business processes and customer experiences. AI-driven customisation tactics are essential to the tourist industry's revival since they allow companies to adjust to changing consumer tastes, according to UNWTO (2021). AI actively reconfigures agency in the hospitality sector rather than serving as a passive instrument, according to structuration theory (Giddens, 1984). By maximizing resource allocation and enhancing operational efficiency, AI-powered solutions such as dynamic pricing models (Airbnb, 2021) and predictive analytics (McKinsey, 2022) have an impact on decision-making structures. Traditional hospitality positions are being redefined by this interaction between technology and human agency, which also improves company agility and shapes customer interactions and expectations.

According to network theory, the growing interconnectedness of digital platforms, service providers, and customers is reflected in AI's position in the hospitality industry. The World Economic Forum (2023) highlights the changing relational dynamics within digital tourist ecosystems by highlighting how AI-driven automation strikes a balance between operational efficiency and the requirement for human participation. Similarly, AI's role in growing tourist networks through big data and IoT is highlighted in the OECD's (2020) report on digital transformation, which promotes a more resilient and responsive sector structure. According to network theory, AI-powered platforms build highly interconnected, decentralized networks where travelers, hotels, and airlines may communicate in real time. By lowering inefficiencies, facilitating quick adaptation to changes in the market, and encouraging dynamic, data-driven decision-making in the hospitality and tourism industries, this interconnection improves agility.

## CASE STUDIES

### A. Marriott International

The focus is on the implementation of AI-driven customer service tools, including chatbots and mobile applications. Marriott International's adoption of these AI technologies significantly improves operational flexibility and customer interaction. By automating standard inquiries and offering round-the-clock support, these tools enhance operational efficiency, enabling staff to concentrate on more intricate tasks that necessitate human involvement. This approach not only boosts productivity but also optimizes resource management, which is essential in the competitive landscape of the hospitality industry. Utilizing Structuration Theory, the analysis examines how these technologies transform agency within Marriott's organizational framework. This theory posits that agency is shaped by the rules and resources embedded in an organization's social systems. The incorporation of AI tools allows employees to redefine their responsibilities; for example, frontline personnel can transition from monotonous customer service duties to roles that prioritize relationship development and tailored service. Additionally, customers become active participants in this framework as they engage with AI systems designed to meet their preferences and requirements, resulting in a more customized experience. This mutual interaction between technology and human agency not only empowers both employees and customers but also cultivates a more adaptable organizational culture, ultimately strengthening Marriott's competitive position in the hospitality industry.

### B. Airbnb

Airbnb's implementation of digital platforms to facilitate peer-to-peer accommodations and experiences illustrates a network structure that encourages flexibility and swift adaptation to market fluctuations. By directly connecting hosts and guests, Airbnb removes traditional intermediaries, thereby offering a wide array of lodging choices and tailored experiences that align with shifting consumer preferences. The platform's dependence on user-generated content, especially reviews and ratings, is vital in shaping customer experiences. These reviews not only foster trust and transparency but also impact the decisions of potential guests, creating a dynamic feedback mechanism that motivates hosts to enhance their offerings. This inclusive approach to content allows for ongoing adjustments and innovations based on immediate customer feedback, enabling hosts to swiftly respond to evolving market demands and guest expectations. Additionally, this network structure empowers hosts to operate autonomously while reaping the benefits of Airbnb's extensive user base. Such flexibility cultivates a responsive environment where both hosts and guests can adapt to emerging trends, including preferences for unique experiences or sustainable travel options. At last, Airbnb's model exemplifies how digital platforms can utilize community-driven content to improve adaptability and resilience in a rapidly evolving market landscape.

### C. Hilton Hotels

The implementation of the "Connected Room" initiative which incorporates Internet of Things



(IoT) and artificial intelligence (AI), markedly improves personalized guest experiences while promoting agility and operational efficiencies. By integrating advanced technology, guests are empowered to tailor their room settings—such as lighting, temperature, and entertainment—via mobile applications or voice commands, thus creating a customized environment that reflects their individual preferences. Analyzing this through the perspective of Network Theory, the technological integration fosters a network of interactions among guests, staff, and systems. The interconnected devices within the Connected Room collect data on guest behaviors and preferences, to make real-time adjustments. This adaptive network allows the organization to swiftly recognize trends and modify services accordingly, thereby enhancing customer satisfaction and loyalty. Furthermore, the efficiencies achieved through automation alleviate the workload on staff, enabling them to concentrate on more valuable interactions rather than routine tasks. As the network of smart devices communicates and exchanges information, operational processes are streamlined, resulting in quicker response times and reduced overhead costs. Ultimately, the Connected Room initiative exemplifies how the utilization of IoT and AI not only personalizes guest experiences but also fosters a flexible and efficient operational framework capable of rapidly responding to evolving consumer demands.

#### **D. Expedia Group**

AI algorithms designed for personalized travel recommendations and pricing strategies are transforming the travel planning landscape by improving the connectivity among various participants in the travel ecosystem. These advanced technologies process extensive datasets, including user preferences, historical behaviors, and market dynamics, to provide customized travel options that align with the desires of individual travelers. Such a high degree of personalization not only elevates customer satisfaction but also cultivates brand loyalty, as users perceive themselves as understood and appreciated. Regarding adaptability, AI-enhanced pricing strategies empower companies to modify prices in real-time based on demand shifts, competitor movements, and seasonal variations. This level of responsiveness enables travel firms to maximize revenue while offering competitive pricing to consumers. By incorporating AI into their marketing initiatives, businesses can more accurately identify target demographics and execute timely, relevant campaigns tailored to specific market segments. Additionally, the interconnected structure of the travel ecosystem—which includes airlines, hotels, online travel agencies, and local attractions—reaps the benefits of these AI advancements. As stakeholders exchange insights and data through integrated platforms, they can more effectively anticipate traveler requirements and collaborate on bundled offerings. This collaborative approach enriches the overall travel experience, ensuring that all stakeholders—travelers, providers, and marketers—gain from a more agile, responsive, and customer-focused travel planning process.

#### **E. Booking.com**

The implementation of machine learning at Booking.com for dynamic pricing and inventory management greatly improves its ability to respond to market demand and competitive pressures.



By examining real-time data regarding user interactions, competitor pricing strategies, and seasonal patterns, machine learning algorithms can adjust prices and inventory levels in real time. This technological advancement allows Booking.com to maintain competitive pricing while maximizing inventory use, ensuring that accommodations are booked even during slower periods. Such a flexible strategy enables the platform to quickly adapt to market changes, effectively balancing supply and demand. When viewed through the lens of Structuration Theory, which investigates the interplay between human agency and organizational frameworks, it becomes evident how these AI-driven innovations transform both organizational practices and consumer interactions. For Booking.com, the integration of machine learning modifies conventional decision-making processes within the organization. Rather than depending on fixed pricing models or manual interventions, AI systems consistently shape pricing strategies, thereby redefining employee roles to focus more on strategic initiatives such as customer engagement and partnership development. From the consumer's viewpoint, these technologies influence the manner in which users engage with the platform. Dynamic pricing fosters a sense of urgency and encourages prompt decision-making, while tailored offers address individual preferences, thereby enhancing the customer experience. Consequently, machine learning not only boosts Booking.com's operational effectiveness but also reconfigures the dynamics between the company, its workforce, and its clientele.

## F. Taj Hotels

The incorporation of artificial intelligence and mobile technology at Taj Hotels significantly improves customer service and operational efficiency while altering the sociological dynamics within the organization. By implementing AI-driven solutions for personalized services—such as virtual concierges, mobile check-ins, and real-time assistance for guests—Taj Hotels enhances the overall customer experience and optimizes resource allocation. Nevertheless, this technological evolution carries substantial implications for employee roles and customer interactions. Analyzing this through the framework of Structuration Theory reveals that the integration of AI redistributes agency within the organization. Employees, who previously handled customer service functions such as bookings, check-ins, and basic inquiries, are now transitioning to positions that focus on complex problem-solving and managing guest relationships. This shift in responsibilities allows employees to engage in higher-value activities, thereby redefining their roles within the organizational hierarchy. AI serves as a pivotal element in transforming the human-digital interface, affecting how both staff and customers engage with one another. From the viewpoint of Network Theory, these technologies create an interconnected ecosystem among staff, customers, and automated systems, promoting a dynamic network of interactions. Guests utilize mobile platforms, AI applications, and employee support, resulting in a flexible and responsive network that caters to individual preferences. This interconnectedness not only boosts operational agility but also redefines relationships by merging human and digital interactions, evolving the traditional service model into a more cohesive, technology-enhanced experience.

## G. Klook

Klook's digital platform for booking travel experiences and activities employs artificial intelligence to deliver personalized recommendations, establishing a responsive and flexible network model that quickly adapts to shifting consumer preferences and market dynamics. By harnessing AI, Klook processes extensive user data, including browsing habits, previous bookings, and current market trends, to create customized travel experiences that resonate with individual traveler interests. This tailored approach significantly boosts customer engagement and satisfaction, as users receive suggestions that align closely with their changing preferences.

The network model is pivotal to Klook's responsiveness. The platform integrates a diverse range of stakeholders, such as local experience providers, travelers, and third-party collaborators. This interconnected framework facilitates real-time updates and modifications based on customer actions and market fluctuations. For example, as the demand for specific experiences varies, Klook can modify its offerings and promotions accordingly, ensuring that travelers consistently have access to relevant and timely options. The use of AI enhances Klook's capacity for rapid adaptation. As data circulates among various nodes within the network—comprising users, service providers, and AI systems—Klook can react to market changes more effectively than conventional models. This agility guarantees that the platform remains competitive, continually providing value to both customers and partners in an ever-evolving travel environment.

The study's conclusions are consistent with previous and current research on the use of AI in the travel and hospitality industries. AI's ability to automate repetitive operations, increase productivity, and lower operating costs was highlighted in earlier research. Nonetheless, recent studies demonstrate AI's revolutionary potential in influencing organizational structures and customer experiences. AI's ability to reinterpret staff responsibilities is exemplified by Marriott International and Taj Hotels; previous research on automation and labor adaptation has also noted this change. Similar to earlier studies on digital platforms that promote peer-to-peer interactions, Airbnb and Klook support network-based models of service delivery. Expedia Group and Booking.com's use of AI in dynamic pricing supports recent research on data-driven decision-making, increasing flexibility and competitiveness. Hilton's Connected Room program, which emphasizes customized visitor experiences, is in line with current research on IoT integration. All things considered, these results support AI's dual function in improving operational effectiveness and changing how people engage with technology in the hotel sector.

## Focussed Group Discussions

Discussions encompassed hotel managers, front-line staff, AI developers, and customers, focusing on the influence of AI on operational efficiency, workforce dynamics, customer experience, and challenges such as costs and data privacy.

- » A. Hotel Managers emphasized the operational efficiencies that AI can bring, including the automation of administrative tasks, the optimization of dynamic pricing, and

enhancements in customer relationship management through tools like chatbots. They underscored the necessity for a thorough cost-benefit analysis prior to implementation, as significant initial investments and a shortage of skilled personnel were identified as obstacles to successful AI integration.

- » B. Front-line Employees conveyed a mix of enthusiasm and apprehension. While AI has alleviated their workload in areas such as guest check-ins and query management, they expressed concerns regarding the potential for AI to supplant human roles, particularly in customer-facing positions. They advocated for AI to serve as a complement to human labor rather than a substitute, highlighting the importance of collaboration between humans and AI in service delivery.
- » C. AI Developers shared their perspectives on the technical hurdles associated with AI implementation in the hospitality industry. They noted the challenges of creating AI solutions that address the varied cultural needs of a global clientele. Additionally, they emphasized the critical nature of data security and privacy, given that AI applications involve the collection and processing of substantial amounts of personal information.
- » D. Customers exhibited varied responses to AI technologies. While they recognized the convenience and personalization offered by AI-driven services, such as customized recommendations and expedited service, many still favored human interaction, particularly in managing complex or emotionally charged situations. They appreciated the human element in hospitality, advocating for a hybrid approach that combines AI and human service.

The findings are supported by recent research that highlights AI's potential to improve productivity and personalization while posing questions regarding data privacy and job displacement. The impact of automation on worker dynamics has been emphasized in previous study, and comparable discussions have taken place after previous technology transitions in the hospitality industry. While current study recognizes AI's expanding significance in customer engagement, studies from the early 2000s emphasized human interaction as a fundamental component of service. Today's findings, in contrast to earlier talks, emphasize the necessity of AI-human partnership rather than replacement. The changing conversation emphasizes the need to strike a balance between preserving the human element in hospitality services and technology advancement.

## **Institutional Reports and Strategies**

AI's growing application in the hotel and tourist sectors has changed stakeholder interactions and improved operational agility, changing the dynamics of the sector. AI-driven personalization tactics that let companies react quickly to changing customer preferences are highlighted in reports like the UNWTO (2021), which is consistent with structuration theory's focus on the duality of structure and agency. As AI mediates decision-making processes and impacts institutional practices, McKinsey & Company (2022) emphasizes AI's role in maximizing efficiency and customer experience. As demonstrated in the World

Economic Forum (2023) report, which examines how automation creates new service ecosystems while preserving the human element in tourism, AI-driven platforms enable dynamic linkages among actors from the standpoint of network theory. These revelations cast AI as an active force that transforms corporate processes and customer interaction, challenging conventional ideas of it as a passive tool.

The quick uptake of AI, however, prompts questions about power imbalances, technological mediation, and socio-technical hazards. Digital revolution in tourism is covered in the OECD Report (2020), which highlights the unequal distribution of AI advantages and possible labor market disruptions. While AI-mediated decision-making increases agility, it also changes organizational power dynamics by establishing new dependencies or strengthening existing ones.

While Network Theory demonstrates the interdependencies between AI-driven platforms and human agents, Structuration Theory helps put these shifts in context by showing how AI is incorporated into social activities. AI's use in hospitality is made more difficult by ethical issues like privacy and data protection, which need for a well-rounded strategy that incorporates both automation and human labor. By combining these viewpoints, our approach reinterprets AI as a revolutionary force that mediates connections, reorganizes agency, and reimagines hospitality and tourism in the digital era, rather than merely as an efficiency tool.

Some reports and strategies categorized according to key themes such as "technological mediation" (the role of AI in facilitating interactions between systems and users), "structuration" (the integration of AI into organizational practices), and "network dynamics" (the connections AI creates among stakeholders and its impact on agility).

### **Marriott International – AI-Driven Personalization Strategy:**

Marriott has detailed its strategy regarding AI in customer relationship management within its loyalty program, Bonvoy, in various reports. The documentation illustrates how AI analyzes customer preferences to customize services for a more personalized experience. Algorithms powered by AI predict customer behavior and provide tailored promotions. The theme of "technological mediation" is evident in Marriott's use of AI to enhance customer interactions, while "network dynamics" are highlighted through the incorporation of guest data into the wider service ecosystem.

### **Accor Hotels – AI-Assisted Dynamic Pricing Models:**

In its strategy document, Accor employs AI to refine pricing through real-time data analysis, adjusting room rates in response to demand and competitor pricing. This approach enhances organizational agility, enabling the chain to swiftly adapt to market fluctuations. The theme of "structuration" is relevant as Accor's AI tools transform pricing strategies, embedding

technological decision-making within the company's operations.

### **Hilton Worldwide – AI Integration in Customer Service**

According to its strategic report, Hilton utilizes AI chatbots, such as "Connie," to automate customer service, providing support around the clock. AI tools also handle guest feedback, analyze trends, and recommend enhancements. The theme of "technological mediation" is reflected in AI's direct interaction with guests, facilitating human-to-machine interfaces, while "network theory" is illustrated by the connection of customer inquiries with back-end systems and human staff.

### **Airbnb – AI-Enhanced Host-Guest Interactions**

Airbnb's report details the role of artificial intelligence in facilitating interactions between hosts and guests. AI technologies aid in automating property listings, optimizing pricing strategies, and suggesting accommodations tailored to user preferences. Airbnb employs AI to identify and mitigate fraudulent activities, thereby enhancing security for all involved parties. The report explores themes related to how AI influences the structural dynamics between hosts and guests (structuration), while "network dynamics" illustrate the connections among hosts, guests, and internal systems, ensuring smooth operational processes.

### **World Tourism Organization (UNWTO) – Global Report on AI in Tourism**

The World Tourism Organization (UNWTO) presents a comprehensive report that offers a global perspective on the application of AI in the tourism sector, featuring case studies from various nations. It examines the transformative potential of AI in tourism operations, focusing on enhanced personalization and improved efficiency. This report underscores significant global trends in "network dynamics," investigating how AI interlinks diverse tourism stakeholders through platforms, policy frameworks, and technological innovations.

### **Skift Research – AI and Technology Trends in Travel**

Skift Research's publication centers on the trends surrounding AI and technology in the travel industry. It highlights the implementation of AI for personalized customer experiences, dynamic pricing models, and operational efficiencies across the travel sector. The report includes case studies from airlines, hotels, and tour operators that have integrated AI to enhance their competitiveness. Key themes include "technological mediation" and the changing roles of humans and AI in providing hospitality and tourism services, with an analysis of how AI influences decision-making processes within the travel stakeholder network.

Recent research supports the findings by highlighting AI's revolutionary potential in the hospitality industry through dynamic pricing, personalization, and increased productivity. While Hilton and Airbnb's AI apps support research on technology mediation in service industries, Marriott and Accor's AI plans mirror recent studies on data-driven decision-making. Reports from Skift and the UNWTO confirm AI's influence on international travel

networks. Prior research on automation in the hospitality industry concentrated on increasing efficiency but lacked AI's capacity for personalization and prediction. Today's research emphasizes AI's integration into fundamental business models, indicating a move toward AI-driven operational structuration, in contrast to previous viewpoints that saw AI as supplemental.

## 6. SOCIOLOGICAL IMPLICATIONS

From the perspective of Structuration Theory (Giddens, 1984), artificial intelligence technologies are not simply tools utilized by organizations; rather, they are fundamentally transforming the frameworks within which hospitality services function. These technologies modify the established norms and routines governing human interactions in the industry. For example, AI-enabled systems such as chatbots, automated check-in processes, and personalized data applications are supplanting conventional face-to-face engagements, thereby altering the essence of customer service and the roles of employees. This transformation exemplifies the duality of structure, wherein AI acts as both a facilitator and a product of human agency. Employees are required to adjust to new interaction modalities, acquiring technical competencies, while businesses gain agility by swiftly responding to customer needs and market fluctuations. Consequently, the interaction between technology and human agency reconfigures organizational practices, workflows, and decision-making frameworks.

Network Theory (Latour, 2005) further elucidates the role of technological mediation by examining the intricate relationships within the tourism ecosystem. AI technologies, including recommendation algorithms and digital platforms, facilitate interactions among various stakeholders—customers, service providers, and digital intermediaries. These AI systems foster highly responsive networks, enabling hospitality enterprises to utilize real-time data to tailor services to individual preferences. This results in a dynamic network of participants, characterized by interdependence and decentralization. The flexibility provided by AI arises from these interconnected networks, empowering organizations to innovate and remain competitive in an ever-evolving global marketplace. At last, Structuration and Network Theory collectively underscore the sociological implications of AI in the hospitality and tourism sectors, illustrating how technology reshapes both the dynamics of human interactions and the networks that enhance the industry's agility and responsiveness.

## 7. MAIN ARGUMENT & SUGGESTIONS

### Conceptual Gaps Addressed

By redefining the function of AI via the prisms of structure and network theory, the study fills important conceptual gaps in the body of existing literature. Although AI has historically been thought of as a passive technology, our research shows that it actively shapes organizational behaviors. For example, Accor's dynamic pricing models challenge the idea that technology

only supports human agency by incorporating AI into decision-making. Furthermore, the complex relationships that AI forges between stakeholders have frequently been ignored in earlier studies. Our study advances the theoretical understanding of AI as a mediating factor in global tourism networks by analyzing AI-enhanced host-guest dynamics in Airbnb. This study shows how AI fosters networked interactions across various players.

### **Practical Gaps Addressed**

By emphasizing how AI may enhance agility, balance human-AI interaction, and resolve ethical dilemmas, the study closes significant practical gaps in the application of AI in the hotel sector. In addition to improving market responsiveness, Marriott's AI-driven revenue management system and other real-time AI-driven changes bridge the knowledge gap regarding how AI optimizes agility in dynamic hospitality markets. Hilton's chatbots serve as an example of how artificial intelligence (AI) boosts productivity, but the research reveals that people still value emotional interaction with humans, suggesting the necessity for a hybrid strategy that balances automation and human labor. AI developers and institutional reports also raise privacy concerns, contributing to the discussion of the socio-technical risks of AI in the hotel sector. By including structuration and network approaches, our study reframes AI as a transformative force that is reshaping relationships, power, and agency in the hotel and tourism sector.

## **8. CONCLUSION**

In examining the role of technological mediation and AI within the hospitality and tourism sectors. In analyzing the influence of technological mediation and artificial intelligence within the hospitality and tourism industries through the lenses of Structuration Theory and Network Theory, it becomes evident that these advancements extend beyond mere operational instruments. They are fundamentally transforming the structures and networks that dictate organizational functionality, stakeholder interactions, and responses to fluctuating market dynamics.

Structuration Theory underscores the reciprocal relationship between technology and human agency. In the context of hospitality, AI and digital tools are not merely passive components; they actively reshape routines, norms, and roles within organizations. Employees, customers, and managers interact with these technologies in ways that modify their practices and redefine the relationship between humans and technology. For instance, AI-enhanced customer service, adaptive pricing strategies, and predictive analytics enable businesses to better anticipate and meet consumer demands, thereby promoting agility. Nonetheless, this evolution also necessitates that employees adjust to new operational methods and skill requirements, illustrating the transformation of workplace roles and the reallocation of agency between humans and machines.

Network Theory further enriches our comprehension by highlighting the relational aspects of hospitality and tourism in the digital era. AI-driven platforms such as Airbnb, Booking.com, and



Expedia act as central nodes within an extensive network, linking consumers, service providers, and data algorithms in a flexible and responsive framework. These AI-facilitated networks empower organizations to achieve a level of agility that was previously unattainable, enabling rapid adaptation to consumer preferences, market changes, and global trends. The interconnectedness of participants in this AI-mediated landscape fosters innovation and enhances competitiveness within the sector.

The role of technological mediation and artificial intelligence has become crucial in improving agility in the hospitality and tourism sectors. Analyzing this through the sociological perspectives of Structuration and Network Theories demonstrates that these technologies not only enhance operational efficiency but also significantly transform the structural and relational dynamics of the industry, facilitating its advancement in a progressively digitized and competitive environment.

## REFERENCES

- Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the internet. *Tourism Management*, 29(4), 609–623. <https://doi.org/10.1016/j.tourman.2008.01.005>.
- Bulchand-Gidumal, J. (2020). Impact of artificial intelligence in travel, tourism, and hospitality. In *Springer eBooks* (pp. 1–20). [https://doi.org/10.1007/978-3-030-05324-6\\_110-1](https://doi.org/10.1007/978-3-030-05324-6_110-1).
- Bulchand-Gidumal, J., Secin, E. W., O'Connor, P., & Buhalis, D. (2023). Artificial intelligence's impact on hospitality and tourism marketing: Exploring key themes and addressing challenges. *Current Issues in Tourism*, 1–18. <https://doi.org/10.1080/13683500.2023.2229480>.
- Castells, M. (2010). *The rise of the network society* (2nd ed.). Wiley-Blackwell.
- Dinker, N. (2023c). Impact of social media on youth in the context of the culture of India: A sociological analysis. *International Journal of Novel Research and Development*, 8(8), a625–a626.
- Dogru, T., Line, N., Mody, M., Hanks, L., Abbott, J., Acikgoz, F., Assaf, A., Bakir, S., Berbekova, A., Bilgihan, A., Dalton, A., Erkmén, E., Geronasso, M., Gomez, D., Graves, S., Iskender, A., Ivanov, S., Kizildag, M., Lee, M., & Zhang, T. (2023). Generative artificial intelligence in the hospitality and tourism industry: Developing a framework for future research. *Journal of Hospitality & Tourism Research*, 1–19. <https://doi.org/10.1177/10963480231188663>.
- eHotelier. (n.d.). <https://www.ehotelier.com>.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. University of California Press.
- Hospitality Net. (n.d.). <https://www.hospitalitynet.org>.
- Hsu, C. H. C., & Powers, T. (2002). *Marketing hospitality*. Delmar.
- Ivanov, S., & Webster, C. (2019). *Robots, artificial intelligence, and service automation in travel, tourism and hospitality*. Emerald Publishing.
- Kwortnik, R. J., & Thompson, G. M. (2009). Unifying service marketing and operations with service experience management. *Journal of Service Research*, 11(4), 389–406. <https://doi.org/10.1177/1094670509338772>.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.
- Li, X. (Robert), & Chen, Y. (2019). The role of artificial intelligence in the future of hospitality and tourism. *Journal of Hospitality and Tourism Technology*, 10(2), 139–151. <https://doi.org/10.1108/JHTT-03-2018-0021>.
- McKinsey & Company. (2020). How COVID-19 is changing consumer behavior in travel and

tourism. <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/how-covid-19-is-changing-consumer-behavior-in-travel-and-tourism>.

McKinsey & Company. (n.d.). <https://www.mckinsey.com>.

O'Connor, P. (2003). Ontologies for the hospitality and tourism industry. *Tourism Management*, 24(2), 145–155. [https://doi.org/10.1016/S0261-5177\(02\)00061-9](https://doi.org/10.1016/S0261-5177(02)00061-9).

OECD. (2020, March). *OECD tourism trends and policies 2020*. [https://www.oecd.org/en/publications/2020/03/oecd-tourism-trends-and-policies-2020\\_7cfc4549.html](https://www.oecd.org/en/publications/2020/03/oecd-tourism-trends-and-policies-2020_7cfc4549.html).

O'Reilly, T. (2010). Government 2.0: Structure, principles, and issues. In J. S. Smith & R. E. Williams (Eds.), *The new public service: Serving, not steering* (pp. 153–172). M.E. Sharpe.

Poon, A. (1993). *Tourism, technology and competitive strategies*. CAB International.

Rihova, I., Buhalis, D., Moital, M., Gouthro, M., & Negricea, I. (2013). The role of social networks in collaborative consumption: The case of shared accommodation. *Journal of Business Research*, 66(5), 645–652. <https://doi.org/10.1016/j.jbusres.2012.08.014>.

Sigala, M. (2020). Social media and customer engagement in the hospitality sector: A review and future research agenda. *International Journal of Contemporary Hospitality Management*, 32(6), 2055–2075. <https://doi.org/10.1108/IJCHM-11-2019-1034>.

Siguaw, J. A., & Simpson, P. M. (2006). The role of technology in the service experience: Toward a framework for research. *Journal of Service Research*, 9(2), 156–173. <https://doi.org/10.1177/1094670506290500>.

Skift. (n.d.). <https://www.skift.com>.

Tussyadiah, I. P. (2020). The impact of artificial intelligence on the future of tourism. *Journal of Tourism Futures*, 6(1), 1–8. <https://doi.org/10.1108/JTF-12-2019-0101>.

Uysal, M., & Perdue, R. R. (2019). *Handbook of tourism management*. Routledge.

Wang, D., & Lee, H. (2020). Technology, tourism and service quality: A systematic review. *Tourism Management Perspectives*, 35, 100–110. <https://doi.org/10.1016/j.tmp.2020.100728>.

World Economic Forum. (2023, December). How is AI reshaping the travel & tourism industry? <https://www.weforum.org/stories/2023/12/how-is-ai-reshaping-the-travel-tourism/>.

World Tourism Organization (UNWTO). (n.d.). Artificial intelligence challenge. <https://www.unwto.org/challenges/artificial-intelligence-challenge>.

Zhang, H., & Zhao, L. (2019). Social media and hospitality marketing: The role of user-generated content. *Journal of Hospitality Marketing & Management*, 28(1), 30–46. <https://doi.org/10.1080/19368623.2018.1471284>.