IMPACT OF THE DIGITAL ECONOMY AND INNOVATION ON THE BUSINESSES OF SMALL AND MEDIUM ENTERPRISES

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Abstract

The COVID-19 outbreak posed a significant economic threat to small and medium enterprises (SMEs). Despite its negative impact on the economy and SMEs, the pandemic also presented opportunities for reform to help the economy recover quickly. Moreover, the pandemic accelerated digitalization, which brought fundamental changes in competitiveness drivers, such as business models, business processes, and required skills and competencies for employability (Shafi et al., 2020; Ssenyonga, 2021). This study aimed to explore post-COVID-19 pandemic opportunities for SMEs in Krabi, Thailand, through digitization. In-depth interviews were conducted, and a purposive sampling of eight Thai SME business owners in Krabi, Thailand, was selected for the qualitative study. The data were analyzed using content analysis and NVivo software. The results indicated that there are opportunities for SMEs to benefit from the deployment of digital technologies and innovation in the post-pandemic era. Additionally, SMEs have incorporated digital technologies and innovation into their services and operations to achieve long-term development, as these advancements also provide substantial advantages to SMEs.

Keywords: SMEs, Innovation, Digitization, Post-COVID-19 Pandemic, Opportunity

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1. INTRODUCTION

Digital technologies are central to digitalization (Guo et al., 2020). The advent of digital technologies and innovation holds enormous potential for driving both social and economic progress. As a result of digital innovation, traditional business models have given way to digital ones, and the digital transformation of economies is now heavily dependent on advanced technologies and big data. The importance of digital transformation has become increasingly evident as businesses seek to maintain their competitive edge in a digitalized marketplace. It is noteworthy that some of the world's most valuable companies are those in the digital sector, indicating the crucial role of digital innovation in modern economies (Kala'lembang, 2021; Kraus et al., 2021; Yousaf et al., 2021). In the digital economy, efficiency is dynamic rather than static (Siripipatthanakul et al., 2022). The complexity and dynamic nature of technology makes it challenging to achieve digital innovation in the digital economy. While all businesses, including small and medium-sized enterprises (SMEs), confront

these challenges, technological advancements can also provide SMEs with significant opportunities (Eravia et al., 2015; Teece, 2018; Yousaf et al., 2021). Moreover, the economy suffered a significant blow due to the COVID-19 crisis, resulting in a sharp decline in growth, employment, and overall productivity. The pandemic led to the closure of numerous businesses, disrupted supply chains, and resulted in substantial job losses. As a consequence, SMEs and the private sector were compelled to confront various challenges posed by the pandemic, such as the risk to business continuity and survival (Huang et al., 2022; Reyes, 2022). Hence, it is critical to identify pathways to mitigate the impact of COVID-19 on education service delivery, labor and employment, trade, investment, and SMEs, and thus support long-term economic recovery (Ssenyonga, 2021).

In advanced industrialized and emerging economies, SMEs play a crucial role in fostering economic growth, dynamism, and flexibility. They represent the most prevalent form of business organization, constituting approximately 95 to 99 percent of all companies. Modern information technologies offer significant advantages to businesses, including SMEs. Moreover, new modes of communication, such as social media, are emerging as powerful tools for business growth (Robu, 2013; Sandu et al., 2020). In today's digital economy, businesses of all sizes and across all sectors are equipping their employees with digital tools. In fact, more than half of all employees in an average firm use computers with internet access. Firms benefit significantly from digital tools, which help to reduce transaction costs by providing faster access to information and facilitating communication between employees, suppliers, and networks. Additionally, digitalization can assist SMEs in integrating into global markets by reducing transportation and border operation costs and expanding opportunities to trade services. Digitalization also enhances access to resources such as finance (e.g., peer-to-peer lending), training, recruitment channels, and government services that are increasingly available online. Moreover, it promotes innovation, offers greater access to innovation assets, and enables businesses to collect and analyze their own operational data (Organisation for Economic Co-operation and Development [OECD], 2021). Still, when technology is integrated into various business processes, weaknesses may be discovered in some areas of the company, as well as customer loss and a decrease in sales, particularly in SMEs (Dethine et al., 2020; Klein & Todesco, 2021). Hence, it is critical for business owners to find solutions that SMEs can implement to mitigate the risks and challenges associated with the integration of technology into their business processes (Hu & Kee, 2022; Vrontis et al., 2022). Given the significance of utilizing, integrating, and managing digital technologies in the digital transformation of SMEs, it is crucial to examine the impact of these factors on SMEs. This study aims to explain the post-COVID-19 pandemic opportunities for SMEs in Krabi, Thailand, through the use of digitization. This qualitative study selected eight Thai SME business owners in Krabi, Thailand, using purposive sampling. The data collected was analyzed using content analysis and NVivo software. The study revealed that SMEs have the potential to leverage digital technologies in the post-pandemic era to their advantage. The findings also showed that SMEs have adopted digital technologies into their operations and services, leading to long-term growth and providing significant benefits to the SMEs. The study highlighted the potential benefits that digital technologies can provide for SMEs, especially in the post-pandemic era. SMEs should consider adopting these technologies to enhance their operations, services, and competitiveness in the market.

The paper consists of six main sections. Section 1 serves as an opening for the study. Section 2 presents a literature review. Section 3 outlines the research methodology, while Section 4 presents the study's findings. In Section 5, the study's findings are discussed. Finally, Section 6 presents the study's conclusion, limitations, and recommendations.

2. LITERATURE REVIEW

SMEs are defined differently across countries, with various characteristics used for identification such as total assets, fixed assets, total sale volume, number of employees, or a combination of these factors (Terdpaopong, 2011). Among these, the number of employees is the most frequently used factor in many countries (Terdpaopong & Farooque, 2012). For example, the European Union uses 250 employees as the upper limit for designating an SME, while some countries set the limit at 200 employees. On the other hand, the United States considers firms with fewer than 500 employees as SMEs (Harney & Nolan, 2014; Stan, 2014). SMEs account for a significant component of the economy. Because the SME sector is critical to job creation, economic growth, and innovation, these economic units are recognized globally as key actors in socioeconomic development (Karadag, 2015). The global economy has undergone a series of transformations over time. It started with the term "information economy" in 1970, followed by "e-economy" in 1980, "internet economy" in 2000, and currently "digital economy". In the present economic downturn, the adoption of a digital economy and the use of information and technology by SMEs are increasingly essential and are emerging as a new foundation for entrepreneurs. The reasons for this include cost and time-effectiveness, innovation, and other competitive advantages, while also being environmentally and socially friendly. The benefits of a digital economy can extend to various parties in the value chain, such as suppliers, entrepreneurs, wholesalers, retailers, and customers (Limsarun, 2015).

The changes in business models brought about by digital technologies represent a significant challenge for SMEs. Whether digital transformation represents an opportunity or a challenge for SMEs depends on how the SME approaches it strategically (Yousaf et al., 2021). SMEs may thrive in a digitalized organizational environment because digital technology facilitates intelligence gathering, cost reduction, and audience expansion. On the other hand, SMEs may struggle to adapt to changes due to a lack of technical or marketing expertise (Quinton et al., 2018). SMEs rely heavily on digital technologies, such as new software, digital

platforms, and other technological advancements to support their transition from analog to digital processes in the digital economy (Dressler & Paunovic, 2021; Mohamed & Ali, 2022). To cope with significant challenges and improve their technical expertise, digital innovation is essential for SMEs operating in the digital economy. During times of structural change in the digital economy, SMEs are critical market participants, and it is crucial to investigate their sustainable management in this environment (Yousaf et al., 2021). Furthermore, given the importance of SMEs in the economy, especially during times of significant structural change, it is necessary to understand the factors that aid in their performance in the digital organizational environment (Quinton et al., 2018).

Businesses around the world are facing an unprecedented crisis as a result of the COVID-19 pandemic (Chatterjee et al., 2022). COVID-19 has had far-reaching consequences in developing countries, making it much more difficult for them to implement an effective stimulus (Kurpayanidi & Abdullaev, 2021). Moreover, because of limited resources, SMEs have been hit the hardest (Chatterjee et al., 2022). Despite the seriousness of the COVID-19 pandemic's impact on SMEs and the economy as a whole, the COVID-19 pandemic has provided a number of reform opportunities to aid in the economy's rapid recovery (Song & Zhou, 2020; Utit et al., 2021). Gamjorn and Nelson (2020) investigated changes in the SME restaurant industry in Bangkok before and after COVID-19: it was discovered that the cloud kitchen model had been in use in several countries for some time, but due to the COVID-19 pandemic, the model was being forced to operate more quickly in Thailand. SME owners enjoy this model because it allows them to share a kitchen with other entrepreneurs while benefiting from cost-sharing. Banna and Alam (2021) explored the potential of digital financial inclusion as a factor in promoting banking stability in Association of Southeast Asian Nations (ASEAN) countries and its implications for the post-COVID-19 era. They found that full implementation of digital financial inclusion can accelerate ASEAN banking stability by reducing bank default risk and increasing financial mobility within the region. Moreover, their findings suggested that digital financial inclusion can aid ASEAN banks in maintaining banking sector stability during and after the COVID-19 pandemic by minimizing liquidity crises and non-performing loans. Therefore, accelerating digital finance in ASEAN countries is considered a critical strategy for achieving banking sector stability, and promoting economic and financial resilience even in times of crisis. Utit et al. (2021) simulated the impact of improving inter-linkages between SMEs and large firms as a measure to reform the economy in the post-COVID-19 period. Their findings indicated that policy decisions regarding the desired type of improvement (whether output, value-added, or both) and which sectors to focus on must be made with caution, because improvements in the inter-linkages between SMEs and large firms may not necessarily lead to the desired macroeconomic outcomes. Chatterjee et al. (2022) examined the effects of big data-driven innovation and technological capability on SMEs' supply chain systems and how technology leadership support moderates their performance in the post-COVID-19 situation. The findings suggest that both big data-driven innovation and the technological capability of SMEs impact their supply chain capability, which in turn affects their performance in the post-COVID-19 scenario. The study also highlights the moderating effect of technology leadership support on SMEs' performance.

3. METHODOLOGY

A qualitative research approach was employed, specifically in-depth interviews, to investigate the opportunities for SMEs in Krabi, Thailand, in the post-COVID-19 era through the use of digitalization. Qualitative research aims to understand the context in which people or groups make decisions and act, as well as to explain the reasons behind observed phenomena (Limna & Kraiwanit, 2022). In-depth interviews were chosen as they provide detailed responses on specific topics, resulting in accurate information that meets research objectives (Limsakul & Kraiwanit, 2020). To collect primary data, the researchers used a documentary method to review secondary data and formulate key survey questions. The sampling method used was purposive sampling, which is commonly used in qualitative research. Researchers with expertise select the most relevant sample to gain a comprehensive understanding of a particular phenomenon or population (Siripipatthanakul et al., 2022). According to Francis et al. (2010) and Namey (2017), a minimum of six interviews appears to be the optimal number for achieving data saturation in qualitative research. Thus, the participants were eight Thai people who were SME business owners in Krabi, Thailand. In order to be eligible for the study, individuals were required to meet three inclusion criteria: 1) they must be 18 years of age or older; 2) they must be Thai residents residing in Krabi, Thailand, and 3) they must be owners of SMEs that have been in operation for at least two years.

According to Limna (2023) and Selvi (2019), content analysis is a qualitative method for systematically and objectively describing and quantifying specific phenomena by drawing valid inferences from verbal, visual, or written data. Furthermore, according to Mortelmans (2019), NVivo is a valuable tool for enhancing the scope and depth of analysis. Hence, the content analysis method and NVivo software were used in this study to analyze the qualitative data collected through in-depth online and face-to-face interviews, as recommended by Limna et al. (2023).

4. RESULTS

Table 1 shows the respondents' demographic profile. Respondent one, a 34-year-old male, worked as a bar owner. Respondent two, a 44-year-old male, was a restaurant owner. Respondent three was a 31-year-old female who worked as a cafe owner. Respondent four, a 47-year-old male, was a hostel owner. Respondent five, a 37-year-old female, was a restaurant owner. Respondent six, a 39-year-old female, was a hair salon owner. Respondent seven, a 32-year-old female, was a cafe owner. Finally, Respondent eight, a 42-year-old male, was a restaurant owner. All of the respondents were SME business owners, over the age of 18 years old, who lived and worked in Krabi, Thailand.

Table 1. Respondents' demographic profile

No.	*Age*	*Gender*	*SME role*	*Date and time of interview*
Respondent 1	34 years old	Male	Bar owner	10 October 2022, 05:30 pm
Respondent 2	44 years old	Male	Restaurant owner	10 October 2022, 09:00 am
Respondent 3	31 years old	Female	Cafe owner	11 October 2022, 11:00 am
Respondent 4	47 years old	Male	Hostel owner	12 October 2022, 09:00 am
Respondent 5	37 years old	Female	Restaurant owner	12 October 2022, 11:00 am
Respondent 6	39 years old	Female	Hair salon owner	13 October 2022, 09:00 am
Respondent 7	32 years old	Female	Cafe owner	13 October 2022, 11:00 am
Respondent 8	42 years old	Male	Restaurant owner	14 October 2022, 01:00 pm

4.1. Content analysis

The SME business owners in Krabi demonstrated how digital technologies and innovations helped them overcome the challenges posed by the COVID-19 pandemic. These technologies and innovations enabled them to enhance their business operations, customer experiences, and financial performance. For example, the use of point of sale (POS) systems allowed business owners to keep track of their revenue and manage their inventory more effectively. This improved their businesses' efficiency and profitability. Additionally, the use of social media platforms, such as Facebook and Instagram, enabled them to reach a broader audience and promote their businesses more effectively. Moreover, the adoption of online booking systems and contactless payment made it easier for customers to interact with these businesses, improving the customer experience while adhering to the necessary health protocols during the pandemic. The use of external funding assistance, such as grants or loans, also helped these businesses access the necessary resources to adapt and remain resilient during the pandemic. Overall, the responses from SME business owners in Krabi showed that digital technologies and innovation were essential for small businesses to survive and thrive in the digital economy. It was vital for SMEs to continue exploring new digital tools and strategies to stay competitive, increase their efficiency, and improve their financial performance.

"I have been running my business for six years. At first, it was going well. As you may know, Ao Nang is a popular tourist destination. However, due to the COVID-19 pandemic, I had to temporarily close my business. During that time, I was able to plan and restructure my business. I have used digital technologies such as POS to keep track of my revenue. The end result is impressive" (Respondent one, a 34-year-old male and a bar owner).

"My restaurant, like many other small businesses, was forced to close due to the COVID-19 pandemic. During the pandemic, the SME community in Krabi met, and we agreed to hold a course on how to deal with this and other future crises. The use of digital technologies is critical. I've been using point of sale (POS) to help with operations at my restaurant. Social media platforms such as Facebook and Instagram are extremely beneficial" (Respondent two, a 44-year-old male and a restaurant owner).

"I'd been using digital technologies before the COVID-19 pandemic. Our services, such as a menu, reward card, and payment, are available online. It is extremely beneficial to us because we run a reward card campaign through the LINE application in which you receive one star for every 250-baht purchase, and with ten stars, you receive a 70-baht free drink. This campaign is popular. Furthermore, we've included our information in the application, and some people will use it to reserve a table and order cakes and drinks" (Respondent three, a 31-year-old female and a cafe owner).

"As a result of COVID-19, my hostel had to close, but that was okay because I was able to plan my business to deal with the crisis and make it even better. We have been using CloudBed and other digital platforms like social media. The results are very impressive. Moreover, we used Workplace by Facebook to help with communication in the team, and it is very good and easy to use" (Respondent four, a 47-year-old male and a hostel owner).

"It was bad during the COVID-19 pandemic. However, my team and I fought back and continued to run the business. I've learned to use technologies and incorporate them to run my business. There are several applications that are beneficial, such as Food Panda and Grab Food. I'd also recommend other SMEs to incorporate digital technologies into their businesses" (Respondent five, a 37-year-old female and a restaurant owner).

"My business was just getting better. Now, to stay in the digital age, we use 24/7 online booking using Facebook. A smart salon can also use augmented reality to assist customers. Clients can see what a hairstyle would look like on them before you even start working" (Respondent six, a 39-year-old female and a hair salon owner).

"Because of the COVID-19 pandemic, our cafe was shut down for a year. We had opportunities to rebrand and plan better strategies. Now, our menus can be accessed by scanning the QR code. We also have touchscreen point of sale terminals, order and pay at the table, and contactless payments. It is good, and my team is happy. The performance has hit the goals" (Respondent seven, a 32-year-old female and a cafe owner).

"As a result of the COVID-19 pandemic, I've learned that successful restaurants need digital technology that can keep up. We used pen and paper and never used point of sale (POS) in our restaurant. I visited my friend who was also a SME business owner, and he recommended that I use digital technology. Now, we are using POS, handheld POS systems, and touch screen terminals. Using POS has helped me a lot. It is good, convenient, and simple to use" (Respondent eight, a 42-year-old male and a restaurant owner).

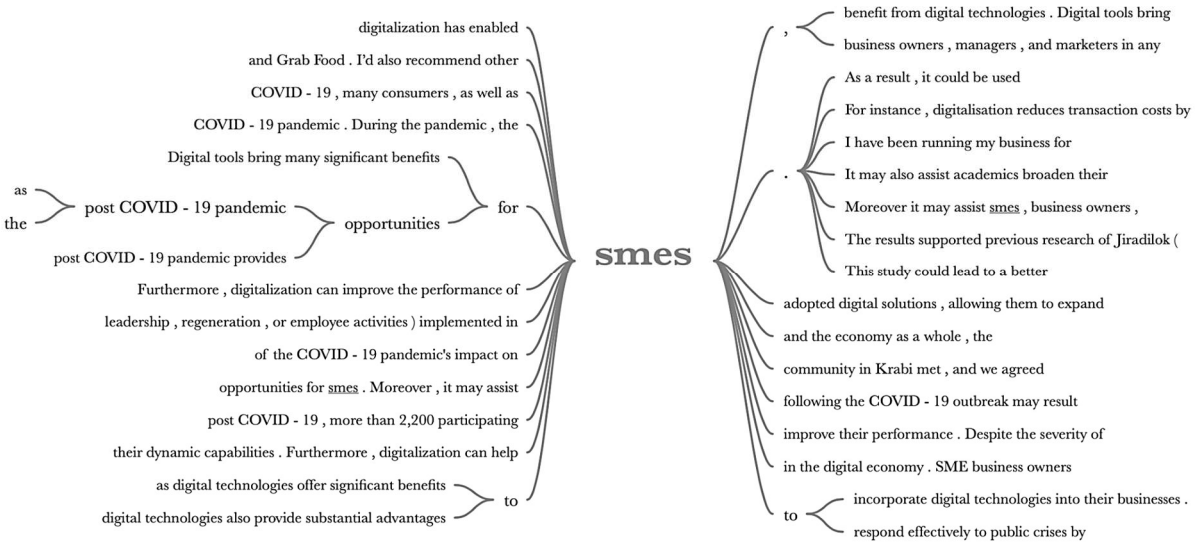
4.2. NVivo analysis

The interpretation and analysis were based on NVivo. The following images depict the word frequency (word cloud) and text search (word tree).

Figure 1. Word cloud

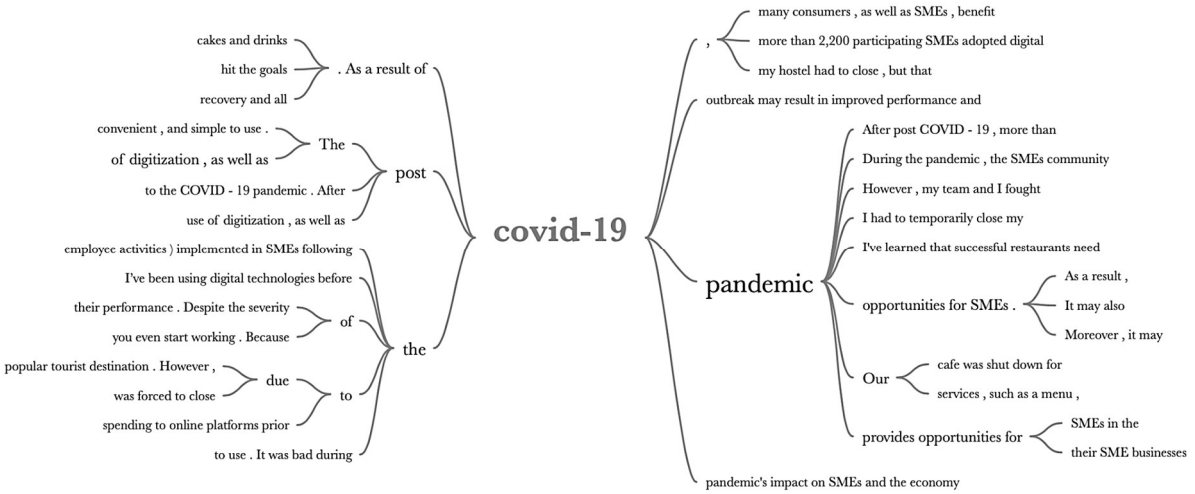
Source: Authors' elaboration.

Figure 2. Word tree (SMEs)



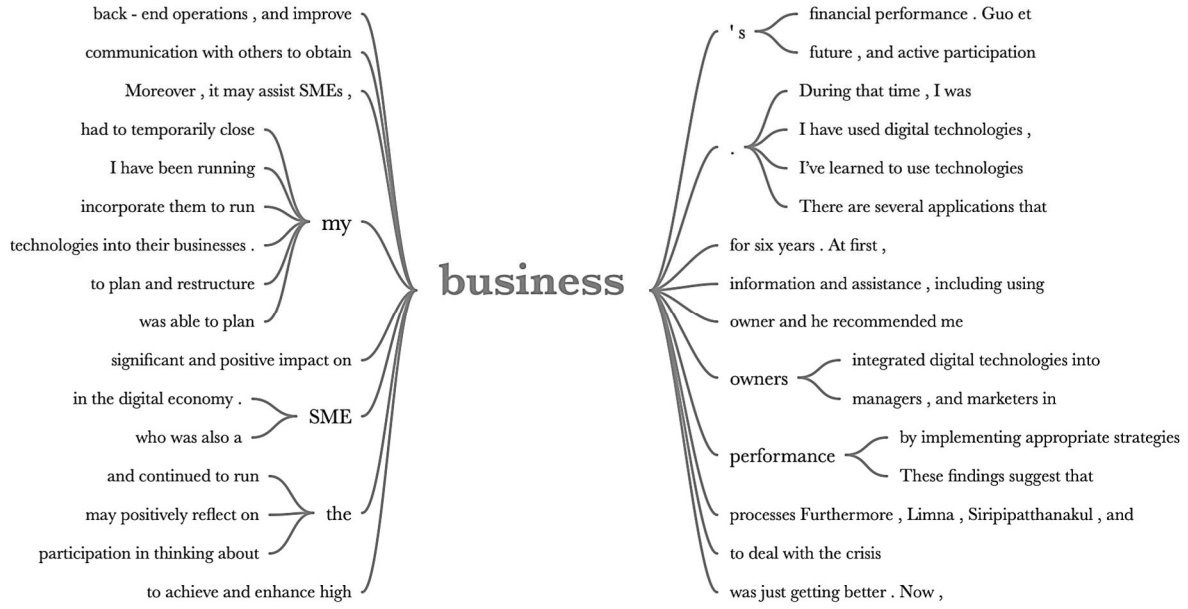
Source: Authors' elaboration.

Figure 3. Word tree (COVID-19)



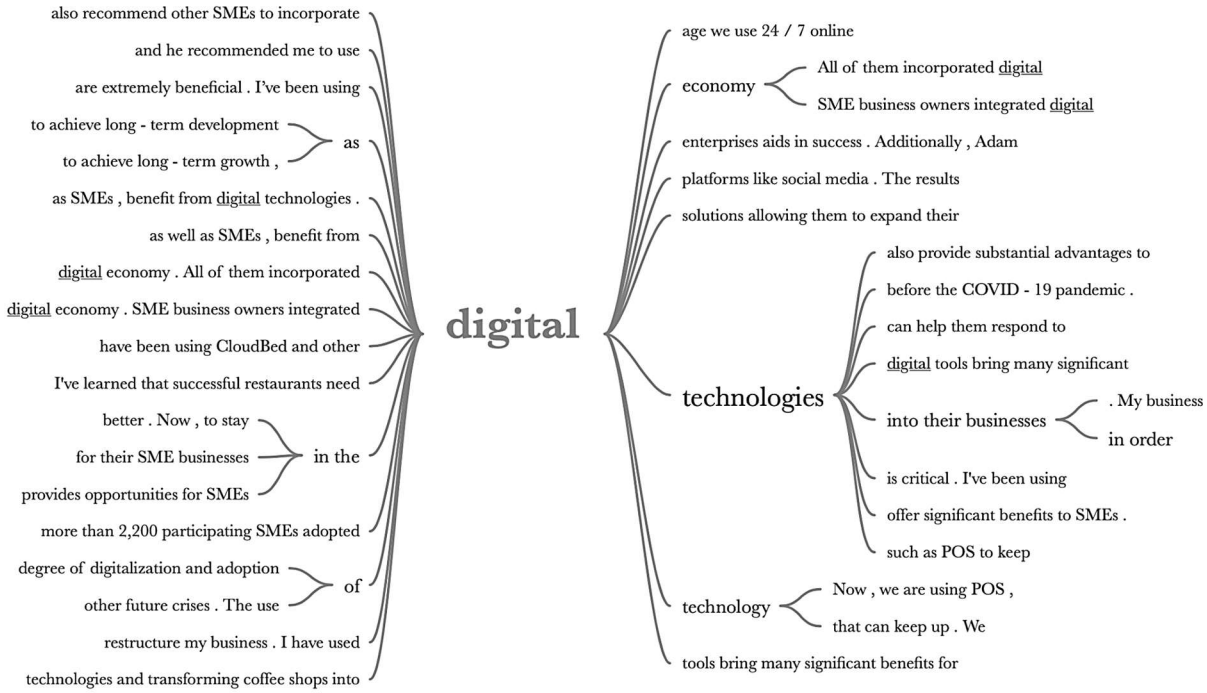
Source: Authors' elaboration.

Figure 4. Word tree (Business)



Source: Authors' elaboration.

Figure 5. Word tree (Digital technology)



Source: Authors' elaboration.

Figure 6. Word tree (Opportunities)

Source: Authors' elaboration.

5. DISCUSSION

This study explained the post-COVID-19 pandemic opportunities for SMEs in Krabi, Thailand, through the use of digitization. The findings unveiled that in the aftermath of COVID-19, SMEs have access to opportunities within the digital economy. These opportunities have prompted SME business owners to incorporate digital technologies and innovations into their operations, aiming for sustainable growth. It is evident that digital technologies and innovations bestow substantial advantages upon SMEs in their pursuit of long-term development. The results supported the previous research by Jiradilok (2022), which indicated that consumers were already shifting their spending to online platforms prior to the COVID-19 pandemic. Post-COVID-19, more than 2,200 participating SMEs adopted digital solutions, allowing them to expand their online presence, streamline back-end operations, and improve business processes. Limna et al. (2021) confirmed that coffee shop owners believe big data analytics and artificial intelligence are essential for businesses. Implementing new technologies and transforming coffee shops into digital enterprises aids in success. Furthermore, Adam and Alarifi (2021) established that SME innovation practices can have a significant and positive impact on business performance. This implies that the management practices adopted by SMEs in response to the COVID-19 pandemic, including external knowledge acquisition, structural and leadership changes, regeneration, and employee activities, can result in improved performance and an increased chance of survival. In other words, intensive communication by SME managers with stakeholders to obtain business information and assistance, the use of social media to market products, cost reduction through workplace sharing and online task completion, worker participation in business planning, and active engagement in SME social networks can reflect positively on the business's financial performance. Moreover, Guo et al. (2020) also assert that digitalization has equipped SMEs with dynamic capabilities to respond effectively to public crises and improve their overall performance. Du et al. (2023) found that COVID-19 has significantly impacted the profitability, operations, economy, and access to finance of SMEs. The study's findings suggest that external funding assistance has played a crucial role in SMEs' ability to survive and thrive through technological innovation, rather than their actual output. It is imperative that SME businesses, policymakers, and administrators understand the implications of these results.

To sum up, the digital economy has transformed the way SMEs conduct their business operations. With the increasing adoption of digital technologies, SMEs have access to new opportunities and competitive advantages, including improved communication, access to resources, and reduced transaction costs. Furthermore, the COVID-19 pandemic has highlighted the importance of digitalization, prompting SMEs to integrate digital technologies to remain competitive and resilient during times of crisis. Hence, it is crucial for SMEs to embrace digital technologies and innovation and harness their potential to attain sustainable growth and enhance competitiveness in the digital economy.

6. CONCLUSION

The feedback from SME business owners in Krabi highlights the importance of digital innovation in the survival and success of small businesses in the digital economy. It is crucial for SMEs to continually explore new digital tools, innovations, and strategies to remain competitive, enhance efficiency, and improve financial performance.

Alongside the severe impact of the COVID-19 pandemic on SMEs and the economy as a whole, the pandemic has also offered a number of reform opportunities to aid in the economy's rapid recovery. As a result of COVID-19, many consumers and SMEs are benefiting from digital technologies. Digital tools bring many significant benefits to SMEs. For instance, digitalization reduces transaction costs by improving and speeding up access to information and communication between employees, suppliers, and networks. As a result, SMEs' digitization efforts, as evidenced by their degree of digitalization and adoption of digital technologies, can help them respond to public crises more effectively. Furthermore, digitalization can improve SMEs' performance. This study could lead to a better understanding of the use of digitization and the post-COVID-19 opportunities for SMEs. Moreover, it may help SMEs, business owners, managers, and marketers in any sector to achieve and enhance high business performance by implementing appropriate strategies to meet the needs and expectations of stakeholders, customers, and employees through the use of digitization. In addition, this study contributes to the existing literature on the use of digitization and on the post-COVID-19 opportunities for SMEs. Thus, it could be used to guide future research on the use of digitization and post-COVID-19 opportunities for SMEs. It may help academics to broaden their research by incorporating more potential elements.

The study is constrained by the fact that the sample only included SMEs in Krabi, which may limit the generalizability of the results to other regions in Thailand. As a solution, expanding the study to include more regions in Thailand is recommended to improve the generalizability of the findings. Future studies should also consider employing quantitative methods, such as questionnaires, to further investigate the relationship phenomenon among a larger group of participants. Additionally, future research could focus on evaluating the effectiveness of digital technologies in enhancing supply chain management for SMEs, especially given the supply chain disruptions faced by businesses in the post-COVID-19 era. Furthermore, future studies could examine the factors that influence SMEs' adoption and utilization of digital technologies, such as organizational culture, leadership, and human resource management. Exploring these factors would provide insights into how SMEs can overcome barriers to digitalization and optimize the advantages of digital technologies.

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