

Digital Transformation and its Impact on Organizations

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Abstract

The paper discusses the topic of digital transformation, starting from its definition and examining the literature focusing on several theoretical aspects. The paper argues that digital transformation is not just about technology, but also about people, their mindset, and skills. It is also about rethinking business models and processes to leverage technology for better outcomes. In sum, digital transformation is a complex and multidisciplinary phenomenon that requires a holistic approach. Additionally, this paper aims to address these fundamental questions: What are the factors that impact organizations, and what factors appear to determine the failure of digital transformation in organizations, considering that the majority of organizations seem to struggle in achieving successful digital transformation? Consequently, many organizations find themselves unable to implement a genuine and effective digital transformation, despite their efforts in digital investments.

This contribution aims to enrich the literature and enhance knowledge regarding the important issue of digital transformation failures across organizations, also considering the limited research on the factors determining the failure of digital transformation. The originality of the study lies in the metadata analysis carried out, which allows for an efficient and deeper insight into the problem at hand.

Keywords: digital transformations, technology; mindset, strategy, digital business model, skills, failure factors, VOSviewer software, metadata analysis

1. Introduction

Digital transformation is reshaping the way organizations operate. In fact, it fundamentally transforms the way organizations work and deliver value to customers. Digital transformation driven by digital technologies changes economic and social relationships, impacting organizations across all sectors. Although digital transformation is based on technology and digital technologies are necessary for implementing it, these factors alone seem insufficient enablers. As we will see, people and culture are also key elements in realizing the change that digital transformation brings. Additionally, the expectations of consumers and investors, as well as the prospects of greater economic and social benefits, play a role in the process of digital transformation.

Digital transformation offers tremendous opportunities for organizations to transform their business model, go-to-market strategy, organizational structure, and operational processes. However, it also presents major challenges.

Digital transformation has become a widely discussed topic in the literature. Much of the existing literature on digital transformation, with numerous review articles, examines its characteristics and how organizations can leverage digital technologies to drive change and create value (Vial, 2019; Lanzolla et al. 2020; Hanelt et al. 2021; Nadkarni, Prügl, 2021; Kraus et al., 2021; Dąbrowska et al. 2022; Kraus et al., 2022; Rêgo et al., 2022; Vidal et al., 2022; Lamarre et al., 2023; Rakovic et al., 2024).

The literature highlights that digital transformation is a multi-dimension phenomenon involving numerous stakeholders (i.e., organizations, consumers, digital platforms, technological stakeholders, government institutions). Several scholars (e.g., Nambisan, Wright, Feldman, 2019; Broekhuizen et al., 2021; Verhoef et al., 2021; Paul et al., 2024) have emphasized the need to address the issue of digital transformation from a multidisciplinary and multistakeholder perspective.

This paper seeks to answer the question: What are the drivers of digital transformation? Furthermore, it aims to analyze the impact of digital transformation on organizations, trying to identify the factors that can determine the

success or failure of digital transformation within them.

The paper begins as a conceptual contribution on digital transformation and its impact on organizations across all sectors. However, it also seeks to empirically investigate, through a VOSviewer-based meta-analysis of the literature on digital transformation, what the critical factors are for implementing digital transformation in organizations. The aim is to better understand how organizations can successfully implement digital transformation or why they may fail.

The ultimate goal of the paper is to advance research and understanding of digital transformation.

2. Defining Digital Transformation

The literature adopts various definitions of digital transformation, encompassing a broad range of concepts and dimensions.

In broad terms, digital transformation refers to the adoption of advanced digital technologies to revolutionize services or businesses. It revolves around embracing disruptive technologies to boost productivity, foster value creation, and enhance social welfare (Schilirò, 2024).

Kraus et al. (2022, p. 2) have argued that “digital transformation can be defined as integrating digital technology into all aspects and operations of an organization, which leads to infrastructural changes in how the organization is operated and delivers value to its customers”.

Hess et al. (2016, p.124) have stated that “digital transformation is concerned with the changes that digital technologies can bring about in a company’s business model, products, processes and organizational structure”.

While Schilirò (2022, p.32) has maintained that “digital transformation implies a profound change, particularly a structural change, i.e., changes in organizations, processes, and business models in the firms, and changes in consumer behavior, not just a digitalization of business processes.”

Verhoef et al. (2021), Nambisan, Wright, and Feldman (2019) have instead emphasized the importance of a new digital business model, while Li (2020) highlighted that digital transformation signifies disruptive implications for new types of customer experiences.

Boulton (2021) has underlined that digital transformation means a rethinking of how an organization uses technology, people, and techniques in pursuit of new business models and additional revenue streams, driven by changes in customer expectations around products and services.

Saldanha (2019) has argued that digital transformation, that can also be called “digital transformation 2.0”, utilizes emerging technologies such as Artificial Intelligence, Machine Learning, and the Internet of Things to create innovative business models, streamline operations, and derive valuable insights from data. Thus, the current digital transformation pertains to the Fourth Industrial Revolution. Digital transformation 2.0 represents a more comprehensive approach where technology is not merely a tool to achieve specific objectives, but rather an integral part of the organization’s strategy and culture.

Furthermore, a new group of powerful, emerging technologies is driving futuristic innovation and fresh digital transformations. These technologies are known as DARQ, which stands for distributed ledger technology, artificial intelligence, extended reality, and quantum computing. While some of these technologies have existed for some time, our understanding of them has evolved. DARQ technologies retain the power to deeply reshape organizational policies, processes, practices, and end-consumer experiences, thereby transforming organizations.

Therefore, digital transformation is a complex phenomenon that impacts organizations in various ways, affecting many functions and segments within an organization. Indeed, it enhances customer experience, as digital transformation enables organizations to better understand customer needs through data analytics and personalized experiences, favoring improved customer satisfaction and loyalty. It fosters innovation, as digital transformation through digital technologies enables the development of new products, services, and business models. Consequently, organizations adapt to changing market demands and stay ahead of competitors.

Digital transformation improves operational efficiency, leading to cost savings and faster delivery times. Digital tools and automation streamline processes, reducing manual efforts and errors. Moreover, digital technologies enhance visibility and transparency across the supply chain, reducing costs and optimizing inventory management, thus enabling supply chain optimization. With digital transformation, decision-making becomes data-driven, as the proliferation of data fosters an environment where organizations make informed decisions based on real-time insights. The development of data analytics and AI helps identify trends, predict outcomes, and optimize strategies. Additionally, it improves risk management, as digital transformation enhances security measures to protect sensitive data and mitigate cyber threats. Compliance with regulations becomes easier with

digital solutions for data management and reporting. Finally, digital transformation provides a competitive advantage. Organizations that successfully undergo digital transformation gain a competitive edge by leveraging technology to innovate, streamline operations, and deliver superior customer experiences.

However, it's essential to highlight that digital transformation also brings challenges such as cultural resistance, skill gaps, cybersecurity threats, and ethical considerations regarding data privacy. Successful transformation requires strong leadership, strategic planning, and a commitment to continuous learning and adaptation.

3. Literature on the Impact Factors of Digital Transformation

The literature on the impact factors of digital transformation has explored various elements that influence the successful implementation of digital transformation initiatives within organizations. Nadkarni and Prügl (2021) have suggested that digital transformation needs both technology and people. Indeed, digital technologies are major factors influencing digital transformation. According to Dąbrowska et al. (2022), digital technologies are, for better or worse, reshaping the workplace, organizational and manufacturing systems, customer expectations and behaviors, business models, value creation and capture, and markets.

Businesses and industries that leverage digital technologies are better placed to unlock productivity gains, for example, through automation, and are better able to connect with distant customers and employees. Copestake, Estefania-Flores, and Furceri (2022), in their empirical work show that output losses are higher in countries with weaker digital infrastructure, while the number of job posts has been favored by digital occupations.

Lanzolla et al. (2020) have pointed out that digital technologies might trigger operational and transaction efficiency and change the nature of knowledge in the digital realm. Digital technologies have fueled innovations across traditional industries, also embracing networks and communities. They have enhanced connectivity favoring access to many services, and to trade. Their impact on manufacturing has also been disruptive. Artificial intelligence, machine learning, cloud computing, big data, Internet of Things, 3D printing, robotics, digital twin, and advanced reality are among the most innovative digital technologies that have transformed production and fostered the development of Industry 4.0 (Schilirò, 2022).

In addition, these digital technologies and the flow of innovations related to them have changed not only how business are conducted but also how people communicate and interact. Today, to innovate, the focus must go on the customer's need, given that the world changes, culture changes, and people's needs with it. The customer's need must always be the center of attention to better meet their expectations and desires. The use of smart digital technologies, for instance, has contributed to empower customers to co-create value with companies. Companies have revolutionized many industries by introducing digital platforms that facilitate exchanges between multiple users. The use of digital networks to coordinate economic transactions with algorithms through platforms, given the greater possibilities of artificial intelligence, has become an important factor of digital transformation (Schilirò, 2021).

Technological advancements are occurring at an unprecedented pace, leading to significant changes across various facets of business operations. This rapid evolution in technology imposes extensive transformations on organizations, affecting their organizational structures, distribution channels, and customer relationships. Consequently, this dynamic environment escalates uncertainty and poses challenges for digital transformation efforts.

Digital transformation implies a profound, structural change in organizations, consumer behavior, and social relations. This is why Saarikko, Westergren, and Blomquist (2020) have argued that the ability to remain relevant and competitive in the wake of massive and rapid technological development requires digitally aware business strategies.

Some scholars (e.g., Paul et al. 2024; Dąbrowska et al. 2022; Broekhuizen et al. 2021; Hanelt et al. 2021; Verhoef et al. 2021; Lanzolla, et al. 2020; Zangiacomì et al. 2020; Nambisan, Wright, & Feldman, 2019) recognize that digital transformation is a complex, multidimensional, and multifaceted phenomenon. Digital transformation has a strong impact on multiple disciplines and its analysis requires the integration of different theoretical perspectives (Lanzolla et al., 2020). In particular, Broekhuizen et al., (2021) have argued that, given the numerous stakeholders involved, such as service providers, platforms, employees, and end-users, businesses should adopt a multi-stakeholder perspective in analyzing digital transformation and the resulting digital business models. This perspective is necessary to capture the interrelatedness of the various stakeholders and obtain a more complete picture of the evolution of the entire ecosystem. In addition, it will help addressing complex business challenges.

To succeed in digital transformation, Berman (2012) pointed out that reshaping customer value propositions and

transforming their operations using digital technologies for greater customer interaction are key. Additionally, it is crucial to build a new set of capabilities that allow companies to progress along both dimensions. Berman (2012) also pointed out that, among the new capabilities a company must develop in the digital environment, the foremost is the ability to design and deliver new business models.

Business model change is fundamental for digital transformation. The emergence and evolution of digital technologies, together with the wide availability of data, force both new ventures and incumbent firms to respond to digital challenges by digitizing parts of their business models or introducing new and disruptive business models, usually platform-based.

Verhoef et al. (2021) and Broekhuizen et al. (2021) have argued that, to achieve a successful digital transformation, it is not sufficient to implement new technologies alone. A specific organizational structure is also needed: it is necessary to transform the organization to take advantage of the possibilities offered by new technologies, create adequate digital resources, choose the strategies that must be adopted to succeed, and align the internal organizational structure with these strategies. Additionally, digital transformation has consequences for the metrics used to evaluate performance.

In the model suggested by Verhoef et al. (2021), digital technology, digital competition, and digital customer behavior are the three external drivers of digital transformation. Regarding digital technologies, Verhoef et al. (2021) have maintained that a major economic implication of new digital technologies, such as artificial intelligence, blockchain, the Internet of Things, and robotics, is that "they affect the firm's cost structure through replacing costlier humans" with automated tasks and processes (e.g., robots, virtual agents, optimizing logistics streams) and "reducing supply chain costs through the use of artificial intelligence and blockchain" (Verhoef et al. 2021, p. 890). They also argued that competition becomes more global due to these new digital technologies, and its intensity increases with the entrance of large, information-rich companies into the global market. Finally, they claim that as consumers become more connected, informed, empowered, and active, consumer behavior changes in response to digital transformation.

In conclusion, the literature highlights that both technology and people are crucial in digital transformation. The rapid adoption of new technologies significantly drives digital transformation, requiring organizations to continually invest in and adapt to these technologies to stay competitive. Furthermore, organizational culture—specifically, a culture that supports innovation, flexibility, and continuous learning—is essential for digital transformation. This culture needs to foster innovation and drive change across all departments of the organization. Therefore, digital transformation requires a strategy.

Since people are the second fundamental pillar of digital transformation, strong and visionary leadership is essential to guide organizations through the complexities of digital transformation. Additionally, employee skills are critical to the success of digital transformation. Organizations need to invest in training and development programs to equip their workforce with the necessary digital skills and competencies. Finally, market conditions, including customer expectations, competitive pressure, and regulatory requirements, also play a significant role in digital transformation. All these factors are interdependent and must be managed holistically for successful digital transformation. Understanding and addressing these impact factors can help organizations navigate the complexities of digital change.

4. Failure Factors in Digital Transformation

The previous section highlighted that management and strategic literature have demonstrated that digital transformation is a multidimensional and complex phenomenon. The first objective of this research is to understand digital transformation failures, followed by identifying the critical factors for successful implementation.

Empirical research indicates that success in digital transformation is difficult to achieve. In fact, the process of digital transformation does not always lead to positive outcomes (Dąbrowska et al., 2022). Saldanha (2019) and Akkerman (2021) have noted that more than 70% of digital transformations fail.

The literature on companies' critical failure factors in digital transformation focuses not only on the rapid pace of technological change but also on the importance of people and culture. In particular, Akkerman (2021) has identified several common causes of these failures, including a lack of clear vision or direction, the absence of an integrated digital strategy, failure to sustain initiatives beyond the inception stage, isolated initiatives rather than embedding the digital transformation strategy within the organization, lack of prioritization, blindly following hypes and trends, focusing on technology while ignoring the human factor, a siloed approach to data, a risk-averse culture, throwing money at the problem without a clear business case, lack of innovation capabilities,

legacy problems, and technology limitations. Akkerman focuses on three critical success factors: strategy, mindset, and skills and technology. He argues that digital transformation acts as a permanent catalyst for change and requires a holistic approach that is closely linked to the business strategy. This approach includes integrating digital transformation with strategic business outcomes, developing a mindset of continuous innovation, enabling an end-to-end focus on the customer, and promoting a data-driven culture throughout the organization.

Several other contributions (e.g., PECB, 2022; Ramesh & Delen, 2021) have identified critical failure factors in achieving digital transformation. Significant challenges include the lack of an organizational change management strategy, insufficient expertise to implement complex digital transformation strategies, and internal resistance to change. Additionally, organizations must have a relative advantage over existing technology, and the new technology that provides this advantage must be simple to use. It is important for organizations to have the ability to test new technology before fully committing. Timing is a crucial factor in digital transformation, and organizations must put in extra effort to meet the continuously evolving needs of customers. Security concerns also arise as organizations adopt remote work, digital processes, and cloud-based technology, exposing them to higher levels of risk. Budget constraints pose another challenge, as digital transformation involves high costs and substantial investment. Finally, organizational culture plays a positive role in transformation processes, particularly when driven by an engaged workforce.

A McKinsey & Company (2022) survey highlighted factors that might contribute to the successful implementation of digital transformation. The results indicate that top-performing companies in digital transformation focus on customer engagement and innovation strategies rather than operational efficiency. Top performers excel in their ability to disproportionately build and, in some cases, monetize proprietary assets such as software, AI, and data. Furthermore, these top performers are more likely to have invested in several core tech capabilities, including the adoption of public cloud, a clear company-wide data strategy, agile and DevOps practices, the use of design thinking to enhance user experience, and automated processes for testing and developing technology. Finally, top economic performers are more effective than their peers in managing executive talent and are more likely to have a tech-savvy C-suite.

This literature review emphasizes that digital transformation poses significant challenges. First, from an organizational perspective (e.g., team structure, incentive systems), it requires breaking down traditional silos between functions. Second, there is a need to acquire new skill sets and to disrupt existing business models. Particularly in the current era of the Fourth Industrial Revolution, digital transformation demands the convergence of technologies such as artificial intelligence, hyper-intelligent automation, blockchain, the metaverse, and quantum computing within cloud-native applications, enabling companies to unlock new opportunities. Additionally, going digital requires the development of digital strategies; however, these strategies often fail to account for how digital transformation is altering economic fundamentals, industry dynamics, and the nature of competition (Bughin, Catlin, Hirt, & Willmott, 2018). In a dynamic and uncertain environment characterized by digital disruption, where digital transformation becomes a necessity, it is more effective to adopt a different notion of strategy. The alternative approach involves embracing the concept of *transient advantage* (McGrath, 2013), where businesses continuously launch new strategic initiatives, creating a portfolio of advantages that can be quickly built and just as rapidly abandoned. In this context, success will depend on building new operational capabilities, as businesses must make decisions not only at a faster pace but also in areas where they may have no prior experience with digital transformations.

5. A Metadata Analysis of the Failure Factors of Digital Transformation (Note 1)

This section examines the key factors that appear to contribute to the failure of digital transformation within organizations through a meta-analysis of publications on the topic. By reviewing a broad spectrum of existing research, the study aims to identify common patterns that lead to digital transformation failures across organizations. Additionally, it seeks to recognize any potential gaps that need further investigation. The research methodology adopted involves the systematic searching, selection, and synthesis of relevant literature and data sources. Through this rigorous methodological approach, the paper aims to provide an insightful view of the critical factors that hinder successful digital transformation. The main objective is to understand how organizations can successfully implement digital transformation and why they often fail. The ultimate goal is to contribute to the advancement of research and understanding of this disruptive phenomenon.

5.1 The Methodology

The aim of the research design, involving a bibliometric analysis, is to present a comprehensive picture that helps to understand digital transformation failures.

The process was divided into several phases. The first phase defined the objective and the research domain to be

applied for the selection and evaluation of academic papers. The second phase involved the establishment of specific parameters that have been used to select academic papers in order to provide more pertinent findings (Note 2). The third phase related to the paper identification for the inclusion in the analysis. The fourth and last phase involved the examination of selected papers using the bibliometric analysis by using the VOSviewer software.

For the search and collection of documents, the keywords "Digital Transformation" and "Fail*" were identified in the title, abstract, and/or keywords. Works published between 2012 and 2023 were considered.

Findings have been restricted to articles and reviews written in the English language. Moreover, a research area filter has been implemented in accordance with the research objectives, by selecting: Business Economics, Social Sciences Other Topics, Science Technology Other Topics.

The research identified a total of 63 results. To examine these findings, the mapping and clustering technique proposed by Waltman et al. (2010) was employed for the bibliometric networks.

This methodology has been chosen because it helps mitigate the inconsistencies that arise during the construction of maps at various levels of detail. In fact, it utilizes mapping and clustering systems founded upon analogous measures.

The text mining analysis was conducted using a precise selection of the most frequently occurring words in the titles and abstracts of the publications. The objective was to ascertain the frequency of occurrence of the keywords or 'items' and the connections between them. The network visualization facilitated the grouping of items into clusters, which are represented by labels and circles. The size of each circle is determined by the weight of the corresponding item. Furthermore, a chronological analysis of the evolutionary phenomenon was conducted using the overlay visualization technique. Therefore, the various analyses were performed by constructing and visualizing bibliometric networks using the VOSviewer software. Finally, the clustering outcomes were explained and categorized based on thematic domains.

The stages of analysis of this research process are graphically represented in Figure 1.

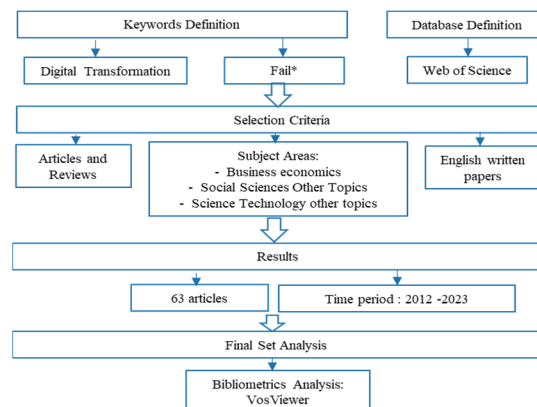


Figure 1. Stages of analysis

5.2 The Results

The examination of the progression of publications over the selected time frame, as illustrated in Figure 2, demonstrates that it was only since 2019 that the topic of digital transformation was adequately addressed in academic journals. During this period, there was a noticeable increase in the production of articles, culminating in 2022 when the number of publications pertaining to digital transformation failure reached a maximum of 15. The data for 2023 covers the period until July, so a further increase in publications likely occurred during the rest of the year.

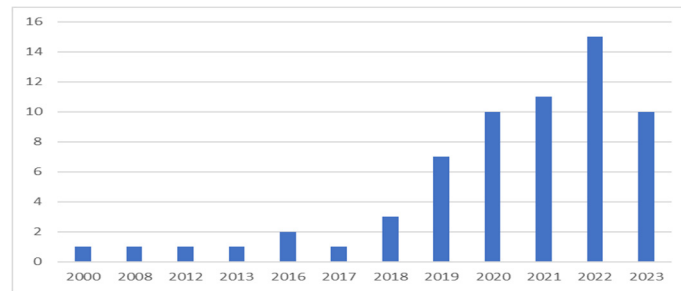


Figure 2. Total number of publications per year

Source: our elaboration.

To gain a more comprehensive understanding of the interconnections between the chosen publications, the study employs visualization techniques by using the VOSviewer software. Distinct colors have been allocated to each cluster to visually represent them. This implies that items within the same cluster exhibit greater associations among themselves compared to entities belonging to distinct clusters. Additionally, the various items are interconnected by lines, symbolizing the relationships between them.

Figure 3 examines the failure factors, presenting the results of a text mining analysis that reveals three distinct clusters. The first cluster, colored in red, comprises 16 items, including keywords such as strategy, business model innovation, digital technology, customer, knowledge, and organizational change. The second cluster, colored in green, comprises 12 items, including big data, acceptance, firm performance, data analytics, Industry 4.0, management, and operations, among others. Cluster 3, colored in blue, consists of 8 items: competitive advantage, digital leadership, digital transformation, governance, entrepreneurship, information systems, innovation, and productivity.

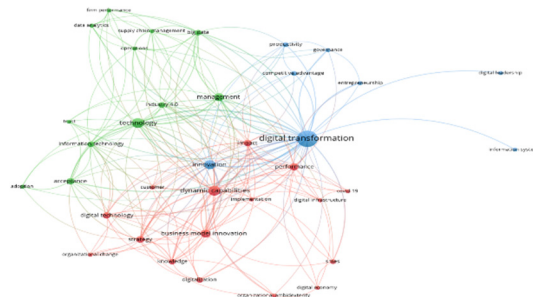


Figure 3. Network visualization of text mining analysis

Source: our elaboration.

According to the results of the text mining analysis shown in Figure 3, several factors contribute to the failure of digital transformation. Firstly, the red cluster, characterized by a large number of items, suggests that failure in the digital transformation process may occur due to inadequate implementation of dynamic capabilities, business model innovation, and strategies, with digital technology also playing a role. The lack of integration, building, and reconfiguring of internal and external resources to address and shape rapidly changing business environments is a significant factor that hinders digital transformation. Successfully navigating digital transformation also requires employees to acquire different capabilities, new competencies, and new skills. Consequently, the absence of essential talents within organizations, as well as a lack of investment in training and upskilling initiatives, can impede the successful integration and acceptance of digital technologies. Furthermore, a well-defined strategy and vision for digital transformation are crucial. Without such a strategy, organizations may struggle to align their efforts and make informed decisions.

The green cluster highlights that technology, the implementation of Industry 4.0, the acceptance of change, trust, and good data-driven management may impact digital transformation. This cluster suggests that one of the main reasons for the failure of digital transformation appears to be the resistance to change within organizations.

Additionally, organizations that lack a data-driven culture or fail to invest in data management and analytics capabilities may not leverage data effectively for transformation purposes. Finally, inadequate technology infrastructures can obstruct the implementation and scalability of digital initiatives.

The blue cluster is also relevant because it shows that a lack of innovation, poor entrepreneurship, weak governance, and inadequate digital leadership may lead to failure, as emphasized by Nadkarni & Prügl (2021), AlNuaimi et al. (2022), and Rakovic et al. (2024).

The outcome of the chronological analysis conducted on the topic of digital transformation over time is presented in Figure 4. The overlay visualization map illustrates the temporal evolution of publications spanning the years 2019 (Note 3) to 2023, transitioning from blue, denoting early publications, to yellow, representing more recent publications.

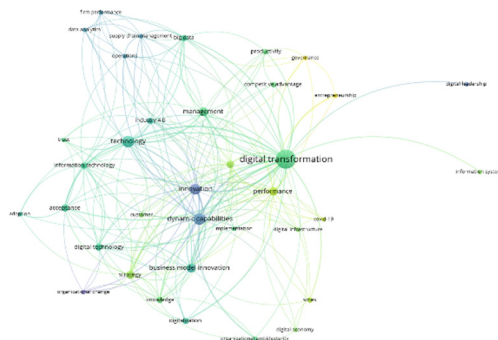


Figure 4. Overlay visualization of chronological analysis

The figure shows the evolution of the literature from topics related to innovation, dynamic capabilities, business model innovation, and organizational change to more recent topics on strategy, performance, governance, management, and entrepreneurship. This confirms that digital transformation requires a strategy to be carried out at the board and C-level. Therefore, governance, entrepreneurship, and the related change of mindset are more essential than ever for successfully implementing digital transformation.

6. Concluding Remarks

This paper has highlighted that digital transformation is a complex and pervasive phenomenon with broad and deep economic and organizational implications. First, the paper attempted to identify the factors influencing digital transformation. Although digital transformation centers around the use of technology, which has a significant impact and brings changes within organizations, people and culture also play vital roles in the successful implementation of these changes. Furthermore, the specific implications of digital transformation may vary depending on the industry, organization size, and scope of the transformation effort. Digital transformation is also crucial for the relationship with customers. In terms of customer experience, it provides a seamless experience across multiple channels through omni-channel engagement, favors personalization by delivering tailored experiences and recommendations, and allows mobile accessibility, ensuring that services and products are accessible via mobile devices.

Second, the paper explored the factors contributing to the failure of digital transformation in organizations, followed by an identification of the critical factors for successful implementation, especially given that success in digital transformation remains elusive for most organizations. This study suggests that a clear strategy, the capability to foster innovation and agility, the ability to redesign the business model, reliance on data-driven decision-making, a mindset open to change, and the creation of a culture that promotes experimentation, continuous learning, and adaptability are key factors for successful digital transformation. These factors must be complemented by good governance, which includes strong leadership, clear objectives, cross-functional collaboration, risk management, and effective budgeting. Such factors are also crucial for responding to market changes and customer demands. Additionally, ensuring that employees have the necessary skills to leverage digital technologies effectively is essential. In sum, digital transformation is a complex and multidisciplinary phenomenon that requires a holistic approach.

Finally, this contribution adds to the body of research on digital transformation. However, one limitation of this work is the limited availability of data on digital transformation failures, with updates only available up to July 2023. A future direction for our research will be to expand and update the database.

Informed consent

Obtained.

Ethics approval

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The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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Notes

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Note 2. To conduct the research, the database Web of Science have been used because of the inclusion of peer-reviewed international scientific journals, along with the assessment of both the quality and quantity of publications pertaining to the topic.

Note 3. 2019 was the year that showed a visible increase in the number of articles published.

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