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Digital Capability and Business Agility among Micro Enterprises

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Abstract

The nationwide COVID-19 pandemic has caused several countries to use travel restrictions and movement controls. In Malaysia, the small business sector is one of the sectors most affected by the implementation of the Movement Control Order (MCO). Therefore, the use of digital views is increasingly important in helping to live a technological life in the new norm. The objective of this study is to identify the level of business agility, digital capability and the relationship between digital capability and the business agility among micro enterprises in Muar, Johor. To achieve the objective of the study, the researcher used a quantitative method, where the questionnaire was disclosed online using Google Form. A convenience sampling method was employed with a final of 361 responses among micro farmers. The Statistical Package for Social Sciences (SPSS) was used to conduct descriptive analyses, normality tests, Spearman's correlation and simple linear regression analysis. Descriptive results showed a high value of mean score for both variables. Furthermore, the findings of Spearman correlation is r=0.508 ($p<0.01$), whereas the regression model is, R^2=0.098 ($p<0.01$). The results show that, digital capability has a significant and positive relationship with business agility where 9.8% of variation in the business agility was represented by digital capability. It shows the digital capability is important and have a significant impact on business agility, while ensuring an improved operations of micro enterprises in the food and beverage service sector's performance. Digital technology can help in increasing economic growth for a country. There is a need to further explore the extent of digital consumption and examine how digitalization impacts various facets of business performance.

1. Introduction

Several scholars acknowledge that micro-businesses are the backbone of some economies, as they provide skilled labor, job opportunities, and sources of income for the nation (Hassan *et al.*, 2021). As such, supporting micro businesses is essential for their survival and growth. Entrepreneurs must carefully evaluate various options to optimize outcomes. In this regard, micro-business owners are often required to handle multiple responsibilities that involve various decision-making processes (Topimin & Mohd Hashim, 2020). In a highly

competitive environment, successful managers need to identify and seize opportunities while safeguarding, developing, and restructuring resources to maximize profits (Akkaya & Qaisar, 2021). However, every industry must implement an effective strategy to ensure long-term business performance, such as adopting business agility. Agile business capabilities are crucial in today's rapidly changing market environment, as they enable organizations to quickly integrate, produce, and modify internal and external components to adapt to change. Moreover, business agility refers to a firm's ability to respond swiftly to demands and changes (Sandhya & Lakshmi, 2011). The pandemic has disrupted existing regulations, leading to new and interconnected challenges and creating a need for solutions to navigate this uncertainty (Saputra *et al.*, 2021). Consequently, digital technology must be integrated into businesses. From an organizational agility perspective, business agility encompasses specific dimensions supported by agility enablers and driven by agility drivers, including supply chain, operational, and marketing agility (Walter, 2021).

The COVID-19 pandemic has undoubtedly exacerbated the difficulties faced by small businesses worldwide, irrespective of their size, location, or funding. Many financial studies have highlighted the crisis's impact on small enterprises, particularly their limited access to financing and profit sources (Kaberia & Muathe, 2020). They are also subject to numerous constraints, including restricted access to credit (Mukherjee, 2018). Disruptions like the COVID-19 outbreak must be absorbed and recovered from by the food system (Golan *et al.*, 2020). Small businesses need to address unpredictable demand and gain a competitive edge in supply chain agility by anticipating, preparing, responding quickly, and recovering from disruptions. The potential of the COVID-19 pandemic to reshape market structures and business practices largely depends on a company's supply chain resilience (Uddin *et al.*, 2021). Managers find it more challenging to accept disruptions at both the business and supply chain levels, and several studies have examined the consequences of the pandemic in the marketplace. Implementing supply chain initiatives is difficult due to a lack of knowledge sharing, risk assessment, and supplier management (Zhou *et al.*, 2020). As the pandemic has reduced the time available for executing new processes, businesses must act as swiftly as possible (Rodrigues *et al.*, 2021). Companies that can manage their current resources efficiently while experimenting with new approaches will have a competitive advantage under pressure. In these uncertain times, businesses must balance meeting immediate needs with achieving long-term goals (Wiggers, 2021). However, focusing too much on future growth and customer acquisition could jeopardize their ability to meet the needs of current customers. The economic crisis caused by COVID-19 is likely to affect the financial system's stability and the global economic structure (Ruiz Estrada *et al.*, 2020).

In times of uncertainty, even small-scale financial aid can significantly influence the behavior of SMEs (Olusegun *et al.*, 2020). This is evident in policies such as providing stimulus packages, loan forgiveness, and supporting the continuity of existing businesses (Nandy & Biswas, 2022). These measures reflect the necessity for businesses to adapt their practices, particularly in digital, social, and marketing strategies (Bhimani *et al.*, 2019). The COVID-19 pandemic has accelerated this transformation, with technological advancements impacting various aspects of life and business operations (Achmad, 2021). Small businesses that continue to rely on outdated methods are likely to face challenges such as declining demand and disruptions in sourcing materials. The research aims to explore the relationship between digital capability and business agility among micro-enterprises in the food and beverage services sector in Muar, Johor. Many of these enterprises utilize digital technologies to promote their businesses, making it vital to assess their digital capabilities and agility. Muar, as a key contributor to Johor's economy, offers a blend of traditional and modern industries, making it a prime location for studying digital transformation. In 2022, Johor's GDP reached RM142.1 billion, driven by significant investments in manufacturing, services, and electronics, further reinforcing the importance of this research (Johor Economic Planning Unit, 2024a). The study focuses on managers and assistant managers responsible for business operations and development. It aligns with the Johor Sustainable Development Plan 2030, which emphasizes empowering investments and advancing the digital economy, identified as one of the key pillars (Johor Economic Planning Unit, 2024b).

2. Literature Review

2.1 Micro Enterprises in Malaysia

According to Small and Medium Enterprises Corporation Malaysia (SMECorp. Malaysia) based on Fig. 1, a micro enterprise is an entrepreneur who does small business and whose income does not exceed RM300,000 per year and has the size of the number of full-time employees less than 5 people either in the manufacturing category, services and other sectors (Hassan *et al.*, 2021). The concept of micro-enterprise was started by using when the majority of small entrepreneurs applied informal working methods and the use of irregular and low-wage workers. There are 645,136 SME organizations in Malaysia of which the largest percentage (77%) comes from micro enterprises (SMEcorp, 2016). As of 2023, Malaysia had around 1.25 million micro, small, and medium enterprises (MSMEs), with micro-enterprises remain forming the largest segment, accounting for approximately

78% of the total MSMEs. This segment plays a significant role in Malaysia's economy, contributing about 38.4% to the national GDP and providing 48.5% of the country's employment in 2023. These businesses are pivotal, especially in sectors like manufacturing, services, and agriculture, contributing to exports and local market stability.

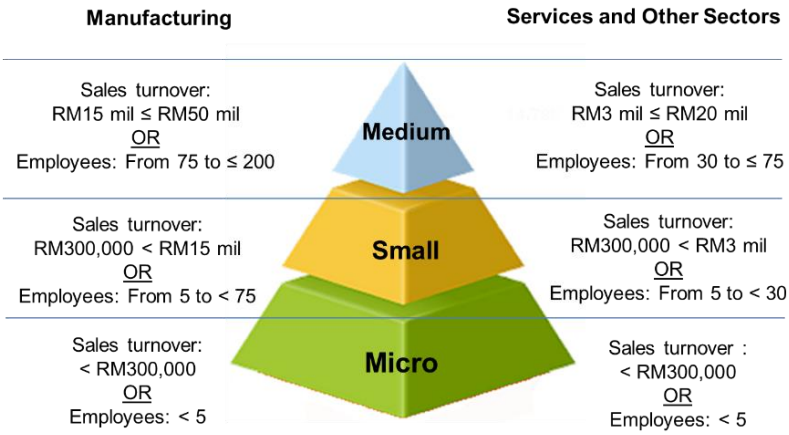

Fig. 1 *Detailed definition of the categories of micro, small and medium (SMECorp, Malaysia, 2016)*

Although often viewed as a support industry, Small and Medium Enterprises (SMEs) play a vital role in driving economic growth and contributing to national income (Azlan *et al.*, 2020). Over the past three decades, food industry SMEs in developing countries have transformed food supply chains by independently building networks to source inputs and sell products, thus overcoming the limitations of traditional markets (Reardon *et al.*, 2021). These developments have significant practical and theoretical implications for entrepreneurial micro-businesses in the small food sector, offering insights into the current business landscape (Akther, 2021). By striking the right balance between the three critical components of entrepreneurship—team, resources, and opportunity—companies can empower entrepreneurs and open new market opportunities. However, not all entrepreneurs are equally equipped to adapt their businesses to new norms. The COVID-19 pandemic has dramatically reshaped business models and revenue streams for SMEs (Azlan *et al.*, 2020). More research is needed to gain a comprehensive understanding of risk management practices among Malaysian entrepreneurs, particularly in the aftermath of the pandemic (Hassan *et al.*, 2021). This is especially relevant as micro-entrepreneurs have increasingly embraced digital tools in navigating the new business environment.

The global socio-economic impact of the COVID-19 pandemic has been profound, making recovery essential for adapting to the new normal (Fabeil *et al.*, 2020). However, there is limited knowledge regarding the challenges and strategies employed by small businesses in response to pandemic-induced crises. Previous studies indicate that micro-businesses in less developed areas face greater challenges compared to those in urban and developed regions, largely due to their isolation, infrastructure deficiencies, labor shortages, and restricted financial resources (Narula, 2020). The Movement Control Order (MCO) and its effects on small businesses have garnered significant attention from various media outlets. Micro-entrepreneurs, in particular, have experienced a loss of daily income due to supply chain disruptions caused by the closure of supporting industries, compounded by labour shortages and reduced cash flow (Ramli & Yekini, 2022). In response, many entrepreneurs have adopted alternative strategies to sustain their operations. Utilizing social media platforms and mobile applications, such as Facebook and WhatsApp, for selling and promoting products has emerged as a key business continuity strategy during the MCO period (Fabeil *et al.*, 2020). Additionally, some entrepreneurs have employed part-time delivery workers or runners to distribute their goods to customers and have adopted cash-on-delivery (COD) payment methods to maintain sales. It is crucial for entrepreneurs to be mindful of the impact that crises or disasters can have on their businesses, as these events influence both current and future performance. Entrepreneurs must differentiate between planning—proactive actions taken to prepare for potential future crises—and management, which involves reactive contingency strategies in response to ongoing crises (Burgner *et al.*, 2020). This study examines business continuity as a key crisis management approach for entrepreneurs and explores company recovery planning as a process for post-crisis strategic adaptation.

2.2 Digital Capability

Businesses require dynamic adaptability to navigate evolving market conditions. Dynamic capabilities, a subset of broader organizational competencies, enable firms to develop new processes and products in response to changing environments (Saputra *et al.*, 2021). Among these, digital capability has emerged as a critical factor for business success. Abdurakhmanova *et al.* (2020) argue that a company's ability to thrive in the digital economy

depends on its capacity to learn and implement digital technologies. Digital capability has thus become integral to the restructuring of business models, operational processes, and user experiences. Dynamic capability theory posits that the adoption of digital technologies facilitates remote operations and social distancing requirements, making workflows more comfortable, flexible, and efficient (Khin & Ho, 2019). For businesses to remain competitive, they must implement digital solutions that digitize products, services, and business functions. An example of such innovation is the use of market information technologies that leverage technological learning to assess customer preferences, allowing firms to adjust their product offerings accordingly (Khin & Ho, 2019). These innovations highlight the importance of specific characteristics that drive digital capability within organizations, as well as the managerial competencies required to harness these aspects. According to Senaratne and Kulathunga (2021), managers should place greater emphasis on supporting creative ideas and fostering organizational learning activities to enhance digital capability. Thus, managerial action is crucial in fostering and leading digital creativity to improve performance. To achieve this, businesses must develop structures, cultures, and work practices that promote and support digital capability (Saarikko *et al.*, 2020).

2.3 Business Agility

Business agility is achieved when organizations strategically and efficiently implement agile practices at a scale across all functions. The challenge for managers lies in embracing agility at the organizational level while resisting the tendency to revert to traditional decision-making and communication methods (Dalcher, 2021). Agility, however, is inherently tied to people, and managers must recognize that it can only be realized through the active involvement of employees in transforming the business into an agile and sustainable entity (Munteanu *et al.*, 2020). It is widely acknowledged that a flexible and agile approach contributes to the effective implementation of sustainable policies. In this context, agility refers to the capacity to manage projects from inception to completion while maintaining the ability to adjust strategies and operations to meet evolving contractual and delivery requirements (Aziz *et al.*, 2020). Naseer *et al.* (2021) highlight that organizational agility is characterized by responsiveness, a core attribute for businesses. According to business agility theory, the adoption of innovative management strategies by international companies significantly influences their overall success (Lootah *et al.*, 2020). For instance, a study on agricultural firms in China revealed that business agility in the form of e-commerce capabilities enhances both market capital agility and operational adjustment agility (Lin, 2020). Lin (2020) evaluated survey data from 290 agricultural enterprises, concluding that e-commerce capacity positively affects market capitalization agility more than operational adjustment agility. Further research has shown that strategic industries, such as Indonesia's oil palm sector, also benefit from agility in business operations. The palm oil industry, which has thrived for over 160 years, remains a key economic driver in the country (Edwards, 2019). In this challenging environment, business agility serves as a vital strategy, combining culture, leadership, and systems to foster dynamic capabilities and facilitate rapid decision-making which considered as critical elements for organizational performance in the 21st century (Francis *et al.*, 2021). Similarly, Vermeulen and Pretorius (2020) found that the Bus Rapid Transit (BRT) system in South Africa demonstrates two key dimensions of agility: market orientation agility and operational agility. Their study aims to enhance understanding of how these agility dimensions can improve BRT operations. They suggest that adopting agile practices, particularly those that provide flexibility in managing route deviations, strengthens overall business agility (Vermeulen & Pretorius, 2020).

One key aspect of business agility is supply chain agility. Al Humdan *et al.* (2020) defines supply chain agility as a critical capability for maintaining competitiveness in an era of uncertainty and turbulence. In today's dynamic and increasingly competitive business environment, supply chain adaptability is regarded as one of the most vital characteristics of an efficient supply chain (Pickard, 2021). A flexible supply chain, coupled with strong partnerships, enhances a company's ability to accelerate its adaptation process and ultimately gain a competitive advantage (Haq *et al.*, 2020). An essential analysis in supply chain strategy involves modeling systems that respond to both predictable and unpredictable demand (Pickard, 2021). Haq *et al.* (2020) further emphasize that the COVID-19 pandemic has prompted a reevaluation of the global supply chain's resilience and structure, highlighting the need for agility. Agile supply chains not only adapt to regular market changes but also respond effectively to unprecedented disruptions. The concept of a supply chain is founded on the development of a value chain network comprised of distinct functional entities that collaborate to supply resources and information, ensuring efficient supplier management and the smooth flow of materials (Abdoli Bidhandi & Valmohammadi, 2017). This integrated approach, referred to as supply chain management, involves combining strategies and processes to seamlessly coordinate suppliers, manufacturers, distributors, and customers. Supply chain management was one of the earliest corporate functions to experience significant technological advancements (Gezgin *et al.*, 2017). Gezgin *et al.* (2017) argue that innovative and forward-thinking strategies are essential for the successful transformation of future supply chains. By enabling the flow of digital information and resources throughout the organization, business supply chains can become more agile (Nandi *et al.*, 2021). This agility also allows organizations to anticipate future prospects by considering market pressures, trends, and evolving customer expectations (Chen *et al.*, 2009). Research findings indicate that, through

collaboration with partners, businesses can develop dynamic capabilities that restructure operational processes, thereby improving supply chain effectiveness. The ability to adapt to a constantly changing environment and fluctuating market demands is essential for effective supply chain management (Eslami *et al.*, 2021).

Second, another key dimension of business agility is operational agility, which refers to an organization's ability to effectively redesign its business processes in response to environmental changes (Asadullah, Niaz & Wahhaj, 2017). This capability is essential for businesses seeking to adapt swiftly and remain competitive. According to Kerti Yasa *et al.* (2019), operational excellence, a hallmark of internal capabilities, can be achieved through continuous process improvement methodologies such as Six Sigma. Additionally, investments in infrastructure and information platforms enable enhanced service delivery, further supporting operational agility. Over the past five years, the concept of operational agility has garnered significant research attention due to its critical role in achieving business success (Lin, 2020). Much of this research focuses on identifying and defining various aspects of operational agility. Tallon *et al.* (2019) argue that information technology (IT) serves as a key enabler of operational agility, allowing businesses to quickly adjust their processes to capitalize on market-driven innovations. Operational agility is the capacity of a company to rapidly and effectively adapt its business procedures, reorganizing existing processes and creating new ones to seize opportunities in dynamic market conditions (Sajdak, 2015). This adaptability requires a business to reconfigure its resources, initiate strategic changes, and manage their implementation to meet evolving demands (Saputra *et al.*, 2021). Operational agility enhances an organization's innovation, speed, reliability, and cost-effectiveness (Chen, 2021). For example, IT systems are often used to develop electronic communication channels, which facilitate the rapid flow of information, thereby improving operational agility. Several empirical studies have explored the impact of IT infrastructure on operational agility, such as Lin's (2020) research using a variance model to examine the influence of IT components. Additionally, Senaratne and Kulathunga (2021) highlight the mediating role of operational agility in the relationship between IT efficiency and company performance. However, many businesses treat the relationship between IT and operational agility as if it were automatic, without recognizing the need for deliberate alignment and integration.

Third, marketing agility is a key type of business agility. Scholarly research underscores the need for innovative and adaptable organizational structures, as well as the importance of agility in marketing functions (Fachrunnisa *et al.*, 2020). In essence, marketing agility is a crucial component of effective marketing strategies (Zhou *et al.*, 2019). To implement growth activities, firms must employ structured processes, make quick decisions, and engage in trial-and-error learning. Marketing agility refers to an organization's ability to understand market dynamics and swiftly adapt marketing strategies to meet changing demands (Kalaignanam *et al.*, 2021). Furthermore, marketing agility involves a proactive approach, allowing firms to anticipate customer needs and focus on customer acquisition and retention (Zhou *et al.*, 2019). This perspective views marketing agility as a firm's ability to identify and seize market opportunities in advance (Zhou *et al.*, 2019). The core characteristics of marketing agility include flexibility, responsiveness, speed, a culture of change, integration, and reduced complexity (Walter, 2021). Agility is recognized as a critical dynamic capability (Jafari-Sadeghi *et al.*, 2022). To achieve agility, firms must be able to identify and capitalize on opportunities, mitigate threats, and sustain competitiveness through the continuous upgrading and reconfiguration of assets. In today's business landscape, having a digital presence is essential for reaching wide audiences, acquiring new users, and fostering long-term relationships (Nuseir *et al.*, 2020). A digital presence also enables businesses to promote products to target audiences, influencing customer purchasing decisions. Nuseir *et al.* (2020) highlight that digital marketing provides tools to track and analyze user behavior across websites, social media platforms, and other digital channels, evaluating metrics such as reach, conversion, and engagement. The growing use of social media and the increasing sensitivity to internet issues, particularly in regions like the Middle East, underscore the relevance of digital marketing (Achmad, 2021). The integration of digital marketing and technological innovation has fundamentally transformed business operations (Moi & Cabiddu, 2021).

The discussion emphasizes the critical role of digital capability in enhancing various forms of business agility, including supply chain, operational, and marketing agility. Supply chain agility refers to a company's ability to adapt its supply chain processes to changing market conditions, while operational agility focuses on the ability to quickly reconfigure internal processes in response to environmental shifts. Marketing agility involves the capacity to rapidly adjust marketing strategies based on evolving customer needs and market opportunities. Digital capability, through tools such as data analytics, social media, and IT infrastructure, enhances the speed, flexibility, and coordination needed for these types of agility, allowing businesses to respond more effectively to market dynamics and customer demands.

H_1: Firms with higher digital capability demonstrate greater business agility.

Fig. 2 shows the conceptual framework of the relationship between digital capability as an independent variable and the dependent variable which is business agility in micro enterprises. This model has been adapted from Saputra *et al.* (2021).

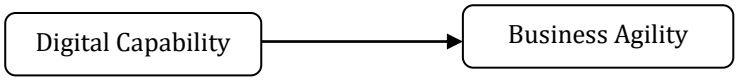

Fig. 2 *Research framework*

3. Methodology

Research design is a crucial element in conducting a study, ensuring that research objectives are met and research questions are effectively answered. It establishes the research methodology and verifies that the results are reliable, valid, and accurate (Abutabenjeh & Jaradat, 2018). This study aims to examine the relationship between digital capability and business agility in micro-enterprises during the COVID-19 pandemic. A quantitative research design was utilized, with data collected through survey questionnaires. According to Zhang *et al.* (2018), quantitative research methodology involves a structured approach to problem-solving, emphasizing quantification, measurement, and evaluation. The unit of analysis refers to the subjects or objects under investigation in the data collection process (Subramanian, 2012). Units of analysis can include individuals, groups, organizations, or social artifacts and interactions. In this study, the unit of analysis is micro-enterprises within the food and beverage (F&B) service sector. The research focuses specifically on how digital capability influences business agility among micro-enterprises during the pandemic. The target respondents are managers or assistant managers responsible for developing and operating F&B businesses.

A population is defined as a group of individuals who share at least one common characteristic that distinguishes them from other groups (Wilson & Rees, 2005). In research, the term population refers to the entire group of people under study. For this research, the population consists of micro-enterprises located in Muar, Johor, with a total of 5,327 SMEs (Majlis Perbandaran Muar, 2022). Sampling involves selecting a subset of the population to act as respondents, due to constraints such as time and resources that prevent studying the entire population. Sampling techniques fall into two categories: probability sampling and non-probability sampling. Probability sampling, which includes random sampling, is suitable for this study as it aims to generalize findings to the entire population. In contrast, non-probability sampling techniques, such as convenience sampling, involve selecting respondents who are readily accessible to the researcher. Convenience sampling was employed for this study, with data collected through nearby locations, email surveys, and social media links. According to the sample size determination table by Krejcie and Morgan (1970), a minimum sample size of 361 respondents is required for the study. The questionnaire has three parts, namely Part A is about information demographics, Part B is business agility and Part C looks at digital capability. Part A contains five questions about the respondent's profiles and three questions about the organization's profiles which includes gender, age, education level, department, position and length of service, while the organization's profiles include the type of food manufacturing sector, year of establishment, number of employees and company ownership. While Part B contains 11 items for business agility and Part C has five questions for digital capability. The questionnaire uses a five-point Likert scale in Part B and Part C which represents; 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree. The data collection process took about four months from September to December 2022.

The data that has been collected through a set of questionnaires has been processed using the Social Science Statistical Package (SPSS) software, to see the frequency and percentage, level, correlation and impact of the studied variables among the micro enterprises. Among the analysis used were descriptive, reliability, normality, correlation, and simple linear regression. Descriptive analysis is the first step for overall data analysis. It is used to present the data obtained in a more descriptive and manageable form (Atmowardoyo, 2018). The measure of central tendency is used in this research to measure the mean or average of the data. The average mean value between 1.00 to 2.33 represents weak where between 2.34 to 3.67 is moderate and the value between 3.68 to 5.00 represents high. One of the most widely used reliability measures in organizations and social sciences is Cronbach's alpha (Bonett & Wright, 2015). Acceptable reliability values are between 0.6 - 0.99. The interpretations are basically; 0.9 – 1.0 as very good and effective with a high level of consistency, 0.7 – 0.8 as good and acceptable, 0.6 – 0.7 as acceptable, < 0.6 as items need to be fixed, and < 0.5 as item should be dropped. Normality analysis is used to determine whether the data set is a good model and to calculate the probability that the data random variable is normally distributed (Rani Das, 2016). There are two types of normality tests conducted in this study, namely graphical and statistical analysis. Based on graphical analysis (Q-Q plot, histogram or box plot) and formal tests of normality, analysts often conclude that the data distribution "is normal" or "not normal" (Yap & Sim, 2011). Although a graphical approach can be helpful in determining whether a sample of data is normal, it cannot offer formal and definitive proof that the assumption of normality is true. To read graphs effectively, functional and solid-based statistical skills are also required. Therefore, rigorous statistical tests are usually required to confirm results using a graphical approach. Next, the normality test that can usually be done using some standard tests included in statistical analysis such as the Kolmogorov-

Smirnov, Shapiro-Wilk, or Skewness and Kurtosis tests (Ho *et al.*, 2019). It aims to determine whether the distribution of the variable follows a normal distribution. Several criteria, including the well-known p-value, are used in this test to evaluate the data and determine whether the distribution deviates significantly from the normal distribution (Nelson, 2021). The distribution deviates significantly from the normal distribution if $p>0.05$.

Correlation analysis is used to assess the relationship between the dependent variable and independent variable. The dependent variable is business agility while the independent variable is digital capability. Correlation analysis commonly used in research includes Pearson and Spearman correlation. Pearson's Correlation is used if the data is normally distributed while Spearman's Correlation is used if the data is not normally distributed. Pearson's correlation is calculated by taking the sample ratio of two variables to the product of two standard deviations and describes the strength of the linear relationship (Gogtay & Thatte, 2017). Additionally, it states that the correlation rank requires the data to be categorized and the value to be assigned a certain rank with 1 to be set as the highest. The nominal degree of relationship (*r*-coefficient) used to analyze the results obtained are interpreted as, ±0.8 to ±1.0 as very strong, ±0.6 to ±0.8 as strong, ±0.4 to ±0.6 as medium, ±0.2 to ±0.4 as weak, and 0.0 to ±0.2 as very weak (Atmowardoyo, 2018). Last but not least, a simple linear regression was employed to examine the impact between variables because it is a fundamental statistical method used to assess the relationship between two variables: digital capability (predictor variable) and one business agility (response variable). For the model goodness-of-fit, R^2 value is used to measure how well the regression model explains the variability of the dependent variable. It ranges from 0 to 1, where a value closer to 1 indicates a better fit of the model to the data. The p-value for Slope ($\beta 1$) will test the null hypothesis that the slope is equal to zero (no effect). A small p-value (typically $p < 0.05$) indicates that the slope is statistically significant, suggesting a meaningful relationship between predictor and response variables.

4. Results and Discussions

4.1 Demographic Statistics

The response rate is 72.2% which is 361 samples set of usable questionnaires collected from 500 distributed sets. The demographic statistics reveal that the majority of respondents are male (76.5%) and predominantly aged between 20-39 years (76.8%). Most participants are Malay (73.4%), with a significant portion holding a Diploma or equivalent (41.6%). The primary business type is food and beverage preparation (51%), with a notable number operating for 3-5 years (44.3%). Table service is the most common service category (51.2%), and during COVID-19, 22.4% of businesses reported sales revenue exceeding RM25,000. The overall information of the respondents is presented in Table 1.

Table 1 *Demographic Profiles of Respondents*

Demography	Item	Frequency (n=361)	Percent (%)
Gender	Male	276	76.5
	Female	85	23.5
Age	20 - 29 years old	140	38.8
	30 - 39 years old	137	38
	40 - 49 years old	69	19.1
	50 years old and above	15	4.2
Ethnicity	Malay	265	73.4
	Chinese	68	18.8
	Indian	20	5.5
	Others	8	2.2
Education	SPM	91	25.2
	Diploma / Matriculation / Foundation / STPM	150	41.6
	Bachelor's Degree	105	29.1
	Master	11	3
	Ph.D	4	1.1
Business Type	Food Preparation Only	68	18.8
	Beverage Preparation Only	57	15.8
	Food and Beverage Preparation	184	51
	Catering	16	4.4
	Fast-Food	35	9.7
	Frozen Food	1	0.3
Business Period	2 Years and Below	85	23.5

	3 - 5 Years	160	44.3
	6 – 9 Years	86	23.8
	10 Years and Above	30	8.3
Service Category	Table Service (Example: Restaurant or Café)	185	51.2
	Assisted Service (Example: Cafeteria)	23	6.4
	Self-Service (Example: Buffet)	17	4.7
	Single-Point Service (Example: Stall)	136	37.7
Sales Revenue During COVID-19	RM0 – RM5,000	54	15
	RM5,001 – RM10,000	54	15
	RM10,001 – RM15,000	63	17.5
	RM15,001 – RM20,000	62	17.2
	RM20,001 – RM25,000	47	13
	More Than RM25,000	81	22.4

4.2 Descriptive Analysis

The descriptive statistics for digital capability among respondents, who are micro-enterprises in Muar, Johor is displayed in Table 2, indicate a high level of proficiency across various dimensions. These micro-enterprises excel in acquiring important digital technologies (Mean = 4.01, SD = 0.64) and identifying new digital opportunities (Mean = 4.22, SD = 0.75). They are highly responsive to digital transformation (Mean = 4.28, SD = 0.71) and adept at mastering state-of-the-art digital technologies (Mean = 4.23, SD = 0.75). Additionally, these businesses are proficient in developing innovative products, services, and processes using digital technology (Mean = 4.16, SD = 0.73). Overall, the total average score of 4.20 (SD = 0.70) reflects a high level of digital capability among the micro-enterprises in Muar, Johor.

Table 2 *Descriptive statistics for digital capability*

Item	Mean	Std. Deviation	Level
We are acquiring important digital technologies.	4.01	0.64	High
We are identifying new digital opportunities.	4.22	0.75	High
We are responding to digital transformation.	4.28	0.71	High
We are mastering the state-of-the-art digital technologies.	4.23	0.75	High
We are developing innovative products/service/process using digital technology.	4.16	0.73	High
Total Average Score	4.20	0.70	High

Most small enterprises in Malaysia are increasingly adopting digital transformation due to its accessibility and the growing influence of globalization. The trend towards digitalization has led to a significant increase in the number of small enterprises engaging in digital activities. This growing engagement has broadened the diversity of businesses with unique interests and needs. Consequently, many respondents express a commitment to continue utilizing digital technologies in the future. Existing research highlights the impact of digitalization on businesses, particularly in how they adopt new business models, manage uncertainty, and build resilience (Belitski *et al.*, 2022). The rapid growth of small enterprises is closely tied to their business models, and in times of uncertainty, digitally-enabled models play a critical role in sustaining growth (Hock-Doepgen *et al.*, 2021). Digital capabilities enable the renewal and transformation of existing business models. The use of various technologies, particularly social networks, enhances businesses' ability to form strong emotional connections with customers, thereby gaining deeper insights into their needs, desires, and motivations (Cenamor *et al.*, 2019). These emotional and social dimensions allow businesses to collaboratively develop future strategies with their customers. Through digital technology, companies can establish routines that begin with customer interaction, progress through customer satisfaction and loyalty, and culminate in customer engagement (Da Silva Freitas *et al.*, 2017).

The descriptive statistics for business agility indicate a high level of responsiveness across various dimensions. The organization demonstrates a strong ability to adapt services and products to new customer requirements (mean = 4.05, SD = 0.49) and react swiftly to new market developments (mean = 4.37, SD = 0.64). It effectively manages significant changes in demand (mean = 4.21, SD = 0.64) and adjusts its product portfolio as required by the market (mean = 4.24, SD = 0.66). The organization also shows high responsiveness to supply-side changes (mean = 4.26, SD = 0.65) and fulfills special requests promptly (mean = 4.01, SD = 0.59). Additionally, it scales service levels to support market fluctuations (mean = 4.21, SD = 0.67) and quickly makes alternative arrangements during supply disruptions (mean = 4.21, SD = 0.63). The organization is adept at making and implementing decisions in response to market/customer changes (mean = 4.12, SD = 0.68) and

continuously seeks ways to reinvent itself to better serve the marketplace (mean = 4.30, SD = 0.67). It views market-related changes and apparent chaos as opportunities to capitalize faster (mean = 4.22, SD = 0.73), resulting in an overall high business agility score (mean = 4.20, SD = 0.64).

Table 3 *Descriptive statistics for business agility*

Item	Mean	Std. Deviation	Level
We are able to adapt our services and/or products faster to new customer requirements.	4.05	0.49	High
We are able to react faster to new market developments.	4.37	0.64	High
We are able to react faster to significant changes in demand as required by the market.	4.21	0.64	High
We are always able to adjust our product portfolio faster as required by the market.	4.24	0.66	High
We are able to react faster to supply-side changes.	4.26	0.65	High
We fulfil demands faster for special requests whenever such demands arise.	4.01	0.59	High
We are more responsive to scale up or scale down service levels to support fluctuations in the market.	4.21	0.67	High
Whenever there is a disruption in supply from our suppliers, we can quickly make necessary alternative arrangements.	4.21	0.63	High
We are more responsive to make and implement appropriate decisions in the face of market/customer-changes.	4.12	0.68	High
We constantly look for ways to reinvent/re-engineer our organization to better serve our marketplace.	4.30	0.67	High
We treat market related changes and apparent chaos as opportunities to capitalize faster.	4.22	0.73	High
Total Average Score	4.20	0.64	High

The descriptive statistics reveal that micro-enterprises in Muar exhibit a high level of business agility, characterized by their strong ability to swiftly adapt to customer requirements, market developments, and supply-side changes. These enterprises effectively manage demand fluctuations, fulfil special requests promptly, and make quick alternative arrangements during supply disruptions. Their responsiveness in scaling service levels and making timely decisions in response to market changes, coupled with a continuous drive to reinvent and capitalize on market opportunities, underscores their overall high agility. The micro-enterprises agree that business agility should be reasonable and satisfactory. Achieving agility requires transforming small enterprises into flexible and sustainable organizations while maintaining their individuality (Munteanu *et al.*, 2020). Each business undergoing an agile transition will prioritize different revenue categories (Paterek, 2019). For instance, those needing to hire talent emphasize employee engagement, financially struggling businesses focus on financial gain, and those under competitive pressure prioritize customer satisfaction. Agility enables businesses to make faster decisions, develop products more quickly, and shorten the time to market. They envision a system that allows them to outperform competitors and become industry leaders in product creation (Neubeck *et al.*, 2017).

4.3 Correlation and Multiple Linear Regression Analysis

Upon checking on the constructs and items, according to the reliability analysis using 361 dataset, Cronbach's Alpha for digital capability is 0.80, with 5 items, whereas for business agility, the value is 0.821 with 11 items. Both results show values of Cronbach's Alpha more than 0.7 which means good and acceptable. Thus, all of the items remained and used for further analyses. The normality testing showed using skewness and kurtosis values did not meet the requirements of the range between ±2.00 and ±5.00 respectively with standard error of 0.128 and 0.256 respectively. Further results of the normality test show that the value for the dependent variable, which is the business agility, shows a significant value below 0.01 ($p<0.01$). Both Kolmogrov-Sminov and Shapiro-Wilk tests show significant values both with $p<0.01$. The conclusion that can be implemented is that the data obtained is not normally distributed and Spearman correlation analysis will be employed to test the relationship between the variables. The Spearman correlation analysis showed a correlation between digital capability and business agility is significant at the 0.01 level (2-tailed), with a positive *r*-coefficient value of 0.508. The value represents a medium strength of relationship between digital capability and business agility. According to the model explanation from Table 4 and Table 5, the R square value is 0.098, or 9.8%. This means that digital capability can explain about 9.8 percent of the dependent variable of business agility. The remaining

90.2 percent of the factors are not covered in this study. When observed more in Table 6, it reveals a significant impact of digital capability towards business agility at $p<0.01$. Therefore, hypothesis H_1 is supported.

Table 4 *Model summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.312	0.098	0.095	0.36699	0.098	38.85	1	359	0.000

Table 5 *ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.232	1	5.232	38.85	0.000
Residual	48.351	359	0.135		
Total	53.584	360			

Table 6 *Simple Linear Regression*

Model	Unstandardized Beta		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.258	0.152		21.394	0.000
Digital Capability	0.225	0.036	0.312	6.233	0.000

The findings demonstrate a significant relationship between digital capability and business agility, particularly in the context of supply chain, operational, and marketing agility. Digital capability plays a crucial role in enhancing supply chain agility. Gezgin *et al.* (2017) argue that successful digital transformation requires an innovative and forward-looking approach to supply chain management. Competitiveness in digital capability can also provide a key explanatory factor for predicting the success of small businesses (Nandi *et al.*, 2021). According to Büyüközkan and Göçer (2018), for a supply chain to fully benefit from technological solutions and realize the advantages of digitalization, it must integrate digital techniques into its overall operational strategy and organizational structure. Flexibility and durability are essential for businesses to adapt to future demands, requiring appropriate personnel, skill sets, processes, and equipment to enhance efficiency and effectiveness (Alzoubi & Yanamandra, 2020). This adaptability, or agility, enables micro-enterprises to maintain smooth business operations, as confirmed by Zhou *et al.* (2020), who found a strong connection between digital capability and supply chain agility. Employees' successful utilization of digital tools often reflects a solid knowledge base or expertise, contributing to overall business agility.

Digital capability also correlates with operational agility. Chen (2021) highlights that the operational agility enabled by digital tools significantly influences the willingness of small traders to adopt new business practices and engage in further interactions. Research by Saputra *et al.* (2021) shows that organizations tend to make strategic decisions in stages when integrating digital technology. Operational agility offers significant advantages, including the accessibility of technology and the ability to identify and segment opportunities (Krotov *et al.*, 2015). For businesses to meet their objectives, particularly in a mobile-driven environment, operational agility must prioritize the use of mobile technologies (Sajdak, 2015). This is further supported by Hadjielias *et al.* (2022), who emphasize the strong relationship between digital capabilities and operational agility, noting that enhanced digital capabilities can improve employee performance and operational output. In the realm of marketing agility, digital capability has been shown to have a positive moderating effect. Nuseir *et al.* (2020) argue that digital capability enhances marketing agility by enabling the swift reallocation of resources across markets, products, and channels. Li *et al.* (2021) further assert that marketing agility drives success through innovative practices, particularly in sectors like food and beverage, which rely on semi-skilled and unskilled workers for digital marketing processes. Although Malaysia's digital marketing landscape may be less advanced compared to other countries, this presents an opportunity for increased innovation in marketing strategies (Tallon *et al.*, 2019). To achieve marketing agility, businesses must have a clear understanding of how campaigns operate at various stages of promoting digital business.

5. Conclusion

To address the gaps in current research, several recommendations are proposed for both future organizations and researchers. First, digital capabilities and business agility should not be limited to sales functions but should encompass a broader scope, including product development, pricing strategies, promotion, and distribution to

meet consumer needs more effectively. While the analysis of digital capabilities and business agility in this study is largely technical, it is also essential to incorporate professional ethics as a guiding principle for enterprises. This is particularly relevant for small entrepreneurs in the food and beverage service sector, who should adopt strategies that enhance sales techniques and business practices. The recommendations outlined aim to assist respondents in strategizing their capabilities, though success will require significant commitment from the entrepreneurs themselves, alongside support from both government and non-government advisory services. This collaborative effort is crucial for fostering the growth of the food and beverage sector in Muar, Johor, and promoting community cohesion in the district.

Additionally, this study highlights that undergoing digital transformation enhances collaboration and efficiency among traders by streamlining operations, which ultimately increases profit margins. Future researchers could further explore the extent of digital consumption and examine how digitalization impacts various facets of business performance. Researchers may also consider engaging traders directly to gain insights into their agility perspectives, which can provide a more nuanced understanding of how digital capabilities influence business agility. By doing so, more targeted and relevant research questions can be formulated. In summary, this research underscores the significant relationship between digital capability and business agility, particularly in relation to work performance perceptions among micro-enterprises in the food and beverage service sector. Supply chain agility, in particular, enables traders to access sufficient food and drink in terms of both quantity and quality, which is essential for their ability to function effectively. However, over-reliance on unskilled digital use can hinder productivity and prevent businesses from fully leveraging technological advancements. The evolving trends in supply chain agility, operations, and marketing also emphasize the need for organizations to collaborate and share data to optimize sales outcomes. Consequently, there is a growing preference for hiring highly skilled and educated traders to standardize performance and ensure business success. Ultimately, this study's objective was met, supported by prior research and thorough data analysis.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Zulkifli, Ahmad;* ***data collection:*** *Zulkifli;* ***analysis and interpretation of results:*** *Ahmad;* ***draft manuscript preparation:*** *Ahmad, Mamat. All authors reviewed the results and approved the final version of the manuscript.*

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