

Crucial Factors Influencing the Success of SMEs in the Digital Transformation Era

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Abstract: Small and medium enterprises (SMEs) have an important role as the backbone of a country's economy. However, in the current digital era, there are many challenges faced by SMEs in adopting digital transformation. Assumed limited literature that discusses the success factors of digital transformation in SMEs. Therefore, this research aims to explore the important factors for the success of digital transformation in today's SMEs. The method used in this research is to search for articles relevant to the research topic using the Google Scholar database. The research results show that digital strategic planning, digital maturity, relationship capital, and collaborating with external digital innovation units are the keys to successful digital transformation in MSEs today. The results of this research will provide input to SMEs and the government in making decisions to achieve the success and sustainability of SMEs, as well as enrich the literature that examines digital transformation in SMEs.

Keywords: *SMEs, Digital Technology, Transformation Era, Crucial Factors, Content Analysis*

1. Introduction and Background

Small and Medium Enterprises (SMEs) have become an interesting issue to study to date (Chakma & Dhir, 2023; De Matteis, Elia, & Del Vecchio, 2023; Olazo, 2023; Suzic & Forza, 2023; Verma et al., 2023; Zahoor et al., 2024), plays an important role in the country's economy (Li et al., 2016; Ng & Kee, 2017; Srimulyani et al., 2023; Wattanakomol & Silpcharu, 2023). The contribution of SMEs can be seen in increasing income, employment, and economic growth (Hill et al., 2002; Mittal & Raman, 2021; Restrepo-Morales et al., 2019; Sarwoko & Frisdiantara, 2016), and important contributors in most industries (Li et al., 2016; Ng & Kee, 2017).

The increasingly widespread digital technology has caused rapid and radical changes in business and society today (Scuotto et al., 2021), including SME businesses. Competition is increasingly competitive as a result of globalization and dynamic markets (Ahmad et al., 2022; Huang et al., 2022). The future of SMEs depends largely on their ability to meet customer expectations and remain competitive in the market (Moeuf et al., 2018). Society and business are asked to respond to new circumstances, through flexibility, speed, and adaptability (Ragazou et al., 2022). Krempf and Pace (2001) stated that not responding to technology/globalization can cause failure to achieve important goals.

The digital era provides a new paradigm in managing the SME industry (Moeuf et al., 2018), digital technology can be utilized by SMEs to manage their business operations effectively and provide unique value to their clients in both local and international markets (Teoh, Ahmad, Abdul-Halim, & Ramayah, 2022), affects business processes, operational routines, and company capabilities (Ragazou et al., 2022). However, SMEs face several important obstacles, including a lack of access to information regarding the latest technology (Kergroach, 2020), how to optimally align business strategy with digital technology as a consequence of the ongoing digital technology revolution (Li et al., 2016), limited capital, qualified workforce, and modern technology (Gentile-Lüdecke et al., 2020).

The ability to access and align business strategies with technology is no longer an option but is a key factor for the success and sustainability of SMEs (Bouwman et al., 2019). A previous study conducted by Zhang et al. (2022) revealed that limited resources, capabilities, and the digitalization process of SMEs were relatively slow, and literature discussing digital technology for SMEs was still very limited. Therefore, to fill this gap in the literature, this research aims to find the key factors for the success of digital technology in SMEs.

2. Literature Review

Small Medium Enterprises (SMEs) in Economic Development: Facts show that SMEs are the backbone of the national economy in many countries (London, 2010), playing an important role in the industry in developed and developing countries in today's global economy (Naradda Gamage et al., 2020). However, globally there has been no agreement on the definition of SMEs. Each country has a different definition of SMEs. The common explanation used to explain the classification of SMEs refers to financial size and number of employees (Melo et al., 2023). For example, South American countries such as Brazil require SMEs to have 20 – 249 permanent employees (Melo et al., 2023). In the United States, the criteria for SMEs are determined by the number of employees being less than 500 (U.S.Small, 2018). In Europe, SMEs are defined as businesses that employ less than 250 people and must have an annual turnover of up to EUR 50 million (Malesios et al., 2021). The criteria for SMEs in China are to have 300 – 1000 employees and have a sales turnover of 20 – 40 million Yuan. SMEs in Indonesia have criteria of less than 100 employees, Malaysia with criteria of 5 - 150 employees and an annual sales turnover of 250 - 25 million RM (Abe et al., 2015).

Several pieces of evidence have been revealed by previous researchers that SMEs make many contributions, such as contributing to 90% of business forms and providing employment for 60% of the world's workforce (Munro, 2013), are the most dynamic businesses in the global economy and play an important role in developing human well-being in any country (Naradda Gamage et al., 2020), contributing to poverty alleviation and sustainable economic growth (Asare et al., 2015; Ayyagari, Beck, & Demirguc-Kunt, 2007; St-Pierre et al., 2015; Helping to eradicate poverty, inequality and unemployment in rural areas, helping people with disabilities, women, families, uneducated people and rural communities to contribute (Fiseha & Oyelana, 2015; Stuart, 2011). SMEs realize sustainable development through inclusive economic growth (Fonseca & Carvalho, 2019). SMEs utilize many local resources (Asare et al., 2015).

Contribution to Digital Transformation on SMEs: Digital transformation is a big topic in scientific studies today (Dörr et al., 2023). The term digital transformation is different from the concept of digitization (Melo et al., 2023). Digitization according to Verhoef et al. (2021), is the activity of changing manual information into digital without adding value to the activity. Meanwhile, the terms digital transformation and digitalization are terms that are often used interchangeably and have meaning in broad concepts that affect an ecosystem (Bedell-Pearce, 2018; Reis et al., 2018).

Digital transformation has given rise to a new paradigm in running a business, building relationships with consumers, suppliers, and stakeholders, and encouraging business model innovation and customer value creation (Chatterjee, Chaudhuri, Vrontis, & Thrassou, 2022; Stich et al., 2020; Yang et al., 2023). Digitalization is very important for SMEs in carrying out their role in contributing to a country's economy (Chatterjee et al., 2022; Hadjielias et al., 2022).

Previous research has shown the role of digital transformation in helping SMEs. Some of them; such as providing solutions for SMEs affected by COVID by forming new digital networks with consumers (Ragazou et al., 2022), and helping SMEs to survive by building new business models (Bouwman et al., 2019). Digitalization creates important innovations in marketing and financial performance which are very beneficial for the sustainability of SMEs, especially during the COVID-19 pandemic crisis (Chatterjee et al., 2022; Hossain et al., 2022; Hulla et al., 2021). The results of research conducted by Moeuf et al (2018) by collecting several previous articles revealed that digital transformation in SMEs increases flexibility, reduces costs, increases productivity, improves quality, and shortens delivery times.

3. Research Methodology

To answer the objectives of this research, it collected data/articles related to the topic "Crucial factors influencing the success of SMEs in the Digital Transformation Era" using the Google Scholar database. This is done with the consideration that data/articles that are reputable and easily accessible are generally also indexed on Google Scholar. The search strategy carried out on Google Scholar is as follows:

Strategi Searching Google Scholar

Keywords	"SMEs in Digital Transformation"
First Searching	205.000 results
Unchecked Citation	172.000 results
Custom Range: 2019 -2024	17.200 results
Title Screening	262 results
Scopus/ WoS	83 results
Abstract Screening	18 results
Full-Text Screening	18 results

4. Results

As a result of searching through the Google Scholar database, it is found 18 articles that were relevant to the aims of this research. The descriptions of the 18 articles are presented below:

Table 1: Year of Publication and Publications per Year

Year	Article
2019	1
2020	2
2021	3
2022	4
2023	4
2024	4
Total	18

Table 2: The publisher and number of articles published

Publisher	Article
Elsevier	8
Emerald	2
MDPI	3
IEEE	1
Polska Akademia Nauk	1
Barcelona: OmniaScience	1
Fakultet organizacije i informatike, Sveučilište u Zagrebu	1
No Publisher	1
Total	18

Table 3: Countries and number of articles from each country

Country	Article
Italy	2
Czech Republic	2
India	1
Vietnam	1
Indonesia	1
China	1
Turkey	1
European	2
Spanish	1
German	1
Others	5
Total	18

Table 4: Success Factors for Digital Transformation in SMEs

No	Success Factors	Authors
1	Digital maturity	Dutta, Kumar, Sindhvani, & Singh, 2020; Marino-Romero, Palos-Sánchez, & Velicia-Martín, 2024; Melo et al., 2023; Priyono, Moin, & Putri, 2020; Scuotto et al., 2021; Troise, Corvello, Ghobadian, & O'Regan, 2022)
2	Relationship capital	(Manafe, 2024; Pelletier & Cloutier, 2019; Troise et al., 2022)
3	Digital strategic plan	(Červinka, 2023; González-Varona, López-Paredes, Poza, & Acebes, 2021; Marino-Romero et al., 2024; Matarazzo, Penco, Profumo, & Quaglia, 2021; Omrani, Rejeb, Maalaoui, Dabić, & Kraus, 2022; Palade & Møller, 2023; Šimberová et al., 2022; Zhang et al., 2022)
4	Commitment	(Palade & Møller, 2023)
5	Top management involvement	(Palade & Møller, 2023)
6	Educational background	(Clemente-Almendros, Nicoara-Popescu, & Pastor-Sanz, 2024)
7	Collaborate with external digital innovation units.	(Hermann et al., 2024; Manafe, 2024; Priyono et al., 2020)
8	Environmental factor	(Ta & Lin, 2023)
9	Adaptive and innovative mindset	(Manafe, 2024)

Discussion

The research findings indicate an increase in the number of articles from 2019 to 2024 related to the factors of success in digital technology adoption in SMEs (see Table 1). Furthermore, Table 2 reveals that articles on the research topic have been published by leading publishers such as Elsevier, MDPI, and Emerald, which are the top three publishers. Although this research topic has been explored in several countries, the number of published articles is relatively small, with most studies conducted in Asia and Europe (see Table 3). Table 4 highlights digital strategic planning, digital maturity, relationship capital, and collaboration with external digital innovation as the four key factors for successful digital transformation in SMEs. Based on these research findings, the contributions of this study are: First, expanding the study of SMEs, particularly about digital transformation; Second, according to the authors' knowledge, this is the first study that aggregates the success factors of digital technology adoption in SMEs.

5. Managerial Implications and Recommendations

This study provides valuable insights for SME practitioners to focus on the key factors in adopting digital technology to improve SME performance. Additionally, we recommend that future research should broaden its scope to include other countries in Asia and Europe, given the current limitations in the number of available articles. It is also important to empirically evaluate whether the findings of this study can be generalized across different countries.

Conclusion

The results of the research conducted grouped the success factors for digital transformation in SMEs into 9 groups, namely: digital maturity, relationship capital, digital strategic plan, commitment, top management involvement, educational background, collaboration with external digital innovation units, environmental factors, and adaptive and innovative mindset. Of the nine groups, four groups are important for SMEs to adopt for successful digital transformation in their businesses, namely; digital strategic plan, digital maturity, relationship capital, and collaborating with external digital innovation units. The results of this research also

show that 1) there is an increase in SME studies from 2019 -2024, 2) \pm 80% of the studies conducted by researchers were published in large publishers (Elsevier, Emerald, MDPI, and IEEE), and 3) studies have been carried out in many countries such as Asia and Europe.

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