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Bibliometric Analysis on Digital Leadership in the Hotel Industry and Future Trends

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Abstract

Purpose – This bibliometric review critically synthesizes the existing research on digital leadership within the context of the hotel industry's digital transformation (DT). In response to a growing body of fragmented literature, this study employs bibliometric techniques to analyze the literature on digital leadership in the hotel sector. The aim is to identify key contributors and delineate core thematic clusters related to digital leadership.Design/Methodology – In analysing the significant and multifaceted topic of digital leadership, this study investigates the subject within the context of the hospitality industry, with a particular focus on environmental issues. The research evaluates themes based on past, present, and future trends in digital leadership in hotels, utilizing a bibliographic database sourced from the Web of Science (WoS). Findings – Several themes were identified from the role of digital transformation and impact on the hotel industry. The main themes include three aspects-“the concepts and elements of the digital leadership in the hotel industry”, “the structure of digital leadership in the hotel industry” and “the future trends of digital leadership in the hotel industry” through VOS viewer analysis.

Keywords: *Digital leadership, digital transformation, tourism and hospitality, bibliometric analysis.*

Introduction

The hospitality industry is experiencing a significant digital transformation (DT) driven by the advancement and widespread adoption of digital technologies. This evolution marks a shift from a traditional, low-technology, labor-intensive service sector to a high-technology, knowledge-intensive industry (Pencarelli, 2020). This transformation involves not only the integration of digital technologies—such as artificial intelligence (AI), service robots, and big data analytics—but also more complex innovations in digital business models that fundamentally reshape customer value propositions and value chains (Helal, 2023).

With the continuous advancement of digital technologies—including cloud computing, big data, the Internet of Things (IoT), 5G, and artificial intelligence (AI)—a new wave of industrial revolution, commonly referred to as Industry 4.0, has emerged on a global scale (Lu, 2017a). This transformation offers better customization and higher-quality products alongside improvements in technological equipment. Notably, the "Internet of Things," characterized by sensor-equipped devices that extend into physical reality and connect physical and digital entities, has facilitated the tourism and hotel industry's transition into the intelligent era known as 4.0 (Pencarelli, 2019). As an industry heavily reliant on interpersonal service experiences and labour-intensive practices, the hotel sector has been reshaping its operations in recent years through intelligent services across multiple dimensions. These include smart rooms, online reservations, self-check-in systems, intelligent customer service solutions, revenue management systems, social networks for engagement purposes, online marketing strategies, and robotic services (Liu et al., 2024). However, mere reliance on technological innovation is insufficient to ensure sustainable value creation. The critical factor lies in whether leaders can systematically integrate technology with processes and organizational culture to cultivate momentum for digital leadership.

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Ultimately, the success of organizations hinges on leaders who are adept at fostering digital transformation and driving innovation within this evolving digital landscape (Bresciani et al., 2021).

With the advancement and evolution of technology, traditional information technology has transformed into emerging digital technologies such as big data, cloud computing, the Internet of Things (IoT), 5G, blockchain, and artificial intelligence. This transformation has given rise to a more transformative concept of digital leadership (Qin Lin, 2023; Ju, 2021). Research on digital transformation has surged in recent years, accelerated by the COVID-19 pandemic (Faraj et al., 2021) and the emergence of new customer generations. This reflects its critical role in enhancing customer experiences, gaining competitive advantages, increasing profitability, and attracting highly qualified employees. Furthermore, digital transformation necessitates that hospitality organizations develop and sustain robust digital business capabilities. Among these capabilities, digital leadership stands out as a core competency that requires managers to acquire new skills for leading sustainable change amidst ongoing digital disruption. Consequently, it is indispensable for organizational adaptation and success in the digital era (Busulwa et al., 2024).

This study is motivated because there have been no studies yet on digital leadership in the hotel industry. Despite that, there are studies that have provided useful and fundamental overviews of the generic digital leadership literature. Among these studies. Tigre et al. (2023) who perform a bibliometric analysis on digital leadership and investigated that three clusters mainly in the subject of virtual teams, include 1) challenges and dynamics facing virtual teams 2) leadership challenges for virtual teams 3) technology and organization. This study raised the main capabilities of digital leadership include people focus, personal aspects, long-term orientation and task achievement. Zhu et al. (2025), in their systematic analysis of digital leadership in the education sector, found that digital leadership enhances teachers' job engagement and satisfaction by promoting technology integration and improves management efficiency through the construction of digital culture and digital transformation, all based on the technology-organization-environment (TOE) framework. Peng et al. (2024) reviewed 2527 peer-reviewed English articles published between 2000 and 2023 through bibliometric analysis about digital transformation in the hotel industry provides insights into the domestic research landscape of digital technology adoption in hotels. And discovered four themes (1) digital technology adoption, (2) stakeholder out-comes of digital transformation, (3) online purchase determinants, and (4) online review analysis. Pencarelli (2019) found the tourism industry is deeply involved in this digital transformation. Digital Revolution 4.0 leads Tourism 4.0, with wisdom and sustainability as the correct paradigms for enhancing the quality of tourism practices. To the author’s knowledge, no studies have reviewed digital leadership in the hotel industry through bibliometric analysis. Filling in the gap of the current context, this study first, to assess the overall intellectual structure of the field through bibliometric techniques—including co-authorship, citation, co-citation, and co-occurrence analyses—to map the evolution and key contributors of research on digital leadership in hotel DT; second, to identify and synthesize core research themes, with a particular focus on how digital leadership intersects with digital technology adoption strategies, stakeholder management, and organizational change mechanisms. This focus responds to the implicit linkage between digital leadership and technology adoption strategies highlighted in prior hospitality DT reviews, where leadership was identified as a critical factor in managing internal and external stakeholders toward digitalization and collaboration with technology providers.

(1) To understand the definition of digital leadership in the hotel industry and the theoretical base.

(2) To understand the main issues of digital leadership in the hotel industry based on co citation analysis

(3) To investigate the knowledge structure of digital leadership in the hotel industry based on co-citation analysis.

(4) To forecast and predict research trends of digital leadership in the hotel industry based on co-word analysis.

(5) To explore the impacts of digital leadership on organizational variables.

Literature Review

Since Avolio (2000) first introduced the concept of e-leadership, it has undergone continuous evolution alongside the rapid advancements in Internet and communication technology (ICT). This evolution has led to the emergence of virtual leadership, followed by leadership 4.0, and ultimately culminated in digital leadership—a reflection of the practical implementation of digital transformation

(Avolio, 2000; Westerman et al., 2014). In the hospitality industry, digital transformation is not only about adopting new technologies but also involves the development and maintenance of specific digital business capabilities, including digital customer engagement, digital innovation, and digital leadership (Busulwa, Pickering, & Mao, 2022). The role of hospitality managers is critical in driving these transformation efforts, as they lead the change required to build and sustain these capabilities. Consequently, managers must posses new or enhanced competencies that align with the demands of digital business environments (Holsapple, 2013). Competencies, as defined by Boyatzis (1982), refer to the knowledge, skills, abilities, and other characteristics necessary for managers to perform their tasks effectively. Recent studies have highlighted a significant gap between the competencies required for successful digital transformation and those associated with traditional digital technology management (Brynjolfsson & McAfee, 2014).

This gap has become more pronounced due to the exponential pace and breadth of digital technology advancements, indicating that existing lists of hospitality management digital technology competencies may need extension. he rapid evolution of digital technologies in the hospitality industry demands an expanded framework that integrates both technological competencies and broader management skills (Mayer-Schönberger & Cukier, 2013). Such a framework can bridge this gap, offering a comprehensive view of how digital technology competencies align with overall hospitality management competencies, thus enhancing the preparedness of future hospitality leaders (Schönherr et al., 2023).

Furthermore, digital leadership is increasingly recognized as an essential driver for fostering innovation and sustainability in the hospitality sector. Recent research underscores the role of digital tools as enablers of innovation, helping organizations merge technological capabilities with strategic organizational goals (Schönherr et al., 2023). As digital transformation is seen as a synergistic process, it involves combining digital technologies with management competencies to create, retain, and transfer knowledge—key elements in driving both service innovation and sustainable tourism development (Schönherr et al., 2023). The integration of digital leadership practices allows hospitality businesses not only to innovate but also to address environmental sustainability challenges, making them more resilient and competitive in the long run (Melnyk et al., 2014). For instance, digital tools that enhance customer experience management can also optimize resource utilization and reduce operational waste, aligning with sustainability objectives.

To address this issue, the study reconceptualizes the expanded competencies list into an integrative framework. This framework not only clarifies the interrelationships and interactions between different competencies but also explains how digital technology competencies align with broader hospitality management competencies. The ultimate goal of this framework is to enhance the preparedness of the future hospitality management workforce to effectively participate in digital transformation and digital business change agendas within their organizations. Digital leadership in the hotel industry has increasingly recognized digital tools as critical enablers for driving innovation and sustainable practices, with recent research highlighting their role in integrating technological capabilities with organizational goals. Schönherr et al. (2023) emphasize that digital transformation, viewed as a synergistic process of combining digital technologies and competencies, enables organizations to create, retain, and transfer knowledge—foundations for both service innovation and sustainable tourism development.

Methodology

Bibliometric approach

This study employed bibliometric analysis

This study employs a bibliometric review to quantitatively analyze the existing literature on digital leadership within the hospitality sector. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021) to ensure methodological rigor and transparency. Bibliometric analysis offers a robust quantitative approach for examining scholarly publications, allowing for the systematic mapping and summarization of research to inform future studies (Broadus, 1987; Pritchard, 1969). Its strength lies in its scientific objectivity and comprehensive coverage, which can provide a more extensive overview of a field than traditional literature reviews or meta-analyses (Moher et al., 2015).

The PRISMA framework complements this by providing a standardized structure for documenting the review process. It mandates the detailed reporting of search strategies, inclusion and exclusion criteria, and data extraction methods. This practice enhances transparency, facilitates the replication of research, mitigates data bias, and improves the overall reliability of the findings (Page et al., 2021). Adherence to PRISMA ensures that all critical aspects of the review are comprehensively addressed, thereby strengthening the quality of the research and the validity of its subsequent recommendations (Rahman et al., 2024).

The data for this analysis was sourced exclusively from the Web of Science (WoS) database. WoS was selected for its high-quality, reliable indexing and its widespread use in bibliometric studies (Boloy et al., 2021; Fauzi, 2023; Zupic & Čater, 2015). It is recognized as a reputable source for academic publishing and citation data, providing extensive access to globally acclaimed research (Martín-Martín et al., 2021).The PRISMA flowchart (Figure 1) outlines the process of searching, screening, and analyzing the data. A specific search string (detailed in Table 1) was developed to identify relevant publications. The strategy incorporated keywords related to "digital leadership" and its synonyms to capture the core theme. Simultaneously, terms such as "hotel," "hospitality," "lodging," and "accommodation" were used to define the industrial context. Truncation (e.g., "hotel*") was applied to include related terms like "hotels," "hotelier," and "hoteliers." To maintain a focus on high-quality, peer-reviewed literature, the search was limited to journal articles and publications in the English language, as these are typically subject to a more rigorous review process (Budler et al., 2021).

No	Keywords	Justification
1	"digital leader*" OR "digital leadership" OR "Electronic* leadership" OR "Electronic* leader*" OR "Virtual leader*" OR "Virtual leadership" OR "Leadership 4.0" OR "4.0 leadership" OR "digital transformation"	To identify literature related to digital leadership
2	hotel* OR hospitality OR lodging OR accommodation	To identify literature related to hospitality industry

Table 1 Source(s): Authors' own creation work

Findings and Discussion

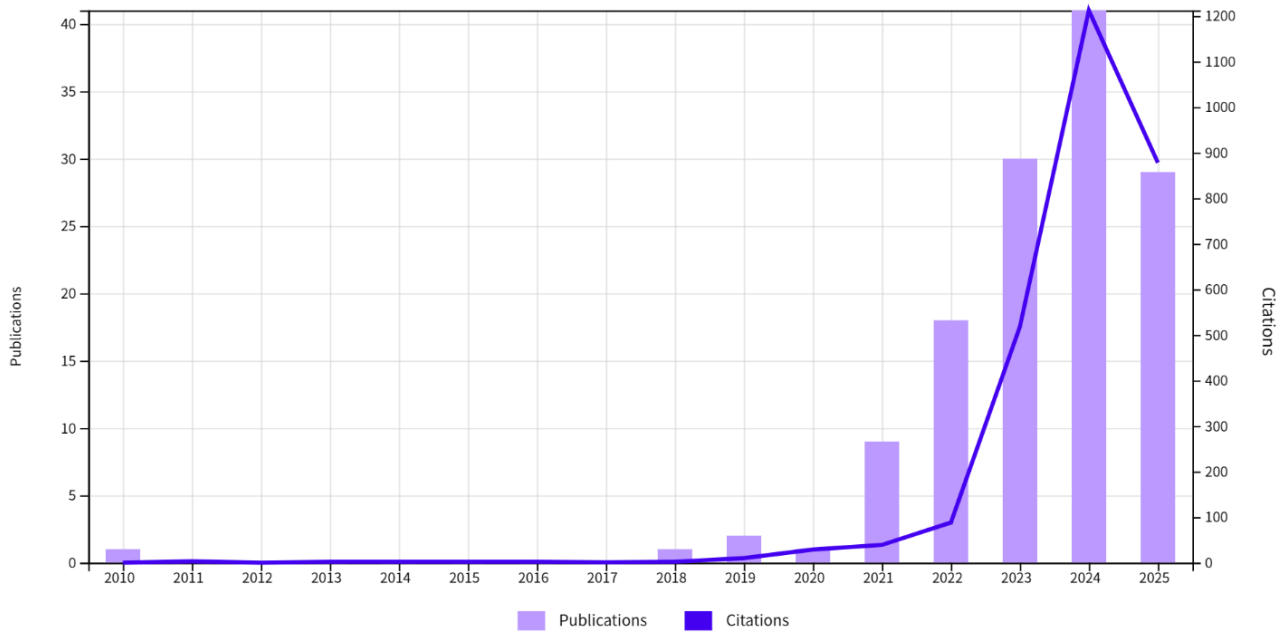
The data collection process was from 6th August, 2025 to 10th August, 2025 covering the period from its beginning to August 10th, 2025. The initial retrieved documents were 172. According to the flowchat of PRISMA as Figure 1, it shows the inclusion and exclusion criteria with restriction on the language. After being limited to the articles and English languages, only 132 articles were finalized. The total citation was 2638 and 2585 (without self-citations). The average citation per item was 21.2, with an h-index of 19. This research domain has established a fundamental theoretical framework and possesses a solid foundation for both theoretical and empirical investigations.

Distribution of documents publication years

The fist publication emerged in 2010 and from 2010 to 2018, scholarly output in the field remained sparse, with only isolated publications and limited citation activity, suggesting that research interest had not yet consolidated into a distinct academic domain. Beginning in 2019, a gradual increase in publications emerged, likely reflecting the early adoption of emerging digital technologies and their growing recognition in both industry and academia (Buhalis & Leung, 2018). A marked acceleration occurred from 2021 onward, coinciding with the intensified digital transformation across sectors—particularly following the COVID-19 pandemic—which compelled organizations to adopt and integrate digital solutions at an unprecedented pace (Gretzel et al., 2020; Dwivedi et al., 2021). The period between 2022 and 2024 witnessed an exponential surge in scholarly contributions, with publications

peaking in 2024. Citation trends mirrored this trajectory, reaching a record high of over 1,100 citations in the same year. This peak can be attributed to the maturation of the research domain, where foundational studies published in the preceding years began to accrue recognition and influence. Figure 2 presents the number of articles selected from Wos.

Table:2



Source (s): Web of Science

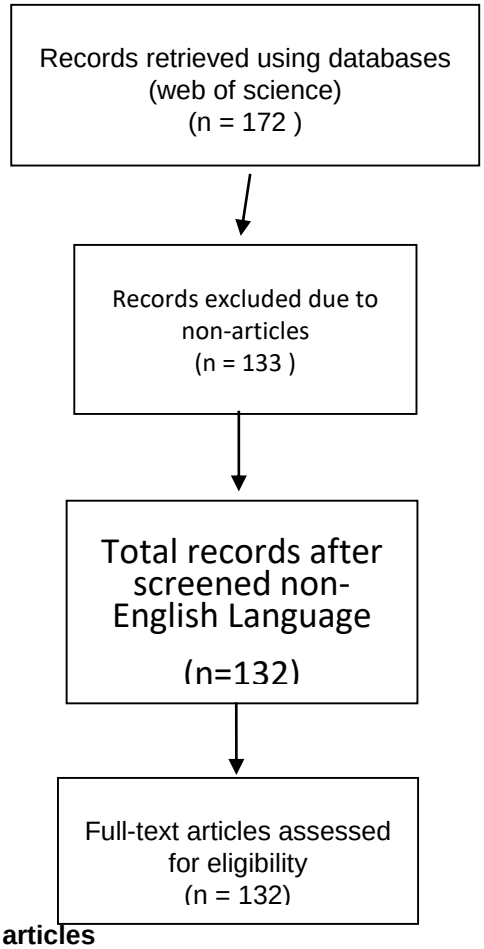


Figure 1: Flowchart of the articles

Journal Distribution

Through co-citation analysis, we identified a total of 132 journals, which are primarily distributed across 99 distinct publications, exhibiting slight variations in the number of articles published by each. The International Journal of Hospitality Management exerts the most significant influence on research within this domain, followed closely by the International Journal of Contemporary Hospitality Management, Tourism Management, and Sustainability. This finding underscores that, in addition to journals specifically focused on digital leadership within the field, there are also cross-disciplinary and interdisciplinary journals that are attentive to the development of this topic.

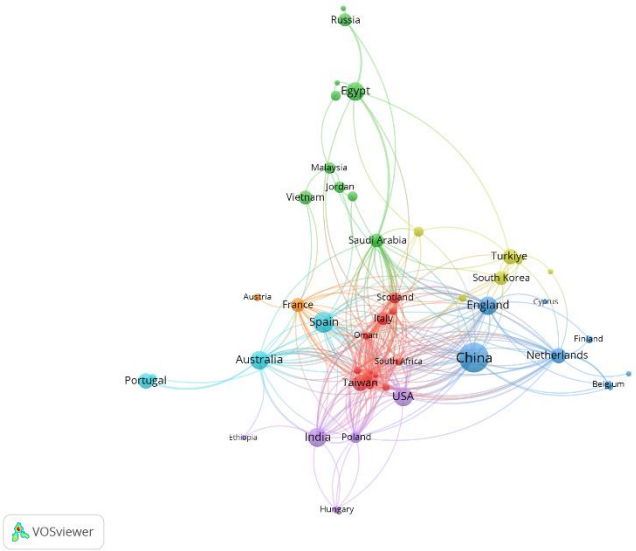


Table 3

Distribution of institute cooperation and Countries

According to the international cooperation map presented, it is evident that China has established collaborative relationships with numerous countries and regions. Based on the strength of these connections (Total link strength), the most significant cooperation occurs with the United States, followed by the United Kingdom, New Zealand, the Netherlands, the Arab region, Australia, India, Italy, Poland, Spain, and again the United Kingdom.

The institutions with a significant number of publications are predominantly Arab universities, including the University of Sadat City, Suez Canal University, and King Faisal University. The volume of papers published by research institutions serves as an indicator of their research capabilities in this domain. However, given that the overall intensity is merely 13, it suggests that research in this field remains relatively limited. To foster further development in subsequent stages, cross-regional and cross-institutional collaborations should be pursued.

Bibliometric coupling

Of the 132 documents, 59 met a threshold of 4 citations. The threshold was determined by several trials to ensure that the cluster network produced is robust and appropriate. The minimum citation should be reasonable, not too high or low. It may lead to over filtering and under filtering, respectively (Rejeb et al., 2021). The threshold in this study was tried several times, ranging from 3 to 12, until 4 was determined to have the most suitable citation threshold for producing a relevant network map. The top documents based on total link strength (TLS) are Peng et al. (2024) (183 TLS), Cheng et al.,(2023) (153 TLS) and Busulwa et al.,(2022) (123TLS). Table 2 presents the top 10 documents in bibliographic coupling analysis, ranked from their total link strength. Figure 3 presents the network visualization of bibliographic coupling on digital leadership in hotel industry. There are seven clusters, with three estranged cluster (orange, light blue and purple) that can be neglected. These clusters are analysed and articulated through a thorough re-evaluation of the representative articles within each cluster, culminating in a synthesis of the prevalent themes and research trajectories.

Cluster 1（red）: with 12 items, the red cluster is labelled as “digital transformation in the hotel industry”. This cluster primarily investigates the transformations in leadership styles, employee motivation, and organizational culture within the framework of digitalization in the hotel industry. Busulwa et al. (2022) digital business capabilities such as digital customer interaction, digital customer experience management, digital innovation, and digital leadership are essential management capabilities for the digital transformation of hotels. According to jayarrdena (2023), this study investigated corroborated that top management support, effort expectancy, and personal innovativeness serve as critical antecedents. Furthermore, the results underscored the distinctive role of behavioural expectation in forecasting the utilization of digital technology (DT).

Cluster 2 (green): with 12 items, the green cluster is labelled” Fundamental of digital leadership in the hotel industry”. This cluster represents the largest and most central component within the network, embodying the fundamental research on digital transformation and digital leadership. It has developed a comprehensive research framework for digital leadership and organizational transformation, integrating both theoretical models and practical applications. According to Dwivedi et al. (2023), the investigation of artificial intelligence reveals its potential to enhance productivity, particularly within the hotel and tourism sectors as well as in information technology from a multidisciplinary perspective.

Cluster 3 (blue): with 9 items, the blue cluster is labelled “the impact of digital leadership” According to Hussein et al. (2024) Digital leadership exerts a substantial positive influence on sustainable competitive advantage, green absorptive capacity, and ecological innovation. This study offers empirical evidence supporting the dynamic capability theory. Furthermore, Morgado Oliveira, J., & F. Gomes, C. (2024) raised up that internalizing best practices is essential for effectively harnessing digital capabilities to achieve sustainable development. To attain high levels of success in sustainable development, organizations must internalize these best practices comprehensively. Consequently, the importance of digital leadership in facilitating digital transformation and promoting the sustainable development of contemporary organizations is emphasized, which was also supported by Morgado Oliveira and F. Carlos (2024). This cluster suggests that the impact of digital leadership within the hotel industry has been investigated, and a more comprehensive theoretical model is being developed by integrating additional mediating or moderating variables, such as organizational resilience and employee engagement.

Cluster 4 (yellow): with 9 items, is labelled with “the application of digital leadership in the hospitality industry”. Buhalis (2024) found that digital technologies drives transformation, and lead to better decision-making, cost reduction as well as productivity improvement. Most important thing is the implementation of digital technologies requires leadership commitment.

Casais and Ferreira (2023) also found that the smart hotels formed by digital technology are highly likely to shape the future of the hospitality industry, and this will also be the future leadership development direction for professional managers.

Table 4: Ranking of the top 10 papers according to total link strength

No.	Documents	Citation	Total Link Strength
1	Digital transformation in the hospitality industry: A bibliometric review from 2000 to 2023. International Journal of Hospitality Management, 120, 103761.	9	183
2	A digital transformation approach in hospitality and tourism research. International Journal of Contemporary Hospitality Management, 35(8), 2944-2967.	79	153
3	Digital transformation and hospitality management competencies: Toward an integrative framework. International Journal of Hospitality Management, 102, 103132.	81	123
4	Hospitality employees and digital transformation: The mediating roles of alienation and motivation. International Journal of Hospitality Management, 119, 103731.	9	107
5	Does digital transformation exacerbate or mitigate maturity mismatch in hospitality and tourism firms?. International Journal of Hospitality Management, 123, 103915.	7	106

6	Digital transformation and human resources planning: the mediating role of innovation. Journal of Hospitality and Tourism Technology, 14(1), 21-36.	15	95
7	Strategic responses to digital disruption in incumbent firms–a strategy-as-practice perspective. Journal of Computer Information Systems, 63(2), 281-292.	5	88
8	A conceptual model for developing digital maturity in hospitality micro and small enterprises. Journal of Theoretical and Applied Electronic Commerce Research, 18(3), 1511-1528.	4	86
9	Digitalization strategy adoption: The roles of key stakeholders, big data organizational culture, and leader commitment. International Journal of Hospitality Management, 117, 103643.	11	82
10	Technology acceptance antecedents in digital transformation in hospitality industry. International Journal of Hospitality Management, 108, 103350.	54	75

Source(s):Author's own creation/own work

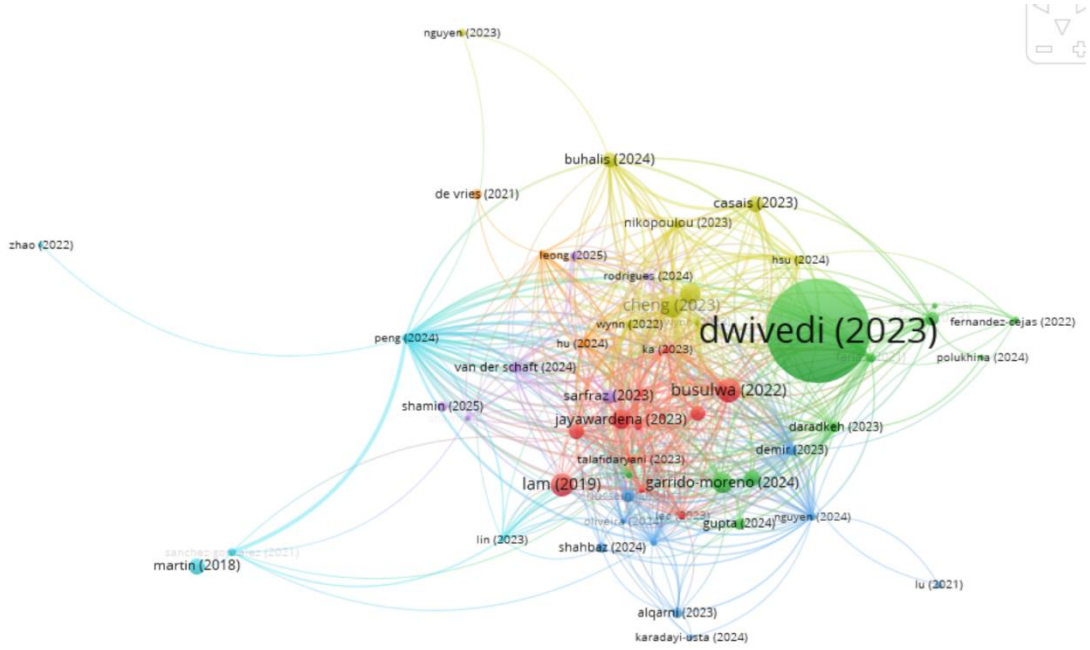


Figure 1 Bibliographic coupling of digital leadership in the hotel industry (VOS viewer visualization)

Future trend of digital leadership in the hotel industry

From 9,488, a total of 30 cited references is included with the threshold of 7 cited references. The three highest co-cited documents are Vial.G (2019) (30 citations), Lam and Law (2019) (25 citations), and Verhoef et al. (2021) (19 citations). Table 3 displays the top 10 co-cited documents in the co-citation analysis which Shows the networks of co-citation relationship for authors produced by VOS viewer.

Documents	Citation	Total link strength
vial g, 2019, j strategic inf syst, v28, p118	30	163
lam c, 2019, int j hosp manag, v79, p60	25	155
verhoef pc, 2021, j bus res, v122, p889	19	122
fornell c, 1981, j marketing res, v18, p39	19	88
busulwa r, 2022, int j hosp manag, v102	17	88

hair j. f., 2014, multivariate data an	17	70
buhalis d, 2018, int j hosp manag, v71, p41	15	82
warner ksr, 2019, long range plann, v52, p326	14	59
alrawadieh z, 2021, tourism econ, v27, p328	12	85
podsakoff pm, 2003, j appl psychol, v88, p879	12	57

Table 5 Top 10 documents in co-citation analysis

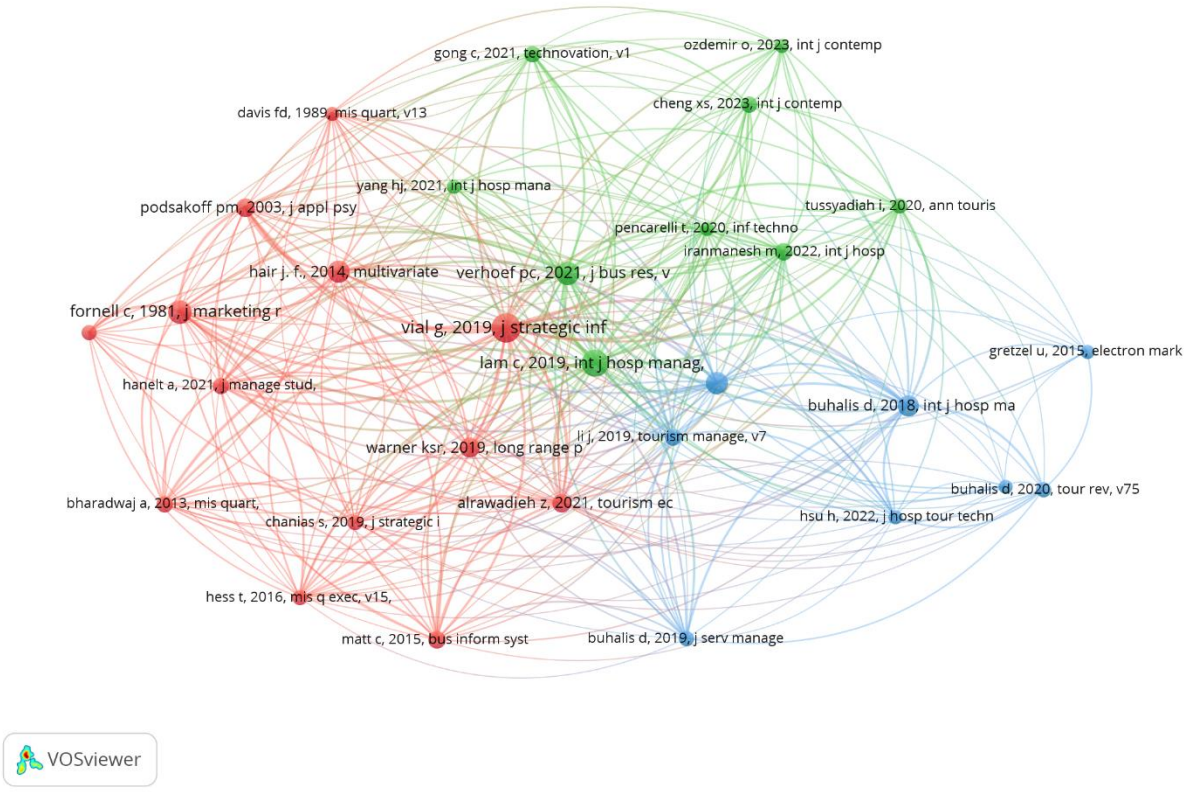


Figure 2 Co-citation analysis on the digital leadership in the hotel industry

Figure 3 displays the network structure and visualization of the co-citation analysis on digital leadership in the hotel industry. The following clusters explains the author's view.

Cluster 1(Red): with 13 publications, cluster 1 is described and themed as "The core dimensions and dynamic capability construction of digital transformation strategy". In the era of digital transformation, it is necessary for organizations to develop dynamic capabilities to adapt to digital transformation strategies. (Vial, G. (2021)), Warner, K. S., & Wager, M. (2019) demonstrate the specific practices of existing enterprises in building dynamic capabilities during the process of digital transformation. This includes the construction of digital perception, digital acquisition and digital transformation capabilities. Address the challenges of digital transformation by adjusting business models, collaboration methods and cultures.

Cluster 2(Green); with 9 publications, and is labelled "digital transformation applied to multidisciplinary research". Verhoef et al. (2021) found three distinct stages of digital transformation: digitalization, digital integration, and digital transformation from a multi-disciplinary perspective, identifying each stage presents specific requirements concerning an enterprise's digital resources, organizational structure, growth strategy, and measurement standards. Furthermore, Lam and Law (2019) revealed that the IT teams and marketing and sales departments of high-end and luxury hotels in the Asia-Pacific region face challenges related to skills, culture, processes, and mindset in their digital transformation efforts through comprehensive interviews.

Cluster 3(Blue): with 8 publications, cluster 3 is labelled as" The Influence of Technological Advancements on Innovation in Hotel Services". Innovative synthetic services, including smart environments, cybersecurity, and gamification, have the potential to transform service ecosystems and facilitate the co-creation of value (Buhalis et al, 2019). Meanwhile, research has suggested that the intelligent hotel ecosystem can leverage big data to analyse business intelligence, generate scenarios that optimize revenue management, and by implementing these scenarios, enhance competitiveness and improve overall performance (Buhalis and Leung, 2018). By collecting data from 468 full-time employees working in five-star hotels in Guangzhou, this study further reveals that artificial intelligence and robot consciousness are significantly associated with employees' intention to quit. Moreover, this relationship is moderated by perceived organizational support and the competitive psychological climate. The findings of this research hold substantial theoretical and practical implications for the hotel industry (Li et al., 2019).

Co-word analysis

At least 8 occurrences were found for each of the 24 meet the threshold. The co-word analysis identified "digital transformation" as the most frequently used keyword, appearing 70 times. It was followed by "hospitality" with 33 occurrences and "innovation" with 22 occurrences. Table 3 shows the top 15 most used keywords. Figure 3 explains the network structure of keyword co-occurrences, comprising four distinct yet interconnected clusters.

Cluster 1 (Red): this cluster includes 9 keywords labelled "technology drive dynamic capacities". The study showed that digital dynamic capabilities could be applied in the digital transformation (Vial, 2021). Dynamic capabilities pertain to the cultivation of an organizational culture that promotes innovation and facilitates agile collaboration (Wang and Pervaiz,2007). Digital leaders exhibit competence such as digital literacy, vision-setting, adaptability and the ability to inspire and empower employees (Larjovuori et al., 2016). Therefore, digital leadership acts as a dynamic managerial capability, bridging technological adoption and organizational transformation.

Cluster 2 (Green): this cluster contains 7 keywords titled "digital transformation in the hospitality industry". The scholar has identified four fundamental dimensions of digital transformation strategy: technology utilization, changes in value creation, structural modifications, and financial considerations. Integrating these four dimensions into a cohesive digital transformation framework can assist enterprises in evaluating their capabilities and developing effective digital transformation strategies. Furthermore, it underscores the importance of ensuring that digital transformation strategies are closely aligned with IT strategies as well as other organizational and functional strategies (Matt, 2015).

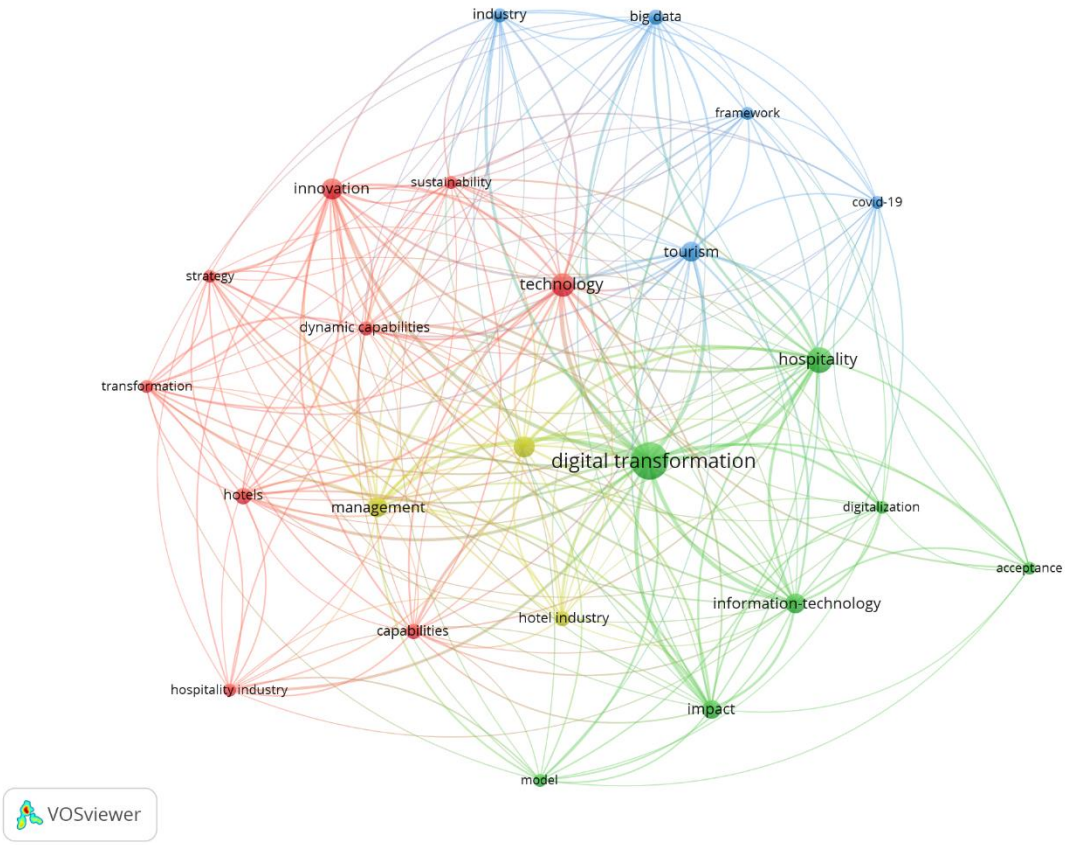
Cluster 3 (Blue): this cluster contains 5 keywords titled" Covid-19 and big data development accelerated reshaping the hospitality industry". The theory of strategic consistency indicates the degree of fit between an enterprise's resources and opportunities and threats, which includes strategic fit, functional integration, and the fit between business strategy and information technology (Henderson and Venkatraman ,1992). Moreover, the positive impact of strategic consistency on organizational performance has been confirmed (Sharma & Behl, 2023; Ghonim et al..2022).

Table 6

Top 15 most used keywords

Keyword	Occurrences	Total link strength
digital transformation	70	195
hospitality	33	94
innovation	22	78
technology	27	77
performance	23	71
information-technology	19	68
tourism	20	68
management	20	67
impact	18	58
hotels	14	43

dynamics capacities	10	41
big data	11	39
capacities	11	37
industry	10	37
transformation	8	35



Implication

Theoretical implications

Digital leadership (DL) has emerged as a fundamental element of innovation and competitiveness within the hotel industry, rendering it a vital area of inquiry for scholars seeking to investigate its evolution and implications. By examining the concept of digital leadership, researchers can illuminate the current landscape of technological advancements in the hotel sector while concurrently identifying significant research gaps that may further inform this discipline. This line of investigation is crucial not only for expanding academic knowledge but also for evaluating the impact of digitalization on business practices within the industry. The insights derived from such studies can provide a valuable foundation for scholars interested in enhancing theoretical frameworks related to digital leadership and its influence on hotel management practices.

The theoretical implications of studying digital leadership within the hotel industry are multifaceted. First, this research illuminates underexplored areas of digital leadership, particularly in the context of hospitality, and advocates for a more nuanced and comprehensive application of established theories. Teece et al. (1997) introduced the theory of dynamic capabilities, which posits that enterprises can enhance their competitiveness in continuously evolving environments by modifying their resources and improving their adaptive capacity over time. Ellström (2021) suggested that the era of digital transformation is characterized by rapid changes in value creation processes and tasks. Enterprises

can effectively adapt to this digital transformation through the development of dynamic capabilities, which include cross-industry digital perception, internal awareness of digital infrastructure, formulation of a comprehensive digital strategy, delineation of enterprise boundaries, segmentation of the digital transformation into specific projects, and establishment of a cohesive digital infrastructure. Integrating dynamic capabilities theory (DCT) with frameworks for digital transformation (DT) can yield a more robust understanding of how the hotel industry adapts to rapid technological changes. Furthermore, Henderson and Venkatraman introduced the "Strategic Alignment Model" in 1989, emphasizing the critical importance of aligning information technology strategy with business strategy, integrating information technology infrastructure with organizational processes, and harmonizing organizational infrastructure with operational processes. Such alignment is essential for enhancing overall performance and competitiveness (Ilmudeen et al., 2019). aligning digital strategy with organizational capabilities through strategic alignment theory can provide deeper insights into the adaptability and responsiveness of hotel firms amidst evolving digital trends. A thorough exploration of how these theories intersect and influence one another can enhance our understanding of the drivers behind digital leadership in the hospitality sector.

Research on digital leadership in the hotel industry of great significance to scholars. By investigating digital leadership, scholars can better understand the field's current state, identify the research gaps, review the impact of research in the hotel industry. This can help scholars contribute to the digital leadership knowledge progress and a base for the theoretical study. The theoretical implications include two domains. First, the study voids the digital leadership in the hotel industry, such as more comprehensive research of theories highlighting the dynamics capacities, strategic alignment theory with a more in-depth illustration. Secondly, the study use of co-citation analysis can contribute to developing a new theoretical framework of digital transformation to the digital leadership development. Thirdly, the dynamic capabilities theory Supports Digital Transformation through three aspects including sense, seize and transform. In the hospitality industry, the integration of DCT, DT, and DL is particularly crucial. The industry faces unique challenges such as fluctuating customer demands, high turnover rates, and the increasing integration of AI and robotics into service delivery (Nam et al., 2021).

Practical implications

The study of digital leadership helps to identify artificial intelligence and digital technologies that are more like to reshape the future of hospitality, enabling the managers and practitioners to prepare for the changes. First of all, this research has identified digital leadership as a significant and evolving subject that is currently exerting considerable influence. By leveraging advanced technologies such as artificial intelligence, the Internet of Things, and big data, it facilitates digital transformation and subsequently encourages managers to enhance their digital competencies in order to adapt to the ongoing developments associated with this transformation (Buhalis et al., 2019; Hussein et al., 2024). Therefore, managers should prioritize ongoing development of digital skills and foster a culture that embraces technological change. Secondly, hotels must acknowledge that successful digital transformation necessitates not only the adoption of digital tools but also strong leadership commitment and the integration of digital strategies with organizational objectives (Casais & Ferreira, 2023). Leaders play an essential role in aligning technological investments with service innovation, customer experience enhancement, and sustainability initiatives. Thirdly, findings indicate that effective digital leadership contributes to sustainable competitive advantage by fostering green absorptive capacity and eco-innovation (Hussein et al., 2024; Morgado Oliveira & Gomes, 2024). Practitioners are therefore encouraged to incorporate digital leadership into their sustainability strategies—particularly in developing smart and green hotels—to meet evolving consumer expectations alongside global sustainability goals. Finally, policymakers can leverage these insights to design training programs and policies aimed at strengthening digital leadership within the hospitality workforce. This will ensure that hotels are adequately prepared to adapt to disruptions brought about by Industry 4.0 as well as post-COVID-19 acceleration towards digitization (Dwivedi et al., 2020; Verhoef et al., 2021).

Conclusion

This study provides a comprehensive bibliometric analysis of digital leadership in the hotel industry, addressing a gap in understanding the current landscape. This bibliometric analysis provides a systematic overview of digital leadership within the hotel industry, addressing a significant gap in hospitality research. The study illustrates that digital leadership serves as a fundamental pillar for driving digital transformation, enabling hotels to adopt new technologies, foster innovation, and enhance sustainable competitiveness. By mapping the intellectual structure and identifying thematic clusters,

this research reveals that digital leadership influences not only organizational performance but also sustainability and employee engagement. The findings emphasize that digital leadership functions as a dynamic capability that integrates technology, personnel, and organizational culture to effectively navigate digital disruption (Vial, 2021; Warner & Wäger, 2019). For the hospitality sector—particularly hotels—this implies that leaders must formulate forward-looking strategies, cultivate digital maturity, and adapt to technological advancements to ensure long-term success. Overall, this study enriches the existing literature by providing a comprehensive overview of the evolution, current state, and future directions of digital leadership in the hospitality sector. Additionally, it offers actionable guidance for managers, practitioners, and policymakers on leveraging digital leadership as a pathway toward innovation, resilience, and sustainability in the era of Tourism 4.0.

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