Research Article

Determinants and Outcomes of Crisis Management among Micro, Small and Medium-Sized Enterprise (MSME) Entrepreneurs in Thailand during COVID-19 Pandemic

Received: *May 24, 2022*
Revised: *July 20, 2022*
Accepted: *August 4, 2022*

*Dr.Wanwisa Charoennan**
Dr.Suwanna Kowathanakul
Bhudnumphueng Chatbhumiphong
Lecturer of Faculty of Business Administration,
Institute of Entrepreneurial Science Ayothaya
(* Corresponding Author)

ABSTRACT

The COVID-19 pandemic creates a dreadful effect on businesses across industries. Due to resource constraint, MSMEs are the most vulnerable ones. It is then crucial for them to prepare an effective crisis management to ensure the business continuity or even achieve business excellence in times of inevitable difficulties. The study on COVID-19 crisis management among MSMEs in the emerging market like Thailand is indeed crucial, yet still in its infancy. Therefore, this study aims to investigate the influential factors and outcomes of crisis management among MSMEs in Thailand during the COVID-19 pandemic. This study applied quantitative research approach through the conduct of a survey with 243 MSME entrepreneurs from different industries. It was revealed that crisis management enhanced their business performance as resilience and technology adoption positively influenced the crisis management process. However, while entrepreneurial competency and resilience led to a better business performance, technology adoption, on the other hand, had a negative influence. The research findings provide insights on the underlying mechanism of crisis management and business performance that MSME entrepreneurs could employ to maintain their competitiveness amidst the crisis.

Keywords: Crisis Management, Entrepreneurial Competency, Resilience, Technology Adoption

บทความวิจัย

ปัจจัยและผลลัพธ์ของการจัดการภาวะวิกฤติของกลุ่มผู้ประกอบการวิสาหกิจขนาดกลาง ขนาดย่อม และรายย่อย (MSMEs) ในประเทศไทยช่วงการระบาดของโรคโควิด-19

วันที่ได้รับต้นฉบับบทความ : *24 พฤษภาคม 2565*
วันที่แก้ไขปรับปรุงบทความ : *20 กรกฎาคม 2565*
วันที่ตอบรับตีพิมพ์บทความ : *4 สิงหาคม 2565*

*ดร.วันวิสาข์ เจริญนาน**
ดร.สุวรรณา ก่อวัฒนกุล
พุทธน้ำผึ้ง ฉัตรภูมิพงศ์
อาจารย์ประจำคณะบริหารธุรกิจ
สถาบันวิทยาการประกอบการแห่งอโยธยา
(* ผู้ประสานงานหลัก)

บทคัดย่อ

สถานการณ์การแพร่ระบาดของโรคโควิด-19 ส่งผลกระทบอย่างร้ายแรงกับธุรกิจในหลากหลายอุตสาหกรรม เนื่องจากข้อจำกัดทางทรัพยากร ทำให้ MSMEs ขาดความมั่นคงในการดำเนินธุรกิจเป็นอย่างมาก ดังนั้น MSMEs จึงจำเป็นต้องเตรียมความพร้อมในการจัดการภาวะวิกฤติอย่างมีประสิทธิผล เพื่อให้ธุรกิจสามารถดำเนินการได้อย่างต่อเนื่องหรือได้อย่างเป็นเลิศแม้อยู่ในช่วงสถานการณ์ยากลำบากที่ไม่สามารถหลีกเลี่ยงได้ก็ตาม อย่างไรก็ดี การศึกษาเกี่ยวกับการจัดการวิกฤติการณ์โควิด-19 ในตลาดเกิดใหม่อย่างประเทศไทยนั้นยังมีจำกัดมาก ดังนั้นการศึกษาครั้งนี้จึงมีวัตถุประสงค์ เพื่อศึกษาปัจจัยที่มีอิทธิพลและผลลัพธ์ของการจัดการภาวะวิกฤติในช่วงการระบาดของโรคโควิด-19 โดยประยุกต์ใช้ระเบียบวิธีวิจัยเชิงปริมาณด้วยการสำรวจกับผู้ประกอบการ MSMEs จำนวน 243 รายจากอุตสาหกรรมต่าง ๆ ผลการศึกษาพบว่า การจัดการภาวะวิกฤติทำให้ผลการดำเนินธุรกิจดีขึ้น ความยืดหยุ่นและการเปิดรับเทคโนโลยีมีอิทธิพลเชิงบวกกับการจัดการภาวะวิกฤติ ในขณะที่สมรรถนะด้านการเป็นผู้ประกอบการและความยืดหยุ่นทำให้ผลการดำเนินธุรกิจดีขึ้น การเปิดรับเทคโนโลยีกลับมีอิทธิพลเชิงลบต่อผลการดำเนินธุรกิจ ข้อมูลที่ได้จากการศึกษาครั้งนี้ จะช่วยสร้างความเข้าใจเกี่ยวกับกลไกของความสัมพันธ์ระหว่างการจัดการภาวะวิกฤติและผลการดำเนินธุรกิจ ซึ่งผู้ประกอบการ MSMEs สามารถนำไปประยุกต์ใช้เพื่อรักษาความสามารถในการแข่งขันท่ามกลางวิกฤติการณ์ได้

คำสำคัญ : การจัดการความเสี่ยง สมรรถนะด้านการเป็นผู้ประกอบการ ความยืดหยุ่น การเปิดรับเทคโนโลยี

INTRODUCTION

MSMEs are the pivotal driving force of Thailand's economy as there are over 3 million of them, constituting 99% of all enterprises and generating 5.6 trillion baht or 34.6% of Gross Domestic Product (The Office of SMEs Promotion, 2022). The sudden onset of coronavirus created a dreadful domino effect on MSMEs across industries (Bonin et al., 2021; Kogut & Mejri, 2022) as the prolonged containment measures prompted MSMEs to encounter massive challenges and become more sparingly vulnerable than ever before (Bank of Thailand, 2021). As a result, most business operations are either temporarily halted to prevent the dispersion of the virus or permanently stopped due to reduced purchasing power of consumers (Abuhussein, Barham & Al-Jaghoub, 2021; Charoennan & Embalzado, 2021). This sudden reduction of revenue agitated MSMEs' cashflow, and subsequently threatened their viability (Hossain, Akhter & Sultana, 2022). However, MSMEs from different industries are anticipated to get recovered at different paces, and it is unlikely for certain industries to resume to at the pre-COVID-19 level in the coming years (Prachachat, 2020).

To survive the COVID-19 pandemic, MSMEs must execute an immediate strategic response, which requires an enormous number of resources (Wang, 2009). Through the resource-based view theory, a crisis management should be considered to systematically analyze and prepare organizational resources in implementing well-structured strategies to attain competitive advantage amidst the crisis (Madhani, 2010; Wang, 2009). A robust crisis management particularly calls MSMEs to acquire entrepreneurial competency (Rehman, Elrehail, Naire, Bhatti & Taamneh, 2021; Wang, 2009), resilience or quick adaptability to crises (Kogut & Mejri, 2022) and utilization of technology (Fernandes & Solimun, 2017). Even though crisis management is believed to improve business performance (Jaques, 2010), comprehension on how MSME entrepreneurs manage business during the COVID-19 pandemic is still in its infancy stage (Custance, Walley & Jiang, 2012; Kogut & Mejri, 2022; Pheng, Ho & Ann, 1999). In addition, due to the variations of turbulence levels and contextual factors, there is no best crisis management that fits all situations (Unlu, Kapucu & Sahin, 2010). Besides, there is an evidently lack of studies from the perspective of MSME entrepreneurs who are the backbone of Thailand's economic structure, yet they are severely vulnerable due to resource insufficiency (Fasth, Elliot & Styhre, 2021). Hence, this present study aims to answer the following research questions: "What are the factors influencing the effectiveness of MSMEs' crisis management during the COVID-19 pandemic in Thailand?" and "How does crisis management influence MSMEs' business performance during the COVID-19 pandemic in Thailand?"

LITERATURE REVIEW

COVID-19 Crisis in Thailand

The first infectious case of COVID-19 in Thailand was reported on 13 January 2020, naming it as the first country to report a case outside China (see Table 1 for the timeline). During that time, Thailand received global praises for its effective pandemic management as it seriously and swiftly imposed containment measures such as lockdowns, curfew, social distancing, state quarantine, and restrictions on logistics (AsiaLink, 2021; United Nations Children's Fund, 2020). But despite its relative success, these measures threatened MSMEs' survival as they brought significant disruptions to supply chains, shortage of workforce and cashflow, higher costs, consumers' lower purchasing power and more aggressive competitions (Grant Thornton, n.d.; Prachachat, 2020; The World Bank, 2021).

Table 1: The Timeline of COVID-19 Pandemic in Thailand

Phase and Variants of Concern	Situation
Phase 1: January – 14th December 2020 (Serine or Wuhan)	- Cases were clustered around nightlife venues and the boxing match arena in Bangkok.
Phase 2: 15th December 2020 – 31st March 2021 (Alpha and Beta)	- A surge in cases was reported on 19th December from migrant worker communities around the Samut Sakhon Shrimp Market.
Phase 3: 1st – 30th June 2021 (Alpha and Beta)	- A resurge in cases in Thong Lor entertainment district quickly spread throughout the country due to the non-restricted travel over the Thai New Year holidays in April. - Vaccinations began in February 2021.
Phase 4: 1st July 2021 – 4th January 2022 (Delta)	- The resurge in cases was clustered around Laksi construction camp site, and quickly spread to other provinces.
Phase 5: 5th January 2022 – present (Omicron)	- The Omicron variant was responsible for the aggressive resurge of infection rates.
Total infectious cases (from 13th January 2019 to 15th July 2022): 4,554,976 Total death cases (from 13th January 2019 to 22nd May 2022): 30,958	

Sources: Department of Public Health (2022); Matichon Online (2022); The World Bank (2021); UNICEF (2020)

Although the Thai government arranged the stimulus and relief packages for financial liquidity, which include tax relief, cash handouts, incentives, loans, relaxation of repayment and wage subsidies (UNICEF, 2020), MSMEs were reportedly to be affected the hardest because of the insufficient cashflow and limited access to these stimulus packages. Furthermore, the country's pandemic management has become less effective due to the aggressive resurge of cases from new variants (AsiaLink, 2021). This

subsequently put Thailand in the economically challenging position, which is indicated by the contracted GDP of –6.1% in year 2020 (The World Bank, 2021).

Even though the containment restrictions have been eased out, economic uncertainties remained high (The World Bank, 2021). Moreover, different industries experienced uneven recovery, while some—including medicines, instant foods, delivery services and home appliances—were positively affected, some—including hotels and restaurants, automobiles, apparel, and logistics—were severely impacted and are predicted not to resume at the pre-COVID-19 level in the near future (Prachachat, 2020).

Resource Based View Theory

A dramatic shortage of supplies, interrupted supply chain and reduction of revenues are among the impacts of COVID-19 crisis that pose vulnerability on MSMEs (Organization for Economic Co-operation and Development, 2020). Hence, it is critical that MSMEs prepare a well-structured crisis management plan in managing their respective business with available resources to recover from the crisis (Heller & Darling, 2011; Wang, 2009). This favorable state calls entrepreneurs to effectively employ organizational resources, which include skills and capabilities of entrepreneurs (Rehman et al., 2021; Wang, 2009), quick adaptability to crises (Kogut & Mejri, 2022) and utilization of technology (Fernandes & Solimun, 2017).

Hence, this present study intends to investigate how MSME entrepreneurs strategically manage resources as depicted under entrepreneurial competency, resilience and technology adoption. This is largely to maintain their business performance based on the Resource Based View (RBV) theory, which analyzes organizational resources in implementing strategies to add business value and attain competitive advantages (Madhani, 2010). RBV could be regarded as the most appropriate theory in framing the study on MSMEs' entrepreneurial management as crisis management in small and medium-scale businesses requires considerable resources, which consequently determine their competence in making business decisions and carrying out enhanced business performance (Leekpai, 2013; Miller, 2011). Therefore, the implication of RBV is indeed crucial as it identifies and exploits unique resources to obtain competitive advantages and foster a robust business process amidst the COVID-19 crisis (Miller, 2011; Song, Ma & Yu, 2019).

The RBV contends that entrepreneurial orientation improves entrepreneurial competency in exploiting business opportunities, managing risks and obtaining resources to proactively create and capture customer values in the challenging business environment (Goel & Jones, 2016; Leekpai, 2013; Song et al., 2019). In addition, MSMEs' resource constraints can be managed through resilience that allows them to be dynamically prepared and responsive to the crisis (Chit, Croucher & Rizov, 2022; Klein & Todesco, 2021). Moreover, it has been studied that technological progress helps MSMEs survive and elevate business operations without recruiting a new resource base (Subriadi & Wardhani, 2022). Through the RBV perspective, it is desirable for MSMEs to strategically manage the inimitable resources as depicted under entrepreneurial

competency, resilience and technology adoption in order to advance their competitive advantage and achieve better business performance during the COVID-19 pandemic (Acquaah, Amoako-Gyampah & Jayaram, 2011).

Crisis Management and Business Performance

The COVID-19 pandemic is considered the worst plague to hit the world, and it is unfortunately expected to continue in the years to come (Kissler, Tedijanto, Goldstein, Grad & Lipsitch, 2020; Raassens, Haans & Mullick, 2022). If the crisis is not properly managed, MSMEs will unavoidably be turned into a disastrous situation (Singhal, 2021), especially when they are small and resource constraints (Fasth et al., 2021; Guckenbiehl & Corral de Zubielqui, 2022).

Since business decisions during the threatful COVID-19 are complex and evidently under pressure, a careful decision must be quickly made to ensure MSMEs' continuous well-being (Fasth et al., 2021). This means that crisis management should be proactively planned (Singhal, 2021). Crisis management is an arrangement of well-structured activities in forecasting, identifying, analyzing, handling and preventing business crises by employing management practices so that an organization is able to continue its normal operation and possibly benefit from the times of difficulty (Heller & Darling, 2011; Singhal, 2021; Wang, 2009). Crisis management employs a group of systematic practices including marketing, maintenance, pandemic prevention and human resources (Custance et al., 2021; Lai & Wong, 2020). In short, it facilitates the coordination of organizational responses and resources towards the harmful incident (Olawale, 2014). Contrarily, the absence of crisis management could possibly result in destructive consequences (Unlu et al., 2010).

Therefore, a valid crisis management plan could prevent business crises, facilitate faster recovery or even ensure effective business performance (Heller & Darling, 2011; Olawale, 2014; Pheng et al., 1999; Singhal, 2021; Wang, 2009). Crisis management enables MSMEs to make a quick strategic decision within a structured environment, thereby allowing for minimal negative consequences (Olawale, 2014). Moreover, crisis management has been found to enhance effective communication during crisis and subsequently lead to a sounder understanding, coordination and reduced anxiety among human resources (Buhagiar & Anand, 2022). This implies that under the circumstances where crisis is efficiently managed, it could generate desirable business performance. Therefore, this study hypothesizes that:

H1: There is a positive relationship between crisis management and business performance.

Entrepreneurial Competency

As a leader of MSMEs who desires to enhance business excellence, an entrepreneur is responsible for the success of the crisis management process and is supposed to develop skills that are congruent with highly changeable environments (Heller & Darling, 2012). An effective entrepreneur should be able

to support an enterprise during environmental shifts (Bhaduri, 2019). In times of crises, an entrepreneur is an essential organizational resource to diminish the effects of turbulence (Buhagiar & Anand, 2021). This means that he should possess an integration of skills and personality that allows him to play creative and strategic roles in forecasting, planning for, reacting to, learning from the crises and ultimately develop his entrepreneurial competencies (Buhagiar & Anand, 2021; Khodarahmi, 2009).

Specifically, entrepreneurial competency refers to entrepreneur's skills and capabilities including knowledge, traits and managerial competencies that help improve business performance (Rehman et al., 2021). This indicates that entrepreneurial competency determines the effectiveness of crisis management (Bhaduri, 2019) as it helps in developing and employing business resources that could be efficiently utilized to strengthen business operations (Rehman et al., 2021). Previous studies have also revealed that entrepreneurial competency determines the growth and sustainability of business excellence (Rehman et al., 2021; Sajilan & Tehseen, 2015). Therefore, this study hypothesizes that:

H2: There is a positive relationship between entrepreneurial competency and crisis management.

H3: There is a positive relationship between entrepreneurial competency and business performance.

Resilience

The COVID-19 crisis has consequentially necessitated entrepreneurs to develop skills that assist MSMEs in adopting quickly and creatively towards the crisis so as to maintain business excellence (Nizamidou & Vouzas, 2021). Specifically, entrepreneurs need to be resilient by timely adapting to disruptions in order to recuperate normal operations with least damages, and possibly facilitate an organization to achieve better competitive advantage (Devertsiotis, 2003; Kendra & Wachtendor, 2003; Nizamidou & Vouzas, 2021). Therefore, resilience could be regarded as an ability to turn challenges into opportunities and enhance business performance (Hossain et al., 2022).

Kogut and Mejri (2022) claimed that resilience stimulates entrepreneurs to quickly react to or recover from crises while Doern et al., (2019) explained that resilient entrepreneurs usually develop their entrepreneurial intentions and actions in times of turbulences. Hence, resilience is indicated to play an essential role in facilitating MSMEs to successfully execute an effective crisis management program, and subsequently achieve favorable business performance (Nizamidou & Vouzas, 2021; Unlu et al., 2010). Therefore, this study hypothesizes that:

H4: There is a positive relationship between resilience and crisis management.

H5: There is a positive relationship between resilience and business performance.

Technology Adoption

Technological change is the essential determinant of business recovery that requires entrepreneurs to adopt in order to achieve business efficiency during a crisis (Fernandes & Solimun, 2017). In this present study, technology adoption refers to employing new technologies to efficiently produce valuable products to yield entrepreneurial opportunities and profitability (Fernandes & Solimun, 2017; Miniesy, Elshahawy & Fakhreldin, 2022). Technology facilitates entrepreneurs with considerable advantages related to crisis management, which include faster communication with customers and stakeholders, information access, market opportunities and cost-effective operations (Miniesy et al., 2022).

Technology adoption provides a significant favorable effect on business performance by allowing business to operate at improved efficiency and profitability (Fernandes & Solimun, 2017). Technologies increasingly reshape entrepreneurial activities and resources into digital forms that include digital products or services, digital platforms, and digital infrastructure to yield entrepreneurial opportunities, provide unique business value and subsequently, enhance business performance (Miniesy et al., 2022; Upadhyay, Upadhyay & Dwivedi, 2021). Therefore, this study hypothesizes that:

H6: There is a positive relationship between technology adoption and crisis management.

H7: There is a positive relationship between technology adoption and business performance.

RESEARCH METHODOLOGY

This present study applied quantitative research method where purposive sampling technique was used to select the sample based on the business ownership and involvement (Hallock, Roggeveen & Crittenden, 2019). Hence, the target respondents were entrepreneurs or business owners of MSMEs across business sectors in Thailand, and only one respondent was approached from each enterprise. MSMEs could be classified on the basis of employment into three main sectors, which are the manufacturing, trade and service sectors, as shown in Table 2.

Table 2: Classification of MSMEs in Thailand

Enterprises	Employment
Micro enterprises	Not more than 5 employees
Small enterprises	- Manufacturing sector: 6–50 employees - Trade and service sectors: 6–30 employees
Medium enterprises	- Manufacturing sector: 51–200 employees - Trade and service sectors: 31–100 employees

Source: OSMEP (n.d.)

Self-administered and person-administered surveys were used to collect data depending on the preferences of the respondents. An online questionnaire was used as the research instrument, and it comprised four main parts: 1) background information of business enterprises, 2) influential factors on business operation during COVID-19 pandemic, 3) crisis management during COVID-19 pandemic, and 4) business performance during COVID-19 pandemic. Question items in part two to part four consisted of those corresponding to the measurement constructs, which were adapted from previous studies: business performance (Lai & Wong, 2020), crisis management (Lai & Wong, 2020), entrepreneurial competency (Ahmad, 2007), resilience (Elshaer & Saad, 2021), and technology adoption (Zhou, Qin & Fang, 2019). A five-point Likert scale was used as the measurement scale.

The sample size assigned by previous studies on the crisis management, COVID-19 pandemic or data from business owners were between 101 and 389 i.e., Charoennan and Embalzado (2021) 168 samples, Lai and Wong (2020) 244 samples, Nizamidou et al., (2021) 207 samples, Rehman et al. (2021) 389 samples, and Teeratansirikool, Siengthai, Badir and Charoenngam (2013) 101 samples. Moreover, Hair, Black, Babin, Anderson and Tatham (2006) recommended that the minimum sample size should be five times the number of the variables. Therefore, the proposed sample size of 250 deems appropriate for this present study. During the data collection process, 320 business owners from different industries were approached, and 257 questionnaires were completed. The derived data were monitored and cleaned by considering the respondents' characteristics, the duplication of responses and the completeness of questionnaires. At the end, 243 data sets were considered appropriate for data analysis, which represent 94.5 percent of usable data set.

To control response bias during data collection process, business owners were approached through both face-to-face interview and self-reported online survey. They were informed that the length of questionnaire was short and would take approximately five to seven minutes to finish in order to reduce non-response bias. The survey also emphasized the respondents' anonymity by not inquiring the respondents' name and associated enterprises. The data retrieved from them would not be analyzed and reported individually to reduce the possibility of social desirability bias. Furthermore, respondents were sufficiently informed about the survey topic, yet the details of research contents were withheld to avoid bias from demand characteristics.

DATA ANALYSIS

Confirmatory Factor Analysis (CFA) and Scale Reliability

CFA was performed by adopting structural equation modeling (SEM) to examine the validity and reliability of the constructs (Hair et al., 2006). The absolute fit measures of CFA were: $\chi^2/df = 1.738$, $\rho < .001$, GFI = .822 and RMSEA = .055, and the incremental fit measures were: NFI = .804, IFI = .906, TLI = .895, and CFI = .905. Even though ρ-value is significant, and GFI, NFI and TLI values were below 0.9, they are sensitive to a sample size and can underestimate the fit for small sample size; hence, a cutoff of 0.8 is considered an acceptable fit for the hypothesized model (Hooper, Coughlan & Mullen, 2008; Mulaik et al., 1989). RMSEA value is less than 0.08, indicating a good fit (MacCallum, Browne and Sugawara, 1996). While the standardized factor loadings of most items were above 0.5; one item from business performance is 0.46 yet it was approaching the cutoff point and significant at .001 level, meeting the minimum requirement for factor loading (Hair et al., 2006). In addition, the Cronbach's alpha and the composite reliabilities of all constructs were greater than 0.7 indicating satisfactory internal reliability (Gefen, Straub & Boudreau, 2000). Even though the AVE of entrepreneurial competency and business performance are lower than 0.5, they are acceptable at 0.4 because the CR are higher than 0.6 (Fornell & Larcker, 1981). See Table 3 for details.

Table 3: Psychometric Properties of Scale Items

Constructs	Number of Items	Cronbach's Alpha	Composite Reliabilities	Average Variance Extracted	CFA Factor Loadings
Entrepreneurial competency	4	0.81	0.78	0.47	0.60–0.77***
Resilience	4	0.90	0.90	0.70	0.77–0.89***
Technology adoption	4	0.85	0.84	0.57	0.66–0.82***
Crisis management	4	0.88	0.84	0.58	0.60–0.85***
Business performance	4	0.70	0.72	0.40	0.46–0.73***

Table 4: Descriptive Data of Business Backgrounds

Business Backgrounds	Frequencies	Percentage
Classification of MSMEs		
Micro enterprises	134	55.1
Small enterprises	78	32.1
Medium enterprises	31	12.8
Business Sectors		
Service sector	98	40.3
Manufacturing sector	77	31.7
Trade sector	68	28.0
Industries		
Food and beverage products	50	20.6
Fashion and clothing	23	9.5
Restaurant	18	7.4
Real estate and construction	17	7.0
Hotel and hospitality	15	6.2
Automobile	12	4.9
Beauty, spa, hair salon	12	4.9
Others, such as industrial/electronic materials, agriculture, IT & communication, health products, packaging, etc.	96	39.5
Year of Establishment		
1994 and before	52	21.5
1995–1996 (Dot-com bubble)	5	2.1
1997–2006 (1997 Asian financial crisis)	27	11.2
2007–2010 (Subprime mortgage crisis)	15	6.2
2011–2012 (The 2011 Thailand flood)	13	5.4
2013–2019 (Thai political protest)	89	36.8
2020 onwards (COVID-19 recession)	41	16.9

Descriptive Data

Regarding Table 4, the respondents were 243 MSME entrepreneurs consisting of 134 micro enterprises, 78 small enterprises and 31 medium enterprises. About 98 of them were from the service sector, 77 from the manufacturing sector and 68 from the trade sector. In addition, the respondents were from various industries including food and beverage products (20.6%), fashion and clothing (9.5%), restaurant (7.4%), real estate and construction (7.0%), hotel and hospitality (6.2%), and etc. In terms of the year of their establishment, which is used to estimate their experiences in dealing with crises, the data indicated that 52 enterprises were established in 1994 and before, 5 were established during 1995 and 1996 (after the Dot-com bubble crisis), 27 established during 1997 and 2006 (after the 1997 Asian financial crisis), 15 established during 2007 and 2010 (after the subprime mortgage crisis), 13 established during 2011 and 2012 (after the 2011 Thailand flood), 89 established during 2013 and 2019 (after the Thai political protest), and 41 established in 2020 onwards (after the COVID-19 recession).

RESEARCH FINDINGS

SEM was adopted to determine the hypothesized relationships. The absolute fit measures of the path model were: $\chi^2/df = 1.766$, $\rho < .001$, GFI = .820 and RMSEA = .056, and the incremental fit measures were: NFI = .802, IFI = .903, TLI = .891, and CFI = .902. Even though ρ-value is significant, and GFI, NFI and TLI values were below 0.9, they are sensitive to a sample size and can underestimate the fit for small sample size; hence, a cutoff of 0.8 is considered an acceptable fit for the hypothesized model (Hooper et al., 2008; Mulaik et al., 1989). RMSEA value is less than 0.08, indicating a good fit suggested by MacCallum et al. (1996). In addition, the squared multiple correlations suggested that the predictors accounted for 52.6% of the variance associated with crisis management and 77.0% of the variance associated with business performance.

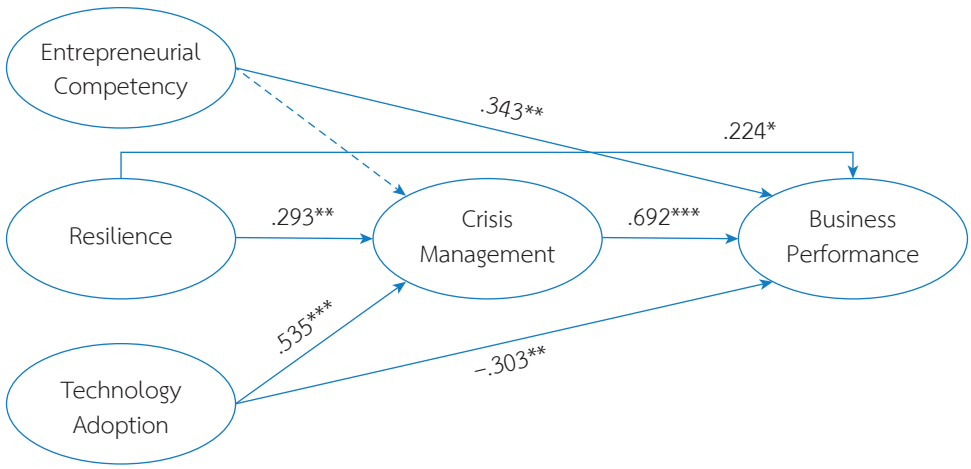

Figure 1: A Summary of Hypothesis Testing Results

The research findings indicated that crisis management significantly and positively influenced business performance (C.R. = 3.977; $\rho < .001$). Therefore, H1 was supported. Nevertheless, H2 was not supported as entrepreneurial competency did not significantly influence crisis management. On the other hand, the results revealed that entrepreneurial competency significantly led to better business performance (C.R. = 3.085; $\rho < .01$). Therefore, H3 was supported. Moreover, resilience had a significant positive influence on crisis management (C.R. = 2.928; $\rho < .01$) and led to improved business performance (C.R. = 2.312; $\rho < .05$). Therefore, H4 and H5 were supported. In addition, while technology adoption had a significant positive influence on crisis management (C.R. = 4.357; $\rho < .001$) supporting H6, it had a significant negative influence on business performance (C.R. = –2.676; $\rho < .01$) thus, H7 was not supported. A summary of hypothesis testing results is illustrated in Figure 1 and Table 5.

Table 5: A Summary of Hypothesis Testing Results

Hypotheses and Paths in the Model	β	C.R.	P-Value
H1: Crisis management ➔ Business performance	.692	3.977	***
H2: Entrepreneurial competency ➔ Crisis management	–.002	–.020	.984
H3: Entrepreneurial competency ➔ Business performance	.343	3.085	.002**
H4: Resilience ➔ Crisis management	.293	2.928	.003**
H5: Resilience ➔ Business performance	.224	2.312	.021*
H6: Technology adoption ➔ Crisis management	.535	4.357	***
H7: Technology adoption ➔ Business performance	–.303	–2.676	.007**

Remarks: 1) β = Standardized Regression Weight; C.R. = Critical Ratio
2) Significant Levels: *** significant at the .001 level, ** significant at the .01 level, and * significant at the .05 level

DISCUSSION

The findings indicated that MSMEs that prepared a crisis management plan achieved better business performance because such practices allowed them to pursue regular business operations and assisted them to effectively recover from the COVID-19 crisis (Buhagiar & Anand, 2022; Heller & Darling, 2011).

The results confirmed that entrepreneurial competency was one of the most crucial determinants on the improvement of business performance because entrepreneurs' skills and capabilities facilitate MSMEs in effectively employing business resources and enhancing business outcomes (Rehman et al., 2021). Nevertheless, while previous studies indicated its positive influence on crisis management (Bhaduri,

2019), this present study found that it did not have a significant impact. The reason is that the time span to handle the crisis is intensely narrow, but the crisis management is not a quick fix (Heller & Darling, 2012). Besides, the effects of the ongoing COVID-19 pandemic are novel and immeasurable thus, it is more likely for Thai entrepreneurs, who are considered to be conservative and possess relatively high uncertainty avoidance, value stability and avoidance risk (Swierczek & Ha, 2003), to delay their investments and efforts (Siam Commercial Bank, 2021). Furthermore, the effect of COVID-19 pandemic is apparently beyond the control of MSMEs due to the government's serious restrictions, consumer's reduced spending and the global economic recession (SCB, 2021). Therefore, entrepreneurial competency was found to have insignificant impact on COVID-19 crisis management.

Furthermore, despite being severely vulnerable during the crisis, the results confirmed that resilient MSMEs would withstand and thrive. They even exploit new business opportunities during the crisis because they were quick and flexible to dynamically execute the crisis management so that faster recovery and even business excellence were achieved (Fasth et al., 2021; Guckenbiehl & Corral de Zubielqui, 2022).

The results also indicated that technology adoption assisted MSMEs in managing and recovering from the COVID-19 crisis due to improved communication, better access to information and higher cost-efficiency (Miniesy et al., 2022). This present study found negative relationship between technology adoption and business performance, which indicates that even though technology has a crucial impact on organizational competitiveness, MSMEs are more likely to experience lack of technology adoption and suffer from barriers to innovation than large enterprises. This is due to such factors as high risk and cost associated with innovation, insufficiency of resources, organizational culture and additional work brought by change (Cordeiro & Vieira, 2012). Moreover, some MSMEs acknowledged that certain technologies were unnecessary due to the existence of previous innovation (Madeira, Carvalho, Moreira, Duarte & Filho, 2017). Some even feel intense anxiety and threat (Xero, 2021). Harel (2021) revealed that most Israelis' MSMEs operating in traditional industrial sector with relatively small amount of technology investment were not affected by the pandemic. Amornkitvikai, Tham and Tangpoolcharoen (2021) supported that MSMEs in Thailand especially the older enterprises, were mostly local enterprises in the offline economy and suffered from barriers to technology adoption. Despite being less likely to adopt technology, according to the results, MSMEs in Thailand still manage to survive and mitigate the effects of COVID-19 pandemic, which illustrates the justification of the negative relationship between technology adoption and business performance.

THEORETICAL AND MANAGERIAL IMPLICATIONS

The research findings provide a better comprehension on the underlying mechanisms of crisis management and business performance during the COVID-19 crisis. Theoretically, this present study illustrates a holistic comprehension of MSMEs' crisis management by incorporating both influential factors and consequences. According to the RBV theory where a robust management of organizational resources and strategic responses should help MSMEs survive or achieve desirable performance during the crisis (Leekpai, 2013; Miller, 2011), this present study does not only confirm the influence of organizational resources namely entrepreneurial competencies, resilience and technology adoption on crisis management and business performance, it also extended the related knowledge and suggested the insignificant influence of entrepreneurial competency on crisis management as well as the negative influence of technology adoption on business performance. Such relationships could be explained by specific organizational and cultural characteristics as aforementioned.

From a practical aspect, this present study implies that it is critical for MSMEs to incorporate crisis management plan into their business goals. This means that MSMEs should prepare crisis management plan to minimize the severe and unpredictable effects of the COVID-19 crisis. Nevertheless, the one-size-fits-all plan is not applicable because the impact is uneven among MSMEs across business sizes, sectors, industries, and investments in technology and cultures (Guckenbiehl & Corral de Zubielqui, 2022; Harel, 2021). Therefore, different organizational resources and strategic responses should be considered in different contexts.

In light of the significant influence of entrepreneurial competency on business performance, it is crucial for entrepreneurs to acquire related knowledge and adopt essential technologies especially on data intelligence. This is to analyze consumer insights and their consumption journey so that it develops business values that meet their preferences based on the efficient usage of available resources. For instance, the derived insights could be utilized as references in identifying the profile of potential customers, creating the appropriate content marketing to enhance customers' engagement and developing products and services to achieve customer satisfaction.

In addition, the results imply that no matter how well the business operation is planned, it is the entrepreneurs' action that determines the business success. Hence, MSME entrepreneurs should be resilient and act upon the plan in the timely and strategic manner to capitalize on any disruptions. Different types of resilient strategies to be executed during the COVID-19 crisis include reconfiguration, leveraging, sensing and interpreting as well as learning and knowledge integration (Hossain et al., 2022).

Despite the negative relationship between technology adoption and business performance, it implies to the government and policy makers that it is crucial to create awareness among Thai entrepreneurs on the long-term benefits of technology on business competitiveness, cost efficiency and subsequent profits. Specifically, policy makers can also encourage MSME entrepreneurs to normalize the

digital changes by quantifying and illustrating the gap between their current operations and those who benefited from the adoption of technology (Xero, 2021).

LIMITATIONS AND FUTURE RESEARCH

Even though this present study provides significant understanding of crisis management and business performance of MSME entrepreneurs in Thailand amidst the unpredictable COVID-19 crisis, it is not without its limitations. Firstly, although the sample size corresponded to the samples reflected in other related studies, the generalization of the research findings to MSMEs in Thailand is limited. This means that the findings were generated from MSMEs with various backgrounds such as the business size, sector, industry and year of establishment. This does not warranty that it is true to all sectors. Therefore, future study is recommended to include larger sample size with homogenous characteristics or to determine whether differences exist among samples with different business profiles.

Secondly, the insignificant relationship between entrepreneurial competency and crisis management and the negative relationship between technology adoption and business performance were documented to be under the influences of certain variables. This may include the government's restrictions, changes in consumer behavior, the global economic recession, and barriers to innovate. This provides good research opportunities for future research investigations. Lastly, this present study focuses on the influences of internal factors. In order to better comprehend the mechanism of crisis management, it is interesting for future studies to include external factors, namely cultural factors, government policies and measures.

REFERENCES

Abuhussein, T., Barham, H. & Al-Jaghoub, S. (2021). The effects of COVID-19 on small and medium-sized enterprises: Empirical evidence from Jordan. *Journal of Enterprising Communities: People and Places in the Global Economy*.

Acquaah, M., Amoako-Gyampah, K. & Jayaram, J. (2011). Resilience in family and nonfamily firms: An examination of the relationships between manufacturing strategy, competitive strategy and firm performance. *International Journal of Production Research, 49*(18), 5527–5544.

Ahmad, N. H. (2007). *A cross cultural study of entrepreneurial competencies and entrepreneurial success in SMEs in Australia and Malaysia*. (Doctoral dissertation). University of Adelaide, Adelaide Graduate School of Business.

Amornkitvikai, Y., Tham, S. Y. & Tangpoolcharoen, J. (2021). Barriers and factors affecting e-commerce utilization of Thai small and medium-sized enterprises in food and beverage and retail services. *Global Business Review*, 1–24.

AsiaLink. (2021). *Thailand's COVID crisis*. Retrieved March 4, 2022 from https://asialink.unimelb.edu.au/insights/thailands-covid-crisis

BOT. (2021). *Revitalising Thailand's Tourism Sector: In Search of Enablers for Future Sustainability*. Retrieved March 4, 2022 from https://www.bot.or.th/Thai/MonetaryPolicy/Economic Conditions/AAA/250624_WhitepaperVISA.pdf

Bhaduri, R. M. (2019). Leveraging culture and leadership in crisis management. *European Journal of Training and Development, 43*(5/6), 534–549.

Bonin, S., Singh, W., Suresh, V., Rashed, T., Uppaal, K., Nair, R. & Bhavani, R. R. (2021). A priority action roadmap for women's economic empowerment (PAEWEE) amid COVID-19: A co-creation approach. *International Journal of Gender and Entrepreneurship, 13*(2), 142–161.

Buhagiar, K. & Anand, A. (2021). Synergistic triad of crisis management: Leadership, knowledge management and organizational learning. *International Journal of Organizational Analysis*. Advance online publication. DOI: 10.1108/IJOA-03-2021-2672

Charoennan, W. & Embalzardo, H. (2021). The impacts of COVID-19 pandemic and strategic responses: Insights from business owners in Thailand. *Chulalongkorn Business Review, 43*(2), 47–71.

Chit, M. M., Croucher, R. & Rizov, M. (2022). Surviving the COVID-19 pandemic: The antecedents of success among European SMEs. *European Management Review*, 1–15.

Cordeiro, A. S. & Vieira, F. D. (2012). *Barriers to innovation in SMEs: An international comparison. Paper presented at II Conferência International de Integração do Design, Engenharia e Gestão para a inovação Florianópolis*, Brasil.

Custance, P., Walley, K. & Jiang, D. (2012). Crisis brand management in emerging markets: Insights from the Chinese infant milk powder scandal. *Marketing Intelligence & Planning, 30*(1), 18–32.

DPH. (2022). *The Daily Situation Updates of COVID-19*. Retrieved July 17, 2022 from https://ddc.moph.go.th/covid19-dashboard/

Devertsiotis, K. (2003). The pursuit of sustainable business excellence: Guiding transformation for effective organizational change. *Total Quality Management, 14*(3), 251–267.

Doern, R. Williams, N. & Vorley, T. (2019). Special issue on entrepreneurship and crises: Business as usual? An introduction and review of the literature. *Entrepreneurship and Regional Development, 31*(5–6), 400–412.

Elshaer, I. A. & Saad, S. K. (2021). Entrepreneurial resilience and business continuity in the tourism and hospitality: The role of adaptive performance and institutional orientation. *Tourism Review*. Advance online publication. DOI: 10.1108/TR-04-2021-0171

Fasth, J., Elliot, V. & Styhre, A. (2021). Crisis management as practice in small- and medium-sized enterprises during the first period of COVID-19. *Journal of Contingencies and Crisis Management, 30*(2), 161–170.

Fernandes, A. A. R. & Solimun (2017). Moderating effects orientation and innovation strategy on the effect of uncertainty on the performance of business environment. *International Journal of Law and Management, 59*(6), 1211–1219.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Gefen, D., Straub, D. & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems, 4*(1).

Goel, S. & Jones, R. J. III (2016). Entrepreneurial exploration and exploitation in family business: A systematic review and future directions. *Family Business Review, 29*(1), 94–120.

Grant Thornton. (n.d.). Responding to Coronavirus COVID-19. Retrieved April 7, 2022 from https://www.grantthornton.co.th/campaigns/coronavirus-covid-19/

Guckenbiehl, P. & Corral de Zubielqui, G. (2022). Start-ups' business model changes during the COVID-19 pandemic: Counteracting adversities and pursuing opportunities. *International Small Business Journal: Researching Entrepreneurship, 40*(2), 150–177.

Hair, J. F. Jr., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. (2006). *Multivariate data analysis*. Upper Saddle River, NJ: Pearson Education.

Hallock, W. Roggeveen, A. L. & Crittenden, V. (2019). Firm-level perspectives on social media engagement: An exploratory study. *Qualitative Market Research: An International Journal, 22*(2), 217–226.

Harel, R. (2021). The impact of COVID-19 on small businesses' performance and innovation. *Global Business Review*, 1–22.

Heller, V. L. & Darling, J. R. (2011). Toyota in crisis: Denial and mismanagement. *Journal of Business Strategy, 32*(5), 4–13.

Heller, V. L. & Darling, J. R. (2012). Anatomy of crisis management: Lessons from the infamous Toyota case. *European Business Review, 24*(2), 151–168.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53–60.

Hossain, M. R., Akhter, F. & Sultana, M. M. (2022). SMEs in Covid-19 crisis and combating strategies: A systematic literature review (SLR) and a case from emerging economy. *Operations Research Perspectives, 9*, 1–13.

Jaques, T. (2010). Embedding issue management as a strategic element of crisis prevention. *Disaster Prevention and Management, 19*(4), 469–482.

Kendra, J. M. & Wachtendorf, T. (2003). Elements of resilience after the world trade center disaster: Reconstituting New York city's emergency operations centre. *Disasters, 27*(1), 37–53.

Khodarahmi, E. (2009). Crisis management. *Disaster Prevention and Management, 18*(5), 523–528.

Kissler, S. M., Tedijanto, C., Goldstein, E., Grad, Y. H. & Lipsitch, M. (2020). Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. *Science, 368*(6493), 860–868.

Klein, V. B. & Todesco, J. L. (2021). COVID-19 crisis and SMEs responses: The role of digital transformation. *Knowledge and Process Management, 28*(2), 117–133.

Kogut, C. S. & Mejri, K. (2022). Female entrepreneurship in emerging markets: Challenges of running a business in turbulent contexts and times. *International Journal of Gender and Entrepreneurship, 14*(1), 95–116.

Lai, I. K. W. & Wong, J. W. C. (2020). Comparing crisis management practices in the hotel industry between initial and pandemic stages of COVID-19. *International Journal of Contemporary Hospitality Management, 32*(10), 3135–3156.

Leekpai, P. (2013). Antecedents to innovativeness and impact on firm performance. *Executive Journal, 33*(4), 55–63.

MacCallum, R. C., Browne, M. W. & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130–149.

Madeira, M. J., Carvalho, J., Moreira, J. R. M., Duarte, F., & Filho, F. S. P. (2017). Barriers to innovation and the innovative performance of Portuguese firms. *Journal of Business, 9*(1), 2–22.

Madhani, P. M. (2010). Resource Based View (RBV) of competitive advantage: An overview. *Resource Based View: Concepts and Practices*, 1–22.

Matichon Online. (2022). *Thailand is Entering the Fifth Wave of COVID-19*. Retrieved May 10, 2022 from https://www.matichon.co.th/local/quality-life/news_3117430

Miller, D. (2011). Miller (1983) revisited: A reflection on EO research and some suggestions for the future. *Entrepreneurship Theory and Practice*, 873–894.

Miniesy, R., Elshahawy, E. & Fakhreldin, H. (2022). Social media's impact on the empowerment of women and youth male entrepreneurs in Egypt. *International Journal of Gender and Entrepreneurship, 14*(2), 235–262.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S. & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin, 105*(3), 430–445.

Nizamidou, C. & Vouzas, F. (2021). HR professionals cultivating resilience and crisis awareness toward a business excellence environment. *EuroMed Journal of Business, 16*(4), 399–415.

Olawale, S. R. (2014). Crisis management strategy and its effects on organizational performance of multinational corporations in Nigeria: Empirical evidence from Promassidor Ltd. *European Journal of Business and Management, 6*(23), 79–87.

OECD. (2020). *Coronavirus (COVID-19): SME policy responses*. Retrieved July 13, 2022 from: https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/

OSMEP. (n.d.). *Definition of MSMEs*. Retrieved March 4, 2022 from https://www.sme.go.th/en/page.php?modulekey=363

OSMEP. (2022). *GDP MSME Quarter 4 Year 2021*. Retrieved April 30, 2022 from https://www.sme.go.th/upload/mod_download/download-20220331142219.pdf

Pheng, L. S., Ho., D. K. H. & Ann, Y. S. (1999). Crisis management: A survey of property development firms. *Property Management, 17*(3), 231–251.

Prachachat. (2020). *The Effects of COVID-19 by Industries*. Retrieved March 4, 2022 from: https://www.prachachat.net/breaking-news/news-547455

Raassens, N., Haans, H. & Mullick, S. (2022). Surviving the hectic early phase of the COVID-19 pandemic: A qualitative study to the supply chain strategies of food service firms in times of a crisis. *The International Journal of Logistics Management*. Advance online publication. DOI: 10.1108/IJLM-01-2021–0013

Rehman, S. U., Elrehail, H., Naire, K. Bhatti, A. & Taamneh, A. M. (2021). MCS package and entrepreneurial competency influence on business performance: The moderating role of business strategy. *European Journal of Management and Business Economics*. Advance online publication. DOI: 10.1108/EJMBE-04-2020-0088

Sajilan, S. & Tehseen, S. (2015). Cultural orientations, entrepreneurial competencies and SMEs business success: The contingent roles of environmental turbulence and network competence. *Review of Integrative Business and Economics Research, 4*(2), 20.

SCB. (2021). *Thailand after COVID-19 Prepare to Get Through the Economist's Perspective. Part 1: The Impact of the Economy and the Thai Labor Market*. Retrieved March 4, 2022 from: https://www.scb.co.th/en/personal-banking/stories/business-maker/thailand-after-covid -ep1.html

SCBAM. (n.d.). *Emerging Market*. Retrieved March 4, 2022 from https://www.scbam.com/th/knowledge-glossary/financial/em

Singhal, M. (2021). Crisis management to enhance organizational performance. *EPRA International Journal of Multidisciplinary Research, 7*(12), 102–106.

Smith, D. (2005). Business (not) as usual: Crisis management, service recovery and the vulnerability of organizations. *Journal of Services Marketing, 19*(5), 309–320.

Song, W., Ma, X. & Yu, H. (2019). Entrepreneurial orientation, interaction orientation, and innovation performance: A model of moderated mediation. *SAGE Open*, 1–13.

Subriadi, A. P. & Wardhani, S. A. K. (2022). Survivability scenario of SMEs in facing COVID-19 crisis based on the social commerce framework. *Sustainability, 14*, 1–24.

Swierczek, F. W. & Ha, T. T. (2003). Entrepreneurial orientation, uncertainty avoidance and firm performance: An analysis of Thai and Vietnamese SMEs. *Entrepreneurship and Innovation, 4*, 46–58.

Teeratansirikool, L., Siengthai, S., Badir, Y. & Charoenngam, C. (2013). Competitive strategies and firm performance: The mediating role of performance measurement. *International Journal of Productivity and Performance Management, 62*(2), 168–184.

The World Bank. (2021). *Monitoring the Impact of COVID-19 in Thailand*. Retrieved March 4, 2022 from https://www.worldbank.org/en/country/thailand/publication/monitoring-the-impact-of-covid-19-in-thailand

UNICEF. (2020). *Social Impact Assessment of COVID-19 in Thailand*. Retrieved March 4, 2022 from https://www.unicef.org/thailand/media/5071/file/SocialImpactAssessmentofCOVID-19inThailand.pdf

Unlu, A., Kapucu, N. & Sahin, B. (2010). Disaster and crisis management in Turkey: A need for a unified crisis management system. *Disaster Prevention and Management, 19*(2), 155–174.

Upadhyay, N., Upadhyay, S. & Dwivedi, Y. K. (2021). Theorizing artificial intelligence acceptance and digital entrepreneurship model. *International Journal of Entrepreneurial Behavior & Research*. Advance online publication. DOI: 10.1108/IJEBR-01-2021-0052

Wang, W. T. (2009). Knowledge management adoption in times of crisis. *Industrial Management & Data Systems, 109*(4), 445–462.

Xero. (2021). *Behavioral research by Xero uncovers barriers to small business technology adoption*. Retrieved April 30, 2022 from https://www.xero.com/my/media-releases/behavioural-research-by-xero-uncovers-barriers-to-small-business-technology-adoption/

Zhou, J., Qin, Y. & Fang, S. (2019). Impacts of consumers and real estate enterprises on the implementation of prefabrication in residential buildings: The moderating role of incentive policies. *Sustainability, 11*(18), 4827.