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PRISMA-based systematic review: exploring the dimensions of digital transformation

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Abstract: The primary objective of this study is to identify and explore the key dimensions of digital transformation, determine the factors influencing its success, and provide recommendations for best practices. Employing the systematic literature review (SLR) method with a PRISMA approach, this research was conducted in July 2024 using data from the Scopus database. A total of 30 eligible articles were analysed, revealing 13 key influencing factors: leadership, culture, IT, knowledge, agility, strategy, top management, attitude, internal factors, finance, readiness, and digitalisation. The findings of this study are expected to offer valuable insights for academics and practitioners in management and information technology. As a qualitative study, it provides a novel perspective by deeply exploring the experiences and perceptions of individuals involved in digital transformation initiatives across various sectors, capturing nuanced and context-specific factors contributing to successful digital transformation.

Keywords: digital transformation; information technology; PRISMA; systematic literature review; SLR.

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1 Introduction

Digital transformation (DT) has become one of the most frequently discussed topics in management and information technology literature (Kraus et al., 2021). This process involves using digital technology to create or modify business processes, culture, and customer experiences to meet the changing needs of business and market dynamics (Fitzgerald et al., 2014). DT is limited to implementing new technologies and involves significant changes in organisational structure and business models (Zgalat-Lozynska et al., 2023). Therefore, a comprehensive understanding of the dimensions of DT is crucial for the success of organisations in the digital era. The literature indicates that DT encompasses various aspects such as digital strategy, technological innovation, and organisational culture change (Westerman et al., 2014).

This study makes a significant contribution to the body of knowledge in the field of DT by providing a comprehensive systematic literature review (SLR) using the PRISMA method, which has not been extensively done in previous research. This research identifies and classifies the key factors influencing the success of DT, thereby offering practical guidance for organisations. The findings of this study also offer recommendations for best practices that academics and practitioners can use to plan and implement effective DT strategies.

Although much research has been conducted on DT, several research gaps remain to be addressed. Most previous studies have focused only on case studies or surveys in specific industrial sectors, making them less representative of various industries and geographical contexts. Previous research often fails to examine the interactions between various factors influencing DT comprehensively. Additionally, the lack of SLRs using the PRISMA method to identify and explore the main dimensions of DT is also a significant research gap.

This SLR will also identify gaps in previous research and provide directions for future research. Moreover, this study will offer practical insights for organisational leaders who wish to initiate or enhance their DT initiatives. With a deep understanding of the key aspects of DT, organisations can design more effective strategies and reduce the risk of failure. The primary objective of this study is to identify and explore the key dimensions of DT using the PRISMA method. This research also aims to identify the factors influencing the success of DT and offer recommendations for best practices. Thus, this study is expected to provide valuable insights for academics and practitioners in management and information technology.

Based on the above explanation, the research is titled 'PRISMA-based systematic review to explore the dimensions of DT'. This study will contribute to the DT literature by providing a comprehensive SLR. By using the PRISMA method, this research will provide a clear and transparent framework for exploring the main dimensions of DT. The results of this study are expected to assist organisations in planning and implementing successful DT initiatives. Based on the background explained, the research question (RQ) is determined as follows:

1 How are articles on DT distributed?

2 What are the dimensions of the DT variable?

3 How do these factors influence DT?

2 Materials and methods

2.1 Data sources

The data used in this study were sourced from the Scopus database, selected for its reputation and extensive academic coverage. The choice of Scopus as the data source ensures the quality and relevance of the analysed research (Postiglione et al., 2024). Only complete, final articles were included in this study. Incomplete articles were excluded to ensure a thorough analysis of the research. This approach helps maintain the integrity and validity of the study's results (Lemstra and de Mesquita, 2023).

2.2 Method

The preferred reporting items for systematic reviews and meta-analyses (PRISMA) method are appropriate for conducting a SLR. By providing a clear and transparent framework, this method allows for identifying, selecting, and synthesising relevant research (Moher et al., 2009). Through the application of the PRISMA method, this study aims to identify the key aspects of DT and explore their interactions and impacts on its success.

The SLR using the PRISMA method was conducted in July 2024. Liberati et al. (2009) outline four steps in conducting a literature review using the PRISMA method. These four steps are:

1 establishing eligibility criteria

2 identifying sources of information

3 collecting data

4 selecting data elements for analysis.

The first step in the literature review process using the PRISMA method is determining the eligibility criteria for the articles. The following are the eligibility criteria established for this study:

1 articles that discuss DT

2 articles that are original and final, and peer-reviewed

3 articles published within the last five years (2020–2024)

4 articles written in an international language, specifically English

5 articles specifically aim to identify the factors influencing DT.

The data used in this study were sourced from the Scopus database. Data was collected manually by analysing abstracts, objectives, variables, indicator dimensions, or items from articles from information sources. The data collection process was conducted meticulously and systematically to ensure each article was relevant and met the inclusion criteria. Articles were collected based on keywords and then thoroughly analysed to obtain data consistent with the research objectives. This analysis included identifying themes and patterns related to DT. Articles were collected to understand the factors influencing DT, and the data elements and influencing variables were recorded. The following are the detailed stages in the article selection process:

1 A search on Scopus was conducted using the keyword DT. The search on Scopus included the following combination: TITLE-ABS-KEY (‘factors that influence’ AND ‘DT’).

2 Articles obtained were then selected based on the eligibility criteria previously described.

3 Articles meeting the eligibility criteria were analysed manually and comprehensively, per the initial research objectives.

Thus, this study will provide a comprehensive overview of the factors contributing to the success of DT in various organisational contexts. Extracted data elements were then categorised based on the year of publication, authors, title, country, sample, article objectives, variables, and determinants of sustainable employee performance. The visualisation of the SLR process using the PRISMA approach applied in this study is depicted in Figure 1. The PRISMA flow diagram provides a clear overview of how articles were selected and excluded during the review process.

3 Result and discussion

3.1 Selected articles

Based on the literature review process, the 30 selected articles were used in this study. The selected articles can be seen in Table 1.

3.2 Descriptive analysis

After selecting 30 articles, the next step is to analyse to identify the factors that can influence DT. Before this, a descriptive analysis is performed to answer RQ1. Descriptive analysis is used to determine the distribution of the selected articles. The distribution of articles based on the year of publication, which can be seen in Figure 2.

Table 1 Details of selected articles

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
1	Korachi and Bounabat (2020)	General approach for formulating a digital transformation strategy	This research aims to eliminate ambiguities regarding the definition and approach of digital strategy by proposing a general definition and establishing a common approach to digital transformation.	The research sample consists of 30 digital strategies and frameworks.	This research uses partial least squares (PLS) to conduct empirical evaluations and analyse the effects of IT governance and management strategies on digital transformation maturity.
2	Avirutha (2020)	Factors enabling the digital change: digital transformation for small and medium businesses	This study explores how companies can overcome barriers and become digital, and whether digital infrastructure and disruption significantly affect SMEs in their digital transformation journey.	The research sample consists of 400 respondents.	This study employs structural equation modelling (SEM) to analyse survey responses and to test and modify the measurement model.
3	Yureva et al. (2020)	Digital transformation and its risks in higher education: students' and teachers' attitude	This research aims to determine the extent to which digital tools and technologies are used by students and teachers in the educational process, as well as to identify the main problems and risks of digitalising higher education. The study also aims to analyse students' and teachers' attitudes towards digitalisation and determine whether the technocratic model of digitalisation is a major issue.	The research sample consists of students and lecturers in the Kazan Federal District (Volga).	This research uses an online survey to collect data on students' and lecturers' use of digital educational resources.
4	Singh et al. (2021)	Modeling the effects of digital transformation on the Indian manufacturing industry	This research aims to identify the antecedent factors of digital transformation and demonstrate the mediating role of digital transformation on the performance of manufacturing companies.	The HR departments of various organisations were contacted to gain permission to contact their mid-level professionals involved in the digital transformation process. The researchers visited the organisations to collect data. A total of 500 questionnaires were distributed.	This study analyses the data using the partial least squares structural equation modelling (PLS-SEM) method.

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
5	Aboushouk (2022)	The impact of employees' absorptive capacity on digital transformation of tourism and travel services: evidence from the Egyptian travel agencies	This study's objective is to assess the impact of employees' absorptive capacity on the digital transformation of travel agencies in Egypt.	The study uses a sample of 278 out of 1008 class A travel agents in Egypt, collected through a simple random sampling technique.	This research employs quantitative methods, with quantitative data analysis conducted using structural equation modelling (SEM).
6	Luo and Yu (2022)	The regulatory effect of firm size on digital transformation: an empirical study of pharmaceutical companies in China	Based on synergy theory, this study aims to investigate the effects of external environmental factors, internal condition factors, company size, and control variables on the digital transformation of pharmaceutical companies in China.	This research collected 395 valid data points from Chinese pharmaceutical companies through an online questionnaire using purposive and snowball sampling.	This study uses quantitative analysis, structural equation modelling (SEM), and regression analysis. The data are analysed using SPSS and Amos.
7	Rupeika-Apoga et al. (2022)	The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic	This research aims to explore the effects of digital orientation and capabilities on digital transformation and the mediating effect of digital transformation on the revenue and business models of SMEs during the COVID-19 pandemic.	The research sample consists of 246 SMEs in Latvia.	This research uses mediation analysis to examine the direct effects of digital orientation and digital capabilities on digital transformation and to explore the mediating effects of digital transformation on SME outcomes.
8	Jonathan et al. (2022)	IT alignment and its influence on digital transformation success	This study aims to investigate whether the influence of eight organisational and managerial factors on IT alignment affects the success of digital transformation in public organisations.	The research sample consists of 402 leaders who participated in an online survey.	This study employs partial least squares-structural equation modelling (PLS-SEM) to test the proposed theoretical model.
9	Zhang et al. (2022)	Research on successful factors and influencing mechanisms of digital transformation in SMEs	This research aims to identify the key factors of digital transformation (DT) in small and medium-sized enterprises (SMEs) and explore the mechanisms of their interaction.	The research sample consists of 180 SMEs in China.	This research uses structural equation modelling (SEM) to analyse the collected data.

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
10	AlNuaimi et al. (2022)	Mastering digital transformation: the nexus between leadership, agility, and digital strategy	This study aims to develop and test a model of how digital transformational leadership and organisational agility affect digital transformation, with digital strategy as a moderator.	Information about the research sample is not provided in this abstract.	This study uses a new institutional theory approach to develop a model and test the relationships between variables using unspecified methods in the abstract.
11	Zhang et al. (2023a)	Study on the influencing factors of digital transformation of construction enterprises from the perspective of dual effects – a hybrid approach based on PLS-SEM and fsQCA	This research aims to explore the mechanisms by which a company's digital transformation affects organisational resilience.	The research sample consists of 339 companies in China.	This research employs fuzzy-set qualitative comparative analysis (fsQCA) and structural equation modelling (SEM) to analyse the data.
12	Lu and Wang (2023)	Exploring the effects of sudden institutional coercive pressure on digital transformation in colleges from the teachers' perspective	This study explores the relationship between digital transformation readiness, adoption intention, digital transformation success, and sudden coercive institutional pressures in the context of distance teaching during the COVID-19 pandemic.	The research sample consists of 233 lecturers participating in distance teaching in Taiwan.	This study uses the partial least squares structural equation modelling (PLS-SEM) approach to validate models and test hypotheses.
13	Zhang et al. (2023b)	Information technology investment and digital transformation: the roles of digital transformation strategy and top management	This research explores the mechanisms by which IT infrastructure impacts a company's digital transformation from the perspective of digital transformation strategy based on the resource-based view (RBV). Additionally, the study examines the moderating role of top management in the relationship between IT infrastructure and digital transformation strategy and between digital transformation strategy and a company's digital transformation.	This study collected 180 sample data points from companies in China through a questionnaire survey.	The analysis method used is partial least squares structural equation modelling (PLS-SEM) to test the hypotheses proposed in the study.

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
14	Chwilkowska-Kubala et al. (2023)	The impact of resources on digital transformation in energy sector companies. The role of readiness for digital transformation	This study aims to explain how human resources, technology, finance, ICT, and infrastructure influence the digital transformation of the energy sector by combining the resource-based view and the concept of digital transformation.	This research used data collected from 110 energy companies.	The analysis method used is structural equation modelling (SEM) to analyse data collected from energy companies.
15	Wongsunopparat and De Silva (2023)	Study of factors influencing digital transformation process in Bangkok	This research aims to study the factors influencing the digital transformation process in Bangkok, Thailand	The research sample consists of 400 respondents collected using electronic questionnaires via social media.	This research uses structural equation modelling (SEM) for data analysis.
16	Huong and Duc (2023)	The perceptions of prospective digital transformation adopters: an extended diffusion of innovations theory	This study aims to investigate the factors affecting user perceptions in adopting digital transformation.	The research sample consists of 248 government personnel, instructors, and students recruited to answer a questionnaire via Google Forms.	This study employs structural equation modelling (SEM) to test the proposed hypotheses and analyse the data obtained from questionnaires.
17	Dai and Tan (2023)	The influence of organisational culture and shared leadership on digital transformation and firm performance	This research aims to investigate the impact of organisational culture (OC) and shared leadership (SL) on digital transformation (DT) and its subsequent effects on firm performance (FP).	The research sample consists of 245 managers and IT staff from 49 commercial companies in the Mekong Delta region, Vietnam.	The analysis method used is structural equation modelling (SEM).
18	Luu (2023)	Digital transformation and export performance: a process mechanism of firm digital capabilities	This study aims to investigate the relationship between digital transformation and export performance by analysing a large sample of exporters in Vietnam, as well as the role of digital transformational leadership and the mediating effects of a company's digital capabilities and employees' exploration and exploitation innovations.	The research sample consists of 364 middle managers in 107 export companies in Ho Chi Minh City, Vietnam.	The analysis method used is partial least squares structural equation modelling (PLS-SEM).

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
19	Gull et al. (2023)	Resilient higher educational institutions in a world of digital transformation	The objective of this research is to investigate the direct and indirect effects of adaptive culture on organisational resilience within the context of higher education institutions.	This research sample consists of 294 teaching faculty members from various higher education institutions in South Asia.	The collected data is analysed using the structural equation modelling (SEM) approach.
20	van Tonder et al. (2023)	Internal organisational factors driving digital transformation for business model innovation in SMEs	The primary aim of this study is to investigate the internal organisational factors driving business strategy renewal and business culture in small and medium enterprises (SMEs) to support their digital transformation pathways.	This study uses the Delphi method, involving the use of questionnaires to determine frequently mentioned internal organisational factors driving digital transformation for business model innovation in SMEs in developing and developed economies, namely South Africa and the Netherlands.	This study combines a literature review with a Delphi study. The Delphi study uses questionnaires to identify internal organisational factors contributing to SME digital transformation. These factors are then compared with insights from the literature review to draw literature-based and empirical conclusions.
21	Ly (2023)	The interplay of digital transformational leadership, organizational agility, and digital transformation	This research aims to test a model of how digital transformational leadership (DTL) influences digital transformation (DT) through organisational agility (OA).	The research sample consists of 388 respondents.	This research employs partial least squares structural equation modelling (PLS-SEM) for analysis.
22	Serdarušic et al. (2024)	Green finance and fintech adoption services among Croatian online users: how digital transformation and digital awareness increase banking sustainability	This study aims to examine the impact of green finance on the adoption of fintech and banking sustainability in the Croatian banking industry.	The research sample consists of 304 participants, comprising customers and employees from various banks in Croatia.	This study uses demographic analysis with IBM SPSS and structural equation modelling (SEM) with SmartPLS.
23	Rawashdeh et al. (2024)	The impact of strategic agility on environmental sustainability: the mediating role of digital transformation	This research aims to investigate the impact of strategic agility on digital transformation and environmental sustainability, as well as to explore the effects of digital transformation on environmental sustainability.	The research sample consists of 284 managers in manufacturing companies in Jordan.	This research uses structural equation modelling (SEM) with Amos 24.0 to test the research hypotheses.

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
24	Ly (2024)	Transforming commitment into performance: a study of digital transformation in the Cambodian public sector amidst a pandemic	This study aims to examine the relationship between organisational commitment (affective, normative, and continuance), individual performance, and digital transformation in public sector organisations in Cambodia during the COVID-19 pandemic.	The research sample consists of 250 employees.	This study employs partial least squares structural equation modelling (PLS-SEM) for data analysis.
25	Khurniawan et al. (2024)	The impact of digital leadership on digital transformation in university organizations: an analysis of students' views	This research aims to determine how digital leadership enhances digital transformation in university organisations by analysing students' opinions.	The research sample consists of 403 students from five faculties at the open university, selected using purposive sampling.	This research uses factor analysis and structural equation modelling (SEM) to analyse data collected from structured questionnaire surveys.
26	Abdurrahman et al. (2024)	Impact of dynamic capabilities on digital transformation and innovation to improve banking performance: a TOE framework study	This study aims to apply dynamic capabilities (DC) considering technological, organisational, and environmental dimensions (TOE framework) to explore digital transformation (DT) and innovation.	The research sample consists of 325 respondents from 48 banks in Indonesia.	This study uses a quantitative approach with the partial least squares structural equation modelling (PLS-SEM) model to analyse the data.
27	Cubillas-Para et al. (2024)	Gliding from regenerative unlearning toward digital transformation via collaboration with customers and organizational agility	This research aims to explore the role of regenerative unlearning in collaboration with customers, organisational agility, and digital transformation.	The research sample consists of medium-sized manufacturing companies in Spain.	This research employs partial least squares structural equation modelling (PLS-SEM) to analyse the data.
28	Waqar et al. (2024)	Evaluation of success factors of utilizing AI in the digital transformation of health and safety management systems in modern construction projects	This study aims to analyse the key elements contributing to the successful integration of artificial intelligence (AI) into the digital transformation of health and safety management systems in construction projects.	The research sample consists of construction industry experts selected through a comprehensive survey.	This study uses exploratory factor analysis (EFA) and structural equation modelling (SEM) to analyse data obtained from distributed questionnaires.

Table 1 Details of selected articles (continued)

No.	*Author*	*Title*	*Purpose*	*Sample*	*Research method*
29	Ongena et al. (2024)	Digital leadership competency to enhance digital transformation	This research aims to investigate the relationship between digital leader competencies based on the European e-competence framework (e-CF) and organisational digital transformation, as well as the relationship between digital leadership competencies (DLC) and IT capabilities.	The research sample consists of 433 respondents.	This research uses partial least squares structural equation modelling (PLS-SEM) to analyse the data.
30	Princes et al. (2024)	Navigating digital transformation challenges: an exploration of employee attitudes, expectations, and support	This study aims to explore the barriers that arise during the implementation of digital transformation within organisations. The main focus is on the human dimension of digital transformation, including employees' attitudes, knowledge, and technical abilities. The research also aims to understand the relationships between employees' performance expectations, well-being aspirations, attitudes toward change, and the accessibility of technical support.	Analysis in this study was conducted using partial least squares structural equation modelling (PLS-SEM) with an 85% confidence level.	Navigating digital transformation challenges: an exploration of employee attitudes, expectations, and support.

Figure 1 PRISMA flow diagram

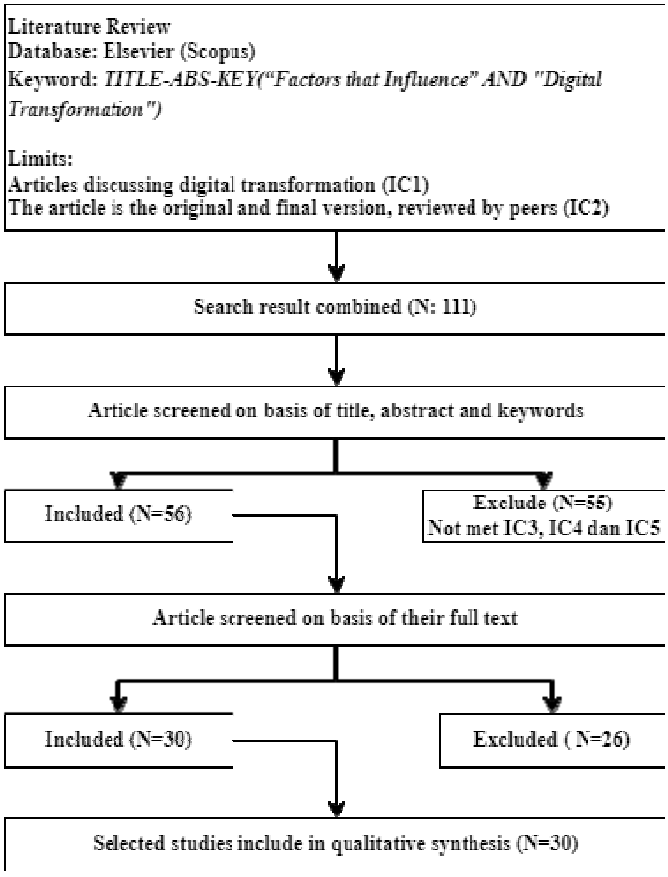
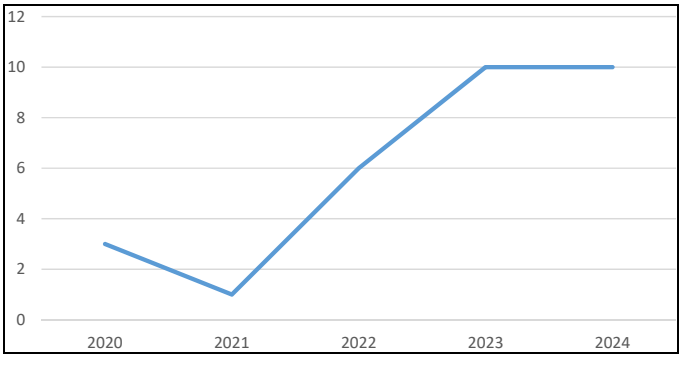


Figure 2 Number of selected articles by year (see online version for colours)



Based on Figure 2, it is known that the selected articles were distributed over the last five years, from 2020 to 2024. The highest number of selected articles was published in 2023 and 2024, with ten articles each. The fewest articles were published in 2021, with a total of one article (Singh et al., 2021). In 2020, there were three articles (Karachi and

Bounabat, 2020; Avirutha, 2023; Yureva et al., 2020). This trend indicates a significant increase in research on this topic over the past two years. This suggests that academic attention to this topic has been growing in line with technological advancements and the need for DT across various sectors.

3.3 Dimensions of the DT variable

Based on the results of the analysis using the PRISMA SLR, several factors influencing DT have been identified. Table 2 provides a detailed breakdown of these factors.

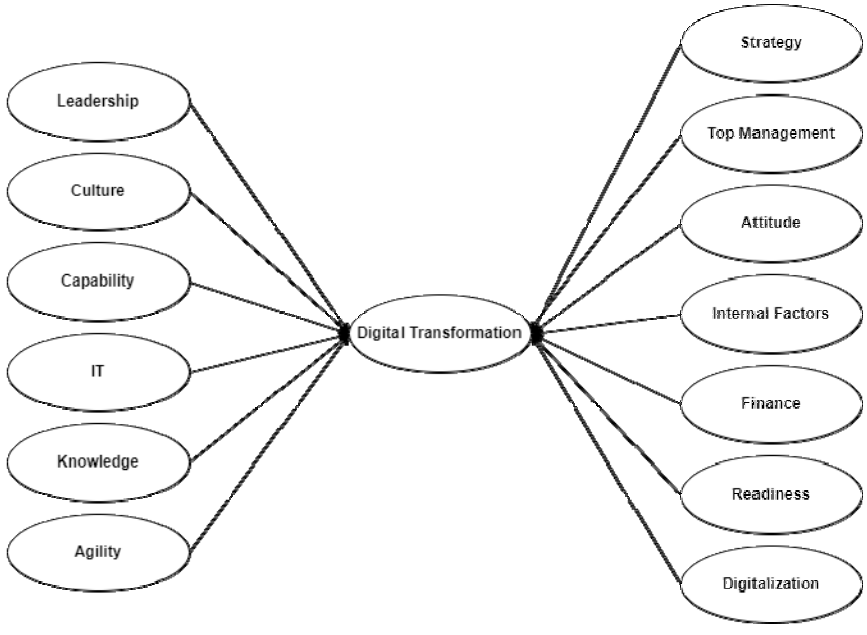
Table 2 Details of factors influencing DT

No.	*Determinant factor*	*Result*	*Conclusion*	*Previous research*
1	Leadership	Significant/ positive	The better the leadership, the more it will enhance digital transformation	Ly (2024), Khurniawan and Irmawaty (2024), Ongena et al. (2024), Wongsunopparat and De Silva (2023), AlNuaimi et al. (2022), Dai and Tan (2023) and Luu (2023)
2	Culture	Inconsistent	Some studies show different results	Singh et al. (2021), Wongsunopparat and De Silva (2023), Dai and Tan (2023) and Gull et al. (2023)
3	Capability	Inconsistent	Some studies show different results	Abdurrahman et al. (2024), Ongena et al. (2024), Rupeika-Apoga et al. (2022) and Luu (2023)
4	IT	Significant/ positive	The better the IT, the more it will enhance digital transformation	Singh et al. (2021), Karachi and Bounabat (2020), Ongena et al. (2024) and Jonathan et al. (2022)
5	Knowledge	Inconsistent	Some studies show different results	Waqar et al. (2023), Aboushouk (2022) and Huong and Duc (2023)
6	Agility	Significant/ positive	The better the agility, the more it will enhance digital transformation	Ly (2024), Rawashdeh et al. (2024), Cubillas-Para et al. (2024) and AlNuaimi et al. (2022)
7	Strategy	Significant/ positive	The better the strategy, the more it will enhance digital transformation	Zhang et al. (2023b), Rawashdeh et al. (2024), Singh et al. (2021), Abdurrahman et al. (2024), Zhang et al. (2023b, 2022) and AlNuaimi et al. (2022)
8	Top management	Significant/ positive	The better the top management, the more it will enhance digital transformation	Zhang et al. (2023b), Waqar et al. (2023) and Zhang et al. (2022)

Table 2 Details of factors influencing DT (continued)

No.	*Determinant factor*	*Result*	*Conclusion*	*Previous research*
9	Attitude	Significant/ positive	The better the attitude, the more it will enhance digital transformation	Princes et al. (2024) and Yureva et al. (2020)
10	Internal factors	Significant/ positive	The better the internal factors, the more they will enhance digital transformation	Luo and Yu (2022) and van Tonder et al. (2023)
11	Finance	Significant/ positive	The better the finance, the more it will enhance digital transformation	Serdarušic et al. (2024)
12	Readiness	Inconsistent	Some studies show different results	Zhang et al. (2023a), Singh et al. (2021), Lu and Wang (2023) and Chwiłkowska-Kubala et al. (2023)
13	Digitalisation	Significant/ positive	The better the digitalisation, the more it will enhance digital transformation	Avirutha (2023)

Figure 3 Factors influencing DT



Based on Table 2, the following is a visualisation of the factors influencing DT, which can be seen in Figure 3.

3.4 Discussion

3.4.1 The influence of leadership on DT

This research shows that leadership plays a crucial role in influencing DT. Effective leadership can guide and motivate teams to embrace and implement digital changes. Studies by Ly (2024), Khurniawan and Irmawaty (2024), Ongena et al. (2024), Wongsunopparat and De Silva (2023), AlNuaimi et al. (2022), Dai and Tan (2023) and Luu (2023) consistently demonstrate that good leadership significantly enhances DT. Visionary and adaptive leaders can create an environment that supports digital innovation. Therefore, the role of leadership is vital in ensuring the success of DT within organisations.

3.4.2 The influence of culture on DT

The influence of organisational culture on DT shows inconsistent results. Some studies, such as those by Singh et al. (2021) and Wongsunopparat and De Silva (2023), found that culture does not significantly affect DT. On the other hand, research by Dai and Tan (2023) and Gull et al. (2023) indicates a positive relationship between culture and DT. An organisational culture that supports innovation and collaboration can facilitate the adoption of digital technology. However, cultural resistance to change can hinder the DT process.

3.4.3 The influence of capability on DT

The relationship between capability and DT also shows varied results. Research by Abdurrahman et al. (2024) indicates that organisational capability significantly affects DT. Meanwhile, studies by Ongena et al. (2024), Rupeika-Apoga et al. (2022) and Luu (2023) show positive but inconsistent results. Organisational capabilities include adapting to new technologies, managing change, and enhancing employee skills. Improving these capabilities is crucial to supporting a successful DT process.

3.4.4 The influence of IT on DT

All analysed studies show that IT significantly and positively impacts DT. Research by Singh et al. (2021), Karachi and Bounabat (2020), Ongena et al. (2024) and Jonathan et al. (2022) consistently supports this finding. A good IT infrastructure enables organisations to implement efficient and effective digital solutions. Additionally, investing in information technology can increase productivity and competitiveness. Therefore, IT is a key factor in driving DT within organisations.

3.4.5 The influence of knowledge on DT

The relationship between knowledge and DT shows inconsistent results. Research by Waqar et al. (2023) and Huong and Duc (2023) found that knowledge significantly and positively affects DT. However, Aboushouk (2022) showed contrary results, indicating that knowledge does not significantly impact DT. Adequate knowledge of technology and digital processes is essential for implementing DT. However, a lack of knowledge or skills can hinder this process.

3.4.6 The influence of agility on DT

Research results show consistency in the relationship between agility and DT. Studies by Ly (2024), Rawashdeh et al. (2024), Cubillas-Para et al. (2024) and AlNuaimi et al. (2022) indicate that agility positively and significantly affects DT. Agility, or the ability of an organisation to quickly adapt to changes, is crucial in a dynamic business environment.

3.4.7 The influence of strategy on DT

Research by Zhang et al. (2023b), Rawashdeh et al. (2024), Singh et al. (2021), Abdurrahman et al. (2024), Zhang et al. (2023b, 2022) and AlNuaimi et al. (2022) consistently shows that strategy has a significant and positive impact on DT. A clear and well-defined digital strategy helps organisations direct their DT efforts. An effective strategy includes careful planning, realistic goal setting, and proper resource allocation. With a solid strategy, organisations can ensure that their digital initiatives align with overall business objectives.

3.4.8 The influence of top management on DT

Literature review shows that top management significantly and positively impacts DT. Research by Zhang et al. (2023b), Waqar et al. (2023) and Zhang et al. (2022) consistently supports this finding. Support and commitment from top management are crucial for the success of DT. Top management is responsible for directing the digital vision and strategy and ensuring that necessary resources are available. Strong leadership from top management can inspire the entire organisation to participate actively in digital initiatives.

3.4.9 The influence of attitude on DT

Literature review shows that attitude significantly and positively impacts DT. Research by Princes et al. (2024) and Yureva et al. (2020) consistently shows that attitude significantly affects DT. A positive attitude towards change and digital innovation is essential in the transformation process. Employees with a supportive attitude towards new technology are more likely to be open to learning and adopting digital solutions. Therefore, developing a positive attitude within the organisation can facilitate a smoother DT.

3.4.10 The influence of internal factors on DT

Internal factors have a significant and positive impact on DT. Research by Luo and Yu (2022) and van Tonder et al. (2023) consistently shows that internal factors significantly affect DT. Internal factors include organisational culture, structure, and internal processes that support DT. Organisations with strong internal factors are more likely to implement and sustain digital changes. Therefore, strengthening internal factors is crucial for the success of DT.

3.4.11 The influence of finance on DT

Finance is found to have a significant and positive impact on DT. Research by Serdarušic et al. (2024) shows that green finance significantly and positively affects DT. Adequate financial investment is necessary to support digital initiatives, such as acquiring new technology and employee training. Healthy finances allow organisations to allocate the necessary resources for DT. Therefore, the financial aspect is crucial in supporting the success of DT.

3.4.12 The influence of readiness on DT

Studies on the relationship between readiness and DT show inconsistent results. Research by Zhang et al. (2023a) shows that organisational and cognitive readiness are not significant, while Singh et al. (2021), Lu and Wang (2023) and Chwiłkowska-Kubala et al. (2023) show that readiness affects DT. Organisational readiness includes infrastructure readiness, employee readiness, and technological readiness. Without adequate readiness, DT can face many obstacles. Therefore, evaluating and enhancing organisational readiness is crucial before embarking on digital initiatives.

3.4.13 The influence of digitalisation on DT

The literature review shows that digitalisation significantly and positively impacts DT. Research by Avirutha (2023) explains that digitalisation significantly affects DT. Digitalisation involves adopting digital technology in everyday business processes. Effective digitalisation processes can increase operational efficiency, reduce costs, and enhance organisational competitiveness. Therefore, digitalisation is a crucial step in a successful DT process.

4 Critical analysis (pros and cons)

This study contributes to the DT literature by systematically identifying 13 key influencing factors. A notable strength is its classification of factors into clear categories (e.g., leadership, IT, strategy), offering a structured framework for researchers and practitioners (AlNuaimi et al., 2022; Zhang et al., 2023b). The PRISMA methodology ensures methodological rigor, reducing bias in article selection and enhancing the study's reliability (Moher et al., 2009). Additionally, including recent publications (2020–2024) ensures that the findings reflect current trends in DT, which is crucial given the rapid evolution of digital technologies (Rawashdeh et al., 2024).

However, the study could benefit from a deeper theoretical discussion on how these factors interact. While leadership and IT infrastructure are consistently highlighted as critical, the analysis does not sufficiently explore potential synergies or conflicts between factors, such as how organisational culture may mediate the impact of strategy (Dai and Tan, 2023). Furthermore, the reliance on structural equation modelling (SEM) in many reviewed studies may overemphasise linear relationships, neglecting more complex, nonlinear dynamics in DT (Ongena et al., 2024). Another limitation is the underrepresentation of sector-specific challenges; At the same time, the study covers multiple industries, but it does not critically assess how factors like finance or agility may

vary in importance between, for example, manufacturing and service sectors (Chwiłkowska-Kubala et al., 2023). Addressing these gaps in future research would strengthen the practical applicability of the findings.

5 Practical implications for businesses and policymakers

This study's findings have significant implications for business firms and governmental regulators navigating DT. For businesses, the strong emphasis on leadership and top management (Ly, 2024; Zhang et al., 2023b) underscores the need for executives to cultivate a clear digital vision, allocate resources strategically, and foster a culture of innovation. Organisations should prioritise investments in IT infrastructure and employee upskilling (Singh et al., 2021), as these factors are critical for sustaining competitive advantage in rapidly evolving markets. Additionally, the role of agility (Rawashdeh et al., 2024) suggests that firms should adopt flexible operational models to adapt to technological disruptions, such as integrating AI and cloud computing (Waqar et al., 2023).

For policymakers, the study highlights the necessity of regulatory frameworks that support DT while addressing disparities in digital readiness. Governments could incentivise small and medium-sized enterprises (SMEs) through subsidies for technology adoption (van Tonder et al., 2023) or tax breaks for R&D investments (Serdarušić et al., 2024). Furthermore, public-private partnerships could bridge infrastructure gaps, particularly in underserved regions (Chwiłkowska-Kubala et al., 2023). Policymakers must also address ethical concerns, such as data privacy and workforce displacement, by enacting laws that balance innovation with social responsibility (Princes et al., 2024). Collaborative efforts between industries and regulators will be essential to maximise the societal benefits of DT while mitigating its risks.

6 Conclusions

The research results indicate that 13 factors can influence DT: leadership, culture, IT, knowledge, agility, strategy, top management, attitude, internal factors, finance, readiness, and digitalisation. This study confirms that the success of DT in organisations highly depends on various interrelated key factors. Effective leadership, strong IT infrastructure, clear strategy, and support and commitment from top management are crucial elements that drive digital innovation and adaptation. Additionally, a positive attitude towards change, the capability to adapt to new technologies, and organisational readiness regarding infrastructure, employees, and technology also play important roles. Internal factors such as a supportive organisational culture and structure, and adequate financial investment are necessary to support digital initiatives. An effective digitalisation can enhance operational efficiency and organisational competitiveness, while cultural resistance and lack of knowledge can become obstacles. Therefore, organisations must holistically manage and integrate these factors to succeed in DT.

7 Future research

Future research should conduct empirical studies on the relationship between the 13 identified factors and DT, especially those showing inconsistencies. This research will enrich existing theories and provide insights into the interrelationships between these variables, offering a more comprehensive understanding of how each factor contributes to the success of DT within organisations.

8 Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the article selection process was confined to the Scopus database, which may exclude relevant studies from other databases, potentially limiting the comprehensiveness of the findings. Second, the eligibility criteria restricted the review to peer-reviewed articles published in English within the last five years (2020–2024), possibly omitting valuable insights from non-English publications or earlier seminal works. Additionally, the PRISMA approach's reliance on predefined keywords and manual screening introduces the risk of selection bias, as some pertinent studies might have been overlooked. Lastly, the qualitative nature of this systematic review, while providing depth, may not capture quantitative trends or causal relationships between the identified factors and DT outcomes. Addressing these limitations in future research could further validate and expand upon the current findings.

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Declarations

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References

Abdurrahman, A., Gustomo, A. and Prasetio, E.A. (2024) 'The impact of dynamic capabilities on digital transformation and innovation to improve banking performance is a TOE framework study', *Journal of Open Innovation: Technology, Market, and Complexity*, Vol. 10, No. 1, p.100215.

Aboushouk, M.A. (2022) 'The impact of employees' absorptive capacity on digital transformation of tourism and travel services: evidence from the Egyptian travel agencies', in *Eurasian Business and Economics Perspectives: Proceedings of the 36th Eurasia Business and Economics Society Conference*, Springer International Publishing, Cham, October, pp.167–184.

AlNuaimi, B.K., Singh, S.K., Ren, S., Budhwar, P. and Vorobyev, D. (2022) 'Mastering digital transformation: the nexus between leadership, agility, and digital strategy', *Journal of Business Research*, Vol. 145, No. 1, pp.636–648.

Avirutha, A. (2023) *Factors Enabling the Digital Change on Digital Transformation for Small and Medium Businesses*, Doctoral dissertation, Sripatum University.

Chwiłkowska-Kubala, A., Cyfert, S., Malewska, K., Mierzejewska, K. and Szumowski, W. (2023) 'The impact of resources on digital transformation in energy sector companies. The role of readiness for digital transformation', *Technology in Society*, Vol. 74, No. 1, p.102315.

Cubillas-Para, C., Cegarra-Navarro, J.G. and Vătămănescu, E.M. (2024) 'Gliding from regenerative unlearning toward digital transformation via collaboration with customers and organizational agility', *Journal of Business Research*, Vol. 177, No. 1, p.114637.

Dai, D.H. and Tan, K.H. (2023) 'The influence of organizational culture and shared leadership on digital transformation and firm performance', *Journal of Governance and Regulation/Volume*, Vol. 12, No. 3, pp.214–22.

Fitzgerald, M., Kruschwitz, N., Bonnet, D. and Welch, M. (2014) 'Embracing digital technology: a new strategic imperative', *MIT Sloan Management Review*, Vol. 55, No. 2, pp.1–12.

Gull, M., Parveen, S. and Sridadi, A.R. (2023) 'Resilient higher educational institutions in a world of digital transformation', *Foresight*, Vol. 26, No. 5, pp.755–744.

Huong, P.T. and Duc, N.L. (2023) 'The perceptions of prospective digital transformation adopters: an extended diffusion of innovations theory', *TEM Journal*, Vol. 12, No. 1, pp.459–469.

Jonathan, G.M., Rusu, L. and Perjons, E. (2022) 'IT alignment and its influence on digital transformation success', *ACIS 2022 Proceedings*, Melbourne, Australia, pp.1–12.

Karachi, Z. and Bounabat, B. (2020) 'The general approach for formulating a digital transformation strategy', *J. Comput. Sci*., Vol. 16, No. 4, pp.493–507.

Khurniawan, A.W. and Irmawaty, D.S. (2024) 'The impact of digital leadership on digital transformation in university organizations: an analysis of students' views', *Education*, Vol. 67, No. 1, pp.677–690.

Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N. and Roig-Tierno, N. (2021) 'Digital transformation: an overview of the current state of the art of research', *Sage Open*, Vol. 11, No. 3, p.21582440211047576.

Lemstra, M.A.M.S. and de Mesquita, M.A. (2023) 'Industry 4.0: a tertiary literature review', *Technological Forecasting and Social Change*, Vol. 186, No. 1, p.122204.

Liberati, A., Altman, D.G., Tetzlaff, J., Mulrow, C., Gøtzsche, P C., Ioannidis, J.P. and Moher, D. (2009) 'The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration', *Bmj*, Vol. 339.

Lu, H.P. and Wang, J.C. (2023) 'Exploring the effects of sudden institutional coercive pressure on digital transformation in colleges from teachers' perspective', *Education and Information Technologies*, Vol. 28, No. 12, pp.15991–16015.

Luo, X. and Yu, S.C. (2022) 'The regulatory effect of firm size on digital transformation: an empirical study of pharmaceutical companies in China', *Computational Intelligence and Neuroscience*, Vol. 1, No. 1, p.7731174.

Luu, T.D. (2023) 'Digital transformation and export performance: a process mechanism of firm digital capabilities', *Business Process Management Journal*, Vol. 29, No. 5, pp.1436–1465.

Ly, B. (2023) 'The interplay of digital transformational leadership, organizational agility, and digital transformation', *Journal of the Knowledge Economy*, Vol. 15, No. 1, pp.1–20.

Ly, B. (2024) 'Transforming commitment into performance: a study of digital transformation in the Cambodian public sector amidst a pandemic', *Cogent Business & Management*, Vol. 11, No. 1, p.2333609.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G. and The PRISMA Group (2009) 'Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement', *PLoS Med*, Vol. 6, No. 7, p.e1000097.

Ongena, G., Morsch, P. and Ravesteijn, P. (2024) 'Digital leadership competency to enhance digital transformation', *International Journal of Innovation and Technology Management*, Vol. 21, No. 6, p.2450042.

Postiglione, M., Carini, C. and Falini, A. (2024) 'ESG and firm value: a hybrid literature review on cost of capital implications from Scopus database', *Corporate Social Responsibility and Environmental Management*, Vol. 31, No. 6, pp.6457–6480.

Princes, E., Hidayat, D., Eni, Y. and Kesuma, A.E. (2024) 'Navigating digital transformation challenges: an exploration of employee attitudes, expectations, and support', in *2024 18th International Conference on Ubiquitous Information Management and Communication (IMCOM)*, IEEE, January, pp.1–7.

Rawashdeh, A., Abdallah, A.B., Alfawaeer, M., Al Dweiri, M. and Al-Jaghbeer, F. (2024) 'The impact of strategic agility on environmental sustainability: the mediating role of digital transformation', *Sustainability*, Vol. 16, No. 3, p.1338.

Rupeika-Apoga, R., Petrovska, K. and Bule, L. (2022) 'The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic', *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 17, No. 2, pp.669–685.

Serdarušić, H., Pancić, M. and Zavišić, Ž. (2024) 'Green finance and Fintech adoption services among Croatian online users: how digital transformation and digital awareness increase banking sustainability', *Economies*, Vol. 12, No. 3, p.54.

Singh, S., Sharma, M. and Dhir, S. (2021) 'Modeling the effects of digital transformation in the Indian manufacturing industry', *Technology in Society*, Vol. 67, No. 1, p.101763.

van Tonder, C., Hasanefendic, S., Bossink, B., Schachtebeck, C. and Nieuwenhuizen, C. (2023) 'Internal organizational factors driving digital transformation for business model innovation in SMEs', *Journal of Business Models*, Vol. 11, No. 2, pp.86–109.

Waqar, A., Qureshi, A.H., Almujibah, H.R., Tanjung, L.E. and Utami, C. (2023) 'Evaluation of success factors of utilizing AI in the digital transformation of health and safety management systems in modern construction projects', *Ain Shams Engineering Journal*, Vol. 14, No. 11, p.102551.

Westerman, G., Bonnet, D. and McAfee, A. (2014) *Leading Digital: Turning Technology into Business Transformation*, Harvard Business Review Press, Massachusetts, US.

Wongsunopparat, S. and De Silva, T. (2023) 'Study of factors influencing digital transformation process in Bangkok', *Business Management and Strategy*, Vol. 14, No. 1, pp.103–122.

Yureva, O.V., Burganova, L.A., Kukushkina, O.Y., Myagkov, G.P. and Syradoev, D.V. (2020) 'Digital transformation and its risks in higher education: students' and teachers' attitude', *Universal Journal of Educational Research*, Vol. 8, No. 11B, pp.5965–5971.

Zgalat-Lozynska, L., Kryshtal, H., Drinke, Z., Lych, V., Kulikov, O. and Panin, Y. (2023) 'Impact of digital transformation on business structures', *Scientific Bulletin of National Mining University*, Vol. 1, No. 4, pp.144–149.

Zhang, G., Wang, T., Wang, Y., Zhang, S., Lin, W., Dou, Z. and Du, H. (2023a) 'Study on the influencing factors of digital transformation of construction enterprises from the perspective of dual effects – a hybrid approach based on PLS-SEM and fsQCA', *Sustainability*, Vol. 15, No. 7, p.6317.

Zhang, X., Xu, Y. and Ma, L. (2022) 'Research on successful factors and influencing mechanisms of the digital transformation in SMEs', *Sustainability*, Vol. 14, No. 5, p.2549.

Zhang, X., Xu, Y.Y. and Ma, L. (2023b) 'Information technology investment and digital transformation: the roles of digital transformation strategy and top management', *Business Process Management Journal*, Vol. 29, No. 2, pp.528–549.