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Review

Exploring Capabilities for Digital Transformation in the Business Context: Insight from a Systematic Literature Review

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Abstract: Digital transformation is considered a high-risk investment due to the fact that as much as 80% of its initiatives fail. To effectively manage and execute digital transformation, organizations must establish capabilities tailored to this process. Thus, this study aims to identify capabilities essential for digital transformation in the business context. A systematic literature review (SLR) was conducted following the PRISMA. An initial search across major academic databases yielded 542 articles. After applying inclusion and exclusion criteria, 43 relevant articles were selected for in-depth analysis. Descriptive, co-occurrence, and qualitative analyses were then applied. The findings reveal five core dimensions of digital transformation capability: digital dynamic capability, digital leadership capability, employee digital capability, digital technology and operational capability, and digital investment capability. These capabilities demonstrate that successful digital transformation depends not only on technology, but also on leadership, human capital, strategy, and investment that ensure resource readiness. This study contributes to digital transformation theory by identifying essential organizational capabilities and provides insights into how organizations can develop these capabilities to achieve successful digital transformation.

Keywords: business organization; digital transformation; digital transformation capabilities; digital investment; digital technology; dynamic capabilities; digital leadership; literature review; employee digital capability

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1. Introduction

The swift development of digital technologies over the past decades, such as artificial intelligence, automation, cloud computing, big data platforms, blockchain, robotics, the Internet of Things (IoT), mobile, and digital media, has generated new opportunities in the market but has at the same time created competitive pressure [1]. Such technologies have the potential to revolutionize the way business is conducted and disrupt the current organizational structure, business process, and business model [2,3]. In order to stay competitive in a constantly shifting market, businesses need to realign their vision, strategy, structures, processes, capabilities, and organizational culture [4–6]. Digital transformation is regarded as a strategic response to trends and challenges in digital technology [7]. As a result, a multitude of business organizations have expressed a need for digital transformation, and it has become a critical strategic tool for organizations to enhance their performance, become adaptive, and obtain a competitive advantage [5,8].

Digital transformation refers to the strategic use of digital technologies (social media, mobile, analytics, or embedded devices) in an organization's processes, products, and business models to fundamentally reshape business processes, customer experiences, and

organizational culture [9,10]. It combines information, computing, communication, and connectivity technologies to trigger significant changes and improvements in many aspects such as the value creation process, organizational tasks, and how business is made [3,5].

The costly investment in digital transformation effort is expected to facilitate the generation of new business models, enhance the organization's value generation, operational efficiency, customer experience, and promote sustainable growth of business organizations. However, digital transformation is a complicated and challenging journey [6]. Previous studies have stated that the majority of digital transformation initiatives are not able to produce the expected results, with a failure rate of as much as 80% [11–13], which means it is perceived as a high-risk strategy [14]. This indicates that the huge investments in digital transformation are not a guarantee that the business will benefit from it. Many organizations are unable to acknowledge the potential of digital transformation, and even those that do are still unable to implement the necessary organizational changes in their routines and working methods to fully actualize the benefits of their digital efforts [5,15]. The most significant challenge of the digital transformation initiative is the lack of guidance for business practice, the disconnection between digital strategy and business, and the poor understanding of and vague direction of transformation [13]. In addition, digital transformation necessitates advanced technology and resource investment, yet many business organizations find it difficult to realize due to a lack of technical skills and high transformation costs [13]. Therefore, despite the importance of resolving the dilemma of successfully digitally transforming the organization, there is a scarcity of conceptual or empirical research that investigates that topic [9,16].

The effectiveness of a digital transformation initiative is not solely determined by the level of financial investment a company makes. Simply investing in sophisticated and expensive technology does not guarantee that a company will benefit from digital transformation [12]. Unsuccessful digital transformation initiatives often stem from an organization's lack of capabilities in understanding and utilizing digital technologies [12,16]. Organizations that will undertake digital transformation have to be aware that digital transformation will cause changes in the way the organization works and its culture, increase dynamics, and require skills, competencies, capabilities, and forms of leadership [12]. This suggests that to manage and execute digital transformation effectively, organizations must establish capabilities that are tailored to this process [5,17,18].

The necessity for organizations to effectively manage digital transformation has motivated researchers to conduct a thorough investigation of the necessary capabilities [8]. Previous studies have emphasized the critical role of developing dynamic capabilities for digital transformation success [5,8–10,19,20]. Dynamic capabilities are critical to the digital transformation process, enabling organizations to identify internal needs, external opportunities, and potential threats while effectively mobilizing resources and transforming operations to develop new services, products, business models, and processes [21]. In addition to dynamic capabilities, Al-Moaid et al. [22] added change management as an important capability that must be developed to avoid failure in the digital transformation process. The capability to establish effective change management can assist organizations in overcoming the resistance to change toward new processes or business models as a result of digital transformation [22].

On the other hand, given that a digital leader's lack of knowledge and capability regarding digital technologies is one of the primary obstacles to successful digital transformation, Several studies have indicated that digital leadership is a key enabler of successful digital transformation [16,23,24]. Carcary et al. [24] developed several critical foundational capabilities for digital transformation, namely agile digital culture, digital leadership skills, digital talent, and digital business strategy. These fundamental capabilities serve as the be-

ginning point for the digital transformation journey. Ren et al. [25] propose four dimensions of digital transformation capability that cover technological, organizational, operational, and strategic aspects in the context of manufacturing companies. Blanka et al. [6] highlight the importance of employee transformation capability as a valuable capability in the context of digital transformation.

However, although prior studies have identified several important capabilities that support digital transformation, such as dynamic capabilities, change management, leadership, and employee capabilities, there is still a lack of a comprehensive and integrated understanding of the full set of capabilities required for transformation success. The inclusion of adaptive capabilities such as dynamic capability together with technical and people-related capabilities is still rare. Those capabilities are mostly discussed separately. Accordingly, it is still necessary to identify key capabilities of digital transformation more comprehensively. Without a complete picture of the necessary capabilities, organizations may experience misalignment of digital strategy with the organization's goal, implementation inefficiencies, and the undetected challenge of the digital transformation process, which can hinder the progress and increase the failure risk of the digital transformation initiative. Identifying these capabilities enables organizations to assess their readiness, address potential barriers, and develop a proper strategy to navigate digital transformation successfully. Only a small number of papers in the current literature underscore the capability of digital transformation. Consequently, it is necessary to further develop studies that focus on the capability of digital transformation, and there is a clear need for a more systematic and comprehensive investigation into what constitutes digital transformation capability. Based on the current state of the literature described, this study attempts to extend previous investigations by employing a systematic literature review to comprehensively obtain the essential capabilities for successful digital transformation in a business context. Accordingly, this study is structured to address the following research questions:

1. What are the capabilities required for digital transformation?
2. How do those capabilities facilitate digital transformation success?

The contributions of this study are twofold. First, it enriches the digital transformation literature by identifying a set of essential capabilities required for successful transformation. The digital transformation capabilities derived from the systematic literature review encompass organizational capabilities that integrate management, leadership, processes, technology, and workforce competence. Second, this study enhances existing research by providing a more comprehensive understanding of how these capabilities contribute to digital transformation, ensuring a structured approach to organizational change.

The remainder of this article is organized as follows: Section 2 outlines the methodology employed in this research, detailing the processes and approaches utilized throughout the study Section 3 discusses the results and findings derived from the implemented methodology. Finally, Section 4 concludes the study, highlighting its implications, limitations, and suggesting opportunities for future research.

2. Literature Review

The digital transformation perspective has emerged as a critical framework in the field of information systems (IS), as it investigates the strategic potential of digital technologies to modify an organization's identity [26]. In the rapidly evolving business environment, digital transformation has emerged as an important strategy for enterprises to gain competitive advantage. Today, The new era of information technology (IT), encompassing artificial intelligence, blockchain, cloud computing, big data, and the Internet of Things, is speeding up the rise of the digital economy and instigating transformative alterations in organizational structures, business processes, and business models. Digital transformation

emphasizes the utilization of digital technologies to enhance operational processes, business models, and consumer experiences, generating value and enhancing sales, productivity, profitability, stakeholder satisfaction, and business growth [27]. Digital transformation activities enhance an organization's value proposition, ultimately reshaping and redefining its identity [26]. Digital transformation offers five key benefits to companies: improved productivity, time optimization, improved quality through machine learning, cost reduction through data analysis, and product personalization, which is a crucial customer selection factor [27]. Although digital transformation research has received significant attention in recent years, the definition of digital transformation has yet to be consolidated and it is still unknown how effective the implementation of digital transformation by organizations is. Vial [3] developed a general definition of digital transformation, where it can be regarded as a process that combines information technology, computing, communication, and connectivity to trigger significant changes and bring significant improvements to an entity. Warner and Wager [10] define digital transformation as the use of new digital technologies to enable major improvements in business such as improving customer experience, streamlining operations, or creating new business models in an organization. Zia et al. [28] conceptualized digital transformation as a shift in the use of digital technology in companies to develop new business models and make changes to the way companies operate, thereby increasing value creation and the company's competitive advantage.

To create an organization that can manage and succeed at digital transformation, a series of capabilities are needed that are specifically developed to support it, which is often known as digital transformation capability [5]. Previous studies have tried to identify and examine various types of capabilities that can support digital transformation. The development of a digital transformation capability framework is usually grounded under a variety of frameworks, such as the TOE framework [18,29], resource-based view framework [15], dynamic capability view [5,10,28], or the combination of more than one framework. However, the dynamic capability view is regarded as the most used framework when discussing digital transformation. Dynamic capabilities were first expressed by Teece in 1997 and are a development of the resource-based view concept [5]. The theory of dynamic was introduced to address the limitations of the resource-based view, particularly in explaining how organizations can continuously adapt and enhance their resources and capabilities in response to rapidly evolving environmental conditions [30]. Dynamic capabilities focus on how companies change their resources to continuously adapt to both customer changes and technological opportunities [5,31]. This means it has been considered an appropriate framework to examine strategic transformations, such as digital transformation, undertaken by companies [10]. Many previous studies include dynamic capability in the discussion of digital transformation [19,22,32,33], some of which even exclusively develop a digital transformation capability framework based on the concept of dynamic capability and then refer to it as dynamic digital capability [10,28]. Other than dynamic capability, prior studies have also identified capabilities such as leadership capability, digital culture, and change management as being required for digital transformation, [34,35].

3. Materials and Methods

This study aims to explore the important capabilities necessary for successful digital transformation in business organizations based on reviews of previous literature. The literature review process was conducted systematically by following PRISMA procedure. PRISMA stands for Preferred Reporting Items for Systematic Reviews and Meta-Analyses. It is a set of guidelines designed to conduct systematic reviews and meta-analyses. There are four main steps in PRISMA procedure, including article identification, article screening,

article eligibility assessment, and article selection [36]. The process of literature review in this study is visualized in the PRISMA flow diagram presented in Figure 1.

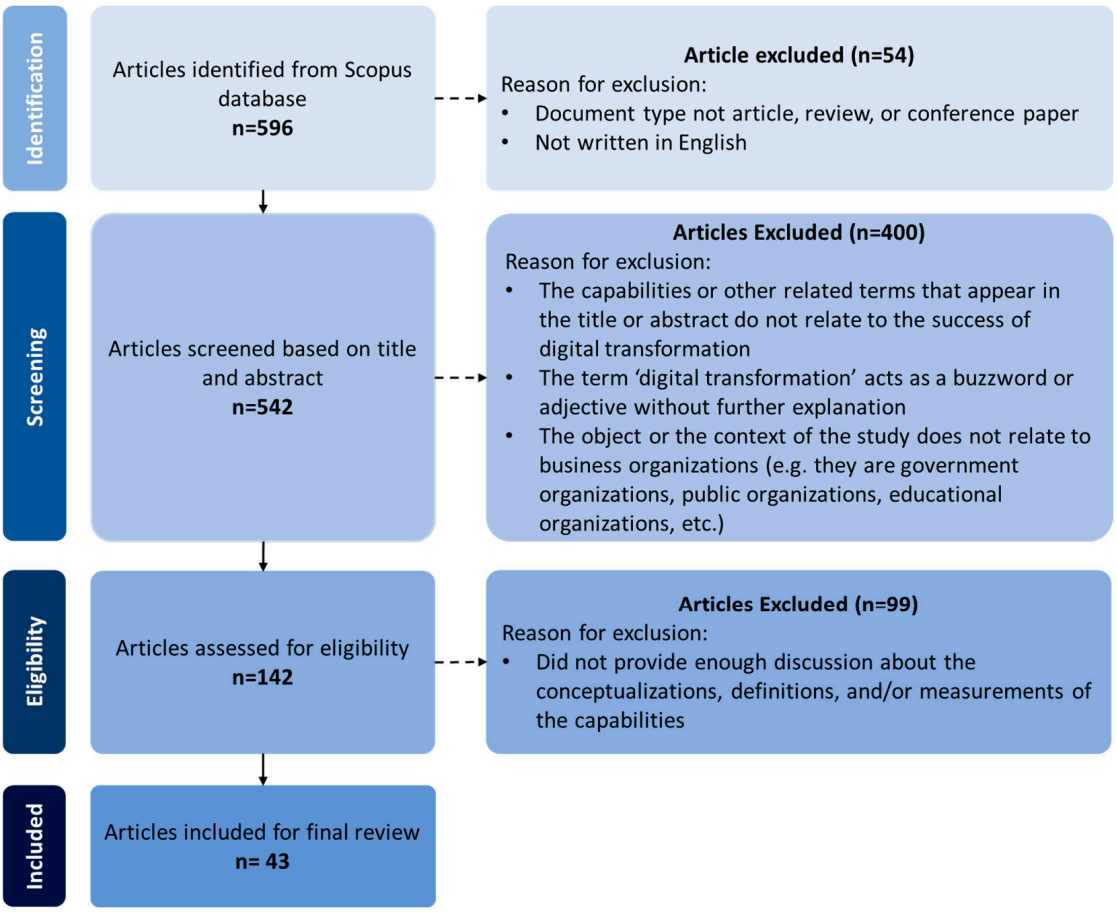


Figure 1. PRISMA flowchart (source: authors' own creation).

3.1. Article Identification

To obtain articles that suit the research objective, the first stage is to collect relevant articles from an electronic database. This study used Scopus database as the main source for article identification due to the following reasons: (1) Scopus includes broad coverage of scientific research, ensuring access to a large volume of research across disciplines; (2) Scopus contains content from reputable and peer-reviewed journal articles, ensuring the reliability and credibility of the obtained articles; (3) Scopus covers research from many different areas, facilitating comprehensive analysis and bringing in research from various fields [37]. In addition, compared to other databases such as Web of Science (WoS), Scopus has less restriction in accepting articles [37], which means it can capture a wider range of publications, increasing the chances of uncovering relevant and diverse studies. However, since Scopus contains thousands of articles with a wide range of topics, a search strategy that includes relevant keywords is needed to ensure the relevancy of the collected articles with the topic discussed in this study. The list of keywords was developed based on the research questions and key concepts that this study aims to explore, specifically focusing on digital transformation and the organizational capabilities that support it. The chosen combinations of keywords were intended to capture research that is directly aligned with the study's scope and objectives. To maintain relevance, terms related to digitality, such as digital transformation, digitalization, or digital technology, were required to appear in the title of the articles. Furthermore, since the primary objective of this study is to identify

capabilities that support digital transformation, terms related to capability—including capability, ability, competency, or skill—were also required to be present in the title. Lastly, as this study focuses on the organizational level, keywords such as organization, business, firm, or company need to appear in the title, abstract, or keywords section of the article. Based on these criteria, the search strategy for this study was constructed as follows: (TITLE ((digital AND transformation) OR digitalization OR (digital AND technolog*)) AND TITLE (capabilit* OR abilit* OR skill* OR competenc*) AND TITLE-ABS-KEY (business* OR firm* OR organization* OR compan*)). This study encompasses all publishing years and only includes documents that were categorized as articles, reviews, and conference papers that were written in English. At this stage, a total of 542 articles were found.

3.2. Article Screening

This stage was an initial screening to determine the articles' suitability to be included in the eligibility assessment stage. The 542 articles obtained from the previous stage were subsequently screened according to their titles and abstracts. Based on the screening process, 400 articles were excluded for the following reasons: (1) The capabilities or other related terms that appear in the title or abstract were not something that relates to the success of digital transformation; for example, they discussed the opposite condition, where digital transformation can generate certain capabilities in business. (2) The term "digital transformation" acted as a buzzword or adjective without further explanation, such as in phrases like "digital transformation era" or "digital transformation context", etc.. (3) Since this study focuses on business organizations, the articles that studied objects not in a business organization (e.g., government organizations, non-profit organizations, educational organizations, etc.) were excluded. We acknowledge that sectors beyond business, such as the governmental, non-profit, and educational sectors, are also engaged in digital transformation, and that the inclusion of only the business sector may limit the generalizability of the findings while potentially overlooking valuable insights from the excluded sectors. However, we believe that significant differences in primary goals, key driving factors, and performance indicators across these sectors might influence the objectives of their digital transformation and broadening the scope to include non-business sectors could compromise the clarity and practical relevance of the findings for business contexts. Thus, to ensure theoretical alignment, contextual relevance, and practical applicability of digital transformation in business contexts, this study excluded articles that explicitly discuss digital transformation in non-business settings. At this stage, 400 articles were excluded. Among the 400 excluded articles, 76% were removed because the capabilities or related terms mentioned in the title or abstract were not relevant to the success of digital transformation. Another 10% were excluded as the term "digital transformation" was used merely as a buzzword or adjective without substantive explanation. The remaining 14% were excluded because the studies did not address digital transformation within a business context. Finally, at this stage, a total of 142 articles were included for the next stage.

3.3. Article Eligibility Assessment

In this stage, full-text screening was performed to assess the eligibility of the articles to be included in the process. Since this study's focus was to identify the capabilities needed for the success of digital transformation, the studies that did not provide enough discussion of the conceptualizations, definitions, and/or measurements of digital transformation capability or other related terms were excluded. At this stage, a total of 43 articles were included for the next stage.

3.4. Article Analysis

Several types of analysis were conducted on the 43 articles included in this study, including, descriptive analysis, co-occurrence analysis, and qualitative analysis. Descriptive analysis was conducted to provide an overview of the characteristics of the articles reviewed. In this study, descriptive analysis was conducted to analyse the distribution of papers by publishing year, document type, research methodology, industry type, and journal distribution. Co-occurrence analysis was conducted to explore the connection and patterns among digital transformation capabilities in the selected articles. In this study, co-occurrence analysis was conducted using VOSviewer version 1.6.20. Finally, qualitative analysis was conducted to synthesize key capabilities required for digital transformation success and obtain deeper understanding of how these capabilities are conceptualized and applied in practice.

4. Results and Discussion

Based on the PRISMA procedure, a total of 43 articles were considered to have adequate discussion about the conceptualizations, definitions, and/or measurements of digital transformation capability. Descriptive analysis was then performed on the articles obtained. To understand the trend of research related to digital transformation capability over the years, a descriptive analysis of the 542 articles obtained at the screening stage was performed, which can be seen in Figure 2.

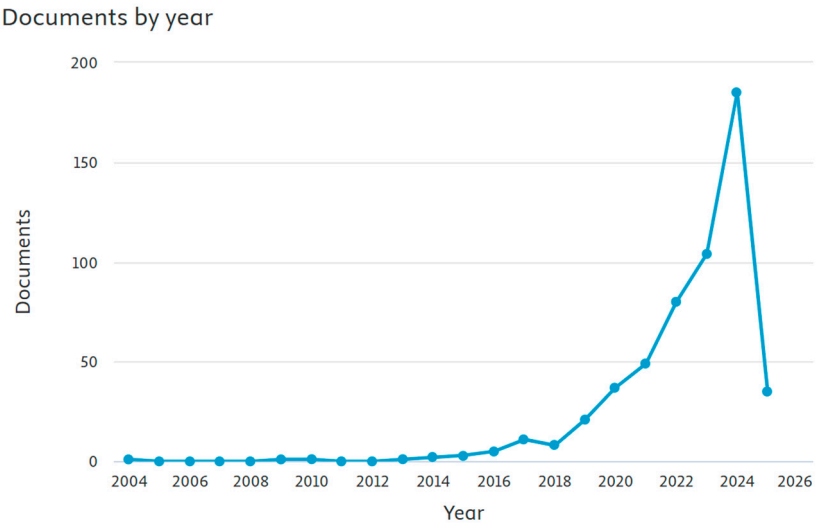


Figure 2. The distribution of papers by year of publication (source: generated from Scopus).

Based on the distribution of the papers by publishing year shown in Figure 3, the trend of research on digital transformation capability has shown a significant increase over time. The earliest articles related to digital transformation capability appeared in 2004. Moreover, fewer than five articles were published annually until 2016, indicating that researchers' interest in this topic was still relatively low during that period. A significant rise in the number of published articles related to digital transformation capability occurred in 2017. This upward trend has continued to accelerate, reflecting the growing importance of digital transformation in business and academia. The rapid increase in publications indicates that digital transformation capability has become a key area of interest for researchers, likely driven by advancements in digital technology, the widespread adoption of digital strategies by organizations, and the increasing recognition of digital transformation as a critical factor in business survival.

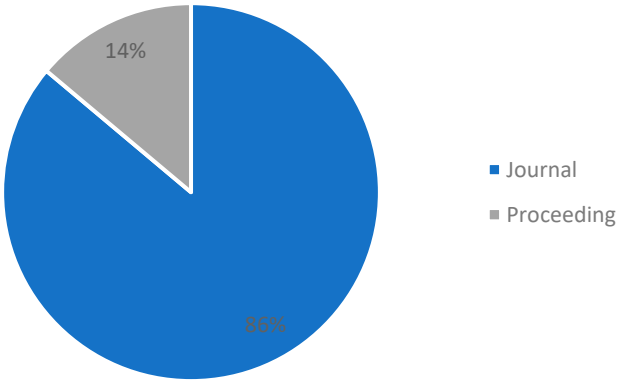


Figure 3. Number of published papers by document type (source: authors' own creation).

Moreover, Figure 4 illustrates the distribution of published papers based on document type. Based on the 43 articles used in this study, journal articles dominate the research on digital transformation capability (37 out of 43), while 6 articles are conference proceedings. Figure 4 illustrates the distribution of research methods used in the selected articles. The analysis shows that the qualitative method is the most used method, with 17 articles, followed closely by the quantitative approach, with 16 articles. Moreover, eight articles are review articles, and two employ a mixed-method approach.

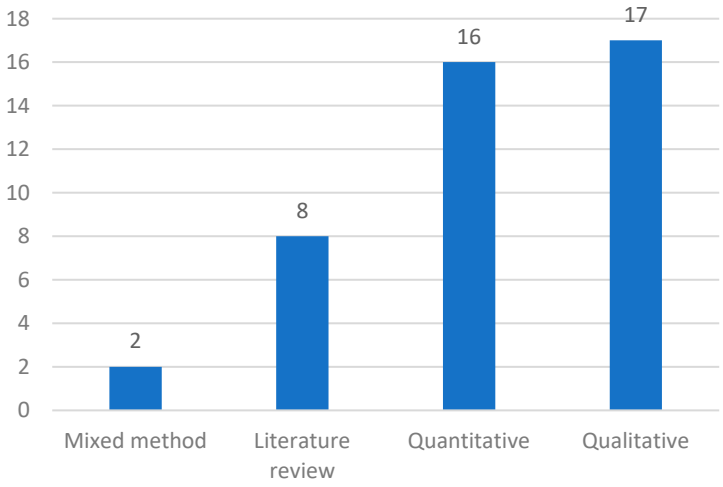


Figure 4. Number of published papers by research method (source: authors' own creation).

Based on descriptive analysis of business types which can be seen in Figure 5, it was found that the majority of the articles (37%) discussed various types of business, indicating that digital transformation capability is considered a concept that is applicable in various organizational contexts. In addition, as many as 35% of the studies did not specifically mention the business type that became the focus of the research. Meanwhile, the banking and manufacturing sectors each contributed 7% of the total studies. The retail sector (5%), telecommunications (3%), and mobility, textiles, and creative industries (each 2%) are still relatively rarely studied, providing opportunities for further research to explore the application of digital transformation capability in more depth and specifically in those contexts.

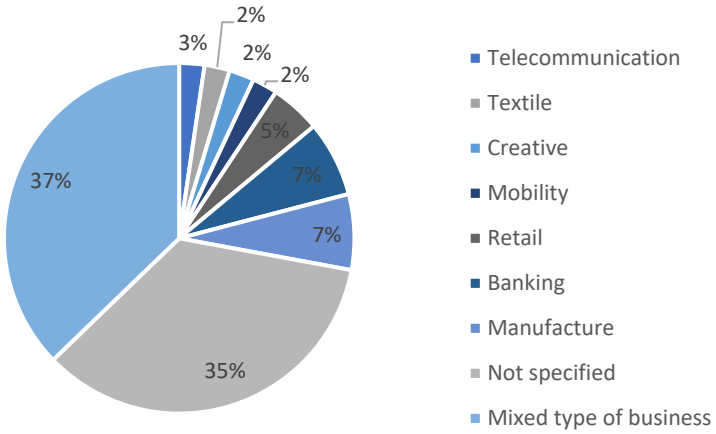


Figure 5. Distribution of reviewed studies based on business type (source: authors' own creation).

Figure 6 presents the distribution of published journal articles among the 43 articles reviewed in this study. The chart shows that the journal Cogent Business and Management has the highest number of published papers, with 3 out of the 43 articles having been published there. Moreover, two papers each were published in the following journals: Benchmarking, Digital Business, Information Systems Journal, International Journal of Innovation and Technology Management, and Sustainability (Switzerland). The remaining 30 articles were spread across various journals, each journal containing one article. This distribution suggests that research related to digital transformation and digital transformation capability is multidisciplinary and has broad relevancy to many subject areas, especially business, management, information systems, and innovation.

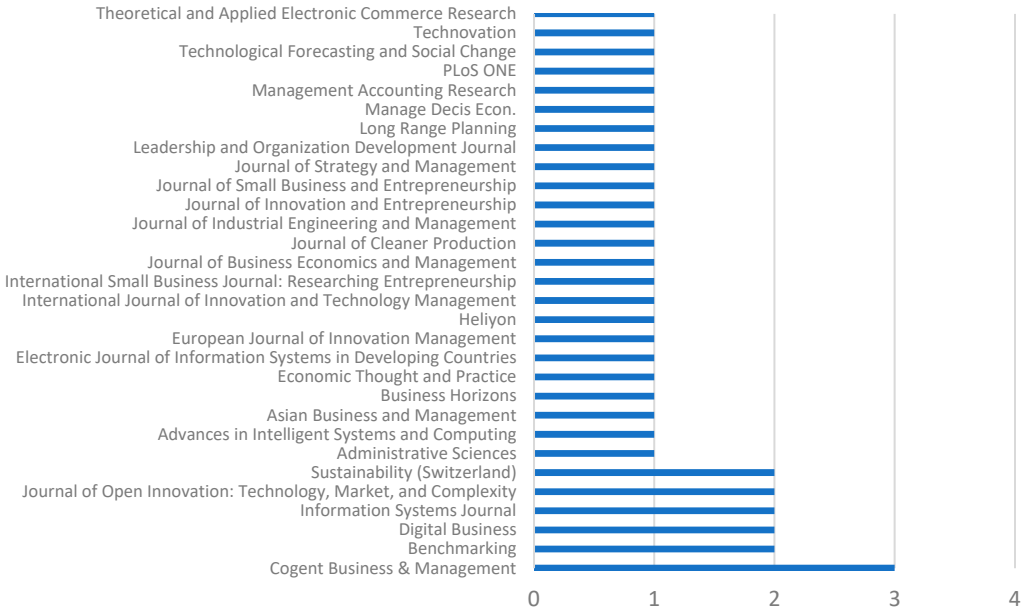


Figure 6. Journal distribution (source: authors' own creation).

Moreover, the co-occurrence analysis conducted on this study is presented in Figure 7. The size of each node reflects the frequency of keyword occurrences, and the connecting lines illustrate the relationships between the terms. From 43 articles, a total of 141 keywords were identified. A minimum of 2 occurrences was set as the threshold for the analysis, resulting in 21 keywords that met the criteria. Moreover, this study removed the keywords included context of where the studies took place, such as countries, regions, types of business, and scales of business. Similar terms were grouped under one single term, such

as "dynamic capabilities" and "dynamic capability" or "IT capabilities" and "IT capability". Finally, 14 keywords were obtained, with a total link strength of 70 and 3 clusters formed. According to Figure 7, the first cluster marked in red highlights the keyword "digital transformation" as the largest node. This keyword is closely linked to terms such as digitalization, digital leadership, leadership competencies, organizational culture, and leadership. This cluster highlights leadership and organizational culture as important enablers in driving digital transformation. The second cluster, marked in green, focuses on keywords such as digital capability, IT capability, innovation, digital orientation, and firm performance. This shows the relationship between digital capability and its impact on innovation and organizational performance. Meanwhile, the third cluster, marked in blue, focuses on the term "dynamic capability", which is closely related to sensing and digital transformation capability. This shows the importance of organizations having dynamic capabilities to be able to respond to changes adaptively in the context of digital transformation. Finally, in general, the relationship between the keywords in Figure 7 shows that digital transformation capability is built on the basis of leadership, technological capability, and dynamic capability as a foundation. The summary of the explanation of each cluster is presented in Table 1.

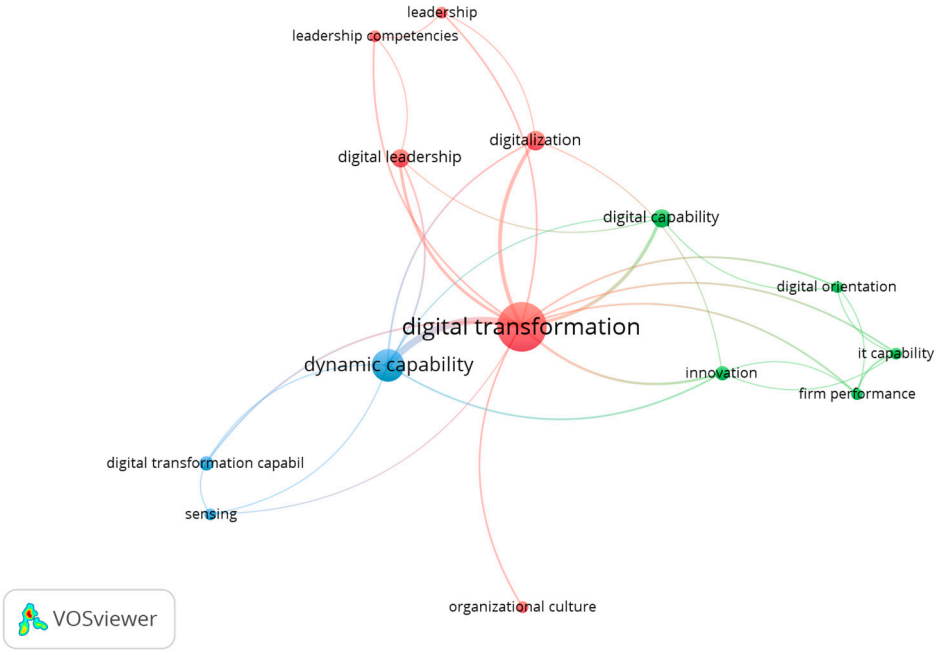


Figure 7. Result of co-occurrence analysis of 43 articles (source: generated from VOSviewer).

Based on the results of the co-occurrence analysis, several clusters of capabilities frequently associated with digital transformation were identified. The three main clusters reflect the importance of leadership and organizational culture, digital and technological capabilities, and dynamic capabilities in supporting the success of digital transformation. Although the co-occurrence analysis provides an insightful initial overview, it is important to note that this analysis is based on the pattern of frequency and co-occurrence of keywords, and therefore cannot fully capture the detailed and comprehensive nature of the identified capabilities. To gain a more complete understanding of these findings, a qualitative analysis was subsequently conducted on the content of the selected articles. This approach aimed to identify additional capabilities that may not be prominently visible through quantitative mapping and to provide deeper insights into how these capabilities are conceptualized, described, and applied across different organizational contexts. By

integrating both approaches, this study sought to develop a more holistic and in-depth framework of digital transformation capabilities.

Digital transformation capabilities play a critical role in enabling organizations to successfully execute digital transformation initiatives and adapt their business models and internal structures accordingly [5]. An organization's capability is defined as its capacity to perform a series of coordinated tasks, utilizing organizational resources, in order to achieve a specific end result [24]. In the context of digital transformation, digital transformation capability is an organization's ability to identify and provide advanced platforms such as information, communication, and control mechanisms, and to integrate digital technologies to effectively connect various stakeholders [19]. The analysis of the 43 articles reveals a variety of capabilities related to digital transformation, which can be seen in Appendix A. However, although the terms categorized as digital transformation capability are highly diverse, many of them share similarities in terms of function, meaning, and contribution to the digital transformation process. Therefore, this study synthesized and developed the dimensions of digital transformation capability (DTC) by grouping capabilities with similar meanings and functions into broader dimensions, and these are presented in Table 2.

The result of this synthesis process led to five main categories of digital transformation capabilities, namely digital dynamic capability, digital leadership capability, employee digital capability, digital technology capability, and digital resource availability. Digital dynamic capability focuses on an organization's ability to respond and adapt to changing digital environments. Digital leadership capability focuses on the ability of leaders to drive digital transformation by communicating effectively, aligning strategy with organizational goals, fostering digital culture, and managing change. Employee digital capability is the ability of employees to effectively utilize digital tools and technologies. Digital technology capability is the organization's ability to utilize and integrate digital and IT tools to enhance operations and practices. Finally, digital resource availability is mainly about the extent to which an organization has access to essential digital resources, such as data, technological infrastructure, human resources, and other foundational tools.

Table 1. Clusters obtained from co-occurrence analysis.

Cluster	Theme	Keywords	Description
1	Leadership capability and organizational culture as enabler of digital transformation	Digital transformation, digitalization, digital leadership, leadership, leadership competencies, and organizational culture	Focus on the human aspect in digital transformation initiatives where leadership capability and organizational culture facilitate the success of digital transformation
2	Digital and IT capabilities as drivers of innovation and firm performance	Digital capability, digital orientation, firm performance, innovation, IT capability	Focus on the development of technical capabilities (digital capabilities, IT capabilities, digital orientation) and how these capabilities contribute to organizational innovation and improved firm performance
3	Dynamic capabilities to navigate digital transformation	Dynamic capability, digital transformation capability, and sensing	Focus on the importance of dynamic capability as key enabler for organizations to adapt and evolve in response to digital disruption

Table 2. Summary of capabilities in studies.

Capabilities Mentioned in Studies	References	Synthesize Capability
Dynamic capabilities	[1,5,8,10,15,19,20,22,33,38–43]	Digital dynamic capability
Digital dynamic capability	[16,40,44,45]	
Knowledge-based dynamic capabilities	[46]	
Dynamic managerial capability	[32]	
Management capability	[47–49]	Digital leadership capability
Stakeholder management	[47]	
Governance	[47,50]	
Organizational capability	[18,25,26]	
Communication	[47]	
Change management	[22,51]	
Digital leadership	[16,24,52–54]	
Leadership competencies	[23,55,56]	
Digital strategy	[24,25,51,52]	
Strategy capability	[18,53,57]	
Organizational alignment	[50]	
Digital mindset	[26]	
Digital culture	[24,51]	
Organization culture	[47,50]	
Data-driven culture	[48]	
Employee competency	[6]	Employee digital capability
Digital talent	[24,26,51,58]	
Employee capability	[48,50,52]	
Employee technical skill	[48]	
Employee analytical skill	[48]	
Digital capability	[42,52,53,57,59,60]	Digital technology and operation capability
IT Capability	[42,52,54,61–63]	
Technology capability	[18,25,48,50,51]	
Digital operation and practice	[25,26,42,51,53]	
Data availability	[26,48,53]	Digital investment capability
Infrastructure capability	[49]	
Basic resource availability	[48]	
Resourcing capability	[47]	

4.1. Digital Dynamic Capability

The term "digital dynamic capability" is rooted in the dynamic capability theory developed by Teece [64]. Among the 43 articles reviewed, 21 identified dynamic capabilities as essential for digital transformation, making them the most frequently mentioned. Although different terms are used, such as dynamic capability, digital dynamic capability, knowledge-based dynamic capability, and dynamic managerial capability, they all emphasize the organization's ability to adapt, reconfigure business models, and respond effectively to technological and market changes.

Dynamic capabilities focus on how organizations change their resources to continuously adapt to changes, be it customer changes or technological opportunities [5,64]. The dynamic capabilities framework provides a powerful perspective for examining strategic transformation in organizations [10]. Moreover, Teece [64] developed the construct of dynamic capabilities, which is reflected by three types of capabilities, namely sensing, seizing, and reconfiguring capability. In the digital transformation context, dynamic capabilities consist of the following capabilities:

- Sensing capability

Sensing capabilities refer to capacity of management to identify and interpret opportunities and threats in the external environment, including change in market demand, technological advancements, and competitive developments [32].

- Seizing capability

Seizing capabilities are the actions taken to address the identified opportunities and threats by reconfiguring organizational resources and capabilities to address the new challenges [32]. These capabilities enable businesses to understand and recognize the modifications necessary to capture value while integrating new technologies into their business processes [16].

- Reconfiguring/transforming capability

Reconfiguring/transforming capabilities refer to the ability to communicate and institutionalize proposed changes within an organization, as well as redefining existing capabilities and internal structures to enhance digital maturity [16,32].

In the context of digital transformation, Ellström et al. [5] stated that to create an organization capable of managing digital transformation, it is necessary to develop dynamic capabilities that are specifically designed to support the success of digital transformation. It can be argued that dynamic capabilities are crucial for the successful implementation of digital transformation, which encompasses modifications to processes such as value creation and organizational tasks in order to achieve a competitive advantage [5]. Dynamic capabilities enable organizations to effectively navigate and manage the opportunities and risks that arise from digital transformation [8]. The attributes of digital dynamic capability can be seen in Table 3.

Table 3. Attributes of digital dynamic capability.

Attribute	References
Constantly monitoring changes in digital technology trends	[5]
Identifying new opportunities related to the strategic use of digital technologies	[5]
Determining the need for a digital transformation strategy	[5]
Formulating digital transformation strategies	[5]
Allocating resources for digital transformation	[22]
Combining internal and external resources for digital transformation	[22]
Prioritizing digital transformation investments based on the expected impact on business performance	[22]
Improving digital maturity	[15,22]
Hiring the right digital talent for digital transformation	[15,22]
Adjusting organizational structures to adapt to digital transformation	[15,22]

4.2. Digital Leadership Capabilities

Based on the review of the literature, it was found that leadership, communication, digital strategy, organizational alignment, organizational culture, and change management are considered important aspects in the digital transformation journey. All of these aspects can be realized if an organization has a digital leader equipped with digital leadership capability. Effective digital transformation requires a leader who can guide the strategic vision and the implementation of digital technologies while promoting digital culture, adaptability, and digital fluency among employees [65]. Prior studies have consistently highlighted the critical role of leaders in managing the digital transformation effectively and linked the success of digital transformation to the leader's capabilities [16,52].

The notion of digital leadership arose from the necessity for leaders to enhance their proficiency at handling and navigating challenges linked to the digital transformation

process [16]. Digital leadership is a novel leadership style that can facilitate successful digital transformation and is considered a significant factor in the development of digital dynamic capability [16]. According to Carcary et al. [24], digital leadership capability acts as one of the key foundational capabilities that should be the focus of development at the early stage of a digital transformation initiative. This capability becomes a foundation for other process and activities [24,52]. Other than that, digital leadership capability strengthens employee digital capabilities and digital technology capabilities [52]. In addition, Albannai et al. [16] argued that digital leadership capability also enhances digital dynamic capability by facilitating cross-functional collaboration, promoting experimentation and learning, and aligning the organization's strategic objectives with digital investments. Digital leadership capability is characterized by a leader's ability to provide a clear direction, nurture digital culture, manage change, and develop strategic decisions aligned with the organization's overall goals and vision [49].

According to Konopik et al. [53], digital leadership capabilities refer to capabilities relating to the digital management and culture of an organization [53]. However, in this study, digital leadership capability covers four aspects, i.e., digital management capability, digital strategy capability, digital culture capability, and change management capability. Digital management capability refers to an organization's ability to plan, orchestrate, and position its digital resources such as knowledge, skills, competencies, personnel, assets, and relationships to make strategic decisions and drive long-term digital transformation in alignment with its overall goals [49]. Change management capability encapsulates a leader's ability to efficiently plan, introduce, and administer change initiatives associated with digital transformation [10,15]. This capability can help businesses overcome one of the most significant barriers of the digital transformation success, i.e., resistance to change [15]. Without proper change management capability, the digital transformation process may fail [22]. Organizations equipped with skillful change management capabilities can proficiently plan, execute, and oversee change initiatives, resulting in smoother transitions and successful integration of digital technologies [15]. Change management capabilities facilitate the effective planning, implementation, and management of change initiatives. The attributes of digital leadership capability can be seen in Table 4.

Table 4. Attributes of digital leadership capability.

Attribute	References
Articulates a clear vision and develops strategies to harness digital technologies for competitive advantage	[24,52]
Translates organizational goals to strategic digital activities	[49]
Ensures digital initiatives align with business objectives	[49]
Motivates employees to embrace digital transformation by conducting training workshops	[22,52]
Encourages all members to achieve digital transformation goals for the organization.	[52]
Fosters digital culture	[16,49]
Ensures that the company has a change management plan before implementing it	[22]
Effectively communicates the purpose and benefits of digital transformation initiatives	[15,22]
Proposes a structured process for managing changes associated with digital transformation	[15,22]
Knows how to address and overcome resistance to digital changes	[15]
Forms a change management team	[22]

4.3. Employee Digital Capability

Employees are regarded as one of the critical pillars in digital transformation [58]. Digital transformation requires employees to have digital capabilities, and its success relies heavily on the employee [58]. Without adequate people equipped with necessary digital skills, digital transformation initiatives would be impossible [15]. Employee digital capabilities incorporate the competencies, knowledge, and skills of the organization's workforce, which are vital for promoting digital transformation [15,52]. Based on Ahmed et al. [15], employee digital capabilities reflect employees' possession of essential skills to adopt digital technology, the provision of training programs developed by the company that aim to enhance employees' digital competencies, and the availability of sufficient staff to support digital transformation initiatives. Prior studies suggest that businesses should be equipped with employees that cover capability in areas such as artificial intelligence, analytics and data science, mobile or online development, cloud and distributed computing, enterprise application architecture, cybersecurity, agile development, vendor management, data architecture, cloud computing, the Internet of Things, blockchain, and customer experience [24,47]. The study conducted by Ahmed et al. [15] highlights the important of employee digital capability in building effective change management practices, which is essential for digital transformation success. Table 5 shows the attributes of digital employee capability.

Table 5. Attributes of employee digital capability.

Attribute	References
In general, the employees possess necessary skills to adopt new digital technologies	[15,22,26,52]
Digital skills are widely distributed across the organization	[26]
The business has employees with data analytic skills	[48,58,60]
The business has employees with data management skills	[58,60]
The business has employees able to solve basic digital problems	[58]
The business has employees with programming skills	[58]
The business has employees able to create digital content	[58]
The employees are familiar with a variety of hardware	[58]
The employees able to utilize relevant software in performing tasks	[58,60]

4.4. Digital Technology Capabilities

Digital technology serves as the cornerstone for executing digital transformation within organizations, encompassing key technologies such as cloud computing, big data, artificial intelligence, and others [25]. A study conducted by Ren et al. [25] found that an organization's proficiency in digital technology would give them an advantage in the digital transformation process. Among the 43 articles reviewed, 14 identified digital-technology-related capabilities—such as IT capability, digital capability, digital operations, or digital practices—as key drivers of digital transformation. Digital technology capability refers to an organization's ability to effectively leverage digital technologies and apply data-driven decision making in its day-to-day operations [26]. It indicates the extent to which an organization has integrated digital technology and data into its daily activities, encompassing the organization's knowledge, expertise, and capacity to effectively utilize digital technologies [52]. This capability can also be regarded as organization's capability to integrate and utilize digital-technology-based resources along with other resources [63]. It evaluates whether enterprises possess the prerequisites for digital transformation, including the implementation of fundamental technologies and the development of facilities, as well as digital integration capabilities, digital infrastructure, and digital technology application [25]. This capability serves as the foundation for organizations to undertake digital

transformation and acts as an indicator of their ability to effectively drive the transformation process [25].

Digital technology capability is demonstrated through digital integration capability and the implementation of a digital platform [25,42]. Organizations with digital technology capability will standardize processes of data input, utilize data-driven decision-making platforms, digitize the organization's core operations, and automate most of the organization's internal processes [26]. Digital technology capability plays a crucial role in supporting digital transformation by enabling organizations to better understand and analyze data, gain insights into customer preferences, and respond quickly to changes in services [42]. Through this capability, organizations can more effectively adapt to market demands, gain a comprehensive understanding of their operational landscape, and detect shifts in the external environment [25,42]. Streamlined and digitized operations enhance efficiency, agility, and data-driven decision making, which are critical factors in achieving successful digital transformation. Table 6 shows the attributes of digital technology capability.

Table 6. Attributes of digital technology capability.

Attribute	References
The business has an information technology department	[62]
The business's operational processes are mostly automated and digitized	[22,26]
The business stores all data in digital form	[26,62]
The business uses various software and digital applications to support business activities (e.g., mobile applications, social media tools and data, big data and advanced analytics, artificial intelligence, machine learning, and Internet of Things)	[26,59]
The business facilitates access to a variety of digital devices to support business activities	[59,62]
The business provides access to a variety of IT or digital devices	[52]
The business utilizes data management services and architectures (e.g., databases, data warehousing, data availability, storage, accessibility, sharing, etc.)	[63]
Decision making in the business's operations is supported by data analysis	[62]
The business uses digital technology to support standardized operational processes	[62]

4.5. Digital Investment Capability

Based on the review of the 43 articles, several articles mentioned the importance of resource availability for the success of digital transformation (e.g., [15,25,26,47,48,51]). These resources include data, technology, and basic resources such as time, financial capital, and personnel [42]. A previous study conducted by Albannai et al. [16] emphasized the importance of resources as critical enablers of digital transformation, as reflected in the view that without sufficient funding and skilled personnel, digital transformation initiatives would not be possible. The availability of required resources can stimulate the development of dynamic capabilities in an organization as well as digital technology capabilities [25]. Thus, a key aspect that determines the success of digital transformation is an organization's ability to make sufficient investments that ensure the availability and accessibility of advanced tools, systems, infrastructure, and digital talent necessary to support its effective adoption [15]. Based on this, this study proposes digital investment capability as a critical aspect in digital transformation initiatives.

Digital investment capability refers to an organization's ability to provide resources that serve as a foundation for enabling and supporting its digital operations [48,49]. By

ensuring that these resources are available and suitable for deployment in new activities, especially in the digital transformation context, organizations can effectively coordinate resource allocation and monitor their utilization; facilitate operational excellence, scalability, and efficiency; and develop a digital service platform [47]. This also supports digital leaders in sharing information more efficiently with employees and enhancing the communication tools essential for effective digital leadership [26]. The availability of physical assets that enable organizations to collaborate and access data in real-time and effectively is considered a critical aspect in transforming an organization into a digital one [26]. Moreover, sufficient investment in employee training and development, financial support for change initiatives, and access to advanced technological tools and systems can foster a supportive environment that encourages positive employee attitudes toward change [16]. The attributes of digital investment capability are presented in Table 7.

Table 7. Attributes of digital investment capability.

Attribute	References
The business invests in technology to collect, store, process, and share a large volume of data	[48]
The business allocates a budget for digital transformation initiatives	[15,48]
The business continuously invests in upgrading technological infrastructure	[15]
The business's current technological resources are sufficient to meet current digital trends	[15]
The business recruits digital talent when needed	[47]
The business has enough team members to support digital initiatives	[15,48]
The business invests in training programs to enhance employees' digital competencies	[15,47]

In addition to identifying key capabilities, this study also sought to examine how these capabilities contribute to the success of digital transformation. Organizations with digital dynamic capabilities tend to monitor changes, detect opportunities and threats, and anticipate emerging trends in their environment, particularly those related to digital technology [10,19,20,33,52]. This is essential for organizations to formulate a digital strategy, develop a long-term digital vision, and continuously refine and enhance their digital transformation strategies [52]. In addition, digital dynamic capabilities assist organizations in making appropriate investment decisions in response to detected opportunities, determining the specific changes needed within the organization to capitalize on those opportunities, and reconfiguring organizational resources to continuously adapt and align with their digital strategy [52].

Digital leaders with strong digital leadership capabilities will drive the success of digital transformation. This is due to the fact that digital leadership capability allows organizations to monitor and explore emergent technology trends, develop digital strategies, lead the implementation of digital transformation, and assist employees in a seamless transition during the transformation process [16,52]. Digital leadership capability will enable a leader to foster their organization's adaptability, motivate employees to embrace technological advancements, and foster a culture that aligns with the organization's digital objectives [52]. Digital leadership capability enables leaders to provide clear direction, ensure that digital initiatives are well integrated with the organization's long-term vision, and demonstrate readiness to champion transformational change [52]. Digital leadership capability enables effective change management and reduces resistance to transformation. This is made possible through open and transparent communication between leaders and

employees regarding the benefits and implications of digital transformation [15]. As a result, employees are more likely to support the adoption and implementation of digital strategies. Moreover, digital leadership capability will enable organizations to effectively utilize their resources to drive innovation, efficiency, and adaptability in order to address changes in the market [49,52], which lead to the development of dynamic capabilities that facilitate successful digital transformation in businesses [16].

On the other hand, employees are regarded as one of the strategic pillars for digital transformation and play a vital role in ensuring its success [58]. Employee digital capability will influence the digitalization process as well as the development of products and the process of innovation [52]. The presence of employee digital capabilities will influence an organization's ability to adapt to digital changes, acquire new digital skills, and develop effective change management practice and digital culture, which is crucial for digital transformation success [15,24]. The development of employee digital capabilities fosters an innovative and technology-driven work environment [57].

The successful implementation of digital transformation requires the availability of adequate resources, including financial, human, and technological resources [15]. Therefore, sufficient funding for investing in technology infrastructure and digitally competent personnel is critical, as digital transformation initiatives cannot progress in their absence [15]. An organization's digital investment capability will determine the availability of the required resources and act as a foundation for enabling and supporting its digital operations [48]. Investments made by the company in digital infrastructure will support digital leaders in sharing updates and information more broadly and quickly with employees while also enhancing effective communication practices essential for digital leadership [26]. The investment in digital resources will stimulate the development of dynamic capabilities, enhancing change management capabilities, fostering digital culture, and developing better digital technology and operation capabilities [15,25]. The summary of the role of each dimension in digital transformation success can be seen in Table 8.

Table 8. Summary of digital transformation capability roles.

Capability	Role in Digital Transformation
Digital dynamic capability	• Helps to detect, anticipate, and understand new digital opportunities and threats [10,16,19,20,33,52] • Promotes the formulation of digital transformation strategy and a long-term digital vision [19,20] • Predicts and adapts latest digital trends [10,20] • Better responds to external pressures for change [39] • Promotes effective change management [20] • Improves resource orchestration [10,16,20] • Improves risk and uncertainty management [20] • Helps to improve an organization's digital maturity [10] • Reorganizes resources and restructures internal infrastructure [16,52]

Table 8. *Cont.*

Capability	Role in Digital Transformation
Digital leadership capability	• Helps to detect new digital opportunities and threats [16,52] • Promotes the formulation of digital transformation strategy and a long-term digital vision [16,24,52] • Ensures the alignment of digital initiatives and business objectives [52] • Translates organizational goals to strategic digital activities [24,52] • Provides direction of the implementation of digital technologies [24,52] • Enhances employee digital capabilities [52] • Improves resource allocation [52] • Promotes effective change management [15,16,52] • Overcomes resistance to change [15,52] • Fosters digital culture [52] • Promotes cross-functional collaboration [16]
Employee digital capability	• Facilitates businesses to more effectively adapt to the new digital environment [57] • Promotes positive attitudes among employees toward change [15] • Overcomes resistance to change [15] • Ensures the digital vision is understood [24] • Fosters digital culture [16,49] • Promotes cross-functional collaboration [16,49]
Digital technology and operation capability	• Facilitates the rapid and widespread dissemination of information and updates to employees by digital leaders [26] • Provides the practical communication tools required for a digital leadership style [26] • Fosters digital culture [16,49] • Promotes cross-functional collaboration [16,49] • Facilitates operational excellence, scalability, and efficiency, as well as the development of a digital service platform [47] • Facilitates the evaluation of potential inefficiencies within the value chain [53] • Facilitates the collection, analysis, and evaluation of information about internal and external processes [25,53] • Enables digital leaders to share information and updates with employees more swiftly and widely [26]
Digital investment capability	• Ensures the availability and accessibility of advanced tools, systems, infrastructure, and digital talent necessary to support its effective adoption [26] • Enables an organization's digital operation capability [15] • Facilitates operational excellence, scalability, and efficiency, as well as the development of a digital service platform [47] • Supports digital leaders in sharing information more efficiently with employees [26] • Provides the communication tools essential for effective digital leadership [26] • Enables organizations to collaborate and access data in real time [26]. • Enables employees to gain digital experience [26] • Enhances employees' digital skills [15] • Fosters a supportive environment that encourages positive employee attitudes toward change [16] • Enhances change management capability [15] • Fosters digital culture [15]

4.6. Discussion

This study aimed to identify and synthesize the key organizational capabilities that support successful digital transformation using a systematic literature review. The analysis revealed five core dimensions of digital transformation capability: digital dynamic

capability, digital leadership capability, employee digital capability, digital technology capability, and digital investment capability. Furthermore, based on these capabilities, a digital transformation capability framework is proposed, which can be seen in Figure 8.

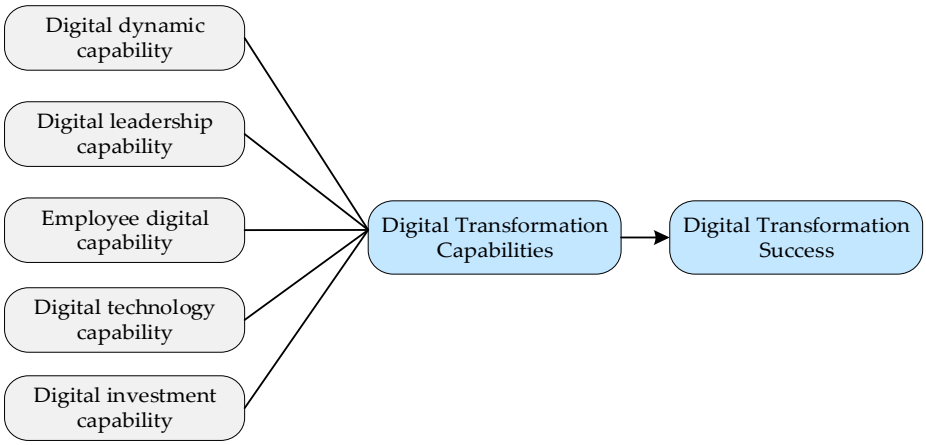


Figure 8. Digital transformation capability framework (authors' own creation).

A key finding of this study is that digital transformation is driven more by human and organizational capabilities than by technology alone. While digital technology serves as an enabler, the success of digital transformation largely depends on leadership, culture, employee capability, strategic alignment, and the managerial aspect. This aligns with the findings from Kane [35] that emphasized that limitations in mindset, leadership commitment, and the ability to manage change effectively often more likely become the main struggle in digital transformation, instead of a lack access to digital tools. The findings of this study demonstrate a strong alignment with the established organizational theories, particularly the resource-based view and dynamic capabilities view. These perspectives suggest that firms need to leverage internal resources and continuously adapt to remain competitive in dynamic environments [31]. Prior studies agreed that the dynamic capability view is an appropriate lens for understanding the digital transformation phenomenon, considering that the process is full of risks, rapid changes, and outcomes that are not always predictable [9]. Moreover, one of the central dimensions, digital dynamic capability, supports the ability of organizations to sense opportunities, seize them strategically, and transform internal processes accordingly. This aligns with prior research on dynamic capabilities as a critical aspect for navigating digital transformation [9,28].

Moreover, the findings of this study emphasize digital leadership capability as a pivotal enabler of successful digital transformation. This finding aligns with the study conducted by Lukito et al. [12], which implies that leadership capability in the management aspect plays a critical role in the digital transformation process. In addition, the lack of appropriate management capability has become one of main reasons for the failure of digital transformation initiatives [12]. The inclusion of digital leadership capability aligns with the study conducted by Teece [31,66], which implies that this capability is the most important element when organizations experience major business model changes, which happens when implementing digital transformation. In his study, Teece mentions the importance of the leader being able to articulate a clear vision and establish an appropriate organizational culture when facing major business model changes [60]. This finding is also supported by Fitzgerald et al. [34], who believe that leadership plays a central role not only in setting the digital transformation agenda but also in sustaining organizational momentum throughout the process [34]. The study conducted by Fitzgerald et al. [34] found that when the leader actively shares a digital vision, employee support and alignment tend to be significantly

stronger. The findings of this study also align with the study conducted by Gouveia et al. [67], which emphasizes that digital transformation is not only a technological shift but a strategic imperative that requires leadership to drive change, align goals, and ensure long-term adaptability. The study conducted by Kane [35] implies that the organizations most successful at digital transformation are not those with the most advanced technology, but those with leaders who can drive cultural change, set a transformative vision, and empower people to work differently. Finally, it should be noted that digital transformation is an evolving journey that will be affected by the emergence of new technologies, a changing market, and shifts in organizational focus. To ensure the digital transformation capability in the business is not outdated, digital dynamic capability plays a critical role. This capability helps organizations to sense new technological trends, seize new opportunities, and reconfigure resources and capabilities as needed. This indicates that digital dynamic capabilities will allow other capabilities to remain relevant with changing situations.

5. Conclusions

This study aimed to identify the capabilities required to support digital transformation in businesses and provide an understanding of how these capabilities contribute to digital transformation. Based on the synthesis of the 43 articles obtained from the systematic literature review, this study identified five dimensions of digital transformation capability, i.e., digital dynamic capability, digital leadership capability, employee digital capability, digital technology capability, and digital investment capability. These capabilities indicate that digital transformation capability encompasses not only the technical capability aspect but also highlights the importance of people and the adaptive capability aspect. Moreover, these capabilities play their own roles in the digital transformation journey and facilitate organizations to address the challenges commonly encountered in digital transformation initiatives, such as aligning digital efforts with business objectives, overcoming unclear strategic directions, driving necessary cultural shifts, and managing resistance to change.

5.1. Theoretical Implication

From a theoretical perspective, this study contributes to the digital transformation literature by offering a comprehensive organizational capability required for successful digital transformation. Drawing from a systematic literature review, the study presents a multidimensional framework consisting of five key capability dimensions, each supported by specific attributes and their role in driving transformation. The first is digital dynamic capability, which refers to an organization's ability to sense digital opportunities, seize them effectively, and reconfigure internal structures in response to change. Digital leadership capability involves strategic vision, change management, cross-functional coordination, and the ability to communicate and champion digital initiatives. Digital technology capability includes data and analytics capabilities as well as the utilization of digital platforms to support operations and innovation. Employee digital capability encompasses the existence of employees with digital literacy and technical and analytical skills in business. Finally, digital investment capability refers to the organization's ability to allocate and manage financial, technological, and human capital—such as investing in digital infrastructure, software, and talent development—to support transformation efforts. By clearly articulating these five dimensions and their defining attributes, the study offers insights into the existing literature and provides an integrated framework that captures how these capabilities collectively enable digital transformation. Furthermore, the findings highlight that successful transformation requires more than the adoption of technology—it depends on leadership engagement, employee readiness, a supportive culture, and strategic investment.

5.2. Practical Implication

The results of this study offer valuable insights for business leaders, executives, and decision makers who attempt to successfully implement digital transformation. First, this study reveals that digital transformation is driven more by human and organizational capabilities than by technology alone. This implies that organizations should prioritize the development of related capabilities, including digital leadership capability, dynamic capability, employee digital capability, and digital investment capability. Before engaging in a digital transformation journey, business leaders should prioritize the identification of the individuals who will serve as digital leaders and the development of strong digital leadership competencies. Selecting digital transformation leaders with digital leadership capability is critical, since this capability contributes to shaping the organization's dynamic capability, which in turn leads to the success of digital transformation. A digital leader should provide strategic direction that aligns with business objectives, translate organizational goals into actionable digital strategies, guide the implementation of digital technologies, manage digital resources—including assets, talent, and infrastructure—communicate a clear digital vision, and foster a digital culture within the organization. One should note that, once a digital vision is formulated, digital leaders should share it with employees. Another important aspect to consider in the early stages of digital transformation is resource availability, including both tangible (physical resources) and intangible resources that can support the success of digital initiatives. To achieve this, organizations need to invest in digital infrastructure (both hardware and software) as well as in building human resources with strong digital capabilities—either through training programs or by recruiting digital talent. The presence of these resources will assist the organization to develop dynamic capabilities and consequently enhance its digital technology capabilities. Finally, business leaders should be aware that digital transformation often disrupts existing workflows, requiring employees to adopt new tools, processes, and mindsets. This can increase the risk of employee resistance to change. To address this, organizations should build change management capability by implementing effective change strategies, clearly communicating the goals of the transformation, and offering training programs to strengthen employees' digital competencies.

5.3. Limitations and Future Research Direction

There are several limitations of this study. First, the capabilities identified in this study are based solely on a systematic literature review. While this approach allows for the synthesis of knowledge from prior research, the absence of empirical validation might limit the understanding of how these capabilities are applied in real-world contexts. Future studies are encouraged to empirically validate and assess the applicability as well as the impact of the identified capabilities, either through case studies, interviews, or surveys from business organizations undergoing digital transformation. Second, this study used Scopus as a single source of data. Although Scopus has extensive coverage of scientific research, which ensures access to a large volume of research across disciplines, relying solely on this database could limit the completeness of the literature included in the review process and result in the omission of relevant studies from other databases that have valuable insight regarding digital transformation capabilities. To enhance completeness and enrich the understanding of digital transformation capabilities, future studies could expand the list of databases used in the review process. Finally, the scope of this study is intentionally limited to digital transformation within business organizations and excludes non-business sectors such as the government, educational, or non-profit sectors. Although this can ensure theoretical coherence and practical relevance to the business context, this narrow scope might affect the generalizability of the findings and disregard valuable insight from

the excluded sectors. Future studies might consider performing a comparative analysis across sectors such as the manufacturing, service, government, or non-profit sectors related to capabilities required for the success of digital transformation; they might also include organizations of different sizes.

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Appendix A

Table A1. Summary of literature review.

Reference	Document Type	Publication Title	Research Method	Business Type	Country	Capabilities for DT Mentioned in Articles
[1]	Journal	Benchmarking	Qualitative	Not specified	Brazil	Dynamic capabilities: • Sensing • Seizing • Reconfiguring
[5]	Journal	Journal of Strategy and Management	Qualitative	Not specified	Not specified	Dynamic capabilities: • Sensing capability • Seizing capability • Reconfigure capability
[6]	Journal	Technological Forecasting and Social Change	Qualitative	Not specified	Not specified	Employee competency
[8]	Journal	Electronic Journal of Information Systems in Developing Countries	Quantitative	Banking	Indonesia	Dynamic capabilities: • Sensing capability • Seizing capability • Transforming capability
[10]	Journal	Long Range Planning	Qualitative	Mixed type of business	German	Dynamic capabilities: Sensing Organizing Restructuring
[15]	Journal	Cogent Business & Management	Mixed-method	Manufacture	Malaysia	Dynamic capabilities: • Sensing capability • Seizing capability • Transforming capability
[16]	Journal	Benchmarking	Literature Review	Not specified	Not specified	Digital leadership Digital dynamic capabilities: • Digital sensing • Digital seizing • Transformation
[18]	Journal	Journal of Open Innovation: Technology, Market, and Complexity	Quantitative	Banking	Indonesia	Technology capability Organizational capability Strategy capability Ecosystem capability

Table A1. *Cont.*

Reference	Document Type	Publication Title	Research Method	Business Type	Country	Capabilities for DT Mentioned in Articles
[19]	Journal	Sustainability	Quantitative	Mixed type of business	Not specified	Dynamic capabilities: Sensing Organizing Restructuring
[20]	Journal	European Journal of Innovation Management	Qualitative	Mixed type of business	Not specified	Dynamic capabilities: • Sensing • Seizing Reconfiguring
[22]	Journal	Journal of Innovation and Entrepreneurship	Quantitative	Tele-communication	Yemen	Dynamic capabilities: • Sensing capability • Seizing capability • Transforming capability Change management • Change urgency • Empowerment • Sustainability • Visionary Coalition
[23]	Journal	Advances in Intelligent Systems and Computing	Qualitative	Mixed type of business	Not specified	Leadership competencies
[24]	Proceeding	Proceedings of the European Conference on IS Management and Evaluation, ECIME	Literature Review	Not specified	Not specified	Agile digital culture Digital leadership skills Digital talent Transformative digital business strategy
[25]	Journal	Sustainability (Switzerland)	Qualitative	Manufacture	Multi country	Digital technology capability Digital operation capability Digital organization capability Digital strategy capability
[43]	Journal	Asian Business and Management	Qualitative	Mixed type of business	Thailand	Dynamic capabilities: Digital sensing Digital seizing Digital transforming
[49]	Journal (Research article)	Information Systems Journal	Qualitative	Not specified	Not specified	Management capability Infrastructure capability Networking capability Development capability
[58]	Journal	PLoS ONE	Literature Review	Not Specified	Not Specified	Employee digital skills Digital working skills Communication skills Adaptation skills Collaboration skills Evidence-based working skills Entrepreneurial skills
[26]	Journal (Research article)	Information Systems Journal	Quantitative	Not specified	Spain	Digital-first mindset Digitized practice and operation Empowered talent Data access and collaboration tools
[61]	Journal	Heliyon	Quantitative	Mixed type of business	Spain	IT capability

Table A1. *Cont.*

Reference	Document Type	Publication Title	Research Method	Business Type	Country	Capabilities for DT Mentioned in Articles
[48]	Journal	Management Accounting Research	Quantitative	Mixed type of business	Not specified	Tangible resources Data Technology Basic resources Intangible resources Data-driven culture Organizational learning Top management support Human skills Managerial skills Technical skills Analytical skills
[47]	Proceeding	Proceedings of the European Conference on Management, Leadership and Governance	Qualitative	Not specified	Not specified	Governance Resourcing Roles, responsibilities, accountabilities Skills and competence development Culture Stakeholder management Communication
[32]	Journal	Journal of Small Business and Entrepreneurship	Qualitative	Retail	Netherland	Dynamic managerial capability
[41]	Journal	Business Horizons	Qualitative	Banking	Brazil	Dynamic capabilities: Sensing capability Seizing capability Transforming capability Governance
[38]	Journal	Digital Business	Quantitative	Manufacture	Germany, Austria	Dynamic capabilities: Digital sensing Digital seizing Digital transforming
[57]	Journal	Administrative Sciences	Quantitative	Not specified	Peru	Digital competency Technical skills Strategic skills
[50]	Journal	Journal of Industrial Engineering and Management	Literature Review	Not specified	Not specified	Employee culture Governance Technology Organizational alignment
[52]	Journal	International Small Business Journal: Researching Entrepreneurship	Quantitative	Mixed type of business	Ghana	Digital capabilities Digital IT capabilities Employee digital capabilities Digital transformational leadership Digital strategy
[53]	Journal	Digital Business	Literature Review	Not specified	Not specified	Strategy and ecosystem capability Innovation thinking capability Digital technology capability Data capability Operations capability Organizational design capability Digital leadership
[42]	Proceeding	Proceedings of the Annual Hawaii International Conference on System Sciences	Literature Review	Not specified	Not specified	Dynamic capabilities: Sensing Seizing Reconfiguring Operational capabilities: • IT capabilities • Digital capabilities

Table A1. *Cont.*

Reference	Document Type	Publication Title	Research Method	Business Type	Country	Capabilities for DT Mentioned in Articles
[63]	Proceeding	Thirty Seventh International Conference on Information Systems	Qualitative	Mixed type of business	United states	IT capabilities IT infrastructure IT business spanning IT proactive stance
[54]	Journal	International Journal of Innovation and Technology Management	Quantitative	Mixed type of business	Not specified	Digital leadership IT capability
[51]	Journal	Journal of Business Economics and Management	Qualitative	Retail	China	Technological change capability Strategic and organizational change capability Management change capability
[55]	Journal	Leadership and Organization Development Journal	Qualitative	Mixed type of business	Multi country	Leadership competencies: • Leadership • Strategy • Collaboration • Personal traits • Change management • Data management • Skills
[59]	Journal	Cogent Business & Management	Quantitative	Mixed type of business	Indonesia	Digital capability
[39]	Proceeding	ACIS 2020 Proceedings–31st Australasian Conference on Information Systems	Mixed method	Creative industry	Indonesia	Dynamic capabilities: Digital sensing Digital seizing Digital transforming
[40]	Proceeding	IEEE International Conference on Industrial Engineering and Engineering Management	Literature Review	Not specified	Not specified	Digital dynamic capabilities: • Digital sensing • Digital seizing • Digital reconfiguring
[60]	Journal	Theoretical and Applied Electronic Commerce Research	Quantitative	Mixed type of business	Latvia	Digital capability
[33]	Journal	Journal of Cleaner Production	Qualitative	Mobility	Not specified	Dynamic capabilities: • Sensing • Seizing • Reconfiguring
[44]	Journal	Manage Decis Econ.	Quantitative	Textile	China	Digital dynamic capabilities: • Digital sensing • Digital seizing • Digital transformation
[46]	Journal	Journal of Open Innovation: Technology, Market, and Complexity	Quantitative	Mixed type of business	Thailand	Knowledge-based dynamic capabilities: Absorptive capability Generation capability Storage capability Adaptation capability

Table A1. *Cont.*

Reference	Document Type	Publication Title	Research Method	Business Type	Country	Capabilities for DT Mentioned in Articles
[62]	Journal	Cogent Business and Management	Quantitative	Mixed type of business	Thailand	IT competency
[56]	Journal	Economic Thought and Practice	Literature review	Not specified	Not specified	Leadership competency

References

1. Froehlich, C.; Reinhardt, L.B.; Schreiber, D.; Eberle, L. Dynamic capabilities for digital transformation in an enterprise business. *Benchmarking* **2024**, *ahead of print*. [CrossRef]
2. Gao, S.; Hakanen, E.; Rajala, R. Digital transformation: The interplay of explorative and exploitative capability development. In Proceedings of the 53rd Hawaii International Conference on System Sciences, Maui, HI, USA, 7–10 January 2020; Volume 2020, pp. 4306–4315. [CrossRef]
3. Vial, G. Understanding digital transformation: A review and a research agenda. *J. Strateg. Inf. Syst.* **2019**, *28*, 118–144. [CrossRef]
4. Jing, H.; Zhang, Y.; Ma, J. Influence of digital ambidextrous capabilities on SMEs' transformation performance: The mediating effect of business model innovation. *Heliyon* **2023**, *9*, 118–144. [CrossRef]
5. Ellström, D.; Holtström, J.; Berg, E.; Josefsson, C. Dynamic capabilities for digital transformation. *J. Strateg. Manag.* **2022**, *15*, 272–286. [CrossRef]
6. Blanka, C.; Krumay, B.; Rueckel, D. The interplay of digital transformation and employee competency: A design science approach. *Technol. Forecast. Soc. Change* **2022**, *178*, 121575. [CrossRef]
7. Zhang, X.; Xu, Y.Y.; Ma, L. Information technology investment and digital transformation: The roles of digital transformation strategy and top management. *Bus. Process. Manag. J.* **2023**, *29*, 528–549. [CrossRef]
8. Abdurrahman, A.; Gustomo, A.; Prasetio, E.A. Enhancing banking performance through dynamic digital transformation capabilities and governance, risk management, and compliance: Insights from the Indonesian context. *Electron. J. Inf. Syst. Dev. Ctries.* **2024**, *90*, e12299. [CrossRef]
9. Schneider, M.H.G.; Kanbach, D.K.; Kraus, S.; Dabi, M. Transform Me If You Can: Leveraging Dynamic Capabilities to Manage Digital Transformation. *IEEE Trans. Eng. Manag.* **2024**, *71*, 9094–9108. [CrossRef]
10. Warner, K.S.R.R.; Wäger, M. Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Plann.* **2019**, *52*, 326–349. [CrossRef]
11. Forliano, C.; Bullini Orlandi, L.; Zardini, A.; Rossignoli, C. Technological orientation and organizational resilience to COVID-19: The mediating role of strategy's digital maturity. *Technol. Forecast. Soc. Change* **2023**, *188*, 122288. [CrossRef]
12. Lukito, D.; Suharnomo, S.; Perdhana, M.S. Transformation Management Capabilities for Digital Transformation Initiatives: A Construct Conceptualization in Alignment with the Dynamic Capabilities Framework. *J. Organ. Manag. Stud.* **2022**, *2022*, 845443. [CrossRef]
13. Xu, Z.; Hou, J. CEO overseas experience, dynamic capabilities and corporate digital transformation: An imprinting theory perspective. *Humanit. Soc. Sci. Commun.* **2024**, *11*, 743. [CrossRef]
14. Wu, W.; Song, J.; Lu, L.; Guo, H. Is managerial ability a catalyst for driving digital transformation in enterprises? An empirical analysis from internal and external pressure perspectives. *PLoS ONE* **2024**, *19*, e0293454. [CrossRef]
15. Ahmed, S.; Aziz, N.A.; Haque, R.; Bin, A.R.; Senathirajah, S.; Qazi, S.Z. Digital transformation in Malaysian manufacturing: A study of change sensing and seizing capabilities. *Cogent Bus. Manag.* **2024**, *11*, 2392046. [CrossRef]
16. Albannai, N.A.; Raziq, M.M.; Malik, M.; Scott-Kennel, J.; Igoe, J. Unraveling the role of digital leadership in developing digital dynamic capabilities for the digital transformation of firms. *Benchmarking* **2024**, *ahead of print*. [CrossRef]
17. Busulwa, R.; Pickering, M.; Mao, I. Digital transformation and hospitality management competencies: Toward an integrative framework. *Int. J. Hosp. Manag.* **2022**, *102*, 103132. [CrossRef]
18. Abdurrahman, A.; Gustomo, A.; Prasetio, E.A.; Agus, E. Impact of dynamic capabilities on digital transformation and innovation to improve banking performance: A TOE framework study. *J. Open Innov. Technol. Mark. Complex.* **2024**, *10*, 100215. [CrossRef]
19. Yu, J.; Wang, J.; Moon, T. Influence of Digital Transformation Capability on Operational Performance. *Sustainability* **2022**, *14*, 7909. [CrossRef]
20. Kowalski, M.; Bernardes, R.C.; Gomes, L.; Borini, F.M. Microfoundations of dynamic capabilities for digital transformation. *Eur. J. Innov. Manag.* **2024**, *ahead of print*. [CrossRef]
21. Wu, M.; Kozanoglu, D.C.; Min, C.; Zhang, Y. Unraveling the capabilities that enable digital transformation: A data-driven methodology and the case of artificial intelligence. *Adv. Eng. Inform.* **2021**, *50*, 101368. [CrossRef]

22. Al-Moaid, N.A.A.; Almarhdi, S.G. Developing dynamic capabilities for successful digital transformation projects: The mediating role of change management. *J. Innov. Entrep.* **2024**, *13*, 85. [CrossRef]
23. Imran, F.; Shahzad, K.; Butt, A.; Kantola, J. Leadership Competencies for Digital Transformation: Evidence from Multiple Cases. *Adv. Intell. Syst. Comput.* **2020**, *1209*, 81–87. [CrossRef]
24. Carcary, M.; Doherty, E.; Conway, G. A dynamic capability approach to Digital transformation: A focus on key foundational themes. In Proceedings of the 10th European Conference on Information Systems Management: ECISM 2016, Évora, Portugal, 8–9 September 2016; pp. 20–28.
25. Ren, X.; Jing, H.; Zhang, Y. Construction of Digital Transformation Capability of Manufacturing Enterprises: Qualitative Meta-Analysis Based on Current Research. *Sustainability* **2023**, *15*, 14168. [CrossRef]
26. Braojos, J.; Weritz, P.; Matute, J. Empowering organisational commitment through digital transformation capabilities: The role of digital leadership and a continuous learning environment. *Inf. Syst. J.* **2024**, *34*, 1466–1492. [CrossRef]
27. del Socorro Encinas-Grijalva, M.; Olivieri-Sangiacomo, F.A.; Galván-Vela, E.; Ravina-Ripoll, R. Business readiness for dual transformation: An analysis of business capabilities for digital and sustainable transformation. *Discov. Sustain.* **2024**, *5*, 164. [CrossRef]
28. Zia, N.U.; Shamim, S.; Zeng, J.; Awan, U.; Chromjakova, F.; Akhtar, P.; Orel, M. Avoiding crisis-driven business failure through digital dynamic capabilities. B2B distribution firms during the COVID-19 and beyond. *Ind. Mark. Manag.* **2023**, *113*, 14–29. [CrossRef]
29. Nguyen, T.H.; Le, X.C. An Extended Technology-Organization-Environment (TOE) Framework for Online Retailing Utilization in Digital Transformation: Empirical Evidence from Vietnam. *J. Open Innov. Technol. Mark. Complex.* **2022**, *8*, 200. [CrossRef]
30. Hussein, H.; Albadry, O.M.; Mathew, V.; Al-Romeedy, B.S.; Alsetoohy, O.; Abou Kamar, M.; Khairy, H.A. Digital Leadership and Sustainable Competitive Advantage: Leveraging Green Absorptive Capability and Eco-Innovation in Tourism and Hospitality Businesses. *Sustainability* **2024**, *16*, 5371. [CrossRef]
31. Teece, D.J. Business models and dynamic capabilities. *Long Range Plann.* **2018**, *51*, 40–49. [CrossRef]
32. Dasí, À.; Kok, G.J.M. Without friction, no shine: How dynamic managerial capabilities combine for family firms' digital transformation. *J. Small Bus. Entrep.* **2023**, *37*, 145–171. [CrossRef]
33. Saeedikiya, M.; Salunke, S.; Kowalkiewicz, M. Toward a dynamic capability perspective of digital transformation in SMEs: A study of the mobility sector. *J. Clean. Prod.* **2024**, *439*, 140718. [CrossRef]
34. Fitzgerald, M.; Kruschwitz, N.; Bonnet, D.; Welch, M. Embracing Digital Technology. A New Strategic Imperative | Capgemini Consulting Worldwide. *MIT Sloan Manag. Rev.* **2014**, *55*, 1–13.
35. Kane, G. The Technology Fallacy: People Are the Real Key to Digital Transformation. *Res. Technol. Manag.* **2019**, *62*, 44–49. [CrossRef]
36. Moher, D.; Liberati, A.; Tetzlaff, J.; Altman, D.G.; Group, P. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ* **2009**, *2535*, b2535. [CrossRef] [PubMed]
37. Samsuden, N.S.; Kohar, U.H.A.; Khatib, S.F.A.; Abbas, A.F. Digital Capabilities and Business Performance: A Systematic Literature Review. *Sustainability* **2024**, *16*, 11108. [CrossRef]
38. Dobrovnik, M.; Herold, D.M.; Kummer, S. Exploring supply chain managers' complex perceptions of dynamic capabilities for digital transformation. *Digit. Bus.* **2025**, *5*, 100098. [CrossRef]
39. Priambada, S.; Korthaus, A.; Bennett, R.M.; Scifleet, P. Exploring Dynamic Capabilities, Digital Business Transformation and Indonesia's Creative Industry Sector. In Proceedings of the ACIS 2020 Proceedings—31st Australasian Conference on Information Systems, Wellington, New Zealand, 1–4 December 2020.
40. Rizana, A.F.; Wiratmadja, I.I.; Akbar, M. Exploring the Role of Digital Transformation for Agile and Resilience Business: A Conceptual Model Based on Dynamic Capabilities View. In Proceedings of the 2024 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Bangkok, Thailand, 15–18 December 2024; pp. 868–872. [CrossRef]
41. de Paula Pereira, G.; de Medeiros, J.F.; Kolling, C.; Ribeiro, J.L.D.; Morea, D.; Iazzolino, G. Using dynamic capabilities to cope with digital transformation and boost innovation in traditional banks. *Bus. Horiz.* **2024**, *67*, 317–330. [CrossRef]
42. Koppe, T.; Leisching, L.; Rasspe, S. Management of Digital Transformation: A Literature Review of Dynamic and Operational Capabilities. In Proceedings of the 56th Hawaii International Conference on System Sciences, Maui, HI, USA, 3–6 January 2023; pp. 4204–4213.
43. Borsano, P.; Marozzo, V.; Bonaglia, M.; Di Minin, A.; Crupi, A. Digital transformation and digital dynamic capabilities improvement in low-medium technology sector: Evidence from Thai family firms. *Asian Bus. Manag.* **2024**, *23*, 683–712. [CrossRef]
44. Shen, L.; Zhang, X. Digital technology adoption, digital dynamic capability, and digital transformation performance of textile industry: Moderating role of digital innovation orientation. *Manag. Decis Econ.* **2022**, *43*, 2038–2054. [CrossRef]
45. Ghosh, S.; Hughes, M.; Hodgkinson, I.; Hughes, P. Digital transformation of industrial businesses: A dynamic capability approach. *Technovation* **2022**, *113*, 102414. [CrossRef]

46. Songkajorn, Y.; Aujirapongpan, S.; Jiraphanumes, K.; Pattanasing, K. Organizational Strategic Intuition for High Performance: The Role of Knowledge-Based Dynamic Capabilities and Digital Transformation. *J. Open Innov. Technol. Mark. Complex.* **2022**, *8*, 117. [CrossRef]
47. Carcary, M.; Doherty, E. Digital Transformation: A Foundational Capability Building Block Perspective on Maturing the IT Capability. In Proceedings of the ECMLG 2022 18th European Conference on Management, Leadership and Governance, Lisbon, Portugal, 10–11 November 2022; pp. 80–88. [CrossRef]
48. Boerner, X.; Wiener, M.; Guenther, T.W. Controllership effectiveness and digitalization: Shedding light on the importance of business analytics capabilities and the business partner role. *Manag. Account. Res.* **2024**, *66*, 100904. [CrossRef]
49. Baiyere, A.; Salmela, H.; Nieminen, H.; Kankainen, T. Assessing digital capabilities for digital transformation—The MIND framework. *Inf. Syst. J.* **2024**, *35*, 6–38. [CrossRef]
50. González-Varona, J.M.; Acebes, F.; Poza, D.; López-Paredes, A. Fostering Digital Growth in SMEs: Organizational Competence for Digital Transformation. *IFIP Adv. Inf. Commun. Technol.* **2020**, *598*, 237–248. [CrossRef]
51. Pan, J.; Lin, J.; Wang, S. a Delphi-Based Index System for Digital Transformation Capability of Retailers. *J. Bus. Econ. Manag.* **2022**, *23*, 1106–1132. [CrossRef]
52. Gyamerah, S.; Afshari, L.; Asante, D. Digital transformation in the SME context: The nexus between leadership, digital capabilities and digital strategy. *Int. Small Bus. J. Res. Entrep.* **2025**, *43*, 303–328. [CrossRef]
53. Konopik, J.; Jahn, C.; Schuster, T.; Hoßbach, N.; Pflaum, A. Mastering the digital transformation through organizational capabilities: A conceptual framework. *Digit. Bus.* **2022**, *2*, 100019. [CrossRef]
54. Ongena, G.; Morsch, P.; Ravesteijn, P. Digital Leadership Competency to Enhance Digital Transformation. *Int. J. Innov. Technol. Manag.* **2024**, *21*, 2450042. [CrossRef]
55. Philip, J.; Gilli, K.; Knappstein, M. Identifying key leadership competencies for digital transformation: Evidence from a cross-sectoral Delphi study of global managers. *Leadersh. Organ. Dev. J.* **2023**, *44*, 392–406. [CrossRef]
56. Živković, S. Inspiring Digital Transformation: An Integrative Leadership Competency Framework. *Econ. Thought Pract.* **2022**, *31*, 237–254. [CrossRef]
57. Espina-Romero, L.; Chafloque-Céspedes, R.; Izaguirre Olmedo, J.; Albarran Taype, R.; Ochoa-Díaz, A. Driving Digital Transformation in Lima's SMEs: Unveiling the Role of Digital Competencies and Organizational Culture in Business Success. *Adm. Sci.* **2025**, *15*, 19. [CrossRef]
58. Bouwmans, M.; Lub, X.; Orlowski, M.; Nguyen, T.V. Developing the digital transformation skills framework: A systematic literature review approach. *PLoS ONE* **2024**, *19*, e0304127. [CrossRef]
59. Prakasa, Y.; Jumani, Z.A. Linking digital capability to small business performance: The mediating role of digital business transformation. *Cogent Bus. Manag.* **2024**, *11*, 2342486. [CrossRef]
60. Rupeika-apoga, R.; Petrovska, K.; Bule, L. The Effect of Digital Orientation and Digital Capability on Digital Transformation of SMEs during the COVID-19 Pandemic. *Theor. Appl. Electron. Commer. Res.* **2022**, *17*, 669–685. [CrossRef]
61. Barba-Sánchez, V.; Meseguer-Martínez, A.; Gouveia-Rodrigues, R.; Raposo, M.L. Effects of digital transformation on firm performance: The role of IT capabilities and digital orientation. *Heliyon* **2024**, *10*, e27725. [CrossRef] [PubMed]
62. Ueasangkomsate, P. Empowering Thai SMEs through IT competency, digitalization and digital transformation for new product development. *Cogent Bus. Manag.* **2025**, *12*, 2458758. [CrossRef]
63. Nwankpa, J.K.; Roumani, Y. IT Capability and Digital Transformation: A Firm Performance Perspective IT Capability and Digital Transformation: A Firm Performance Perspective. In Proceedings of the Thirty Seventh International Conference on Information Systems, Dublin, Ireland, 11–14 December 2016.
64. Teece, D.J. Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance. *Strateg. Manag. J.* **2007**, *1350*, 1319–1350. [CrossRef]
65. AlNuaimi, B.K.; Kumar Singh, S.; Ren, S.; Budhwar, P.; Vorobyev, D. Mastering digital transformation: The nexus between leadership, agility, and digital strategy. *J. Bus. Res.* **2022**, *145*, 636–648. [CrossRef]
66. Teece, D.; Peteraf, M.; Leih, S. Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *Calif. Manage. Rev.* **2016**, *58*, 13–35. [CrossRef]
67. Gouveia, S.; De Iglesia, D.H.; Abrantes, J.L.; Rivero, A.J.L. Transforming Strategy and Value Creation Through Digitalization? *Adm. Sci.* **2024**, *14*, 307. [CrossRef]

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