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Influence of Digital Technologies Capability, Relational Capability and Organisational Agility on SME Performance during COVID-19 Pandemic

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ABSTRACT

This paper investigates the effects of digital technologies capability, relational capability, the quality of external expertise, and organizational agility on the performance of Malaysian Micro, Small, and Medium Enterprises (MSME) manufacturers during the COVID-19 pandemic. Collection of data was done using a structured questionnaire survey. The sampling method used is convenience sampling. With the application of Partial Least Squares Structural Equation Modelling (PLS-SEM), the analysis outcomes indicated that digital technologies capability, relational capability, and organizational agility significantly influence firm performance. This research main contribution to the existing literature is linking digital technology research with the Resource-Based View (RBV) and connecting MSME performance with Contingency Theory (CT). The research findings give valuable information for Malaysian MSME manufacturers to strategically allocate resources to enhance digital technologies capability and relational capability, thereby fostering organizational agility and ultimately improving their performance in the face of unforeseen challenges.

Keywords: Agility, COVID-19, Digital Technologies, Firm Performance, Malaysian MSMEs, Relational Capability, Resource-Based View

INTRODUCTION

COVID-19 or the new Coronavirus took the world by storm and by complete surprise. After the virus was detected in Wuhan in November 2019, the Coronavirus has since spread to almost all countries and leaves behind devastating impacts socially and economically. Organisations from every sector faced a dire business landscape (Troise et al., 2022) caused by the pandemic (Cheah et al., 2024; Rajah et al., 2023). China, badly affected at the beginning of the pandemic, initiated border restrictions and lockdown regulation. Subsequently, European countries and the United States of America lockdown their respective countries. These restrictive regulations have hit the global economy hard (Abed, 2021; Gössling et al., 2021). The rules disrupt cash flow of operating activities and restricts customers' access to monetary and physical activities (Kee, Sin, Yuan…et al., 2023; Rozak et al., 2021). Consequently, business performance such as profitability of MSMEs in many countries, are severely affected (Caballero-Morales, 2021; Cheah, Loh, Gunasekaran, 2023; Lu et al., 2020; Ratnasingam et al., 2020; Sun et al., 2021; Amran et al., 2023; Quyen et al., 2024).

Many Malaysia's MSMEs especially manufacturers, like many MSMEs based in other countries, faced resources limitation and struggled to respond promptly to external changes, thus negatively affecting firm performance (Lu et al., 2020; Markovic et al., 2021; Ratnasingam et al., 2020; Waiho et al., 2020). The low firm performance problems of MSMEs bring down Malaysia's Gross Domestic Products (GDP). The livelihood of many families is threatened as companies resort to salary reduction and worker retrenchment during this challenging time to keep their businesses afloat. This cost cutting measures undertaken by companies hamper the standard of living of the society and limits the ability of the Malaysian government to provide better social care and stimulate the economy due to lesser taxes collected from MSMEs (Rajah et al., 2023). For this reason, the significant organisational resources and capabilities that can improve MSME performance in Malaysia are viewed as an essential area that needs to be addressed.

LITERATURE REVIEW

Firm performance of an organisation has been commonly argued based on Resourced Based View (RBV) (Barney, 1991; Cheah, 2018; Yang et al., 2015). Like large organisations, micro, small and medium enterprises use similar resources to build their competitive advantages, subsequently improving organisational performance. Besides, Contingency Theory is used to argue the relationship between firm performances with its external environment (Ch'ng et al., 2021; Quyen et al., 2024; Venkatraman, 1989). The pandemic, which created market turbulence, altered SME strategies implementation and subsequently impact organisation firm performance. These two theories are viewed as possible to correlate organisation resources, firm performance, and the pandemic.

Scholars like Gehani (1995); Ojha et al. (2014); Rozak et al. (2021); Troise et al. (2022) have proposed capability of digital technologies, capability to relate with others, and ability of company to respond rapidly as the "internal oriented resources" that may enhance the firm performance of MSMEs. On the other hand, a study from T. Yang et al. (2015) indicates that the effectiveness of outsourced expertise as the "external oriented resource" may influence SME performance. Sun et al. (2021) study showed the pandemic impacted China's SME performance significantly. Although this variable was used as an independent construct in Sun et al. (2021) study, this potential variable may be applied as a construct to strengthen or weaken the relationship between determinants and firm performance. Besides, it may explain the predictor or mediator that might affect the firm performance.

This section summarises the literature which explained effects of various determinants on the performance of MSMEs; implementation of the concept in the circumstances of MSMEs and its determinants, concerning technology and external relation and, explicitly, to relational capability, digital technologies capability, the quality of external expertise and organisational agility.

RESEARCH METHOD

Systematic review approach was implemented in the present review. Primary research engine databases such as SCOPUS were used as the main source of journals and articles in this research (Quyen et al., 2023). This approach deliberately pinpointed relevant articles that emphasise on examining past studies about the performance of SMEs abroad and in Malaysia and factors that influence SMEs performance before and during the pandemic. Objectives of this research was achieved by selecting the journals or articles based on several steps, from broad searching of journals using keywords to narrowing down on core articles. These steps are used to determine theory, dependent variables, independent variables, mediators, and moderators applied in this research.

The journal's selection process is mainly based on steps, as shown in Figure 2.0. The selection initially begins with searching for dependent variable keywords such as SMEs performance to identify a group of journals available in SCOPUS. The reputation of these journals was verified by referring them to Journal Citation Report (JCR) listings to determine those journals with high impact factors. Those non-JCR journals were filtered, and the remaining JCR journals numbered 1044. Subsequently, these 1044 articles were narrowed down to select only 37 that matched this research keyword: organisational agility, digital technologies capabilities, quality of external expertise, relational capability, and COVID-19. The following selection step was to filter these 37 articles or journals by removing non-empirical, yielding only 23 articles. The final selection step was to identify the core literature selected in the review by choosing only those with quantitative, empirical, DV related studies. As a result, ten articles were chosen.

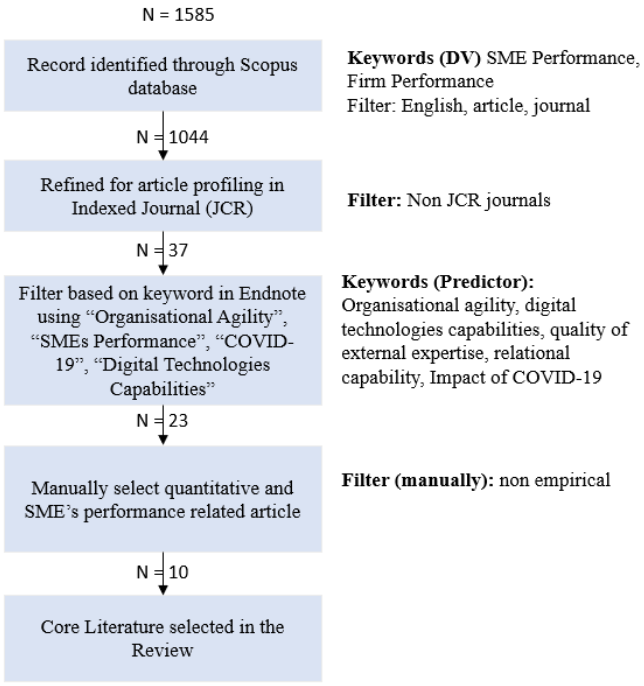

Figure 2.0: Key articles selection

List of Core Articles

This paper reviews the ten core articles (Table 2.0) research conducted on SMEs performance prior and at the height of the pandemic. It explores and relate various predictors, moderators and mediators influencing MSMEs performance. The summary of ten core articles are stated in Table 2.0.

Table 2.0: List of core articles

No	Author (Year)	Article Title	Journal	Country	Theory
1	Rozak et al. (2021)	Social Media Engagement, Organizational Agility and Digitalization Strategic Plan to Improve SMEs Performance	IEEE Transactions on Engineering Management	Indonesia	Digital Transformation theory
2	Troise et al. (2022)	How can SMEs successfully navigate the VUCA environment: The role of agility in the digital transformation era	Technological Forecasting and Social Change	Italy	-
3	Sun et al. (2021)	Determining the impact of Covid-19 on the business norms and performance of SMEs in China	Economic Research-Ekonomska Istrazivanja	China	1. Keynesian Theory 2. Theory of Comparative Advantages
4	Yang et al. (2015)	British SMEs' e-commerce technological investments and firm performance: an RBV perspective	Technology Analysis and Strategic Management	UK	Resource-based View (RBV)
5	Ratnasingam et al. (2020)	How are small and medium enterprises in Malaysia's furniture industry coping with the COVID-19 pandemic? Early evidence from a survey and recommendations for policymakers	BioResources	Malaysia	-
6	Ramanathan et al. (2012)	The impact of e-commerce on Taiwanese SMEs: Marketing and operations effects	International Journal of Production Economics	Taiwan	Resource-based View (RBV)
7	Cegarra-Navarro et al. (2016)	Structured knowledge processes and firm performance: The role of organisational agility	Journal of Business Research	Spain	-
8	Saridakis et al. (2018)	Industry characteristics, stages of E-commerce communications, and entrepreneurs and SMEs revenue growth	Technological Forecasting and Social Change	UK	Transaction Cost Economics Theory (TCE)
9	Koellinger (2008)	The relationship between technology, innovation, and firm performance-Empirical evidence from e-business in Europe	Research Policy	25 European Countries	Economic Theory
10	Lu et al. (2020)	The perceived impact of the Covid-19 epidemic: evidence from a sample of 4807 SMEs in Sichuan Province, China	Environmental Hazards	China	-

RESULTS & DISCUSSION

There are several key findings from some empirical studies in some of the core literature. These findings provided the basis for formulating the theoretical framework in the later part of this research. Several works from authors - Yang et al. (2015), Troise et al. (2022), Rozak et al. (2021) and Sun et al. (2021) are essential references which form the theoretical model in this research. The research findings stated in the six relevant articles in Table 2.1 share similarities in SME performance that can be positively influenced by internal resources, for instance, digitalisation, organisational agility, and external resources. One of the core articles, such as Sun et al. (2021), has highlighted that the pandemic has significantly impacted firm performance. However, none of the six core articles has examined how the integration of internal and external resources enhances SME performance in

response to pandemic-induced disruptions in the business environment. Therefore, investigating this area is the main interest of this study.

Previous Discussion/Argument on DV

MSME manufacturers are affected by the limited scale of supports and abilities (Lu et al., 2020; Markovic et al., 2021; Ramanathan et al., 2012; Troise et al., 2022). The survival of MSMEs is vital to support the country's Gross Domestic Product (GDP) (Belsito & Reutzel, 2020; Na-Nan et al., 2020; Na-Nan & Wongsuwan, 2020). However, several articles have argued that the performance of MSME businesses has been adversely impacted by the deteriorating pandemic conditions (Bartik et al., 2020; Caballero-Morales, 2021; Rozak et al., 2021; Sun et al., 2021). Research carried out by Bartik et al. (2020) has shown many American SMEs faced financial problems. There have been many reductions and business closures based on observation from a sample size of more than 5800 small businesses. Apart from that, Kumar (2021) has stated that the decreasing SMEs' performance eventually reduced China GDP below 5% year on year. Lu et al. (2020) collected data from 4807 SMEs in China via the distribution of online questionnaires and follow-up interviews. The results indicated supply chain disruption, reduced market demand, and cash flow issues. Therefore, based on the literature above, underperforming SMEs that are interconnected economically caused sharp economic downturn.

Table 2.1: Summary of prior quantitative studies.

No	Author (Year)	Sample Size	Research Outcomes
1.	Rozak et al. (2021)	Owner/leader/manager of 239 SMEs	ICT utilisation, social media engagement and organisational agility, positively improve SMEs' performance in a post-pandemic era
2.	Troise et al. (2022)	204 SMEs	The capabilities in digital technologies, relational networks, and innovation positively affects SMEs organisational agility. This agility, in turn, leads to improved firm performance.
3.	Sun et al. (2021)	330 SMEs	COVID-19 pandemic significantly impacted innovative operations, financial performance, remote work structures, safety and satisfaction of stakeholders.
4.	Yang et al. (2015)	CEO or senior managers from 430 SMEs	1. Firm performance is significantly affected by its internal resources (business and human capital) and external capabilities (e-commerce readiness) 2. Capital expenditures on IT systems and external expertise negatively influence their performance.
5.	Ramanathan et al. (2012)	110 SMEs	1. E-commerce operations and marketing strategies significantly enhance SME performance. 2. The effect of E-commerce (operations/marketing) on SMEs performance is moderated by employee size. 3. The duration of E-commerce adoption by SMEs does not strengthen or weaken the correlation between operations/marketing and firm performance.
6.	Koellinger (2008)	7302 European enterprises	1. Internet technologies were crucial for innovation 2. Internet-based or not internet-based innovations (product or process) significantly affect turnover and employment growth. 3. Internet-enabled innovations exhibited stronger growth potential than non-Internet-enabled innovations. 4. No clear evidence linking Innovative activity to higher profitability.

In Malaysia, Abed (2021), Waiho et al. (2020), and Ratnasingam et al. (2020) have highlighted the devastating impacts of the pandemic on the revenue and profitability of agricultural SMEs and furniture SMEs. Ratnasingam et al. (2020), in their survey of 748 SMEs in the Malaysian furniture sector has pointed out that financial difficulties and supply chain disruptions are two significant concerns related to the crisis. Waiho et al. (2020) study demonstrated that the enforcement of the

restricted movement in Malaysia to contain the disease had caused severe consequences to domestic demand of agricultural products, as tourism ceased and consumer purchasing patterns shifted. Strict regulations such as social distancing and the reduction of maximum workforce in production sites (Cheah, Amran, Mahendran et al., 2023), could decrease production activities and force most small-scale factories from continuing operation due to substantial financial losses. Transportation disruptions due to police blockages of transport routes, congested ports, and a reduction in shipping activities can cause a delay in delivering essential goods, leading to high delivery costs, and further reducing the financial performance of SMEs. Hence, like MSMEs from other countries, Malaysia MSMEs was not spared from the devastating economic effects brought by the pandemic.

Based on the literature's arguments, it is important to understand how MSME manufacturers performed financially during the pandemic. Profitability is crucial for MSMEs survival since financial resources are limited. This research defines firm performance as the dependent variable (DV) since it focuses on examining the impacts of various variables on the performance of MSMEs' manufacturers.

Theory and Predicting Variables

The emergence of the pandemic has intensified the study of the influence of MSMEs' organisational internal resources, external resources, and capabilities on firm performance. However, key issues and research gaps have not been answered. The research gap is recent empirical studies (Rozak et al., 2021; Troise et al., 2022) and past studies (Yang et al., 2015) did not examine the impacts of COVID-19 as the moderating effects between dimensions in their respective studies. The relationship between this moderator with MSME's resources or capabilities and firm performance is, therefore, worth exploring since the business environment has changed tremendously after the onset of the pandemic (Abed, 2021; Bartik et al., 2020; Gössling et al., 2021; Lu et al., 2020; Zahra, 2021).

Current investigation is intended to fill this research gap by extending the research works done by Troise et al. (2022), Rozak et al. (2021), and Yang et al. (2015) via incorporating impacts of COVID-19 as the moderator, organisational agility as the mediator, relational capability, digital technologies capability, and the quality of external expertise as constructs in this research. In addition, studies which were done by Rozak et al. (2021); Troise et al. (2022); Yang et al. (2015) are based in Indonesia, Italy, and UK contexts, respectively. Therefore, this empirical investigation is needed to examine the correlation of these variables with firm performance of MSMEs manufacturers in this country.

Current research employs the Resource-Based View (RBV) and Contingency Theory to guide the researcher to establish the conceptual model. Digital technologies capability, relational capability, the quality of external expertise, and organisational agility can be considered as resources and capabilities which are essential to the MSMEs performance (Cegarra-Navarro et al., 2016; Rozak et al., 2021; Troise et al., 2022; Yang et al., 2015). Based on Yang et al. (2015) research findings, RBV provides solid theoretical support to relate the quality of external expertise to performance of MSMEs. Troise et al. (2022) defined capability of digital technologies as the expertise of using software solutions to modify current business operations, either by transforming them or developing completely novel processes. Troise et al. (2022) also stated that relational capability is the ability to establish and sustain the relationship with key players. Company's capacity to respond to disruptive environments, while adapting and revitalizing its business strategies is known as organisational agility (Rozak et al., 2021; Teece et al., 2016; Troise et al., 2022; Zain et al., 2005). In addition, in this research, MSME manufacturers' firm performance is affected by its environment, referred to as COVID-19 pandemic impacts. Therefore, using RBV theory and CT theory as reference theories in this research for empirical studies of the relationship between the constructs, mediator, and moderator with MSME manufacturers' firm performance can be useful.

Previous Discussion/Argument on Digital Technologies Capability

Digital technologies are applied to transform existing business practices and create new processes. Li et al. (2021) stated that integrating and exploiting digital technologies could transform firms into agile organisations. Other studies, however, indicated that having digital technologies in the company is inadequate (Garzoni et al., 2020). The author pointed out that integrating digital technologies in a business can impact SMEs strategies, processes, and performance (Garzoni et al., 2020). The capability to incorporate digital technologies can be defined as IT capability (Ravichandran, 2018), digital capability (Proksch et al., 2021) or digital skills (Rozak et al., 2021). In the research findings stated by Rozak et al. (2021) and Troise et al. (2022), digital skills or digital technologies capability are defined as independent constructs that positively affect organisational agility subsequently impact SMEs performance. Building on Rozak et al. (2021) and Troise et al. (2022), Investigating the digital technologies capability of MSMEs' manufacturers on organisational agility during the COVID-19 pandemic is the main intention of this research study.

Previous Discussion/Argument on Relational Capability

Troise et al. (2022) has argued that relational capability has not been widely studied concerning organisational agility. This study highlights that existing literature mainly examined operational agility within supply chain contexts, especially emphasizing relationships with external partners (Troise et al., 2022; J. Yang, 2014; Yusuf et al., 2014). Another study has stated that supply chain relationships positively influence agility (Naughton et al., 2020). Apart from that, Carmeli and Dothan (2017) and Nyamrunda and Freeman (2021) have highlighted that organisation's capability to foster and sustain relationships with internal and external partners eventually impacted strategic and market agility. Troise et al. (2022) research has found that relational capability, which is one of the antecedents of organisational agility, has a positive relationship. Relational trust enables change receptivity and situational adaptation (Chen, 2019). Therefore, investigation of the relational capability of SME manufacturers on organisational agility is necessary to advance the work of Troise et al. (2022).

Previous Discussion/Argument on The Quality of External Expertise.

Yang et al. (2015) observed that SMEs typically lack internal IT competency. Thus, SMEs outsourced to external consultants as a strategic necessity (T. Yang et al., 2015). The findings from Yang et al. (2015) study indicated that the competency of external expertise affected negatively on Return of Sales (ROS). One of the possible explanations for the negative relationship provided by Yang et al. (2015) is that successful SMEs tend to keep core IT skills in-house. This measure addresses immediate internal problems. Then, SMEs outsourced supporting information technology activities to external parties (T. Yang et al., 2015). In addition, hiring external consultants could incur higher expenditure for the SMEs, consequently reducing the firm's performance. From the discussion above, relationship between the service of external consultant's, business adviser and trainers on organisational agility that eventually affects firm performance are to be examined. The benefit of external expertise is essential to assist MSMEs to transition into digital business to reach out to more comprehensive customers.

Previous Discussion/Argument on Mediating Effects of Organisational Agility

Rozak et al. (2021) has investigated organisational agility as a mediator to mediate digital skills and SME performance. Findings from the author indicated that digital skills enhance the agility level of SMEs by enabling faster decision making, efficient technology adoption, learning, and planning products and services (Rozak et al., 2021). Consequently, SMEs are better positioned to adapt to rapidly evolving the business world (Rozak et al., 2021). Another study on mediating effects of organisational agility by Troise et al. (2022) has found that the capabilities in digital technologies, relational networks, and innovation, build organisational agility in SMEs. That agility positively impacts SMEs performance (Troise et al., 2022). Mediating effects of organisational ability to respond quickly are considered critical aspects which digital technologies influence firm performance (Ravichandran, 2018; Rozak et al., 2021; Troise et al., 2022). Therefore, mediating effects of organisational agility is examined to extend the works of Rozak et al. (2021) and Troise et al. (2022).

Previous Discussion/Argument on Moderating Effects of Impact of COVID-19

Past studies carried out by Abed, (2021); Bartik et al. (2020); Caballero-Morales (2021); Kumar (2021); Lu et al. (2020); Ratnasingam et al. (2020); Sun et al. (2021); Tan & Cheah (2025); Waiho et al. (2020) has showed that the pandemic has brought damaging impacts on SMEs performance. However, none of the above studies has included COVID-19 impact as a moderator in respective theoretical models. Sun et al. (2021) study has defined COVID-19 impact as the independent construct in its theoretical model that influences remote work, merger and acquisitions, operational innovation, financial performance, and stakeholder outcomes. Investigation done by past studies on the role of COVID-19 impact as moderator is not available. Therefore, this research intends to incorporate the impact of COVID-19 as a moderator into the conceptual framework.

Previous Discussion/Argument on Firm Size and Firm Age

Age of firm is gauged by the duration the organisation operating in the market. Essentially, firms with a more extended operating history may have more experience, higher efficiency, better trust relationships, and a customer base to better use resources (T. Yang et al., 2015). The firm age is measured on a scale of several years. Firm size is a crucial control variable when analysing organisational performance because more prominent organisations are resourceful as compared to smaller firms that determines business success (Hambrick & Cannella Jr, 2004; Ramanathan et al., 2012; T. Yang et al., 2015). The total staff is a good measurement of the size of MSMEs since their employment record is kept in the company's human resource department. The age and size of firm are selected as control variables in this study.

Hypotheses Development

Figure 2.1 showed the conceptual model which proposes a direct relationship between independent variables and organisational agility. The model also indicates an indirect effect between the three independent variables with firm performance, mediated by organisational agility. In addition, organisational agility and firm performance is moderated by the impact of the COVID-19 pandemic.

Digital Technologies Capability and Organisational Agility

Troise et al. (2022) argued that capability of digital technologies enabled organisational agility. Other literature also claims that digitalisation at various levels promotes organisational agility (Goswami & Kumar, 2018; Li et al., 2021; Shams et al., 2021). However, availability of digital infrastructures within a company is not adequate without integrating and incorporating these technologies to influence corporate strategies, operation, and firm performance (Garbellano & Da Veiga, 2019; Garzoni et al., 2020; Wang et al., 2020). Troise et al. (2022) stated the importance of integration capability of these technologies than the accessibility of these technologies. Several kinds of literature define integration capability as IT capability (Ravichandran, 2018), digital technologies capability (Troise et al., 2022) and digital capability (Proksch et al., 2021). Therefore, this research formulates hypothesis as follows:

H1: Digital technologies capability positively influences organisational agility of SME manufacturers.

Relational Capability and Organisational Agility

Troise et al. (2022) reported that relational capability significantly influences organisational agility. Liu and Yang (2020) posit that close engagement with external stakeholders improves SMEs' market intelligence and agility. Multiple literature has reported that external network management is a strategic lever for SME to react dynamically (Felício et al., 2019; Jørgensen & Ulhøi, 2010). SMEs' ability to cultivate social friendships, enhance outreach and collaboration, and exchange information significantly strengthens operation, client support, and adaptive strategy (Nyamrunda & Freeman, 2021), especially in volatile and complex environments (Naughton et al., 2020). Thus, hypothesis in this research is proposed as follows:

H2: Relational capability positively influences organisational agility of SME manufacturers.

Quality of External Expertise and Organisational Agility

The quality of external expertise is another external resource or capability that extends the traditional RBV framework in this research (Hitt et al., 2002; Siqueira & Fleury, 2011; T. Yang et al., 2015). This construct is defined as a VRIN resource or capability (Yang et al., 2015). However, the quality of external expertise negatively affects SMEs performance in terms of Return of Sales (ROS) (Yang et al., 2015). In addition, this construct is not mediated by organisational agility in (T. Yang et al., 2015) research. Therefore, current research is of the interest to investigate whether the quality of external expertise influences organisational agility, which affects financial performance of firm during the pandemic, by proposing hypothesis as follows:

H3: The quality of external expertise positively influences organisational agility of SME manufacturers.

Organisational Agility and Firm Performance

Research by several works of literature mentions organisational agility affects firm performance positively. Troise et al. (2022) concluded that agility of firm strengthened SMEs financially. Rozak et al. (2021) reported that organisational agility was proven to improve SMEs performance. Tallon and Pinsonneault (2011) reported the finding in which organisations with the capability to identify and manage both threats and opportunities rapidly had enhanced firm performance, especially in volatile environments. Ravichandran (2018) found that the financial performance of organisations can be positively affected by organisational agility. In the current uncertain and volatile business environment caused by the pandemic, this research postulates that agility within organisation allows MSMEs' manufacturers to react rapidly by taking appropriate actions to improve firm performance. As a result of the above discussion, this research proposed hypotheses as such:

H4a: Organisational agility significantly mediates the relationship between digital technologies capability and firm performance of MSMEs' manufacturers.

H4b: Organisational agility significantly mediates the relationship between relational capability and firm performance of MSMEs' manufacturers

H4c: Organisational agility significantly mediates the quality of external expertise and firm performance of MSMEs' manufacturers

Impact of COVID-19 and Firm Performance

This study investigates the interrelationships between digital technologies capability, relational capability, quality of external expertise, organisational agility, and MSMEs firm performance from the RBT perspective. Apart from that, based on contingency theory, market disruption caused by the COVID-19 pandemic could moderate the mediator and criteria directly. Results of studies carried out by Bartik et al. (2020); Caballero-Morales (2021); Kumar (2021); Lu et al. (2020) and Sun et al. (2021) have found that internationally, the pandemic has brought unpredictable changes with devastating financial consequences to SMEs businesses. Consequently, SME firms need to wrestle with great uncertainty. When the pandemic created highly dynamic and uncertain business environment, organisational agility tended to be emphasised in business strategies. Therefore, this study proposes that:

H5: Impact of COVID-19 strengthens the positive effect of organisational agility on firm performance of SME manufacturers.

Next section exhibits a systematic review of past literature related to MSMEs profitability which serves as a dependent variable (DV) in this research. One area covered by the literature review is the discussion and application of various theories such as Transaction Cost Economics Theory (Saridakis et al., 2018), Theory of Comparative Advantages (Sun et al., 2021), and Resource Based View (RBV) (Barney, 1991). Besides, this chapter also discusses the selection of RBV and CT Theory as the guidance theories and justifications. The results of past studies on the influence of various determinants concerning digital technologies capability, a relational capability, the quality of external expertise, organisational agility on MSMEs performance. In addition, the moderator in this research was discussed. Finally, hypotheses are developed in this research and conceptual model is put forward in Figure 2.1.

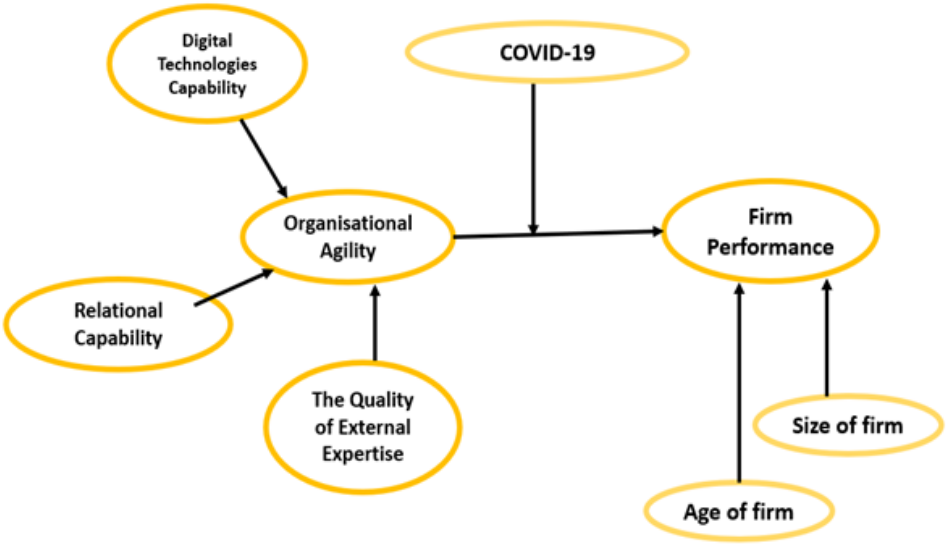

Figure 2.1: Conceptual model

CONCLUSION

The conceptual model underscores the pivotal role of digital technologies capability, relational capability, and organizational agility in enhancing the performance of Malaysian MSME manufacturers during the pandemic. Research outcomes highlight how the integration of these internal and external resources, framed within the RBV and CT Theories, equips MSMEs to navigate volatile and uncertain environments. Digital technologies capability enables firms to transform their operational processes, while relational capability fosters robust partnerships, enhancing adaptability. Organizational agility emerges as a critical mediator, facilitating swift responses to dynamic market conditions and ensuring resilience amidst disruptions.

The implications of this research extend beyond theoretical contributions to practical applications. For policymakers and industry leaders, the study offers actionable insights into resource allocation strategies that prioritize agility and innovation. By leveraging digital tools and cultivating strong relational networks, MSMEs can not only recover from pandemic-induced setbacks but also build sustainable competitive advantages. Future research could explore longitudinal impacts and sector-specific applications of these findings, enriching the understanding of resilience strategies in the face of global crises.

DECLARATION OF CONFLICTING INTERESTS

The authors declare that there is no conflict of interest.

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