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HOW DYNAMIC CAPABILITIES IMPACT COMPETITIVE ADVANTAGES OF THE HOTEL INDUSTRY? MEDIATING ROLE OF SERVICE INNOVATION CAPABILITY

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Abstract: Despite the growing importance of advanced technology and innovation in the hospitality sector, the wide role of dynamic capabilities in shaping service innovation and sustaining competitive advantage remains underexplored. Existing empirical studies lacks practical and theoretical clarity on how specific capabilities (i.e., sensing, coordinating, integrating, and learning) individually influence sustainable competitive advantages. Additionally, the inconsistent role of learning capability highlights a gap in understanding its strategic value in the hotel industry. This study aims to examine how dynamic capabilities impact service innovation capability and sustainable competitive advantages of the hotel industry, relying on the resource-based view and dynamic capability theory. A convenience sample strategy was administered to collect data from senior managers of hotels. The structural equation modeling approach was employed to test the direct and indirect relationships among sensing, learning, coordinating, integrating capability, service innovation capability, and sustainable competitive advantage. Findings from the present study revealed a significant positive impact of sensing, integrating, and coordinating capability on service innovation capability. Thus, service innovation capability also significantly and positively impacts sustainable competitive advantages. Surprisingly, this study confirmed neither direct nor indirect impact of learning capability. The present study is among a limited number of empirical studies that have addressed dynamic capability and service innovation in the hotel industry. Thus, the findings from the present study confirm seeking to establish a dynamic capability and service innovation capability that should be employed in the hotel industry to sustain competitive advantages.

Keywords: dynamic capability, service innovation capability, competitive advantages, resource-based view, hotel industry, Saudi Arabia

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INTRODUCTION

The hospitality and tourism industry has recently become highly competitive (Pugachov et al., 2022), requiring firms to continuously innovate, learn, and adapt to modern market changes to maintain a sustainable competitive advantage and performance (Horng et al., 2022). Alatawi et al. (2023) outlined that the hospitality and tourism sector, mainly hotels, exceeds oil and gas exports, food and beverage, and automobile industries. Prior studies have stated that the hotel industry sustainably contributes to the overall GDP and economic growth worldwide (Dogru et al., 2020). One reason is that the hotel industry spreads economic benefits to other related sectors (e.g., airlines, tour guide agencies, restaurants, and entertainment spots) (Inoue & Lee, 2011). A recent report by UN Tourism witnessed that 1.2 billion travelers flew worldwide in 2024, contributing $10.9 trillion in revenue (UN Tourism, 2024). In this view, several studies stressed that the hotel industry in developing countries is not adopting modern technologies to predict consumer demands and overall innovative technologies (Ezzaouia & Bulchand-Gidumal, 2023). Ersoy (2024) suggested that the hotel industry must develop strategic capabilities to sense opportunities and coordinate resources efficiently to contribute maximum to the country's economic development. The revolutionary role of dynamic capability offers a creative roadmap to the hotel industry where they may significantly learn and adopt modern technologies in tourism industry (Ezzaouia & Bulchand-Gidumal, 2023) and sustain competitive advantages for the long term (Ziyae et al., 2022).

Recently, Ziyae et al. (2022) highlighted that dynamic capability technologies have rapidly transformed the performance and competitiveness of the hotel industry. The dynamic capability of a firm features the modification of its internal and external resources to adapt to a changing environment, ultimately supporting its sustainability and preparing it for evolving technologies that sustain competitive advantage and performance. Dynamic capability in the hotels' context addresses complex consumer consumption market challenges by forecasting demand accuracy (Kazmi & Ahmed, 2022). Ziyae et al. (2022) illustrated that dynamic capability significantly enhances the service innovation process of the hotel industry. In this view, the transformation of dynamic capability that impacts service innovation and competitiveness of hotels has yet to be broadly explored and empirically examined. The extant literature on dynamic

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capability has widely focused on better understating its impact on the performance of manufacturing firms (Saleem et al., 2025). Yet, limited studies examined its effect on the competitiveness of hotels. Importantly, existing scholarly work exhibited innovative technologies that impact the competitiveness of hotels using qualitative methods such as Systematic Literature Review (SLR) (Iranmanesh et al., 2022) and thematic analysis (Ersoy, 2024). As a result, limited scholarly work has examined the impact of dynamic capability on the sustainable competitive advantages of the hotel industry employing quantitative methods. Additionally, Ziyae et al. (2022) suggested that hotels may navigate innovative technology challenges by adopting service innovative strategies. Failure to adopt service innovation capabilities may result in misallocating internal and external resources, which diminishes the return on investment, practically sustaining competitiveness. Unfortunately, existing studies do not address the specific role of service innovation capability in assessing the dynamic capability and competitiveness of the hotel industry.

Service innovation capability greatly enhances service quality by allocating internal and external resources using dynamic capability resources to boost firm competitiveness and ultimate performance. Service innovation capability is essential to translate dynamic capabilities - such as adapting to market changes and reconfiguring resources—into sustainable competitive advantages of hotels (Grawe et al., 2009). In this view, Cheng & Krumwiede (2012) highlighted that service innovation supports enhancing customer experiences and staying ahead of competitors. Hotels that efficiently leverage service innovation and dynamic capability may reliably renew their offerings, ensuring resilience and market leadership in a rapidly evolving hospitality industry (Ezzaouia & Bulchand-Gidumal, 2023).

The present study aims to examine the impact of dynamic capability dimensions (e.g., sensing, learning, coordinating, and integrating capability) on sustainable competitive advantage in the hotel industry in Saudi Arabia, with service innovation as a mediating variable. While previous research has established the importance of dynamic capabilities across various industries, there is limited empirical evidence on how these capabilities influence competitive advantage in the hotel industry. Given the industry's increasing reliance on service differentiation and customer-centric innovations, understanding the relationship between dynamic capabilities and competitive advantage is crucial.

This study seeks to bridge this gap by providing empirical insights into how hotels leverage sensing, learning, integrating, and coordinating capabilities to drive service innovation capability and outperform competitors relying on the resource-based view and its extended version called dynamic capability theory.

The theoretical foundation of the resource-based view (Barney, 1991) and dynamic capability theory (Teece et al., 1997) support understanding how organizations may achieve sustained competitive advantage through continuous adaptation of dynamic capability-based technologies and service innovations. Service innovation is thoroughly associated with dynamic capability, enabling firms to establish differentiated service offerings that meet evolving customer expectations. In addition, the resource-based view (Barney, 1991) further complements this perspective by emphasizing the importance of unique internal resources, such as knowledge, expertise, and technology, in sustaining competitive advantage. When applied to the hotel industry, these theories suggest that hotels that actively develop their dynamic capabilities may be better positioned to innovate and maintain a competitive edge.

Overall, the current study examines the practical and theoretical research gaps mentioned above through a survey conducted among hotels in Jeddah, Makkah, and Medina in Saudi Arabia. This also responds to the call by Jiang et al. (2022), who outline that only a few hotels have taken preliminary initiatives toward dynamic capability and service innovation. As a result, the current study offers numerous practical and theoretical contributions by enriching our understanding and knowledge of how sensing, learning, integrating, and coordinating capability and service innovation capability impact the sustainable competitive advantages of the hotel industry by utilizing dynamic capability theory and resource-based view.

This paper is structured as follows: The second section demonstrates the framework and theoretical foundation following the development of hypotheses. The third section presents the research design, analysis, and measurement results. Results and findings on direct and indirect hypotheses are presented in the fourth section. Finally, sections five and six discuss findings, theoretical and practical/managerial implications and limitations, and future research directions of the present study.

Theoretical Foundation and Hypotheses Development

The present study draws a conceptual framework by integrating the resource-based view (Barney, 1991) and its extended version, called dynamic capability theory (Teece et al., 1997), to investigate the direct and indirect associations between sensing, learning, integrating, coordinating capability, service innovation capability, and sustainable competitive advantages. The resource-based view emphasizes sustainable competitive advantages and its overall contribution to achieving organizational goals (Saleem et al., 2025). Dynamic capability theory emphasizes sensing, learning, integrating, coordinating capability, and service innovation capability (Hernández-Linares et al., 2021).

Sensing capability refers to an organization's ability to detect emerging trends, changes in customer preferences, and market shifts that influence strategic decision-making (Hernández-Linares et al., 2021). In the hotel industry, this means actively monitoring customer expectations, leveraging data analytics to predict future demands, and continuously refining service offerings to align with evolving market needs. On the other hand, learning capability enables hotels to absorb, assimilate, and apply new knowledge for service improvement (Palacios-Marqués et al., 2016).

Hotels that cultivate a strong learning culture are better positioned to transform information into innovative service offerings that differentiate them from competitors.

Integrating capability emphasizes the seamless sharing of knowledge and expertise across various departments, fostering collaboration that enhances service delivery (Fan et al., 2023; Agina et al., 2025). Coordinating capability ensures that resources, tasks, and efforts are synchronized efficiently, leading to streamlined operations and consistent

customer experiences (Nieves et al., 2016). These dynamic capabilities collectively contribute to service innovation, a key determinant of competitive advantage in the hotel sector.

Nevertheless, several past studies investigated the impact of dynamic capability using stakeholder theory (Chacón Vargas et al., 2014; Singh et al., 2022). Another recent survey by Ferreira & Coelho (2020) examined the impact of dynamic capability factors on the sustainable competitive advantages of firms relying on the dynamic capability theory and resource-based view. Hence, the equilibrium assessment of the resource-based view has impelled criticism from several prior scholarly works, who tend to argue that it is static and lacks a technological dynamic viewpoint necessary to address changing business environments (Saleem et al., 2025). As such, dynamic capability manages to address the theoretical limitation of the resource-based view by extending and adding new technological capabilities elements to its extended theoretical viewpoint (Ferreira & Coelho, 2020; Arsić et al., 2025), practically exploring how dynamic capability dimensions (e.g., sensing, learning, integrating, coordinating capability, and service innovation capability) can shape sustainable competitive advantages of the hotel industry over time. From the theoretical lens, Jiang et al. (2022) highlighted that the hotel industry still struggles to understand and implement the potential dynamic capability practices. In this era of competition, the hotel industry must realize the importance and role of dynamic capability practices in maximizing overall competitive advantages and performance.

The resource-based view and its extended theoretical version of dynamic capability theory posit that the hotel industry may achieve sustainable competitive advantages by leveraging a unique, heterogeneous resource bundle that is valuable, inimitable, and non-substitutable. In this view, prior studies pointed out that the services industry, mainly hotels, should reaffirm specific resources such as location advantages, brand reputation, heritage assets, and skilled human capital to enable hotels to attain sustainable competitive efficiency advantages significantly (Li, & Liu, 2018; Ziyae et al., 2022; Chin et al., 2025; Thang & Khanh, 2025). Notably, several recent studies investigated firm performance other than the hotel sector using Resource-based view and dynamic capability theory (Ferreira & Coelho, 2020; Saleem et al., 2025), thus limiting light on the sustainable competitive advantages of the hotel industry by using resource-based view and dynamic capability theory as a theoretical foundation.

However, the theoretical limitations of the resource-based view have been criticized by several existing studies, which led to the emergence of dynamic capability theory, which argues that the services and/or manufacturing firms must also develop adaptive capabilities to respond to business environment changes and competitions, which widely support sustaining the competitive advantages of hotels. Despite growing scholarly attention on the role of dynamic capability in sustainable competitive advantages, the theoretical framework of dynamic capability theory mainly focuses on generalizable knowledge process (Hernández-Linares et al., 2021) and multi-level analyses of manufacturing firms (Saleem et al., 2025). Thus, previous empirical studies have reported mixed findings on the impact of dynamic capability on sustainable competitive advantages and firm performance. Notably, the theoretical concept of dynamic capability theory and its implications for the sustainable competitiveness of the hotel industry is still undeveloped. To address this theoretical gap, this study adopted a (Hernández-Linares et al., 2021) multidimensional approach, which identifies four key dimensions of dynamic capability (e.g., sensing, learning, coordinating, and integrating capability) and service innovation capability. On the other hand, the resource-based view supports the prediction of sustainable competitiveness advantages.

This integrated theoretical framework of the resource-based view and dynamic capability theory offers a structured lens to examine how the hotel industry dynamically adapts to market shifts and technological disruptions, ensuring practical and theoretical rigor. Lastly, integrating a resource-based view and dynamic capability advances our understanding of how the hotel industry combines potential resources with adaptive capabilities to achieve sustained competitive advantages in a vast, volatile industry. Therefore, the proposed conceptual framework is presented in Figure 1.

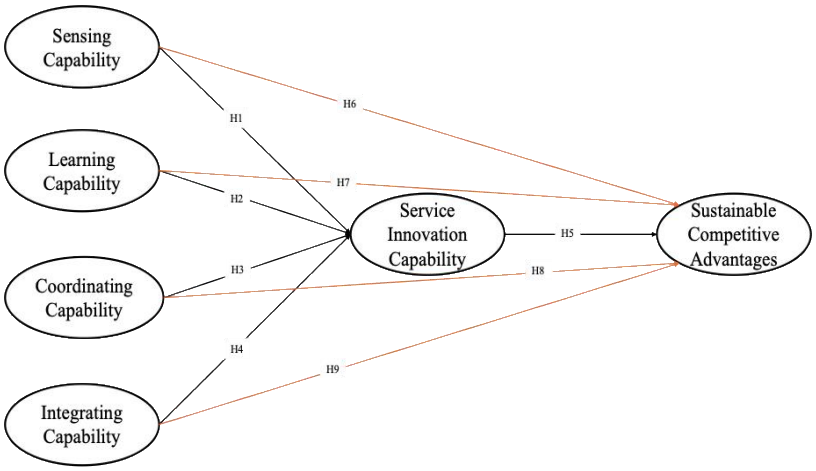

Figure 1. Conceptual framework (Source: Authors own work) (Note: Red arrows presenting meditating hypotheses)

Sensing and service innovation capability

According to Wong & Ngai (2023), "a firm's sensing capabilities refer to its ability to assess, develop, and identify technological opportunities that meet customers' needs and new business opportunities" (p.5). In the services industry, sensing capability enables firms to learn about consumers' demands and market environment and establish strategies

based on the knowledge extracted from it (Kankam-Kwarteng et al., 2021). Sensing capabilities contain the dissemination and generation of trending market enhancement and the ability to reach it to enhance competitiveness and performance (Khristianto et al., 2021). Practically, sensing capabilities educate services firms to extract, evaluate, filter, and interpret the collected consumer information (Tseng, 2023) and formulate long- and short-term business goals based on that information. Prior studies concluded the link between sensing capability and service innovation capability.

For instance, Kankam-Kwarteng et al. (2021) highlighted that the sensing capability involves monitoring consumer preferences, competitor strategies, and innovation in the service industry. Fosso Wamba et al. (2024) demonstrated that sensing capability integrates and responds to market trends and technology advancement to respond to customer needs, which significantly enables the service innovation capability of the firms.

Prior existing studies suggested that the service innovation capability plays an essential role in boosting the firm's responsiveness by formulating adaptive strategies to adopt advanced technology to gain maximum customer satisfaction (Grawe et al., 2009; Feng et al., 2020). Notably, the concept of sensing capability and its impact on service innovation and competitive performance was widely examined in manufacturing firms (Wong & Ngai, 2023).

Thus, limited studies affirm its significant effect on the service innovation capability of the services firms, mainly the hotel industry. Therefore, the present study proposed the following hypothesis to address the above research gap.

H1: Sensing capability has a significant and positive impact on service innovation capability

Learning capability and service innovation capability

According to Hernández-Linares et al. (2021), "learning capability is required to acquire and assimilate knowledge and to use adequate knowledge to facilitate the creation and modification of firm's capabilities and resource base" (p.7). Akgün et al. (2014) highlight that the learning capabilities of a services firm support them to learn and implement new service opportunities to maximize the customers' satisfaction, which ultimately enhances efficiency and competitiveness. Responding strategically to such modern learning capability is hard for competitors to imitate (Weerawardena, 2003). As prior studies witnessed, the services industry's growth depends on innovative learning capability—the potential to develop and implement new advanced services (Patwary et al., 2022; Pande & Pande, 2024). In this view, Gomes et al. (2022) demonstrated that learning capability significantly impacts service innovation capability. Further, they added, the learning capability of a firm refers to its ability to acquire, exploit knowledge, transform, and implement. Similarly, another study by Tang et al. (2015) found that service firms with adaptive strategies for implementing learning capabilities significantly enhance service quality capabilities. Due to high competitiveness in the service sector, mainly hotels must learn rapidly from market shits, guest feedback, and operational challenges to innovate effectively. Due to the novelty of dynamic capability, practical learning capability limited existing studies investigated and concluded its impact on service innovation capability in the hotel industry. Therefore, this study proposed the following hypothesis.

H2. Learning capability has a significant and positive impact on service innovation capability

Integrating capability and service innovation capability

The integration capability creates tangible and intangible organizational values representing its uniqueness in the market (Salunke et al., 2019), which is practically hard for competitors to replicate. According to Hernández-Linares et al. (2021), "integrating capability is the ability to embed new knowledge into the new operational capabilities by creating a shared understanding and collective sense-making" (p.8). In this era of modernization, integrating technologies such as artificial intelligence, robotics technology, and virtual reality likely contributes to the service innovation capability, ultimately enhancing the firm's overall performance and competitiveness (Bujdosó et al., 2025; Salama et al., 2025). Prior studies noticed that service innovation capability is a widely important factor for hotels (Ziyae et al., 2022), which can enhance service efficiency. Previously, Vanpoucke et al. (2014) investigated and confirmed a significant positive association between integrating capability and service innovation capability. Integrating capability enables the service firms to access real-time customer data, which is widely supportive while making competitive strategies. Furthermore, incorporating capability with service innovation capability requires a strategic approach that aligns resources, processes, and culture to foster continuous innovation in service delivery (Chatterjee et al., 2022).

Such capability allows the hotels to assess and understand the market trends followed by the customer needs. Additionally, integrating capability ensures the ability to adapt, reconfigure, and transform resources to meet the market's changing demands. Therefore, limited prior empirical studies have been conceptualized to investigate the impact of individual dimensions of dynamic capability on the service innovation capability of service firms. To bridge the above-mentioned research gaps, the present study explores the implications of learning dynamic capability on the services innovation capability of hotels. Thus, this study proposed the following hypothesis.

H3. Integrating capability has a significant and positive impact on service innovation capability

Coordinating Capability and service innovation capability

According to Hernández-Linares et al. (2021), "The coordinating capability is defined as the ability to orchestrate and deploy tasks, resources, and activities in the new operational capabilities where the integrating capability is based on building collective understanding, and the coordinating capability focuses on orchestrating individual tasks and activities" (p.9). In this competitive hospitality and tourism industry, hotels must continuously learn to innovate in services to meet evolving customer expectations and maintain a competitive edge (Ziyae et al., 2022). Successful service innovation capability depends on creative thoughts and effective coordination among departments, stakeholders, and resources (Nieves

et al., 2016). Hernández-Linares et al. (2021) highlighted that the coordinating capability is an essential dimension of dynamic capability, which refers to an organization's ability to align internal knowledge, processes, and external partnerships to obtain the strategic objectives of the organization. In the hotel industry, this capability practically involves seamless collaboration between front-office staff, housekeeping, food and beverage services, information technology, and management to implement innovative service solutions. Previously, Agarwal & Selen (2013) investigated the link between dynamic capability and service innovation and found a significant positive relationship. Another study by Xiao et al. (2020) concluded that coordinating capability and service innovation have a substantial impact. Due to the novelty of this concept in the hotel industry, limited existing studies shed light on the impact of coordination capability on the service innovation capability of the hotel industry. Therefore, the present research bridges the above gap by exploring how coordinating capability impacts service innovation capability in the hotel industry. Thus, the following hypothesis is proposed.

H4: Coordinating capability has a significant and positive impact on service innovation capability

Service Innovation and Sustainable Competitive Advantages

Service innovation is an intangible resource and capability for service-oriented firms (Grawe et al., 2009). It mainly contains actors from numerous partners, suppliers, and customers who cooperate in recognizing the accurate way to support, design, deliver, and implement the new service (Anuntarumporn & Sorhsaruht, 2022). Notably, service innovation can be assumed to be a significant predictor of the value creation for service firms, mainly hotels (Setianingsih & Nursaidah, 2023). In this era of competition, Ziyae et al. (2022) argued that hotels should integrate advanced customer service systems that can support mechanisms to determine innovation based on existing resources.

Thus, several past studies examined the link between service innovation capability and sustainable competitiveness. For instance, Serafim & Cristovao Verissimo (2021) found that the service innovation capability significantly impacts the competitiveness of hotels. Furthermore, they stated that service innovation also supports the determination of modern market trends and the establishment new business opportunities. Another study by Anuntarumporn & Sorhsaruht (2022) confirmed a significant and direct relationship between service innovation capability and competitive advantages. In this view, Cheng & Krumwiede (2012) suggest that to achieve sustainable competitive advantage in today's dynamic markets, and firms must develop strong service innovation capability—the ability to continuously create, refine, and deliver new or improved services that meet evolving customer needs better than competitors.

Previously, limited empirical studies shed light on the impact of service innovation on the sustainable competitive advantages of the hotel industry. The present study proposed the following hypothesis to address the above empirical criticism and arguments.

H5. Service innovation has a significant and positive impact on sustainable competitive advantages

Mediating Role of Service Innovation Capability

H6: Service innovation capability mediates the relationship between sensing capability and sustainable competitive advantages

H7: Service innovation capability mediates the relationship between learning capability and sustainable competitive advantages

H8: Service innovation capability mediates the relationship between integrating capability and sustainable competitive advantages

H9: Service innovation capability mediates the relationship between coordinating capability and sustainable competitive advantages

METHOD

To obtain the objectives of the present study, the measurement items were identified and developed in three different phases. First, a wide and detailed literature review was conducted to determine the research gaps and select the constructs and their estimated measurement items. Where (I) four items for sensing capability, (II) five items for learning capability, (III) five items for integrating capability, and (IV) five items for coordinating capability adapted from (Hernández-Linares et al., 2021); (V) five items for service innovation capability adapted from (Grawe et al., 2009), and (VI) seven items of sustainable competitive advantages were adapted from (Medeiros et al., 2020).

Second, all the measurement items were pre-tested by three industry professionals with expertise in hospitality and tourism firms and two senior academic experts from "The University of Business Technology Jeddah, Saudi Arabia." Considering the sensitivity and novelty of the present study, expert feedback was vigilantly recorded to enrich the relevancy and validity of the constructs and their corresponding measurement items. Finally, we conducted a pilot study with 35 hotel senior managers who qualified the screening questions on dynamic capabilities and sustainable competitive advantages. However, we start collecting full-scale data after obtaining ($\alpha > 0.7$) values from the pilot testing, confirming the reliability and validity of the constructs (Saleem et al., 2022).

Expert opinion and pilot testing together reduce the bias and ensure the clarity and contextual relevance of the items in the context of the present study. Therefore, we finalized and generated a web link to the questionnaire, and after that, we distributed the weblink among 280 senior management in hotels in Medinah, Makkah, and Jeddah, Saudi Arabia. 231 completed and usable questionnaires were returned. All the measurement items were rated on a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Therefore, a flow chart of methodology is presented in Figure 2.

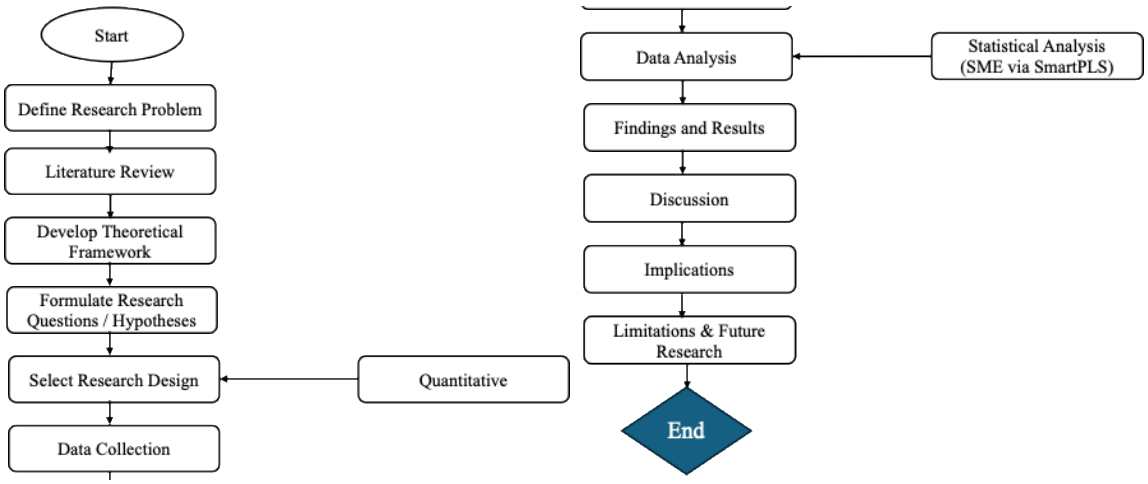

Figure 2. Research Method Flow chart

Sampling and Data Collection

Convenience sampling using a non-probability approach was applied to collect data from the hotels in Medinah, Makkah, and Jeddah in Saudi Arabia. Convenience sampling approach may lead to selection bias, limiting the representativeness of the sample. Since, as a non-probability method, it restricts the generalizability of findings to the broader population.

Given the importance of the hotel industry in Saudi Arabia and the abundance of available data, this context has attracted the attention of both practitioners and scholars, mainly after the severe COVID-19 pandemic crisis.

However, the findings of this study are not limited to the Saudi Arabian hotel industry alone; the insights derived can be extended to other industries and countries by focusing on the general competencies needed for dynamic capability and service innovation capability. 231 valid survey responses were collected over roughly three months (from November 2024 to January 2025). The finalized questionnaire and a cover letter explaining the study's purpose and guidelines were emailed to 280 respondents across various hotels. Using email and online surveys provided logistical benefits, such as cost efficiency and the ability to reach participants regardless of location.

After filtering out incomplete or unqualified responses—such as those from respondents without relevant experience 231 valid responses were retained, resulting in an 82.50% response rate.

Figure 3. Key demographic characteristics

However, most respondents were male (53.25%) and fell between 25-34 years old (23.81%). Most hold a master's degree (23.28%) and a bachelor's (14.29%). The experience level was 1-5 years (22.94%). In addition, senior managers were (50.65%) from upper-upscale (4-star hotels) (34.63%) from Chain/Franchise hotels (23.81%) majority from Jeddah (35.93%). Furthermore, the detailed demographic chrematistics are presented in Table 1 and Figure 3.

Table 1. Demographic characteristics

Demographic	Category	Frequency	Percentage (%)
Gender	Female	108	46.75
	Male	123	53.25
Age	Under 25	38	16.45
	25-34	55	23.81
	35-44	38	16.45
	45-54	54	23.38
	55 and above	46	19.91

Education Level	High School Diploma or equivalent	53	22.94
	Bachelor's Degree	33	14.29
	Master's Degree	54	23.38
	Doctoral Degree	48	20.78
	Other	43	18.61
Years of Experience	Less than 1 year	42	18.18
	1-5 years	53	22.94
	6-10 years	45	19.48
	11-15 years	40	17.32
	More than 15 years	51	22.08
Current Job Position	Senior Manager/Executive	117	50.65
	Middle Manager (Operations/Service/HR)	114	49.35
Type of Hotel	Luxury (5-star)	78	33.77
	Upper-upscale (4-star)	80	34.63
	Mid-scale (3-star)	73	31.6
	Privately Owned	51	22.08
Hotel Ownership Structure	Chain/Franchise	55	23.81
	Public-Private Partnership (PPP)	49	21.21
	Government-Owned	43	18.61
	Other	33	14.29
Location of Hotel	Makkah	77	33.33
	Medina	71	30.74
	Jeddah	83	35.93
Duration of Employment	Less than 1 year	53	22.94
	1-3 years	43	18.61
	4-7 years	58	25.11
	8-10 years	37	16.02
	More than 10 years	40	17.32

Measurement Model

Table 2 illustrates the statistical valuation of the constructs and measurement model using factor loading and discriminant validity. First, Cronbach's alpha (α) and CR were performed to evaluate the construct reliability, and then a factor loading test was performed to validate the measurement items. The factor loading value of the measurement items ranges from 0.911 to 0.643. Next, the α value of all the constructs ranged from 0.843 to 0.703, and the CR value fell within the range from 0.890 to 0.818, exceeding the threshold value of 0.700 (Saleem et al., 2023), validating the measurement model in the present study.

Table 2. Measurement items

Sensing Capability; α = 0.833; CR = 0.890; AVE = 0.671	Loading
SC1	0.848
SC2	0.911
SC3	0.835
SC4	0.663
Learning Capability; α = 0.843; CR = 0.888; AVE = 0.614	
LC1	0.770
LC2	0.696
LC3	0.832
LC4	0.826
LC5	0.786
Integrating Capability; α = 0.797; CR = 0.868; AVE = 0.622	
IC1	0.827
IC2	0.773
IC3	0.813
IC4	0.739
Coordinating Capability; α = 0.758; CR = 0.847; AVE = 0.582	
CC1	0.787
CC2	0.819
CC3	0.663
CC4	0.774
Service innovation capability; α = 0.703; CR = 0.818; AVE = 0.532;	
SIC1	0.652
SIC2	0.643
SIC3	0.777
SIC4	0.827
Sustainable Competitive advantages; α = 0.714; CR = 0.824; AVE = 0.541;	
SCA1	0.793
SCA2	0.692
SCA3	0.788
SCA4	0.660

Second, the AVE was assessed to confirm the convergent validity (Saleem et al., 2022). Thus, we reported that the AVE values of all the constructs range from 0.532 to 0.671, exceeding the threshold valid of > 0.50 (Saleem et al., 2023), confirming the convergent validity of the contextual model of the present study. Third, for the further validation of the constructs, the Standard Deviation (Std. Dev) and Mean (M) test was performed, indicating strong agreement among constructs presented in Table 4. Fourth, discriminant validity – Fornell-Larcker criterion and HTMT were performed to confirm the correlation among the constructs in Tables 3 and 4, confirming the fulfillment of the discriminant validity of the model.

Table 3. HTMT discriminant validity

Constructs	SCA	CC	IC	LC	SIC	SC
Sustainable competitive advantages						
Coordinating capability	0.788					
Integrating capability	0.816	0.916				
Learning capability	0.748	0.857	0.899			
Service innovation capability	0.810	0.906	0.877	0.794		
Sensing capability	0.788	0.736	0.887	0.826	0.803	

Table 4. Fornell-Larcker criterion discriminant validity

Constructs	Std. Dev	Mean	SCA	CC	IC	LC	SIC	SC
Sustainable competitive advantages	0.213	4.00	0.736					
Coordinating capability	0.230	3.70	0.580	0.763				
Integrating capability	0.430	3.30	0.614	0.708	0.789			
Learning capability	0.080	3.01	0.580	0.698	0.745	0.783		
Service innovation capability	0.627	4.61	0.620	0.665	0.665	0.621	0.729	
Sensing capability	0.328	3.80	0.612	0.579	0.723	0.688	0.625	0.819

RESULTS AND FINDINGS

The "Structural Equation Modelling" (SEM) via Smart PLS tested the direct and indirect relationships between sensing, learning, coordinating, integrating capability, service innovation capability, and sustainable competitive advantages, as presented in Figure 4. Direct hypotheses in the present study were tested in two stages.

First, a bootstrapping with 5000 subsamples was applied to evaluate the direct paths between the latent variables. Second, the present study explored the mediating role of service innovation capability between sensing, learning, coordinating, integrating capability, and sustainable competitive advantages. Notably, the coefficient of determination R^2 assesses, indicating 47.6% service innovation capability and 38.9% sustainable competitive advantages, confirming its predictive validity (Saleem et al., 2022). Notably, effect size (f^2) of sensing, learning, integrating, coordinating capability, and service innovation capability shows medium and large effect.

On the other hand, predicative relevance (Q^2) indicates that the services innovation capability and sustained competitive advantages has high predicative values. However, the decision on supportive and/or non-supportive direct hypotheses was confirmed using path coefficients (β), t-statistics, and p-values.

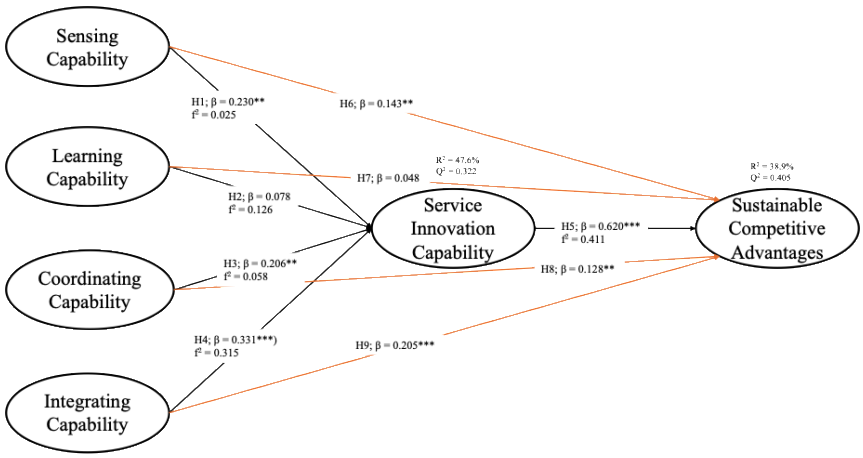

Figure 4. Structural Model (Source: Authors own work) (Note: the solid black arrows present direct hypotheses (H1-H5), and the orange solid arrows present mediating hypotheses (H6-H9)

Direct Hypotheses

Hypotheses (H1, H3-H4) demonstrating that the sensing, learning, integrating, and coordinating capability significantly and positively impact service innovation capability (β = 0.230**); (β = 0.206**) and (β = 0.331***) indicating H1, H3, and H4 are supported. Hypotheses (H2) demonstrate that the learning capability insignificantly and positively impacts service innovation capability (β = 0.078), showing that H2 is unsupported. Additionally, Hypothesis (H5) shows that the service innovation capability significantly and positively impacts sustained competitive advantages where the statistical values show (β = 0.620***); thus, H5 is supported. Therefore, Table 5 presents the overall findings on direct hypotheses.

Table 5. Path coefficient

Direct paths	β	t-statistics	p-values
H1: Sensing Capability → Service innovation capability	0.230	2.886	0.004
H2: learning capability → Service innovation capability	0.078	0.858	0.391
H3: integrating capability → Service innovation capability	0.206	2.343	0.019
H4: coordinating capability → Service innovation capability	0.331	3.785	0.000
H5: Service innovation capability → Sustained Competitive advantages	0.620	10.841	0.000

Note: *** = $p < 0.001$ → Very highly significant; ** = $p < 0.01$ → Highly significant; * = $p < 0.05$ → Significant; no stars = $p \geq 0.05$ → Not significant

Table 6. Mediating Hypothesis

	β	**t-statistics**	**p-values**
H6: Sensing Capability → Service innovation capability → Sustained Competitive advantages	0.143	2.704	0.007
H7: learning capability → Service innovation capability → Sustained Competitive advantages	0.048	0.843	0.399
H8: integrating capability → Service innovation capability → Sustained Competitive advantages	0.128	2.328	0.020
H9: coordinating capability → Service innovation capability → Sustained Competitive advantages	0.205	3.358	0.000

Mediation Hypotheses

Following the approach outlined by Arshad et al. (2016), the mediating effects of service innovative capability were investigated. Determining the mediating effect relied on the path coefficients, which indicate the direct paths between the independent and mediating variables (i.e., IV-MV) and the mediating and dependent variables (i.e., MV-DV). The significance of the mediating effect was assessed based on the bootstrapping results, following the guidelines provided by Hair et al. (2014). Therefore, the results are presented in Table 6. Table 6 demonstrates that Hypothesis (H6, H8-H9) service innovation capability mediates the relationship between sensing capability, integrating capability, coordinating capability, and sustained competitive advantages ($\beta = 0.143$**); ($\beta = 0.128$**); and ($\beta = 0.205$***) showing H6, H8, and H9 are supported. Hypothesis (H7) indicates that the service innovation capability does not mediate the relationship between learning capability and sustained competitive advantages ($\beta = 0.048$), illustrating that H7 is not supported.

DISCUSSION

This current study explored the role of dynamic capability—specifically, sensing, learning, source integrating, and coordinating capabilities in enhancing service innovation capability and how, in turn, to achieve sustained competitive advantage in the hotel industry. The analysis incorporated both direct and indirect relationships, offering a comprehensive understanding of the mechanisms through which dynamic capabilities influence service innovation capability and sustained competitive advantages. Overall, findings from the present study surprisingly reveal that not all the dimensions of dynamic capability significantly impact the services innovation capability of the hotel industry. Among the four capabilities, sensing, integrating, and coordinating capabilities significantly impact the service innovation capabilities. In contrast, learning capabilities have an insignificant positive impact on the services innovation capabilities.

First, the statistical findings from the current study demonstrated that sensing capability has a significant positive impact on service innovation capability, previously supported by Hernández-Linares et al. (2021), who outlined that sensing capability has the potential to detect emerging market shifts and opportunities which poses the groundwork for proactive innovations. Another study by Gomes et al. (2022) validated the significant impact of learning capability on service innovation capability. In another context, Edgar et al. (2024) examined and confirmed that the dynamic capability has a significant impact on the performance of tourism industry in Iran. On other hand, Gupta et al. (2024) confirmed similar results in the context of tourism sector in India. Thus, the current research seeks to expand our understanding of how hotels that constantly lead in learning and adopting various modern services capabilities with a dynamic capability framework could achieve superior about the current consumer market trends, ultimately shaping sustainable competitive advantages. In addition, sensing capability enables hotels to respond to emerging market trends, opportunity recognition, and customer needs, allowing innovation into competitive gains (Hoang et al., 2024; Bálint, 2025). Integration serves as a bridge between insight and execution, helping hotels synthesize information into actionable innovation strategies.

Second, this study found an insignificant and positive impact of learning capability on the service innovation capability of the hotel industry. The findings align with Iqbal & Ahmad (2021), who reported that the learning capability among employees working in cross-culture or under a hierarchical structure tends to avoid knowledge sharing. Notably, Shannaq et al. (2024) pointed out that the organizations under Arab individual supervision probably learning may not be fully strategically and/or institutionally aligned with innovation objectives. Arab countries are characterized by high power distance, hierarchical structure, and cultural collectivism (Basabe & Ros, 2005). Furthermore, employees deeply respect the traditional learning style in countries like Saudi Arabia and avoid challenging service mechanisms. This supports the present study's findings by confirming the significant impact of learning capability on the service innovation capability. For instance, the high-power distance index indicates that the Arab world, which places considerable value on traditional authority, ranks high on this scale (Shannaq et al., 2024). Individuals working in such cultures tend to adhere strictly to hierarchical structures and directives from higher authorities. Moreover, Albassami et al. (2022) witnessed limited knowledge sharing, openness to change, and cross-functional collaboration in Saudi Arabian organizations. In this view, the hospitality industry in Saudi Arabia, which is still evolving toward a more innovation-driven service model, organizational learning may not be fully institutionalized or strategically aligned with innovation objectives.

Third, this study confirmed a significant positive impact of integration capability on the service innovation capability of the hotel industry, supported by Vanpoucke et al., 2014. The findings from the present study exhibited that integrating innovative

technologies such as artificial intelligence with the services has a revolutionary impact on the sustained competitive advantages of the hotels, which shape the hotel's ultimate overall performance. Integrating capability enables hotels to acknowledge and combine insights from distinct sources, such as market emerging trends, operational data, guest feedback, and employee expertise, into innovative and unified service offerings (Ziyae et al., 2022; Ezzaouia et al., 2023). In the hotel industry context, the learning capability is an essential dimension of dynamic capability where seamless guest experiences depend on coordinating multiple service touchpoints, including reception, room services, food services, housekeeping, and digital platforms. Importantly, due to the rapid transformations of the religious tourism and hospitality sector in Saudi Arabia, the hotels need to understand dynamic capabilities implementations spurred by initiatives under Vision 2030.

Fourth, in this hypothesis, the findings from the present study confirmed that the coordinating capability has a significant positive impact on sustained competitive advantages. Emphasizing its critical role in enabling hotels to innovate their service offerings effectively. This was previously supported by Agarwal & Selen (2013), who confirmed a significant association between coordinating capability and service innovation. Prior studies reported that service innovation in the hotel industry requires seamless execution across multiple departments and functions—front desk, food and beverage, housekeeping, information technology, and guest relations (Ziyae et al., 2022; Pande & Pande, 2024). In this view, coordinating capability imitates the hotels' ability to align these diverse functions, ensuring that innovation is not isolated to a single unit but integrated into the service delivery process. Notably, due to the rapid modernization of organizations under Vision 2030, the coordinating capability plays an essential role in shaping the hotels' competitiveness and overall performance.

Fifth, service innovation capability significantly impacts sustained competitive advantages, confirming the strategic importance of innovation in sustaining short- and long-term market leadership. The findings were previously supported by Anuntarumporn & Sorhsaruht (2022), who validated the significant relationship between service innovation capability and sustained competitive advantages. Additionally, empirical studies emphasized that innovative services are highly perishable, customer expectations are dynamic, and differentiation is increasingly difficult (Setianingsih et al., 2023; Kupi et al., 2025). Innovation is critical to achieving and sustaining competitive advantages. This could involve leveraging digital technologies (e.g., mobile check-in, smart rooms), offering personalized services (e.g., cultural or religious accommodations), or developing entirely new guest experience models tailored to local and international visitors. By doing so, hotels can increase customer satisfaction, encourage repeat visits, and strengthen brand loyalty—all key ingredients for sustained competitive advantage.

Finally, the study confirms that service innovation capability mediates the relationship between dynamic capabilities and sustained competitive advantage. It serves as the mechanism through which firms leverage their capabilities to differentiate, adapt, and compete effectively. The study highlights that service innovation capability significantly mediates the relationship between dynamic capabilities and sustained competitive advantage in the Saudi hotel industry. While dynamic capabilities—particularly coordinating, sensing, and integrating—are vital for organizational agility, their full impact is realized when channeled through service innovation.

CONCLUSION

This study advances our understanding of how dynamic capabilities shape service innovation, which leads to sustainable competitive advantage in Saudi Arabia's hotel industry. Grounded in the resource-based view and its extended version called dynamic capability theory, the findings from the present study identified that sensing, integrating, and coordinating capabilities significantly enhance service innovation capability, which subsequently drives sustainable competitive advantage. Contrary to expectations, learning capability did not exhibit direct or indirect effects. Together, these results suggest that in fast-moving, service-intensive contexts, the capabilities that prioritize timely market insight, cross-functional integration, and orchestration of resources translate more readily into concrete service innovations than learning routines that are not tightly coupled to execution. Theoretically, the present study contributes by exploring the heterogeneous impact of dynamic capability dimensions rather than treating them as a composite in a single framework. Thus, the present study determines that service innovation operates as a central transmission mechanism through which specific dynamic capabilities yield a durable advantage. In contrast, the non-significance of learning capability underscores a learning-to-action gap. On the one hand, learning capability alone is insufficient unless embedded in integrative and coordinating routines that convert knowledge into new or improved services. This nuance refines resource-based view and dynamic capability theory arguments by highlighting the primacy of actionability and routinized recombination in service settings.

In practice, policymakers from the hotel industry should establish market-sensing systems that include real-time guest feedback analysis, analytics tools, integration platforms, and coordination systems that enable rapid service testing and deployment. The operationalization of learning processes requires dedicated pipelines, performance-based incentives, and governance systems to prevent knowledge loss. In addition, conducting regular "dynamic capability audits" helps organizations detect service delivery bottlenecks between the learning and implementation stages. Notably, future research should investigate additional factors, including digitalization capability, service design orientation, and customer experience quality, that impact service quality innovation and competitive advantage.

Theoretical Implications

These findings contribute to the dynamic capabilities framework by empirically validating the differentiated roles of specific capabilities in service-driven contexts. They suggest that service innovation is not a function of any single capability but rather a result of orchestrating multiple complementary capabilities. This highlights the nuanced interplay between sensing, integrating, and coordinating activities in service firms. Moreover, the study reinforces the centrality of service innovation as a strategic asset. It mediates the pathway from internal capabilities to external performance outcomes,

aligning with the broader theory that innovation capability is a key conduit through which dynamic capabilities translate into sustainable value creation. This underscores the pivotal role of internal alignment, cross-functional collaboration, and orchestration of resources in fostering innovation and sustaining competitiveness. Firms that can effectively coordinate diverse knowledge and activities are better positioned to generate meaningful innovations that resonate in the market.

Moreover, Pereira-Moliner et al. (2021) highlighted that dynamic capability, including service innovation capability, enables hotels to gather, process, and leverage large volumes of customer and market data. These capabilities help them detect new opportunities and create innovative customer service models through service innovation capability. The findings are theoretically consistent with the dynamic capability theory and resource-based view, revealing unique, innovative technologies to enhance the efficiency of guest experiences and ensure safety (Saleem et al., 2025). Coordinating capability enhances innovation by aligning internal resources and departments to deliver cohesive guest experiences. Sensing capability helps detect market trends, which maintain hotel relevance when translated into innovative services. Integrating capability supports assimilating knowledge to create differentiated offerings, such as personalized or tech-enhanced services. Conversely, learning capability showed no significant indirect effect, suggesting that learning in this context may be more compliance-oriented than innovation-driven. Service innovation capability is a critical bridge that transforms dynamic capabilities into lasting competitive advantage.

Managerial Implications for the Hotel Industry

The findings of this study provide valuable insights for government policymakers, the hospitality industry, and technology developers on how dynamic capability and service innovation can enhance operational efficiency and competitiveness in the hotel industry. Additionally, the study highlights how these advancements align with the United Nations Sustainable Development Goals (SDGs), particularly SDG 9 (Industry, Innovation, and Infrastructure).

The research demonstrates that hotels must adopt an integrated approach to dynamic capability, combining service innovation under the innovative technological factors (e.g., AI, IoT, and blockchain) framework rather than focusing on isolated technologies. For example, AI-driven demand forecasting can optimize room pricing and staffing (Talukder et al., 2025). IoT-enabled innovative room systems improve energy efficiency and guest experience. Blockchain-based supply chain tracking ensures transparency in sourcing sustainable products for the guests (e.g., organic food and eco-friendly amenities) (Mandal et al., 2017; Sholeha et al., 2025). However, hotels that holistically implement these technologies—rather than adopting them piecemeal—will gain a first-mover advantage, staying ahead in domestic and international markets. In this view, hotels must align technological investments with strategic business goals to maximize performance.

For instance, luxury resorts can use AI chatbots for guest engagement. At the same time, budget hotels may focus on automated check-in systems to reduce labor costs as the hotel industry was among the hardest-hit sectors during the COVID-19 pandemic (Ozdemir et al., 2021), with widespread closures, reduced occupancy, and shifting customer expectations. To recover and thrive in the post-pandemic era and/or natural disasters, hotels must enhance their service innovation capability—developing new and adaptive services—by strengthening their sensing capability (the ability to detect and respond to market changes, customer needs, and technological trends).

Therefore, several governments and hospitality businesses have not yet developed policies to support the adoption of dynamic capability in hotel operations. Governments should incentivize hotels to adopt innovative energy systems (SDG 7: Affordable and Clean Energy) and zero-waste supply chains (SDG 12: Responsible Consumption) to address this gap. In this view, Mitra & Jain (2024) highlighted that industry associations should establish best-practice guidelines for integrating AI and IoT into hospitality. Beyond the competitiveness of the hotel industry, other departments linking hotels may utilize innovative technologies to sustain competitive advantages. For example, restaurants and catering (IoT sensors for food safety monitoring), housekeeping (RFID tracking for linen management), and Guest services (AI concierges for personalized recommendations). The hotel industry can enhance operational resilience, reduce costs, and deliver superior guest experiences, ultimately contributing to broader sustainable development goals.

Limitations and Future Research Directions

While providing valuable insights into the impact of dynamic capabilities and service innovation on the competitiveness of hotels in Saudi Arabia, this study presents several limitations that future research should address. First, the research was confined to the hotel industry in Saudi Arabia, which may limit the applicability of its findings to other service industries or different geographical contexts. Future studies could benefit from expanding their scope to include diverse service sectors such as healthcare and aviation to validate and compare the findings across different industries. Additionally, while the study examined various dynamic capability dimensions (e.g., sensing, learning, coordinating, and integrating capability), it did not incorporate emerging innovations like robotics and automation, which are becoming increasingly relevant in the hotel industry. Given the rapid adoption of AI-driven solutions in hotels, such as automated check-in systems and robotic concierges, future research should explore these technologies to provide a more comprehensive understanding of their role in enhancing competitiveness.

This is particularly relevant as Saudi Arabia continues pursuing its Vision 2030 goals, emphasizing economic diversification and technological advancement in the tourism and hospitality sectors. Future studies should also consider the role of government policies and industry collaborations in facilitating the adoption of these innovations, ensuring that the hotel sector remains agile and responsive to changing market demands. Another limitation is the present study focuses on service innovation capability, which, while insightful, overlooks other service factors like customer satisfaction that could further explain how service innovation drives competitiveness.

Moreover, the present study's cross-sectional design restricts the ability to establish causal relationships between dynamic capabilities, service innovation, and competitiveness. Future research could adopt longitudinal designs or utilize objective secondary data to assess causality and long-term impacts better.

Appendix A (Empirical studies on dynamic capability)

Author and Year	Objectives	Findings	Research Gaps Suggested
Agarwal & Selen (2013)	To examine how dynamic capabilities incrementally and cumulatively influence service innovation in collaborative service organizations.	Dynamic capabilities contribute significantly to service innovation when developed incrementally and applied in a cumulative manner.	Limited empirical testing in the hospitality sector; need to explore longitudinal effects of dynamic capability development.
Ferreira & Coelho (2020)	To assess the impact of dynamic capabilities, innovation, and branding capabilities on competitive advantage and SME performance in Portugal, with a focus on entrepreneurial orientation.	Dynamic and branding capabilities positively affect competitive advantage and performance; entrepreneurial orientation moderates these effects.	Further research is needed in non-European contexts and large firms; with a limited focus on service innovation.
Hernández-Linares et al. (2021)	To investigate the relationship between dynamic capabilities and SME performance with market orientation as a moderator.	Market orientation enhances the positive effects of dynamic capabilities on SME performance.	Need for industry-specific studies; lack of application in the tourism and hospitality sectors.
Horng et al. (2022)	To explore how big data capabilities, framed within dynamic capabilities, contribute to competitive advantage and performance in hospitality.	Big data capabilities significantly enhance service innovation and competitive advantage through knowledge-based dynamic capabilities.	Further studies are required to isolate the individual impact of big data and other technological capabilities.
Kankam-Kwarteng et al. (2021)	To assess the roles of market sensing capability and customer interaction orientation in service firm marketing performance.	Market sensing and customer interaction capabilities are crucial for improving marketing performance in service firms.	Lack of integration with broader dynamic capability frameworks in hospitality or tourism sectors.
Mandal (2017)	To analyze the influence of dynamic capabilities on hospital-supplier collaboration and hospital supply chain performance.	Dynamic capabilities strongly affect collaboration quality and supply chain performance in hospitals.	Need to extend findings to non-healthcare service industries, particularly hospitality.
Pande & Pande (2024)	To evaluate how organizational learning culture and dynamic capabilities enhance hotel service innovation.	Both learning culture and dynamic capabilities are key drivers of service innovation in the hotel industry.	Requires broader testing across hotel types and regions to ensure generalizability.
Ziyae et al. (2022)	To investigate the role of dynamic capabilities in driving service innovation in the hotel industry.	Dynamic capabilities significantly influence service innovation and firm competitiveness.	Future studies should examine mediating or moderating variables, such as technological adoption or leadership style.

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REFERENCES

Agarwal, R., & Selen, W. (2013). The incremental and cumulative effects of dynamic capability building on service innovation in collaborative service organizations. *Journal of Management & Organization*, *19*(5), 521-543. https://doi.org/10.1017/jmo.2014.5

Agina, M. F., Farrag, D. A., Jaber, H. M., Fayyad, S., Abbas, T. T., Salameh, A. A., & Elziny, M. N. (2025). The influence of customer incivility on hotel frontline employees' responses and service sabotage: does co-worker support matter? *Geojournal of Tourism and Geosites*, 58(1), 89–104. https://doi.org/10.30892/gtg.58108-1393

Akgün, A. E., İmamoğlu, S. Z., Koçoğlu, İ., İnce, H., & Keskin, H. (2014). Bridging organizational learning capability and firm performance through customer relationship management. *Procedia-Social and Behavioral Sciences*, *150*, 531-540. https://doi.org/10.1016/j.sbspro.2014.09.071

Alatawi, I. A., Ntim, C. G., Zras, A., & Elmagrhi, M. H. (2023). CSR, financial and non-financial performance in the tourism sector: A systematic literature review and future research agenda. *International Review of Financial Analysis*, *89*, 102734. https://doi.org/10.1016/j.irfa.2023.102734

Albassami, A. M., Jantan, A. H., bin Abdullah, A. R., & bin Bali Mahomed, A. S. (2022). Training Needs Analysis and Organizational Effectiveness: Linking Perceived Organizational Support from Saudi Arabian Construction Sector. *Pacific Business Review International*, *14*(12).

Anuntarumporn, N., & Sorhsaruht, P. (2022). The impact of innovation capability of firms on competitive advantage: An empirical study of the ICT industry in Thailand. *The Journal of Asian Finance, Economics and Business*, *9*(2), 121-131. https://doi.org/10.13106/ jafeb.2022.vol9.no2.0121

Arshad, A. M., Wang, J., & Su, Q. (2016). Investigating the mediating role of service innovation in firm performance: An empirical research. *Journal of Applied Business Research*, *32*(2), 461.

Arsić, M., Bojović, P., & Vujko, A. (2025). The role of receptive travel agencies in promoting sustainable rural-spa destination development. *Geojournal of Tourism and Geosites*, 60(2spl), 1168–1178. https://doi.org/10.30892/gtg.602spl14-1490

Bálint, B. (2025). Perceptions of accessible tourism: An analysis of attitudes as a function of direct contact with people with disabilities in Romania. *Geojournal of Tourism and Geosites*, 60(2spl), 1078–1086. https://doi.org/10.30892/gtg.602spl05-1481

Basabe, N., & Ros, M. (2005). Cultural dimensions and social behavior correlates: Individualism - collectivism and power distance. *International Review of Social Psychology*, *18*(1), 189-225.

Bujdosó, Z., Vida, N., Máté, B., Nagy, K., & Bringye, B. (2025). The artificial intelligence usage and benefits in tourism marketing. *Geojournal of Tourism and Geosites*, 60(2spl), 1147–1157. https://doi.org/10.30892/gtg.602spl12-1488

Chacón Vargas, J. R., & Moreno Mantilla, C. E. (2014). Sustainable supply chain management capabilities: a review from the resource-based view, the dynamic capabilities and stakeholder theories. *Latin American Journal of Management for Sustainable Development*, *1*(4), 323-343. https://doi.org/10.1504/LAJMSD.2014.067388

Chatterjee, S., Chaudhuri, R., González, V. I., Kumar, A., & Singh, S. K. (2022). Resource integration and dynamic capability of frontline employee during COVID-19 pandemic: from value creation and engineering management perspectives. *Technological Forecasting and Social Change*, *176*, 121446. https://doi.org/10.1016/j.techfore.2021.121446

Cheng, C. C., & Krumwiede, D. (2012). The role of service innovation in the market orientation - new service performance linkage. *Technovation*, *32*(7-8), 487-497. https://doi.org/10.1016/j.technovation.2012.03.006

Chin, C. H., Chan, W. C., Ming, L., & Chin, C. L. (2025). Revealing the Competitiveness of Rural Tourism: Exploring Tangible and Intangible Resources in Sarawak (Malaysia) and Henan Province (China). *Geojournal of Tourism and Geosites*, 58(1), 18-31. https://doi.org/10.30892/gtg.58102-1387

Dogru, T., McGinley, S., & Kim, W. G. (2020). The effect of hotel investments on employment in the tourism, leisure and hospitality industries. *International Journal of Contemporary Hospitality Management*, *32*(5), 1941-1965. https://doi.org/10.1108/IJCHM-11-2019-0913

Ersoy, A. (2024). Strategies and Barriers to Technological Innovation in the Hospitality Industry: A Qualitative Exploration. *Yüzüncü Yıl Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (65), 35-53. https://doi.org/10.53568/yyusbed.1430100

Ezzaouia, I., & Bulchand-Gidumal, J. (2023). The impact of information technology adoption on hotel performance: Evidence from a developing country. *Journal of Quality Assurance in Hospitality & Tourism*, *24*(5), 688-710. https://doi.org/10.1080/1528008X.2022.2077886

Fan, L., Xie, C., Zhang, J., Huang, S. S., & Wang, X. A. (2023). Hotel digital capability: Dimensionality and measurement. *Journal of Hospitality and Tourism Management*, *57*, 225-235. https://doi.org/10.1016/j.jhtm.2023.10.010

Feng, C., Ma, R., & Jiang, L. (2020). *The impact of service innovation on firm performance: a meta-analysis. Journal of Service Management, ahead-of-print(ahead-of-print).*doi:10.1108/josm-03-2019-0089.

Ferreira, J., & Coelho, A. (2020). *Dynamic capabilities, innovation and branding capabilities and their impact on competitive advantage and SME's performance in Portugal: the moderating effects of entrepreneurial orientation. International Journal of Innovation Science, 12(3), 255–286.* doi:10.1108/ijis-10-2018-0108

Fosso Wamba, S., Queiroz, M. M., Wu, L., & Sivarajah, U. (2024). Big data analytics- enabled sensing capability and organizational outcomes: assessing the mediating effects of business analytics culture. *Annals of Operations Research*, *333*(2), 559-578. https://doi.org/10.1007/s10479-020-03812-4

Edgar, G., Kharazmi, A., Behzadi, S., & Kharazmi, O. A. (2024). Effect of knowledge resources on innovation and the mediating role of dynamic capabilities: case of medical tourism sector in Iran. *European Journal of Innovation Management*, 27(3), 713-741. https://doi.org/10.1108/EJIM-05-2022-0238

Gomes, G., Seman, L. O., Berndt, A. C., & Bogoni, N. (2022). The role of entrepreneurial orientation, organizational learning capability and service innovation in organizational performance. *Revista de Gestão*, *29*(1), 39-54. https://doi.org/10.1108/REGE-11-2020- 0103

Grawe, S. J., Chen, H., & Daugherty, P. J. (2009). The relationship between strategic orientation, service innovation, and performance. *International journal of physical distribution & logistics management*, *39*(4), 282-300. https://doi.org/10.1108/09600030910962249

Gupta, Y., Khan, F. M., Kumar, A., Luthra, S., & Queiroz, M. M. (2024). Mobilising big data analytics capabilities to improve performance of tourism supply chains: the moderating role of dynamic capabilities. *The International Journal of Logistics Management*, 35(2), 649-679. https://doi.org/10.1108/IJLM-03-2022-0125

Hernández-Linares, R., Kellermanns, F. W., & López-Fernández, M. C. (2021). Dynamic capabilities and SME performance: The moderating effect of market orientation. *Journal of Small Business Management*, *59*(1), 162-195. https://doi.org/10.1111/jsbm.12474

Hoang, G., Luu, T. T., Nguyen, T. T., Tang, T. T. T., & Pham, N. T. (2024). Entrepreneurial leadership fostering service innovation in the hospitality firms: the roles of knowledge acquisition, market-sensing capability and competitive intensity. *International Journal of Contemporary Hospitality Management*, *36*(4), 1143-1169. https://doi.org/10.1108/IJCHM-08-2022-0969

Horng, J. S., Liu, C. H., Chou, S. F., Yu, T. Y., & Hu, D. C. (2022). Role of big data capabilities in enhancing competitive advantage and performance in the hospitality sector: Knowledge-based dynamic capabilities view. *Journal of Hospitality and Tourism Management*, *51*, 22-38. https://doi.org/10.1016/j.jhtm.2022.02.026

Inoue, Y., & Lee, S. (2011). Effects of different dimensions of corporate social responsibility on corporate financial performance in tourism-related industries. *Tourism management*, *32*(4), 790-804. https://doi.org/10.1016/j.tourman.2010.06.019

Iqbal, Q., & Ahmad, N. H. (2021). Sustainable development: The colors of sustainable leadership in learning organization. *Sustainable Development*, *29*(1), 108-119. https://doi.org/10.1002/sd.2135

Iranmanesh, M., Ghobakhloo, M., Nilashi, M., Tseng, M. L., Yadegaridehkordi, E., & Leung, N. (2022). Applications of disruptive digital technologies in hotel industry: A systematic review. *International Journal of Hospitality Management*, *107*, 103304. https://doi.org/10.1016/j.ijhm.2022.103304,

Jiang, Y., Ritchie, B. W., & Verreynne, M. L. (2022). A resource-based typology of dynamic capability: Managing tourism in a turbulent environment. *Journal of Travel Research*, 61(5), 1006-1023.

Kankam-Kwarteng, C., Sarpong, A., Amofah, O., & Acheampong, S. (2021). Marketing performance of service firms: Recognizing market sensing capability and customer interaction orientation. *Journal of Tourism, Heritage & Services Marketing*, *7*(2), 38-48. 10.5281/zenodo.5548486

Kazmi, S. W., & Ahmed, W. (2022). Understanding dynamic distribution capabilities to enhance supply chain performance: a dynamic capability view. *Benchmarking: An International Journal*, *29*(9), 2822-2841. https://doi.org/10.1108/BIJ-03-2021-0135

Khristianto, W., Suharyono, S., Pangestuti, E., & Mawardi, M. K. (2021). The effects of market sensing capability and information technology competency on innovation and competitive advantage. *The Journal of Asian Finance, Economics and Business*, *8*(3), 1009-1019.

Kupi, M., Kundi, V., & Szabó, T. (2025). Deciphering the cryptocurrency impact on tourism dynamics: Legal insights from Spain, France, Croatia, and the Netherlands. *Geojournal of Tourism and Geosites*, 58(1), 422-432. 10.30892/gtg.58139-1424

Li, Y. Q., & Liu, C. H. S. (2018). The role of problem identification and intellectual capital in the management of hotels' competitive advantage-an integrated framework. *International Journal of Hospitality Management*, *75*, 160-170. https://doi.org/10.1016/j.ijhm.2018.05.022

Mandal, S. (2017). The influence of dynamic capabilities on hospital-supplier collaboration and hospital supply chain performance. *International Journal of Operations & Production Management*, *37*(5), 664-684. https://doi.org/10.1108/IJOPM-05-2016- 0249

Medeiros, M. M. D., Maçada, A. C. G., & Freitas Junior, J. C. D. S. (2020). The effect of data strategy on competitive advantage. *The Bottom Line*, *33*(2), 201-216. https://doi.org/10.1108/BL-12-2019-0131

Mitra, A., & Jain, V. (2024). AI and IoT Applications in the Hospitality Industry: A Study of Their Potential in Transforming the Indian Online Travel Market by 2030. In *Technology and Luxury Hospitality* 151-164. Routledge.

Nieves, J., Quintana, A., & Osorio, J. (2016). Organizational knowledge, dynamic capabilities and innovation in the hotel industry. *Tourism and Hospitality Research*, *16*(2), 158-171. https://doi.org/10.1177/1467358415600208

Ozdemir, O., Dogru, T., Kizildag, M., Mody, M., & Suess, C. (2021). Quantifying the economic impact of COVID-19 on the US hotel industry: Examination of hotel segments and operational structures. *Tourism Management Perspectives*, *39*, 100864. https://doi.org/10.1016/j.tmp.2021.100864

Palacios-Marqués, D., Devece-Carañana, C., & Llopis-Albert, C. (2016). Examining the effects of online social networks and organizational learning capability on innovation performance in the hotel industry. *Psychology & Marketing*, *33*(12), 1126-1133. https://doi.org/10.1002/mar.20948

Pande, B., & Pande, S. (2024). Enhancing Service Innovation Performance of Hotels: The Role of Organizational Learning Culture and Dynamic Capabilities. *Atna Journal of Tourism Studies*, *19*(2).

Patwary, A. K., Alwi, M. K., Rehman, S. U., Rabiul, M. K., Babatunde, A. Y., & Alam, M. M. D. (2022). Knowledge management practices on innovation performance in the hotel industry: mediated by organizational learning and organizational creativity. *Global Knowledge, Memory and Communication*, *73*(4/5), 662-681. https://doi.org/10.1108/GKMC-05-2022-0104

Pereira-Moliner, J., Molina-Azorín, J. F., Tarí, J. J., López-Gamero, M. D., & Pertursa-Ortega, E. M. (2021). How do dynamic capabilities explain hotel performance? *International Journal of Hospitality Management*, *98*, 103023. https://doi.org/10.1016/j.ijhm.2021.103023

Pugachov, M., Pugachov, V., Shevchenko, O., Banyeva, I., & Kushniruk, V. (2022). Perspectives for the Tourism and Hospitality Industry in a Globally Competitive Environment. 10.46852/0424-2513.4.2022.26

Saleem, M., Kamarudin, S., Shoaib, H. M., & Nasar, A. (2022). Retail consumers' behavioral intention to use augmented reality mobile apps in Pakistan. *Journal of Internet Commerce*, *21*(4), 497-525. https://doi.org/10.1080/15332861.2021.1975427

Saleem, M., Kamarudin, S., Shoaib, H. M., & Nasar, A. (2023). Influence of augmented reality app on intention towards e-learning amidst COVID-19 pandemic. *Interactive Learning Environments*, *31*(5), 3083-3097. https://doi.org/10.1080/10494820.2021.1919147

Saleem, M., Khalid, H., Wijenayake, A., Gaete-Sepulveda, M. A., Almaslukh, F. M., & Mahroof, K. (2025). The impact of supply chain management 4.0 on the performance of the tea manufacturing firms: mediating role of market and entrepreneurial orientation. *Journal of Enterprise Information Management*. https://doi.org/10.1108/JEIM-11-2024-0610

Salama, W. M. E., Khairy, H. A., Mansour, A. A., Alrefae, W. M., Afify, S. M., & Shehadat, A. T. A. (2025). How AI awareness drives employee intention to leave in hotels: The mediating roles of job burnout and psychological contract breach. *Geojournal of Tourism and Geosites*, 60(2spl), 1206–1220. https://doi.org/10.30892/gtg.602spl18-1494

Salunke, S., Weerawardena, J., & McColl-Kennedy, J. R. (2019). The central role of knowledge integration capability in service innovation-based competitive strategy. *Industrial marketing management*, *76*, 144-156. https://doi.org/10.1016/j.indmarman.2018.07.004

Serafim, G. H., & Cristovao Verissimo, J. M. (2021). The relationship between strategic orientation, service innovation, and performance in hotels in Angola. *Sustainability*, *13*(11), 6256. https://doi.org/10.3390/su13116256

Setianingsih, W. E., & Nursaidah, N. (2023). How Does Hotel Service Innovation Affect Experiential Value and Consumer Decisions to Stay in Hotels? *Jurnal Manajemen Bisnis*, *14*(1), 162-178. https://doi.org/10.18196/mb.v14i1.16601

Shannaq, B., Adebiaye, R., Owusu, T., & Al-Zeidi, A. (2024). An intelligent online human-computer interaction tool for adapting educational content to diverse learning capabilities across Arab cultures: Challenges and strategies. *Journal of Infrastructure, Policy and Development*, *8*(9).

Sholeha, A. W., & Sumarmi, S. (2025). Managing sustainable tourism of perawan beach, east Java, Indonesia based on the coastal ecosystem service (ces) approach. *Geojournal of Tourism and Geosites*, 58(1), 78-88. 10.30892/gtg.58107-1392

Talukder, M. B., Kabir, F., & Jibon, F. A. (2025). AI-Driven Personalized Room Management in the Modern Hotel Industry. In *AI Technologies for Personalized and Sustainable Tourism* 59-82. IGI Global.

Tang, T. W., Wang, M. C. H., & Tang, Y. Y. (2015). Developing service innovation capability in the hotel industry. *Service Business*, *9*, 97-113. https://doi.org/10.1007/s11628-013-0220-z

Thang, D. V., & Khanh, P. N. K. (2025). The impact of ecotourism efficiency on promoting sustainable tourism development in the North-Central region. *Geojournal of Tourism and Geosites*, 60(2spl), 1197–1205. https://doi.org/10.30892/gtg.602spl17-1493

Tseng, H. T. (2023). Customer-centered data power: Sensing and responding capability in big data analytics. *Journal of Business Research*, *158*, 113689. https://doi.org/10.1016/j.jbusres.2023.113689

UN Tourism (2024). International tourist arrivals recover pre-pandemic levels in 2024. https://www.unwto.org/un-tourism-world-tourism-barometer-data

Vanpoucke, E., Vereecke, A., & Wetzels, M. (2014). Developing supplier integration capabilities for sustainable competitive advantage: A dynamic capabilities approach. *Journal of operations management*, *32*(7-8), 446-461. https://doi.org/10.1016/j.jom.2014.09.004

Weerawardena, J. (2003). Exploring the role of market learning capability in competitive strategy. *European journal of marketing*, *37*(3/4), 407-429. https://doi.org/10.1108/03090560310459023

Wong, D. T., & Ngai, E. W. (2023). The effects of analytics capability and sensing capability on operations performance: the moderating role of data-driven culture. *Annals of operations research*, 1-36. https://doi.org/10.1007/s10479-023-05241-5

Xiao, X., Tian, Q., & Mao, H. (2020). How the interaction of big data analytics capabilities and digital platform capabilities affects service innovation: A dynamic capabilities view. *Ieee Access*, *8*, 18778-18796. https://doi.org/10.1109/ACCESS.2020.2968734

Ziyae, B., Sadeghi, H., & Golmohammadi, M. (2022). Service innovation in the hotel industry: the dynamic capabilities view. *Journal of Enterprising Communities: People and Places in the Global Economy*, *16*(4), 582-602. https://doi.org/10.1108/JEC-12- 2020-0205

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