International Conference on Business Economics, Social Sciences & Humanities

B-SLR ON DIGITAL TRANSFORMATION TO FIRM PERFORMANCE OF SMES

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ABSTRACT

This paper aims to excavate the nexus between digital transformation and the firm performance of SMEs. The approach used in this paper is a quantitative approach using the Bibliometric Analysis and the Systematic Literature Review (B-SLR) as the analytical method. The data was obtained using papers from the Web of Science (WoS), while the Vosviewer version 1.6.20 was also used as a tool of analysis. The findings indicate that 56 papers were selected based on the Web of Science search. Furthermore, the Bibliometric Analysis indicates four clusters with a nexus in each cluster. The clusters are firms, technology, digitalization, and innovation. Research related to the topics were identified in each cluster respectively. Furthermore, based on the Bibliometric Analysis previous research finds evidence of digital transformation's positive impact on the firm performance of SMEs. Thus, the hypothesis for future work is also provided.

Keywords: *B-SLR, Digital Transformation, Firm Performance, SMEs, Management*

INTRODUCTION

SMEs play an important role in economic development. SMEs are responsible for 90% of all businesses (Melo *et al.,* 2023) and contribute up to 90% of the global GDP (Sagala & Őri, 2024). According to the Indonesian Chamber of Commerce and Industry (2024), 66 million SMEs contribute to Indonesia's GDP of 603,4 billion USD (60,51%) and absorb 117 million workers (97%) from the total workforce. Xie (2023) underscores the irreplaceable importance of SMEs in China in playing a role in promoting stable economic growth, increasing employment, and encouraging entrepreneurship despite its setbacks due to the pandemic. Paul et al. (2017) highlight the advantages of SMEs compared to large firms in terms of quick and flexible decision-making processes, entrepreneurial dynamism, and motivation. Belas et al. (2020) in their research on SMEs among Czech and Slovak entrepreneurs state that SMEs and entrepreneurs are the driving force behind economic growth.

Integrating SMEs by utilizing digital platforms or social media plays a pivotal role in a digital environment. Meier & Peters (2023), however, point out the problem of SMEs engaged in social media. The structure of technology enables SMEs to shape digital transformation. Triose et al. (2022) find three antecedent agilities, digital technology capability, relational capability, and innovation capability that build German SMEs' agility in responding to unprecedented levels of volatility, uncertainty, complexity, and ambiguity (VUCA). In Asia, the understanding of digitalization remains limited. Yet, the demand for its economic potential is urgent (Sarwar et al., 2024). Thus, the aspects that affect digital transformation in shaping SMEs' firm performance require ongoing research to provide a more comprehensive understanding.

LITERATURE REVIEW

Previous studies have highlighted how crucial digital transformation is to bolstering SMEs' position in the sector. According to Skare et al. (2023), SMEs in Europe must undergo a digital transformation in order to improve their access to financing, new and existing consumers, regulatory and competitive changes, rising input prices, and external shocks. Moreover, value creation is highlighted by Matarazzo et al. (2021) as the effect of digital transformation on SMEs in Italy. The results of a multi-case study of six Italian SMEs show that digital transformation has led to innovation in their business models, the development of new distribution channels, and the creation and provision of value to consumers.

SMEs' firm performance is determined by a variety of factors. In order to take advantage of Industry 4.0 technology, Dutta et al. (2019) conducted a study of 250 Indian SMEs. The results showed that in order to make significant adjustments to the design and production methods based on performance indicators, it is necessary to first collect real-time machine data, evaluate it, and implement the findings. Big Data usage is seen as crucial for SMEs in Jordan. In the current dynamic market climate, this is because of data analytics (Lutfi, 2022). The main goal of the study was to identify the factors that influence big data analytics in Jordan's rising economy.

Additionally, using PLS-SEM for analysis, the study looked at how organizational, technological, and environmental variables affected the adoption of big data. Conversely, a particular industry web site serves as an IT resource and is used by Taiwanese textile producers to enhance the organizational performance of Taiwanese SMEs. Senior executives of SMEs operating in the textile sector participated in in-depth interviews and completed questionnaires as part of the mixed-method study project (Chen, 2016).

Micro and small businesses make up Indonesia's tiny industry. Consequently, it is referred to as MSMEs. According to the Law of the Government of the Republic of Indonesia Number 20 of 2008 on Micro, Small, and Medium Enterprises, MSMEs are independent, productive businesses or business entities run by people or organizations that are not subsidiaries or branches of larger corporations. The following criteria are used in Figure 1 to categorize MSMEs, or Micro, Small, and Medium Enterprises.

Table 1. MSMEs Criteria in Indonesia

Micro	Max net worth of Rp50,000,000.00 (fifty million IDR) excluding land and building of the business premises, & Max annual sales revenue Rp300,000,000.00 (three hundred million IDR)
Small	Max net worth of Rp300,000,000.00 (three hundred million IDR) excluding land and building of the business premises, & Max annual sales revenue Rp2.500,000,000.00 (two and a half billion IDR)
Medium	Max net worth of Rp2.500,000,000.00 (two and a half billion IDR) excluding land and building of the business premises, & Max annual sales revenue of Rp50.000,000,000.00 (fifty billion IDR)

Source: Indonesia, 2008

To avoid any inconsistency in the term, the term SMEs will be further used in this paper. SMEs face various challenges in the digital era due to limitations. Meier et al. (2025) underscore that adopting digital technologies can present significant challenges for incumbent SMEs. SMEs frequently struggle to retain competent workers (Bilan et al., 2020), export (Paul et al., 2017), use digital benefits (Sagala & Őri, 2024), and adhere to corporate ethics (Belas et al., 2020), particularly in a digital world (Skare et al., 2023). In Indonesia, these difficulties are comparatively comparable. Innovation and technology, digital literacy, productivity, legality or licensing, financing, branding and marketing, human resources, standardization and certification, equitable distribution of guidance, training, and facilitation, and a single database are among these challenges, according to the Indonesian Chamber of Commerce and Industry (Kadin, 2024).

These problems are not adequately addressed, and this study attempts to close the knowledge gap on them and offer a line of inquiry for further research. Consequently, the following research questions are developed for this study: (1) What are the main study approaches and patterns in the relationship between SMEs' business performance and digital transformation? (2) Which crucial facets of digital transformation were applied to SMEs' business performance? And (3) What impact does digital transformation have on the success of SMEs?

By combining the focused and open procedure offered by Systematic Literature Reviews (SLRs) (Lame, 2019)

with the rigorous and well-liked Bibliometric Analysis (Donthu et al., 2021), this study takes a quantitative approach. Furthermore, Bibliometric Analysis in this research seeks to give a complete analysis of the subject, clarifying major contributions, critical concepts, and developing research topics by utilizing VOSviewer software. It also enables a cutting-edge bibliometric analysis and empowers researchers to visualize links to scholarly articles, collaboration from various researchers, and the importance of the research based on journal citations and the nexus between scientific terminologies (Olanidrin et al., 2023). Furthermore, Wang et al. (2023) emphasized that VOSviewer software can be utilized to transform a vast amount of academic literature into an appealing knowledge landscape visually and thus, a vital component of this research.

METHODOLOGY

In conducting this research, I used the B-SLR proposed by Marzi et al. (2022). This consolidates both methods into flexible tools to cover multiple research objectives while emphasizing the need for novel and relevant theoretical contributions (Marzi et al., 2022). I used B-SLR to achieve the research objectives of digital transformation and its role in strengthening the firm performance of SMEs. This procedure included the following three major phases: (1) configuring the research objective, database selection, and data screening and reduction, (2) conducting a bibliometric approach, configuring the cluster of topics identified, tabulating the data and displaying the data, and (3) conducting a systematic literature review, developing theoretical basis, composing research findings, as well as the conclusion, and implications. The 2nd and the 3rd phases are presented in the section Results and Discussion.

Phase 1: The study's criteria were included into a bibliometric and systematic literature review. The online Web of Science (WoS) database, which offers a thorough overview of global research output, was the source of pertinent data (articles) for this study in November 2024 (Sanchez et al., 2017). The initial search for the keywords “digital transformation” AND “firm performance of SMEs" produces 224 results from the Web of Science Core Collection. Similar results were also produced with the keywords “digital transformation” AND “firm performance AND SMEs". Through careful data refining, it resulted in 56 papers. The refining proceeded as displayed in Table 2.

Table 2. Refining Process

REFINING PROCESS	
KEYWORDS	“digital transformation” AND “firm performance of SMEs"
REFINED	Open Access, full text online
CONTENT TYPE	Journal Article
SUBJECT TERMS	management, business, economics, digital transformation
DISCIPLINE	management or business, or economics
LANGUAGE	English
PUBLICATION DATE	5 years

From this step, I proceeded to the next step: Export to Excel for further data processing based on author (s), title, source, times cited, keywords, WoS categories, research areas, cited references, cited reference count, and highly cited. Moreover, to enable the data to be input into Vosviewer software, I used the Mendeley Reference Manager to upload the papers and save them into a .csv file. As the data was consolidated, the research could progress into the next phase. Phase 2 was conducted using Voswiewer as the data had been consolidated in the previous phase.

To conduct a proper bibliometric approach, proper data must be prepared in the form of a .csv file. The Mendeley Reference Manager obtained the file, which contains 56 papers selected previously. Phase 3 was conducted by exporting data from WoS features. The data was exported based on Country of Origin, WoS Category, Publication Year, and Research Area. Both Phase 2 and Phase 3 are displayed in the Results and Discussion. Furthermore, to deepen the analysis, manually selected papers are chosen to be the fundamental basis of the analysis. The process of conducting the research is presented in Figure 1.

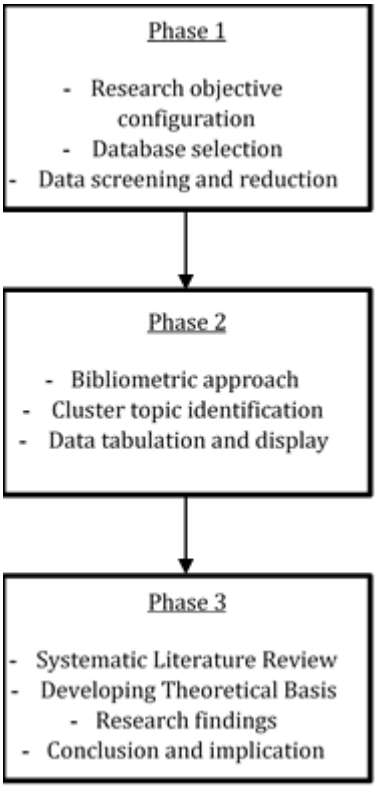

Figure 1. Research Execution Process

RESULTS AND DISCUSSION

This section aims to identify the trends of papers based on the country of origin, publication years, and research area. The trends are presented in Figures 2, 3, and 4. The country of origin of the papers varies. While the majority of the papers come from European Countries, it is also important to note that it dispersed over five continents. Thus, become a global topic.

Most papers come from Italy (12 papers), followed by Finland and Austria with seven and six papers, respectively. In Asia, the People's Republic of China produces the most papers, with four, followed by Indonesia, South Korea, and Vietnam with two each. The USA also has two papers, while African countries that produced papers are Ghana, with one paper. The research-based countries are presented in Figure 2.

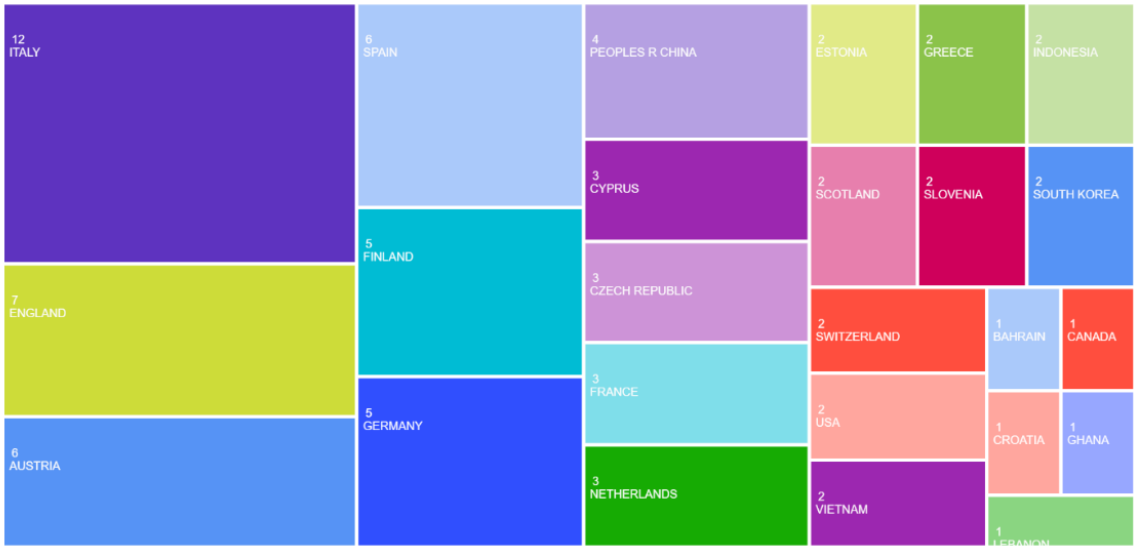

Figure 2. Research based on countries

The number of papers produced also increased rapidly over the past five years. In 2019, there were only two papers produced. The number increased to seven papers in 2020 and 2021. The number of papers was almost doubled in 2022, with 10 papers and 21 papers in 2023. The number of papers also continued in 2024-2025 with 12 papers related to the topics. The number of papers produced each year is presented in Figure 3.

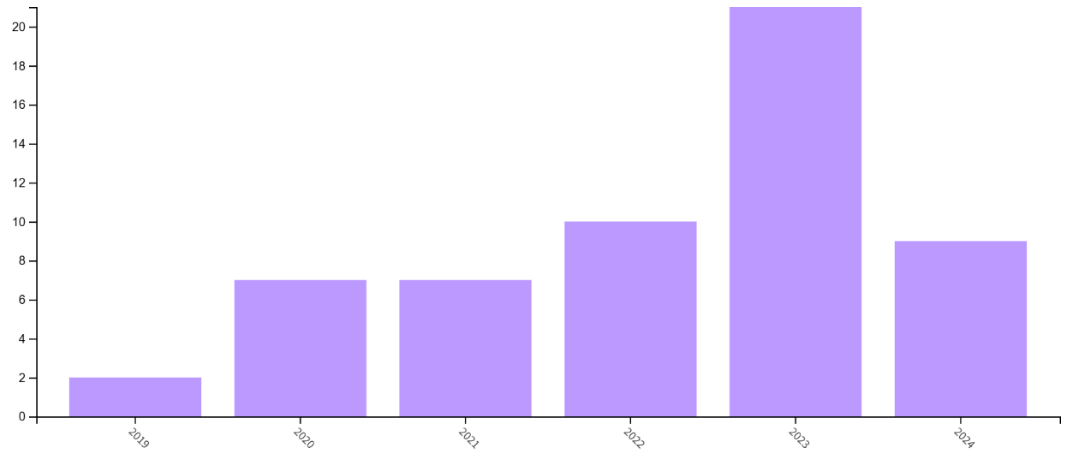

Figure 3. Research based on publication year

The topic of digital transformation and firm performance of SMEs has not only become a global topic but also a multi-disciplinary topic. The 56 papers selected based on the WoS are related to Business Economics. However, it is also related to Information Science, Computer Science, Engineering, Public Administration, Operations Research, Management Science, as well as Environmental Science. Hence, the number of papers is growing to 77. The number of papers produced based on the Research Area is presented in Figure 4.

Figure 4. Number of papers based on the research area

From the total of 56 papers, I have manually selected the most cited papers to be discussed further based on at least one keyword in common. The branch is identified using the author keywords as a baseline since they are generally regarded as a fundamental component that encapsulates and represents the content of scientific publications (Kwon, 2018) and contain subjects the author deems most pertinent to their research (Huang & Zhao, 2019). The nexus center indicates a major issue of previous studies. "Digital Transformation" is the essential term. According to this criterion, there were only 28 research papers that were suitable for organizing the study of SMEs' digital transformation and firm performance in the business and management domain, as shown in Table 3.

Table 3. Summary of the research

No	Author/s	Methodology	Key Findings
1	Ates & Acur (2022)	A longitudinal and interpretive qualitative approach with interviews.	An essential component of the timely and effective implementation of digital transformations is the careful management of obsolescence trap avoidance, which is one of the reciprocal interactions between the empirical sensitivity and the habits of high-tech SMEs.
2	Ballerini et. al. (2024)	Quantitative research using Structured Equation Modeling (SEM)	The association between internationalization performance and e-commerce strategic commitment is somewhat mediated by CMS adoption.
3	Bettiol, et. al. (2022)	A quantitative approach with Principal Component Analysis (PCA), Tetrachoric Correlation Analysis, and Regression Analysis.	How various networked technologies continue to improve company operations by generating new information that serves as an output indication of technological innovation and, thus, a gauge of effective technology utilization.
4	Chatzistamoulou (2023)	Quantitative approach using econometric methods as the analysis tool.	The main conclusions are: (i) digital competitiveness consistently supports the sustainability transition in European SMEs, and (ii) the decision to participate in public procurement is not affected by the adoption of a sustainability-oriented plan.
5	Ciacci & Penco (2023)	Quantitative research using the Partial Least Squares Path Modeling (PLS-PM) method.	BDAC and ExtDT have a beneficial impact on BMI. Additionally, the results show that ExtDT is a less disruptive antecedent of BMI than BDAC. The results also demonstrate that BDAC is not caused by ExtDT alone.
6	Civelek, et. al. (2023)	Quantitative approach with Ordinal Logistic Regression with the SPSS statistical program in the logit function.	The study demonstrates that there is no beneficial correlation between SMEs' worries about their workers' digital literacy and their process of digital transformation.
7	Crupi, et. al. (2020)	Qualitative approach with Phenomenological methods, surveys, and in-depth interviews.	There are four key theoretical contributions. The outcomes of SMEs' digital transformation (DX) processes are shaped by: (1) the internal characteristics of knowledge bases (KBs), (2) the role of Digital Innovation Hubs (DIHs) in dismantling inter-organizational barriers, (3) the importance of DIHs in facilitating interactions among stakeholders involved in the DX process, and (4) the function of DIHs as external enablers that foster broader connectivity to support the growth of innovation ecosystems.
8	Elia, et. al. (2021)	Quantitative research using statistical methods, including Linear Regression and empirical tests.	Three main conclusions may be drawn from this: (1) size is irrelevant for digital export, meaning that the quality of resources and capabilities, rather than their quantity, is what counts. (3) Exporting requires digital skills.
9	Etienne et. al. (2024)	Quantitative approach with Partial Least Squares Structural Equation Modelling (PLS-SEM).	SME digitization affects business performance and offers timely insights into the digitalization's business value.
10	Goncalves, et. al. (2024)	The mixed method of Cognitive Mapping and the best-worst method (BWM).	Small and medium-sized businesses' (SMEs') inclination to participate in online markets may be assessed using the established methodology.
11	Hassan, et. al (2024)	Quantitative approach with Structural Equation Modeling (SEM).	Information processing-related digital technologies offer more room for innovation than other technologies.
12	Kallmuenzer, et. al. (2024)	A qualitative approach using ATLAS analysis application.	The findings show that performance may be greatly enhanced by a wide range of digital tools and apps.
13	Kastelli, et. al. (2024)	Quantitative research with Partial Least Square Structural Equation Modelling (PLS-SEM).	Innovation success is strongly positively impacted by absorptive capacity and, to a lesser extent, by digital capability.
14	Meier, et. al. (2025)	Conceptual and Qualitative approach with surveys	Adopting digital technologies can present significant challenges for incumbent SMEs, hindering their ability to compete effectively in the market.
15	Merin-Rodriganez, et. al. (2024)	Quantitative research with Partial Least Squares Structural Equation Modelling (PLS-SEM).	The results show that digital transformation (DT) improves SME performance through BMI.
16	Mueller et. al. (2021)	Quantitative approach with the Structural Equation Modeling (SEM) as the analysis tool.	Companies are better equipped to pursue both exploratory and exploitative innovation methods, as well as the ensuing search for new business models, when they collect, integrate, transform, and utilize external information.
17	Nasiri, et. al. (2020)	Quantitative approach using the Confirmatory Factor Analysis (CFA).	Investing in smart technologies can yield significant relational advantages for firms.
18	Neirotti & Pesce (2019)	Quantitative approach with empirical data analysis of representative industry-level data on national accounting statistics.	In industries with greater growth opportunities, firms tend to invest more in ICT, which in turn contributes to increased industry concentration, wider profit dispersion, and heightened competitive turbulence within the sector.
19	Nguyen, et. al. (2022)	Quantitative research with Structural Equation Modeling (SEM) as the analysis tool.	The more conscientious an organization is, the more effectively it can leverage digital transformation to enhance environmental performance through Data-Enabled Decision-Making (DEDM).

Table 3 (continue). Summary of the research

No	Author/s	Methodology	Key Findings
20	Orero-Blat, et. al. (2024)	Mixed method research with Partial Least Squares Structural Equation Modeling (PLS-SEM) and fsQCA (Fuzzy Set Qualitative Comparative Analysis).	Fostering an inventive culture is crucial for SMEs, especially smaller ones with less resources. As SMEs want to use DT and BDAC, this innovation-driven dynamism is particularly important for them to be active innovators in their local industries rather than just consumers of technology.
21	Ramadan, et. al. (2023)	Quantitative approach for data collection and analysis using PLS-SEM	A strong positive relationship, supported by effective leadership, significantly enhances an organization's agility in adapting to change.
22	Soluk & Kammerlander (2021)	Qualitative multiple case studies with semi-structured interviews that analyzed the data thematically.	The process, product and service, and business model digitalization phases make up the three stages of the digital transformation that family-owned Mittelstand companies go through.
23	Soluk, et. al. (2023)	A qualitative approach with an interview	Business networks are essential to SMEs' adoption of non-disruptive DT. The concurrent effects of three dynamic capabilities—marketing, strategic planning, and human resources—mediate this connection.
24	Troise, et. al. (2022)	Quantitative with the Partial Least Square as the analysis tool.	Digital technology capability, relational capability, and innovation capability are three critical antecedents of organizational agility (OA).
25	Utomo et. al. (2023)	Quantitative research using Structural Equation Modeling (SEM	Firm competences are indirectly impacted by organizational inertia through digital transformation and capabilities.
26	Wang, et. al. (2023)	Mix method approach, fsQCA (Fuzzy set Qualitative Comparative Analysis), and NCA (Necessary Condition Analysis) with survey.	The results corroborate the empirical view that digital transformation is a thorough and intricate system engineering process that needs cooperation and coordination from all sides.
27	Yu, et. al. (2022)	Qualitative approach with content analysis as a tool.	The process of digital transformation varied depending on whether the industrial surroundings were homogenous or diverse.
28	Zahoor, et. al. (2023)	Quantitative research with Structural Equation Modelling (SEM).	The fact that MDL is positively correlated with the adoption of digital technologies highlights the significance of the relationship between managers' digital literacy and the propensity for technology use in SMEs.

Table 2 shows that the methods used vary. Papers from Neirotti & Pesce, (2019), Nasiri, et. al., (2020), Mueller, et. al., (2020), Elia, et. al., (2021), Bettiol, et. al., (2021), Troise, et. al., (2022), Kastelli, et. al., (2022), Nguyen, et. al., (2022), Chatzistamoulou, (2023), Ciacci, et. al., (2023), Civelek, et. al., (2023), Ramadan, et. al., (2023), Utomo, et. al., (2023), Zahoor, et. al., (2023), Merin-Rodriganez, et. al., (2024), Hassan, et. al., (2024), Ballerini et. al. (2024), and Fabian, et. al., (2024) are using a quantitative methodology with the majority using SEM-PLS as the analysis tool. Whereas in Crupi et. al. (2020), Soluk & Kammerlander (2021), Soluk et. al. (2021), Ates & Acur (2022), Yu et. al. (2022), Kallmuenzer et. al. (2024), and Meier et. al., (2025) are using qualitative methodology. There is also the use of a mixed method such as Gonçalves, et al., (2023), Wang, et al., (2023), and Orero-Blat, et al., (2024).

Digital transformation and its role in improving the firm performance of SMEs have shown a promising result over the years. Studies engaged to digital transformation and the firm performance of SMEs are displayed in Figure 5. Each color represents a different cluster, indicating a group of related items. It also shows multidimensional elements.

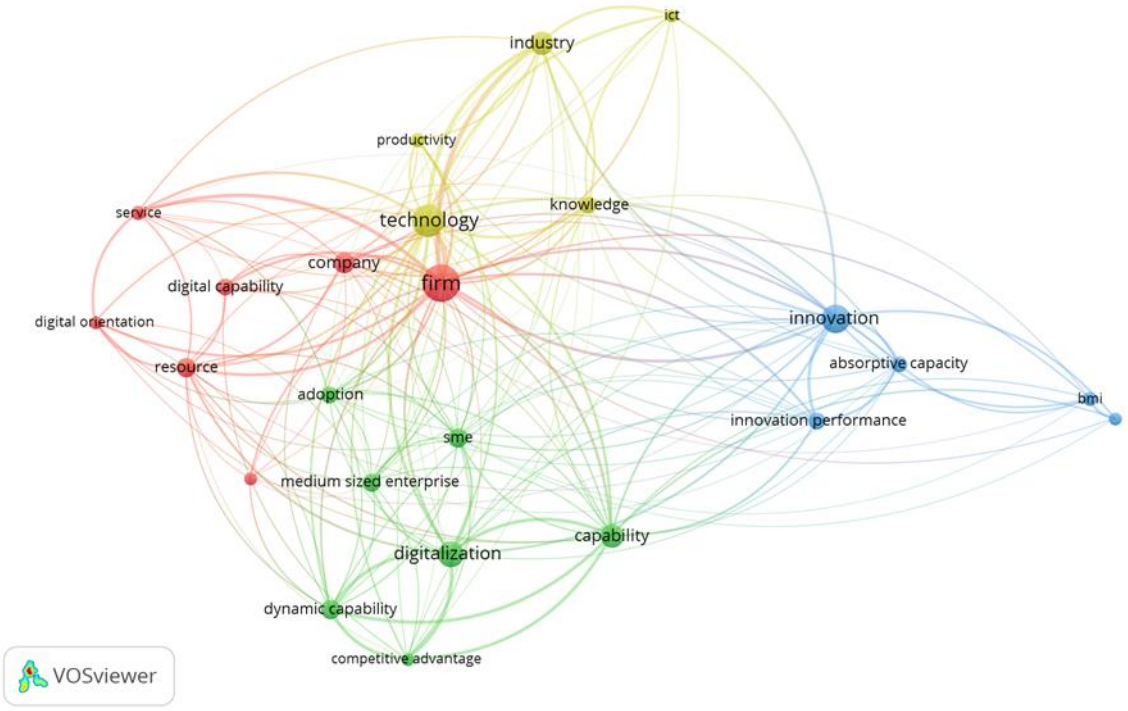

Figure 5. Network Visualization of Digital Transformation and the Firm Performance of SMEs

There are two minimum relationships to enable the Vosviewer network. Thus, it should at least be mentioned in two sources to be linked together (Van Eck & Waltman, 2010). In this study, the result indicates 24 items with a total of four clusters displayed in Figures 6, 7, 8, and 9.

Cluster 1 (Figure 6) indicates the firm as the nexus center. It has seven items, they are company, digital capability (Utomo et al., 2023), digital literacy (Civelek, et. al., 2023), digital orientation (Kallmuenzer, et. al., 2024), firm (Goncalves, et. al.; Merin-Rodriganez, et. al. (2024), Utomo et. al. (2023), Bettiol et. al. (2022), Elia, et. al.; Soluk & Kammerlander (2021)), resource Civelek, et. al. (2023), Elia, et. al. (2021), and service.

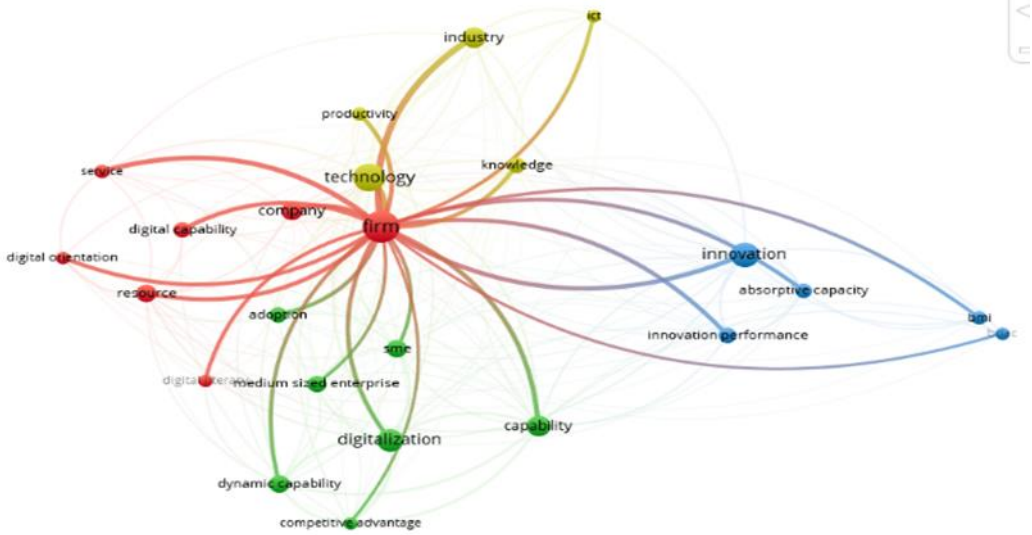

Figure 6. Cluster 1 Firm

Cluster 2 (Figure 7) has five items. The items are ICT (Bettiol, et. al., 2022; Neirotti & Pesce, 2019), industry (Bettiol, et. al., 2022; Mueller et. al., 2021; Neirotti & Pesce, 2019), knowledge (Ramadan, et. al., 2023; Bettiol, et. al., 2022; Crupi, et. al., 2020), productivity, and technology (Soluk, et. al., 2023; Ates & Acur, 2022) Soluk & Kammerlander, 2021) with the network centered on Technology.

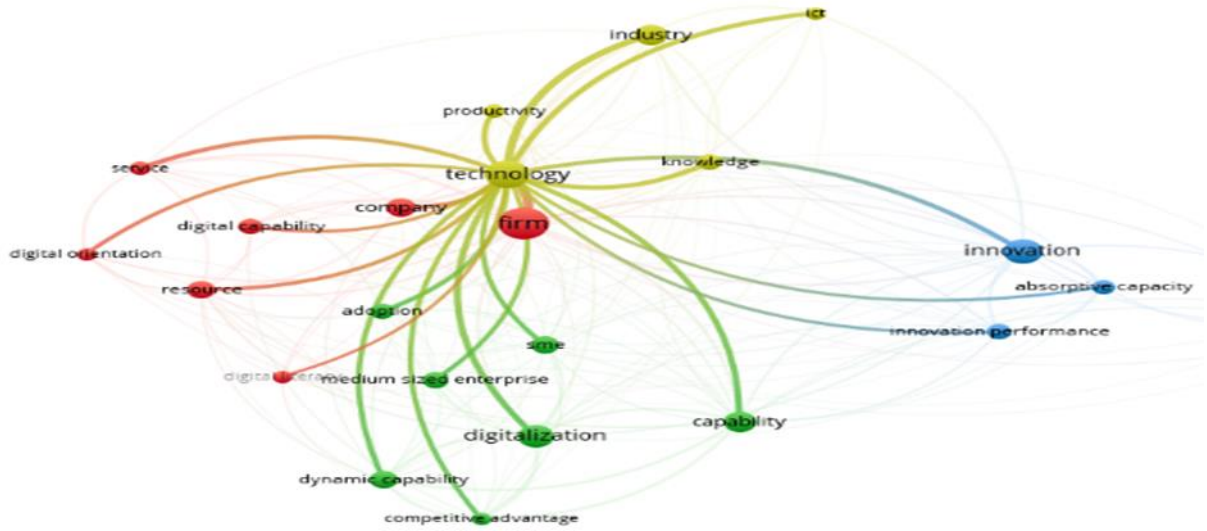

Figure 7. Cluster 2 Technology

Cluster 3 (Figure 8) has seven items centered on digitalization, they are adoption (Soluk, et. al., 2023; Soluk & Kammerlander, 2021), capability (Troise, et. al.,2022), competitive advantage (Meier, et. al., 2025), digitalization (Hassan, et. al.; Kallmuenzer, et. al. (2024), Troise, et. al. (2022), Neirotti & Pesce (2019)), dynamic capability (Hassan, et. al (2024), Ciacci & Penco; Civelek, et. al.; Soluk, et. al. (2023), Ates & Acur (2022), Soluk & Kammerlander (2021)), medium-sized enterprise (Goncalves, et. al. (2024), Wang, et. al. (2023), Ates & Acur (2022) Mueller et. al. (2021)), and SME (Meier, et. al. (2025), Etienne et. al.; Goncalves, et. al.; Hassan, et. al; Kallmuenzer, et. al.; Merin-Rodriganez, et. al. (2024), Chatzistamoulou; Ciacci & Penco; Civelek, et. al.; Soluk, et.

al.; Wang, et. al.; Zahoor, et. al. (2023), Ates & Acur; Yu, et. al. (2022), Mueller et. al.; Soluk & Kammerlander (2021), Crupi, et. al. (2020)).

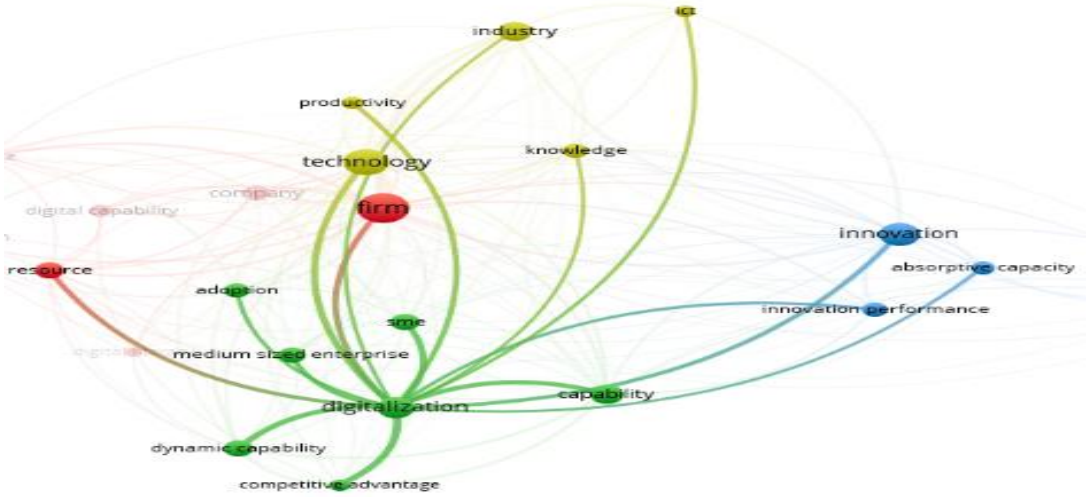

Figure 8. Cluster 3 Digitalization

Cluster 4 (Figure 9) has five items centered on innovation. They are absorptive capacity (Kastelli, et. al., 2024; Mueller et. al., 2021), big data analytics capability (BDAC) (Orero-Blat, et. al., 2024; Ciacci & Penco, 2023), business model innovation (BMI) (Merin-Rodriganez, et. al. (2024), Ciacci & Penco; Ramadan, et. al. (2023)), innovation (Hassan, et. al.; Kastelli, et. al.; Orero-Blat, et. al. (2024), Troise, et. al. (2022), and innovation performance ((Soluk, et. al. (2023), Mueller et. al.; Soluk & Kammerlander (2021), Crupi, et. al. (2020), Neirotti & Pesce (2019)).

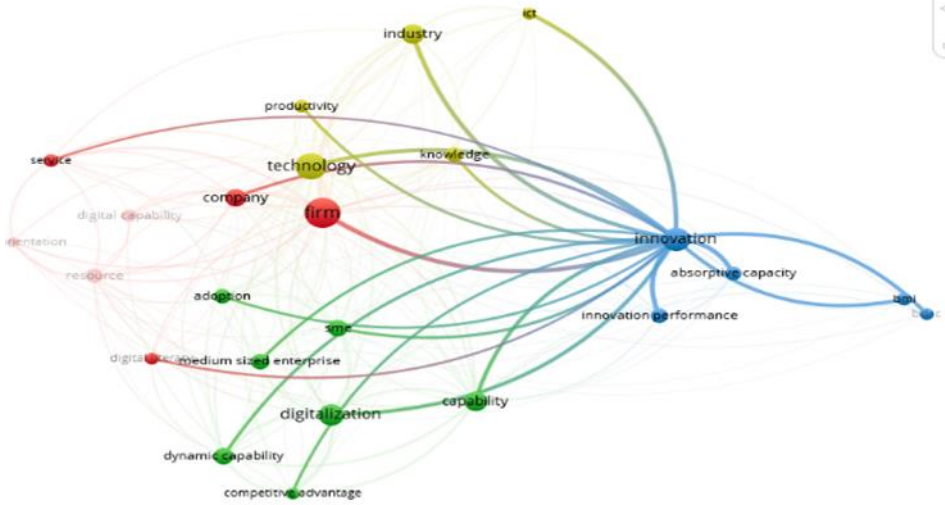

Figure 9. Cluster 4 Innovation

Based on the explanation above, research with clusters can be identified. Research and its clusters are displayed in Table 4.

Table 4. Cluster Identification

No	Author/s	Cluster
1	Ates & Acur (2022)	2,3
2	Bettiol, et. al. (2022)	1,2
3	Chatzistamoulou (2023)	3
4	Ciacci & Penco (2023)	3
5	Civelek, et. al. (2023)	1,3
6	Crupi, et. al. (2020)	2,3,4
7	Elia, et. al. (2021)	1
8	Etienne et. al. (2024)	3
9	Goncalves, et. al. (2024)	1,3
10	Hassan, et. al (2024)	3
11	Kallmuenzer, et. al. (2024)	1,3
12	Kastelli, et. al. (2024)	4
13	Meier, et. al. (2025)	3
14	Merin-Rodriganez, et. al. (2024)	1,3
15	Mueller et. al. (2021)	2,3,4
16	Neirotti & Pesce (2019)	2,3,4
17	Orero-Blat, et. al. (2024)	4
18	Ramadan, et. al. (2023)	2
19	Soluk & Kammerlander (2021)	1,2,3,4
20	Soluk, et. al. (2023)	3,4
21	Troise, et. al. (2022)	3,4
22	Utomo et. al. (2023)	1
23	Wang, et. al. (2023)	3
24	Yu, et. al. (2022)	3
25	Zahoor, et. al. (2023)	3

By utilizing the Bibliometric Analysis further, Vosviewer can identify the nexus between papers that are interlinked with one another. The result is presented in Figure 10.

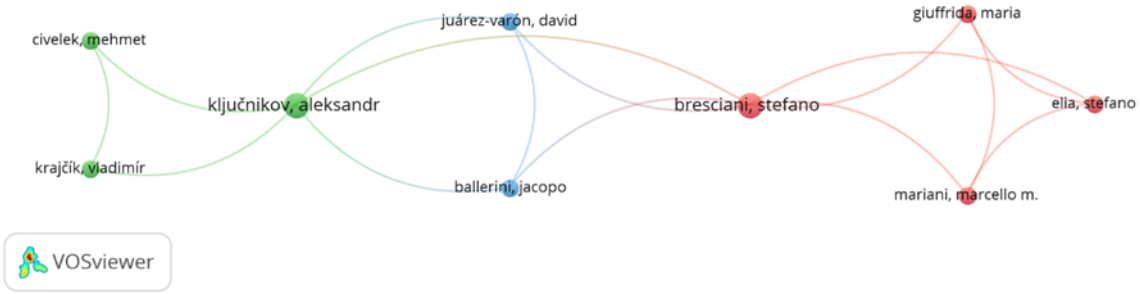

Figure 10. Nexus between research

According to Ballerini et al. (2024), SMEs use a variety of digital platforms to manage internationalization as a business opportunity. The study's evaluation of various multi-sided e-commerce platform types, such content management systems (CMSs), was prompted by the proliferation of third-party multisided platforms (TPMPs) and well-known e-commerce platforms. based on information collected from managers of 263 manufacturing companies and examined with Structural Equations Modeling (SEM). This study shows evidence that internationalization performance is driven by e-commerce commitment. Furthermore, it is discovered that internationalization is impacted by two distinct e-commerce multi-sided platform types: CMSs and TPMPs. While CMSs are useful for businesses with a high level of e-commerce commitment and expectations, TPMPs are best suited for manufacturers with modest commitment, capabilities, and expectations.

Furthermore, Civelek et al. (2023) highlight the importance of digital literacy in the workforce to overcome obstacles. Resource-based View (RBV) is essential to increasing the competitiveness of SMEs in the digital environment. Through the use of the stratified random sample, purposive sampling techniques using telephone surveys, and Ordinal Logistic Regression Analysis. Although there is no positive correlation between SMEs' dynamic capabilities and the process of digital transformation, this study concludes that for SMEs to meet their goals in digital transformation, it is crucial to network with partner firms, form strategic partnerships with seasoned IT companies, and actively engage in hands-on training.

Elia et al. (2021) will investigate the factors that influence digital export to take advantage of the potential presented by digital technology in their business-to-consumer digital marketing endeavors. The purpose of this study is to investigate the business resources to promote internationalization via digital channels by collecting data from 102 SMEs in three distinct industries located in Italy. According to this study, SMEs are not impacted by resource limitations, digital export is more likely to succeed regardless of firm size, and e-commerce managers are more likely than traditional export managers to engage in digital export, regardless of firm size.

The researchers discuss the importance of internationalization for SMEs in a digital environment. It finds that digital transformation plays a pivotal role in increasing the firm performance of SMEs by breaking the boundaries of traditional business models. Since there are limitations for SMEs in terms of digital literacy and other various issues, these can be achieved through various digital platforms (Elia et.al., 2021; Ballerini et al., 2024), and strategic partnerships (Civelek et al., 2023).

The significance of digital transitions in enhancing the performance of SMEs is further supported by other research. Digital transformation affects company performance and offers timely insight into the business value, according to Etienne et al. (2024). Orero-Blat et al. (2024) highlighted how crucial SMEs—especially smaller businesses—are to leveraging digital transformation. Merin-Rodriganez et al. (2024) use BMI to further implement digital transformation in SMEs' improvement. Additional research highlights how digital transformation can improve SMEs' firm performance by boosting organizational inertia through digital capabilities and transformation (Utomo et al., 2023), leveraging the abundance of digital tools and applications (Kallmuenzer et al., 2024), and increasing absorptive capacity (Kastelli et al., 2024). Table 4 presents the nexus between research that builds the foundation on how firm performance is affected by digital transformation.

Table 4. Cluster Identification

No	Author/s	Cluster
1	Etienne et. al. (2024)	3
2	Kallmuenzer, et. al. (2024)	1,3
3	Kastelli, et. al. (2024)	4
4	Merin-Rodriganez, et. al. (2024)	1,3
5	Orero-Blat, et. al. (2024)	4
6	Utomo et. al. (2023)	1

These researches have provided a solid foundation on how the firm performance of SMEs can be increased by digital transformation. Thus, based on the discussion above, the hypotheses can be formulated as follows: **"Digital Transformation affects the Firm Performance of SMEs"**. Figure 11. presents the hypotheses formula.

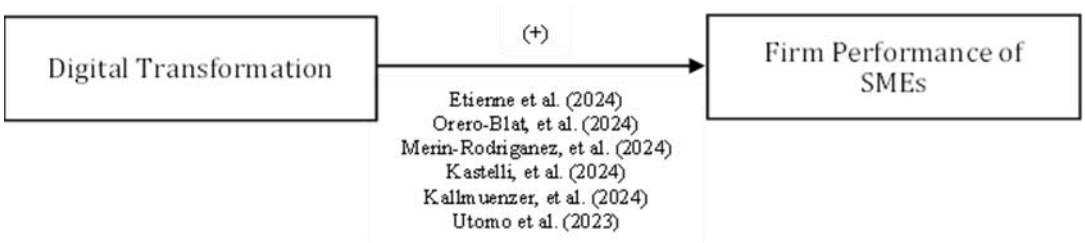

Figure 11. Hypotheses formulation

It is anticipated that this study will have several repercussions. The most significant conclusion is that this study is anticipated to uncover the relationship between SMEs' business performance and digital transformation. Moreover, it is anticipated to establish a basis for subsequent studies in the domains of management and business, particularly with regard to digital transformation and the performance of SMEs. Further research is necessary to determine the dimensions and indicators of each variable and to evaluate the hypothesis developed in this study across a range of disciplines and businesses.

This research has several limitations. The most significant is that I only interpret and analyze the result based on the sole observation. Therefore, I have to limit myself from proposing alternatives in both economic as well as technical fields. It is also essential to limit only as an analyzer, not as a performer. Moreover, there is a limitation in time to conduct this research. This time limitation affects the depth of analysis and the completeness of aspects both in digital transformation and the firm performance of SMEs alike. Thus, this also affects the scholarly publications being referred to as well as the term chosen. It also affects my perspective on measuring several details and/or essential aspects to understand the problem comprehensively. Lastly, aside from that, I am also aware of any potential bias that may occur during the execution and the analysis. However, I will try to consider as many aspects as possible.

CONCLUSION & RECOMMENDATION

The main approaches and trends in digital transformation as well as the business performance of SMEs, have been identified through B-SLR. It concludes that most studies have been quantitative in nature, employing SEM as the analytical instrument. it also indicates that the tendency has been rising over the previous five years. The performance of the company and the main areas of digital transformation have also been determined. Four groups are identified as the important areas based on bibliometric analysis. They are firm, technology, digitalization, and innovation, and each cluster has its own nexus for further research. Furthermore, previous research findings support the positive impact of digital transformation on the firm performance of SMEs in various aspects. Thus, the hypothesis on the topic can be formulated.

ACKNOWLEDGEMENT

The author expresses gratitude to Prof. Nebojša Stojčić, PhD, of the University of Dubrovnik and the University of Zagreb for his guidance and mentoring. The Director of the International Program at Universitas Komputer Indonesia, Dr. Senny Luckyardi, S.P., M.M., the Dean of the Faculty of Economics and Business, Prof. Dr. Siti Kurnia Rahayu, S.E., M.Ak., CA, and the Rector, Prof. Dr. Ir. H. Eddy Soeryanto Soegoto, M.T., along with all parties who have granted permission to carry out this study.

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