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Resilience, Self-efficacy, Openness to Change, and Innovativeness of MSME Owners: A Quantitative-Qualitative Integration Before, During, and After the COVID-19 Crisis

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Abstract

Research Aims: Micro, small, and medium-sized enterprises (MSMEs) have consistently demonstrated their resilience in the face of economic challenges, particularly during crises. This study delves into how the experiences of MSMEs before, during, and after the COVID-19 crisis have translated into resilience, self-efficacy, openness to change, and innovativeness as they responded to the unprecedented challenges posed by the pandemic.

Design/Methodology/Approach: This mixed-methods study combines the quantitative analysis of the characteristics of MSME owners with their narratives of their experiences during the COVID-19 crisis, translating adversity into an opportunity.

Research Findings: The integrated results showed how the quantitative-qualitative insights enabled a more comprehensive understanding of the characteristics that supported resilience, resulting in maximum utilisation of technology, expansion of networks, and the creation of community enterprises.

Theoretical Contribution/Originality: The integration of Psychological Capital Theory into the discussion provides a nuanced lens through which we can understand how MSMEs effectively harness their vulnerabilities to foster resilience, self-efficacy, openness to change, and innovativeness.

Managerial Implications in the South East Asian Context: The findings of this study offer valuable insights for small and medium-sized enterprises in Southeast Asia seeking to develop crisis management strategies. By emphasising the pivotal characteristics of entrepreneurs, these strategies can enhance the agility and resilience of business owners in the face of adversity.

Research Limitations & Implications: Future research could examine COVID-19's longitudinal and comparative effects on Southeast Asian MSMEs. These studies can help explain how small businesses adapt to and evolve to meet difficulties.

Keywords: COVID-19, Resilience, Self-efficacy, Openness to Change, Innovativeness, Mixed-Method

INTRODUCTION

The COVID-19 pandemic has adversely impacted businesses and industries worldwide. Many business owners strive to survive and remain viable in the market. However, despite these challenges, many businesses have seized the opportunity to overcome the crisis and adapt to the new environment (Du et al., 2023). The detrimental impact of the COVID-19 crisis experienced by MSMEs is unlikely for large corporations in terms of capital and other resources. However, MSMEs may not have the financial wherewithal to stay afloat during an economic downturn, but they have remained resilient and survived the crisis.

A previous study observed variations in the behaviour of small and medium-sized enterprise (SME) owners in unpredictable situations. For instance, some owners respond to crises based on their knowledge, while others adapt positively to the circumstances (Friedman et al., 2016). However, there is an ongoing debate regarding the resilience of SMEs. Scholars have questioned their ability to withstand crises due to their limited resources and capabilities, making them vulnerable (Parker & Ameen, 2018; Sullivan-Taylor & Branicki, 2011). Conversely, several researchers argue that although small businesses may be vulnerable, they demonstrate resilience and agility in the face of adversity (Gilbert, 2005; Kitching et al., 2009). The resilience of micro, small, and medium-sized enterprises (MSMEs) can be assessed by considering their entrepreneurial characteristics, attitudes, and behaviour during a crisis. Entrepreneurial characteristics may be crucial to the resilience of MSMEs in the face of adversity. Self-efficacy pertains to the belief in one's ability to navigate difficulties; openness to change reflects an organisation's receptivity to adapt; and innovativeness involves generating and implementing novel ideas. Previous literature has posited the significance of these characteristics for the resilience of SMEs. For instance, Alshebami (2022) found that self-efficacy and resilience are key drivers in SMEs' ability to continue operations during a crisis. Resmi et al. (2020) demonstrated the adaptability of micro and small enterprises to change, while Russell and Faulkner (2004) emphasised the ability of business owners to identify opportunities even amidst a crisis. While most scholars emphasise the vulnerability of MSMEs, owners exhibit resilience, driven by the desire for sustainability and survival in times of crisis (Gilbert, 2005; Kitching et al., 2009).

While numerous studies have highlighted the resilience of MSMEs, the unique challenges posed by the COVID-19 crisis have sparked fresh debates about the adaptability and endurance of business owners. As the COVID-19 pandemic has brought unprecedented challenges to enterprises worldwide, SMEs are especially vulnerable due to their limited resources and capacities. This

study aims to investigate the critical factors influencing the resilience of micro, small, and medium enterprises (MSMEs) during adverse situations, mainly focusing on the COVID-19 pandemic. Thus, the study's objective is to examine how the characteristics of MSME owners, such as self-efficacy, openness to change, and innovativeness, influence resilience during a crisis. Using mixed-method research, this study attempts to investigate whether self-efficacy, openness to change, and innovativeness are evident in SMEs' experiences during the COVID-19 pandemic. These factors may form a significant gap to explore, considering the global and long-lasting impact of the pandemic on the business industry and the broader economy. By examining these factors, we hope to gain insights into how MSMEs have coped with and adapted to the COVID-19 crisis.

This research is necessary because the lessons learned from this adversity can inform and enhance MSME owners' abilities to navigate future crises. Understanding the role of self-efficacy, openness to change, and innovativeness during challenging times can contribute to resilience-building strategies for MSMEs, potentially mitigating the economic impact of future adversities.

LITERATURE REVIEW

This study is drawn from the theories of effectuation and the theory of causality, which explain the viability of MSME owners. According to Alsos et al. (2016), effectuation theory predicts that owners will be highly motivated, although the situation is inherently uncertain. On the other hand, owners use causation theory to take advantage of the market's existence, product knowledge, and success expectations given the situation (Alsos et al., 2016). These explanations support the owner's decision to keep the business going despite its precarious situation.

Micro-, Small, and Medium-sized Enterprises

Medium-sized enterprises (MSMEs), sometimes considered the backbone of national economies, are exceptionally susceptible to external disruptions, including financial crises, natural calamities, and shifts in the economic environment (Susantono et al., 2020). These enterprises face significant risks due to disruptions in business operations and limited financial resources (Parker & Ameen, 2018; Sullivan-Taylor & Branicki, 2011). The pandemic's long-term effects make MSMEs' sustainability even more difficult.

According to a study by the Asian Development Bank (Susantono et al., 2020), micro-, small-, and medium-sized enterprises have experienced substantial declines in revenue and sales. Smaller businesses have been particularly affected by funding shortages, leading many MSMEs across various industries to resort to temporary staff reductions during the pandemic. Additionally, many MSMEs have relied on personal finances or retained profits to sustain their

operations. Consequently, this situation will likely result in increased economic losses for the country and potentially hinder the overall economic recovery.

According to a survey conducted by Bhamra et al. (2011), 46% of SMEs need to prepare for business interruptions, and approximately 40% need a business strategy. Sullivan-Taylor and Branicki (2011) argue that these shortcomings contribute to the susceptibility and inflexibility of small enterprises when faced with challenges. Prior studies have underscored the critical significance of the owners' competencies and assets under challenging circumstances. Bhamra et al. (2011) suggest that a firm's flexibility and ability can undermine its owners' resilience. However, Kitching et al. (2009) challenge the notion of SME vulnerability and assert that owners demonstrate robustness, flexibility, and adaptability in adversity.

Furthermore, Kitching et al. (2009) argue that while small businesses may be vulnerable, they possess a resilience trait that enables them to withstand hardship. Small and medium-sized enterprises (SMEs) are deemed more adaptable and quicker to make decisions, making it easier for them to adjust to change. Despite possessing more resources, large corporations often exhibit restraint and prudence in their decision-making processes due to the stringent laws and policies governing resource utilisation (Parker & Ameen, 2018; Gilbert, 2005).

Prior literature suggests that the attitudes and motives of owners significantly influence business enterprises (Kozubiková et al., 2015). Owners exhibit a multifaceted personality in response to industry challenges. Their attitudes and behaviours are critical for thriving in the current business environment. Scholars identify vital characteristics that entrepreneurs must possess, including courage, self-reliance, responsibility, self-efficacy, perseverance, openness to change, innovativeness, and expertise in their chosen field of business (Deáková et al., 2010). Owners must also be independent, autonomous, and self-sufficient (Kozubiková et al., 2015). To ensure the survival of their businesses, owners must possess a distinct and powerful set of qualities that result in an assertive attitude. For example, owners' self-efficacy, openness to change, and innovativeness are prominent attitudes, as they are motivated by identifying opportunities amidst adversity. Nordhagen (2021) highlights how small businesses have taken the initiative to provide essential goods during the pandemic, enabling them to stay afloat. Similarly, small enterprises have embraced technology to deliver goods and services to sustain their businesses during crises.

Resilience, Self-efficacy, Openness to Change, and Innovativeness

This research is based on Psychological Capital Theory (PsyCap), which stresses positive psychological characteristics such as self-efficacy, optimism, resiliency, and hope (Luthans et

al., 2015). A person's favourable psychological condition or way of thinking is referred to as psychological capital. It includes attributes like self-efficacy (belief in one's ability to achieve goals), hope (an optimistic outlook towards the future), optimism (a positive attitude towards life), and resilience (the ability to bounce back from adversity). According to Xu et al. (2022), psychological capital can support the formation of social capital, which is imperative for developing networks, partnerships, and social connections in an individual's personal and professional life. These characteristics are essential for the resilience of business owners in times of crisis.

The emerging literature on resilience provides several definitions. For example, according to the IPCC (2014), resilience is the capacity to recover from a state of desolation caused by an unexpected occurrence. Gordon (2009) defines it as the capacity to adapt to climate and environmental change, while another study describes it as the capacity to manage change by preserving or modifying living standards in the face of shocks or pressures without jeopardising long-term prospects (Adger et al., 2007). From a business standpoint, there are many ways to define resilience. As an illustration, resilience can be viewed as the business owner's readiness and competence to keep operations running during crises (Pal et al., 2014), their determination when confronted with unexpected economic and environmental shifts (Acquaah et al., 2011), their assuredness in tackling difficulties, and their resilience against economic setbacks and major incidents (Sheffi & Rice, 2005). These varied interpretations of resilience converge on a shared theme: they all underscore a firm's inherent capability to persist, endure, and flourish despite unpredictable challenges.

Consequently, business resilience occurs because of the owner's affirmative behaviour during an economic slump. Small and medium-sized enterprises (SMEs) throughout Asia and the Pacific will likely be resilient to disasters and economic crises. For instance, in 2011, Auckland and New Zealand were struck by a powerful earthquake, forcing all companies to close to protect public safety. Most businesses were unprepared during this period, and the economy suffered significantly. However, despite the risk of natural disasters, most SMEs continue to operate to weather the effects of the circumstances (Tibay et al., 2018). The breakdown of power generation in South Africa has significantly impacted most SMEs in the country between 2014 and 2015. Parker and Ameen (2018) found that South African SMEs have surmounted the problem by recognising the reality of the circumstances and channelling their resources towards opportunities. The owners' proactive response has helped them become more robust during this challenging period in their country. Most small businesses are more concerned with ensuring

business continuity than developing a plan (Alberti et al., 2018; Ismail et al., 2011); thus, SMEs took advantage of the opportunity rather than suspending operations during the crisis.

Additionally, small businesses are surprisingly resilient because of their capacity to adapt quickly to changing conditions (Smallbone et al., 2012). In this sense, a company's ability to withstand difficult economic times is indicated by its ability to carry on with operations (Pal et al., 2014; Smallbone et al., 2012). According to Kitching et al. (2009), while small businesses are vulnerable, they possess a quality that helps them overcome hardship. Due to scholars' divergent opinions on SMEs' vulnerability during times of crisis, this study finds it necessary to analyse how owners respond to crises to retain resilience.

According to previous research, self-efficacy fosters the belief that an individual can adapt to change and contribute to environmental change (Engel et al., 2014). Chambers (2023) defines self-efficacy as "confidence in one's capacity to mobilize the motivation, cognitive resources, and courses of action necessary to satisfy certain situational demands," as defined by Wood and Bandura (1989). It also pertains to an individual's perceived ability to perform things that produce the desired result (Bandura, 1994). The owner's self-efficacy refers to his or her belief in his or her ability to manage the business in the face of adversity. Omerzel and Kuce (2013) claim that the owner's willingness to take risks, self-efficacy, and desire for independence are the most crucial aspects that determine the businessman's performance. Owners with high self-efficacy and resilience are more likely to continue operations despite crises and other environmental obstacles (Alshebami, 2022).

H₁: Higher levels of self-efficacy in MSME owners lead to greater resilience of MSME during the COVID-19 crisis.

Lehman et al. (2002) define openness to change as management's initiative to adapt to change and satisfy new demands or expectations. According to organisational change theory, openness to change is sensitive to what is occurring and responds aggressively to adverse conditions (Roczniewska & Higgins, 2019). In essence, openness to change entails an individual's acceptance and understanding of current events and a desire to adapt to them. In business operations, MSMEs, according to Resmi et al. (2020), are responsive to environmental changes and can adjust in terms of products, marketing methods, sales, and business-supporting technologies. Thus, openness to change enables MSMEs to adapt to and endure the realities of their businesses.

H₂: Greater openness to change in MSME owners increases resilience during the COVID-19 crisis.

Additionally, owners' tenacity fosters innovation. Innovation is considered an essential characteristic of owners. According to extant research, innovation is the process of putting ideas into practice or transforming resources, systems, and products to create new ones (Anderson et al., 2015). While innovation is critical in management, it is more likely to occur when a scenario necessitates sustainability. According to Russell and Faulkner (2004), owners will identify a break in the turmoil, create an opportunity, and work to alter the status quo and establish new norms. In the modern era, technology has facilitated the discovery of opportunities to expand networks. For instance, Hung et al. (2020) indicate that businesses may rely on technology to transform their business model into a more accessible, market-responsive system. Thus, to sustain their operations, businesses must always look for opportunities to innovate and update their processes to create and deliver goods and services. As previously mentioned, innovation is a privilege reserved for large enterprises endowed with enormous resources capable of bearing the cost. While innovation is crucial for a firm's long-term development and competitiveness and can boost profitability, MSMEs may need more resources and capabilities to pursue innovation.

H₃: Higher levels of innovativeness in MSME owners led to greater resilience during the COVID-19 crisis.

RESEARCH METHOD

This research employed a mixed-methods approach, integrating both quantitative and qualitative methodologies to comprehensively understand MSME owners' resilience and their experiences during the COVID-19 crisis. The quantitative study aimed to assess the influence of self-efficacy, openness to change, and innovativeness on the resilience of micro, small, and medium-sized enterprises (MSMEs) by addressing Research Question 1 (RQ1): To what extent do self-efficacy, openness to change, and innovativeness influence the resilience of MSMEs during the COVID-19 pandemic?

The qualitative component complements the quantitative study by offering context and in-depth insights into the experiences of MSME owners during the COVID-19 crisis, addressing Research Question 2 (RQ2): Based on their own experiences, how have MSME owners demonstrated self-efficacy, openness to change, and innovation in response to the COVID-19 crisis? This qualitative

exploration helped to elucidate the quantitative findings and provided a holistic understanding of the phenomenon under investigation.

Integrating quantitative and qualitative data allows for a comprehensive analysis, enabling us to examine how the quantitative statistics on self-efficacy, openness to change, and innovativeness correlate with the qualitative descriptions of MSME owners' experiences during the COVID-19 pandemic.

The quantitative study was undertaken during the COVID-19 pandemic in 2020 and 2021, while the qualitative survey was completed in 2022 after firms had resumed operations, providing a comprehensive picture of the MSME sector's challenges and responses.

Quantitative Method

The researchers surveyed MSMEs from Luzon, the Philippines' most impacted region during the COVID-19 pandemic. Survey Monkey facilitated the distribution of survey instruments to 958 MSME owners. However, after deleting incomplete responses and outliers, the data collection remained at 564. The data instrument consists of 5-point Likert scale questionnaires with responses ranging from strongly disagree (1) to strongly agree (5). Three independent variables were self-efficacy, openness to change, and innovation, and the dependent variable was resilience. The researcher adapted the survey items from the following sources: the Conner-Davidson Resilience scale, Self-Efficacy-New General Self-Efficacy scale by Chen et al. (2001); Openness to Change-Service of Orientation and Psychological Consultation (SOCP), University of Montreal, and Innovativeness-Measurement and Validation (De Jong et al., 2008).

The researcher collected data from family-owned firms classified as micro-, small-, and medium-sized enterprises. The firms are classified based on business capitalization (in Philippine currency), with firms with less than P3,000,000 categorised as microenterprises, those with P3,000,001 to P15,000,000 classified as small enterprises, and medium-sized enterprises with less than P100,000,000 capitalization (DTI.gov.ph). The researcher utilised SurveyMonkey for the instrumentation and online distribution of survey instruments. The instrument includes informed consent and confirmation of the data privacy agreement.

Using SPSS, the researcher performed statistical tests to analyse the data collected for this study and computed basic descriptive statistics for all variables, including means, standard deviations, and ranges. These statistical tests provide a fundamental understanding of the distribution and central tendencies of the data. Before conducting regression analysis, the researcher calculated

Pearson's correlation coefficients to determine the pairwise relationships between all variables: self-efficacy, openness to change, innovativeness, and resilience. This step aids in understanding the strength and direction of linear relationships between each pair of variables. The researcher performed a multiple regression analysis to investigate how self-efficacy, openness to change, and innovativeness (independent variables) predict resilience (dependent variable). The researcher assessed and reported the model's goodness-of-fit, individual predictor significance, and overall predictive power in the results section.

Table 1. Reliability Test

Variables	Cronbach's α	95% CI lower bound	95% CI upper bound
Resilience	0.889	0.874	0.902
Self-efficacy	0.873	0.856	0.888
Openness to Change	0.842	0.822	0.860
Innovativeness	0.875	0.859	0.890

Qualitative Method

The author interviewed 18 MSME owners, with the following distribution of participants: seven micro-entrepreneurs, seven small entrepreneurs, and four medium-sized entrepreneurs. The author employed a semi-structured interview format, which allowed participants to share their unique experiences while ensuring coverage of key areas of interest. The author conducted face-to-face interviews using semi-structured questions to gain insights into participants' experiences. Before each interview, the study's goals were communicated to and understood by each participant. The author obtained both written and verbal consent, assuring participants of the confidentiality and anonymity of the data.

The author employed a thematic analysis approach for the data analysis, which is a method for identifying, analysing, and interpreting patterns of meaning (or "themes") within qualitative data. After the interviews, the author transcribed each verbatim, ensuring accurate data representation in text form. Once transcribed, the author thoroughly read the data multiple times to familiarise herself with the content. The author coded and labelled data segments representing specific themes or patterns during these readings. After coding, the author grouped related codes to identify overarching themes. These themes captured the dominant patterns and narratives present in the data, providing insights into the experiences of MSME owners. Within each identified theme, the author highlighted relevant statements and narratives from participants that illustrated their experiences before, during, and after the COVID-19 crisis.

Mixed-Method

Table 2. Process of Integration of the Quantitative and Qualitative Results

Phase	Method	Procedure and Analysis
Quantitative	Survey	The author administered surveys capturing data on self-efficacy, openness to change, innovativeness, and resilience. The author conducted Pearson correlation to check relationships between variables and performed multiple regression to understand predictors of resilience.
Qualitative	Semi-structured Interviews	Conducted face-to-face interviews with 18 MSME owners using a semi-structured questionnaire. Employed thematic analysis: transcribed interviews, coded data, and identified themes.
Integration	N/A	Interpreted quantitative findings with qualitative narratives. Used qualitative insights to provide context and depth to statistical results.

RESULTS AND DISCUSSIONS

Respondents Profile

Table 3. Frequency Table for Nominal and Ordinal Variables

Variable	n = 564%			
Gender			Nature of Business	
Female	362	64	Agriculture	22 4
Male	203	36	Financial	17 3
Marital Status			Food	138 24
Single	308	54	Manufacturing	29 5
Married	235	42	Retail	157 28
Separated	7	1	Service	106 19
Widowed	4	3	Others	95 17
Owner’s Age			Age of business	
18 to 24	241	43	0-2 years	173 30
25 to 34	68	12	3-5 years	117 21
35 to 44	75	13	6-10 years	95 17
45 to 54	133	24	Over 10 years	179 32
55 to 64	42	7	Capitalization	
65 and older	1		Microenterprise	303 54
Educational Level			Small Enterprise	149 26
Vocational	18	3	Medium Enterprise	112 20
Highschool	59	10	Number of Employees	
College	411	73	1-5	331 5
Post College	76	14	6-10	76 13
			11-15	48 9
			Over 15	108 19

Note. Due to rounding errors, percentages may not equal 100%

Descriptive statistics present the frequencies and percentages of respondents' individual and corporate characteristics, as illustrated in Table 1. The results of the frequency statistics for the individual characteristics reveal that more females manage their businesses at a rate of 64%. In

comparison, males manage them at a rate of 36%. Most owners were single (54%), while 42% were married. Owners are predominately between 18 and 24, accounting for 43% of the respondents. Many family-owned owners were college graduates (72%), with a few vocational graduates (3%). Regarding firm characteristics, frequency statistics revealed that most participants were employed in the food and retail industries, recorded at 24% and 28%, respectively. There is a small percentage of people operating between 0 and 2 years (30%) and beyond 10 years (32%). The capitalization of MSMEs is classified as 54% microenterprises, 26% small enterprises, and 24% medium enterprises. The firm's largest number of employees is between 1 and 5, or 59%.

Quantitative Study

Table 4. Pearson’s Correlation of Variables

Variable		Resilience	Self-Efficacy	Openness to Change	Innovativeness
Resilience	Pearsons’s r	-			
	P-value	-			
Self-Efficacy	Pearsons’s r	0.516***	-		
	P-value	<.001	-		
Openness to Change	Pearsons’s r	0.462***	0.648***	-	
	P-value	<.001	<.001	-	
Innovativeness	Pearsons’s r	0.406***	0.541***	0.846***	-
	P-value	<.001	<.001	<.001	-

*p<.05, **p<.01, ***p<.001

Table 4 shows the correlation of each variable. The moderately positive correlation between resilience and self-efficacy ($r = 0.516, p < .001$) supports the hypothesis that higher self-efficacy among MSME owners is associated with increased resilience. The result suggests that belief in one's capabilities is foundational to responding adaptively to crises like COVID-19. Similarly, the data reveal a positive correlation between resilience and openness to change ($r = 0.462, p < .001$). The result supports the hypothesis that those MSME owners who are more open to change can readily adapt to shifting environments and exhibit greater resilience. It underscores the importance of adaptability in navigating uncertain business landscapes. The relationship between resilience and innovativeness ($r = 0.406, p < .001$) also aligns with the hypothesis that higher innovativeness among MSME owners is associated with increased resilience. The positive correlation suggests that innovative thinking and the capacity to devise new strategies or solutions during trying times can bolster resilience among MSME owners.

The author conducted a linear regression analysis to assess whether self-efficacy, openness to change, and innovativeness significantly predicted the resilience of MSME owners.

Assumptions

The assumption of normality presented in Figure 1 was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). The residuals must not significantly differ from the theoretical quantiles to satisfy the normalcy assumption. Significant variances may be a sign of the unreliability of the parameter estimates. Figure 1 displays a Q-Q scatterplot of the model residuals.

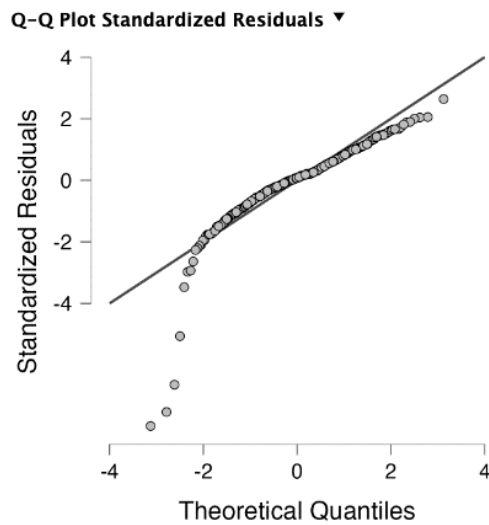


Figure 1. Q-Q Scatterplot for Normality of the Residuals for the Regression Model

Table 5. Coefficients of Self-efficacy, Openness to Change, and Innovativeness on Resilience Behaviour

Model		Unstandardised	Standard Error	Standardised	t	p	Result
H ₀	(Intercept)	4.016	0.022		179	0.00	
H ₁	(Intercept)	0.988	0.193		5.1	***	
H ₁	Self-Efficacy	0.380	0.051	0.349	7.5	***	Significant
H ₂	Openness to Change	0.186	0.063	0.157	3	***	Significant
H ₃	Innovativeness	0.164	0.056	0.141	3	***	Significant

Table 6. Model Fit Summary – Resiliency Behaviour

Model	R	R ²	Adjusted R ²	RMSE
H ₀	0.000	0.000	0.000	0.532
H ₁	0.566	0.320	0.316	0.440

Table 5 shows the results of a linear regression analysis with a Model Fit Summary indicating how well a statistical model fits the observed data. The result in Table 6 shows a better fit as indicated with a less than 1 RMSE (0.440) and an R, which explains that approximately 56% of the variance in the dependent variable is explained by the predictor variables in this model. The regression analysis in Table 5 shows an unstandardised (B) of 4.016. The result indicates the predicted value of the dependent variable (presumably resilience) when all independent variables are zero. It serves as a baseline to evaluate the effects of the predictors. The standard error of 0.022 is associated with the intercept, which estimates the amount by which the unstandardised coefficient might differ. The t-value of 179.3 and p-value of 0.000 suggest that the intercept is statistically significant.

On *Self-Efficacy*, the unstandardised (B) of 0.380 indicates that there is a predicted increase of 0.380 units in resilience for every one-unit increase in self-efficacy, assuming all other predictors are held constant. The standardised (beta) of 0.349 indicates the number of standard deviations that the dependent variable will change due to one standard deviation change in self-efficacy. The t-value of 7.5 and the p-value of 0.000 suggest that self-efficacy is a statistically significant predictor of resilience. The regression results indicated a significant relationship between self-efficacy and resilience among MSME owners. The result suggests that MSME owners with higher levels of self-efficacy were more likely to demonstrate resilience during the COVID-19 crisis. This finding is consistent with Alshebami (2022), who stated that owners with high self-efficacy and resilience are more likely to maintain operations despite crises and other environmental impediments. The findings show that enterprises run by owners who have confidence in their talents and are resilient in the face of adversity are better suited to handle challenging conditions, such as those posed by the epidemic. These business owners are more likely to adapt to changing situations, seek innovative solutions, and continue operations despite severe barriers or crises.

On *Openness to Change*, the unstandardised (B) value of 0.186 indicates that for every one-unit increase in openness to change, resilience is predicted to increase by 0.186 units, given that other predictors are constant. The standardised (beta) value of 0.157 shows that an increase in openness to change predicts a 0.157 standard deviation increase in resilience. The t-value of 3 and the p-value of 0.000 indicate that openness to change is a statistically significant predictor of resilience. Openness to change emerged as another influential factor. The positive relationship shows that MSME owners who are open to adapting and evolving are better equipped to navigate the turbulent times of the pandemic. The result agrees with Resmi et al. (2020), who postulated that MSME owners are receptive to environmental change and

adaptable in terms of products, marketing strategies, and use of technology. This notion underscores the importance of flexibility and adaptability in crisis scenarios. The findings imply that MSME owners who are eager to accept change are motivated to continue, and how they promote their products or utilise technology is typically better positioned to deal with problems and disruptions. This pliability and suppleness contribute to their capacity to overcome challenges and preserve their businesses even in turbulent times.

On innovativeness, the unstandardised (B) value of 0.164 shows that an increase of one unit in innovativeness predicts an increase of 0.164 units in resilience, assuming other predictors remain the same. The standardised (beta) of 0.141 suggests that a one standard deviation increase in innovativeness results in a 0.141 standard deviation increase in resilience. The t-value of 3 and the p-value of 0.000 suggest that innovativeness is a statistically significant predictor of resilience. The regression model suggests that all three predictors—self-efficacy, openness to change, and innovativeness—have a statistically significant positive association with resilience. Self-efficacy appears to have the strongest association (based on the standardised coefficients), followed by openness to change and innovativeness. These results support the hypothesis that these factors influence resilience among MSME owners. In practical terms, MSME owners with higher levels of self-efficacy, openness to change, and innovativeness tend to exhibit higher resilience. The findings emphasise the importance of these traits in fostering resilience, especially in challenging situations like the COVID-19 crisis.

Innovativeness also showed a significant relationship with resilience. This notion implies that MSME owners who actively sought and implemented novel solutions during the pandemic were more resilient in the face of adversity. This argument aligns with the findings of Sahi et al. (2023), who emphasised the intricate relationship between networking, resilience, and innovation. They elucidate that the inclination to innovate is driven by a combination of resilience and the extent of networking. This notion resonates with the broader business literature, highlighting innovation's value, especially during crises when traditional methods may no longer be feasible.

The quantitative analysis indicated that self-efficacy, openness to change, and innovativeness were statistically significant predictors of resilience. Self-efficacy emerged as the most robust influencer, followed by openness to change and innovativeness. These insights underscore the importance of these characteristics in promoting resilience among MSME owners, emphasising their role in navigating crises and promoting business continuity. The above discussion of the results answered research question 1: To what extent do self-efficacy, openness to change, and

innovativeness influence the resilience of micro, small, and medium enterprises (MSMEs) during the COVID-19 pandemic?

Qualitative Study

This section delves into the rich, narrative insights obtained from interviews with 18 MSME owners. These findings present a comprehensive understanding of these businesses' experiences, strategies, and adjustments before, during, and after the COVID-19 pandemic.

Table 7. Thematic Analysis of the Participants' Narrative Experiences

Stages	Business Set-ups	Narrative of Experiences	Aspect	Derived Themes
Operational model pre-COVID	Heavy reliance on walk-in clients.			Operational reliance on walk-in clients.
	Minimal digital presence and no significant use of online platforms for marketing.			
Operational shift during COVID	The primary mode of communication was face-to-face.			Transition to Virtual Interactions. a. Adaptive Strategy. b. Digital exploration. c. Embracing Digital Transformation. d. Strategic Promotion. e. Innovative Marketing. f. Product Reinvention. g. Community Enterprise.
	Decline in face-to-face interactions due to government restrictions.	"If you really have strong goals and dreams to achieve, you will do anything to keep your fire burning. What you could do is be resilient and believe in yourself that you can overcome every trial that your business may encounter."	Self-efficacy- Explicitly mentions the importance of belief in oneself and resilience, both core aspects of self-efficacy.	
	A surge in virtual interactions and increased use of technology for marketing.	"We remained open to change and adapted to the circumstances. We shifted our focus to online platforms and intensified our efforts in promoting our business there."	Explicitly mentions openness to change, adaptability, and a proactive shift to online platforms.	
	- Heavy reliance on social media, online networking, innovative methods, and community enterprise.	"We offer new products; we improve our packaging and presentation."	Demonstrates a proactive approach to product innovation and presentation improvement.	

Table 7. Thematic Analysis of the Participants’ Narrative Experiences (Continued)

Stages	Business Set-ups	Narrative of Experiences	Aspect	Derived Themes
Operational model post-COVID	Shift in consumer behaviour towards in-person purchases, leading to a decline in online sales.	“After the pandemic, we went back to normal sales, but they are not as robust as they were during the pandemic.”	Sales have started to improve after the epidemic, but the increase is not as significant as it was during the pandemic.	Transition to hybrid commerce.
	Hybrid model-Physical and online business transactions.	“After the pandemic, we reopened our physical store and continued with online deliveries.”	Transactions available both in physical locations and online.	

Pre-COVID Experiences - Operational Reliance on Walk-In Clients

We performed an interview and inquired about the businesses' operations prior to the COVID-19 incident. Before the COVID-19 outbreak, micro, small, and medium-sized enterprise (MSME) owners strongly depended on customers visiting their businesses in person. This experience indicates that a large amount of their revenue and commercial transactions were generated by customers physically entering their stores, offices, or establishments.

Most of the participants shared the same view that their businesses heavily depended on customers who walked into their establishments. This approach highlighted the importance of in-person customer interactions as a crucial element of their business. This consensus among the participants indicated that relying on walk-in clients was a common and significant aspect of their business operations. One business owner shared: *"We are into mineral water refilling business. Before the pandemic, we sold well with our walk-in customers"*. (P2).

Direct interactions were the primary mode of communication. Conducting business primarily through face-to-face interactions was a common approach adopted by various businesses, including micro, small, and medium-sized enterprises. This in-person business model was not limited to a specific category of businesses but was widespread across different sizes and types. Digital communication channels were not extensively explored. Participants shared, *"Our store was always bustling with customers; we never felt the need to go online."* (P4). *"I am into digital services, and we usually meet clients personally because it makes transactions easier."* (P3).

Changes Experienced During COVID - Transition to Virtual Interactions

Pandemic-related restrictions such as lockdowns, social distancing guidelines, and customers found it very difficult, and in many cases impossible, to physically visit establishments due to the temporary shutdown of non-essential businesses. These experiences created a situation

where businesses had to find alternative ways to maintain their operations and continue serving their customers.

Participants claim that *"We adapt to changes like paying online and delivery charges"* (P2) and *"I believe that I will survive no matter what"* (P8), reflecting a belief in one's capability to adapt and overcome challenges. This response reflects a sense of self-efficacy.

Participants emphasised the importance of hard work: *"We believe in one's ability to survive and exploring alternatives"* is indicative of the key elements of self-efficacy, including effort, persistence, and the belief in one's problem-solving capabilities (P7).

Participants show perseverance, like, *"If you really have strong goals and dreams to achieve, you will do anything to keep your fire burning"* (P4) and *"I never stop believing that soon it will end"* (P6) demonstrate the idea that a strong belief in one's goals and unwavering faith in a positive outcome are fundamental aspects of self-efficacy.

Participants have expressed adapting to the changes, like, *"We expanded our product offerings and took advantage of what is in demand, like when we started producing cotton-made face masks."* (P12). This statement indicates a proactive approach to changing demands and market conditions. *"We have become creative by offering new products online."* (P17). This statement demonstrates a willingness to embrace change by adopting online channels for product offerings.

Participants took advantage of technology, like *"Go with the trend, Tiktok videos."* (P10). This experience demonstrates the use of emerging trends like TikTok videos for marketing, indicating a willingness to embrace new approaches. *"We did live selling of our products, and it boomed; a lot are watching and inquiring."* (P3). This statement indicates a creative approach to marketing and promotion through live selling.

In response to these challenges, businesses quickly embraced virtual communication methods, harnessing technology to enable remote interactions and transactions, including expanding online sales and e-commerce platforms. A small enterprise owner noted, *"During the pandemic, we posted our products online, leading to increased sales due to customers' inability to shop in person."*(P5). This shift extended to virtual meetings, consultations, and collaborations facilitated by video conferencing tools like Zoom and Microsoft Teams. As a medium enterprise owner expressed, *"We transitioned to online collaboration, providing convenience for both our company and clients."* (P7). These changes align with the transformation of business models posited by Hung et al. (2020).

The pandemic also ushered in the era of digital strategies, with businesses prioritising digital marketing and online platforms like social media. For many, it marked their first foray into digital marketing and sales. Business owners redirected their marketing efforts from physical channels to digital platforms, engaging in activities like social media promotion and customer interaction (Utomo et al., 2023); as a medium enterprise owner shared, *"We started using social media more actively to promote our products."* (P9). Entrepreneurs' adaptability and innovative spirit were evident as they shifted their focus to online platforms, intensifying their promotional efforts. As a microenterprise owner reflected, *"We remained open to change and adapted to the circumstances. We shifted our focus to online platforms and intensified our efforts in promoting our business."* (P7). The crisis also led to the emergence of product reselling networks, where customers and those affected by the pandemic became resellers, expanding the network beyond regular customers to include online retailers. Several owners reported this trend, noting customers' involvement in reselling their products.

Additionally, some businesses enhanced their product appeal through redesigned packaging, attracting a more extensive customer base. This new transition is supported by Akpan et al. (2020), who asserted that innovation provides a competitive edge and serves as a survival mechanism by altering existing business structures. The crisis catalysed ingenuity and adaptation, allowing businesses to respond to evolving market needs.

Post-COVID Realizations and Adjustments - Transition to Hybrid Commerce

As restrictions eased, MSMEs observed a noticeable shift in consumer behaviour, characterised by a decline in online sales. With the option for in-person interactions, customers preferred onsite purchases. This shift underscores the dynamic nature of commerce, signifying the expansion of business networks to encompass both online and onsite transactions. Business owners acknowledged this change, noting that *"People missed the physical shopping experience, leading to a decrease in online orders"* (P6). Another owner stated, *"After the pandemic, we returned to normal sales, though not as robust as during the pandemic"* (P4).

The pandemic served as a wake-up call for business owners, emphasising the importance of preparedness. It underscored the necessity of comprehensive risk management and contingency planning for micro, small, and medium-sized enterprise owners. Some owners shared their insights, with one emphasizing, *"We won't be caught off guard again; having contingency plans is essential"* (15). Another owner highlighted the valuable lesson: *"I realised that even for small businesses, risk management and preparedness are crucial as we cannot predict what the future holds"* (P4).

The qualitative findings offer a profound understanding of MSMEs' business adaptations and resilience during the pandemic. Pre-pandemic operations were heavily skewed towards in-person interactions, emphasising the personal touch. The COVID-19 restrictions acted as a catalyst, pushing these enterprises towards a temporary digital transformation. With the waning of the pandemic, a reversion to pre-pandemic behaviours was observed, but with an added emphasis on the importance of preparedness. These narrative insights complement our quantitative findings, underscoring the importance of adaptability and innovation as determinants of resilience and answering research question 2: How have MSME owners manifested self-efficacy, openness to change, and innovativeness in their experiences during the COVID-19 crisis?

Integration of the Quantitative and Qualitative Findings

Table 8. Integration of the Quantitative and Qualitative Studies

Aspect	Quantitative	Qualitative	Integrated results
Self-efficacy	The quantitative analysis reveals a significant positive correlation between self-efficacy and resilience, as shown in Table 4.	Adaptive Strategy: MSMEs with higher self-efficacy transitioned swiftly to online platforms and innovated products.	The integration of quantitative and qualitative findings emphasises that MSMEs with higher self-efficacy were more proactive in adapting, as indicated by quantitative results. This result aligns with the qualitative findings of a swift transition to adaptive strategy and digital exploration. According to Engel et al. (2014), individuals believe they can adapt to changing environments.
	Further, self-efficacy significantly influences resilience, as presented in Table 5.	Digital Exploration: Self-efficacy fosters a belief in adaptability and contributing to environmental changes.	
Openness to change	The quantitative analysis reveals a significant positive correlation between openness to change and resilience, as evidenced in Table 4.	Embracing Digital transformation- willingness to adopt new technologies, online platforms, and digital sales channels.	Integrating quantitative and qualitative findings emphasises that small businesses demonstrating openness to change exhibit a greater inclination to explore opportunities in the digital realm, including digital transformation and the promotion and expansion of community networks. This assertion is supported by Utomo et al. (2023), who asserted that management's openness to change makes a proactive response to adapt to digital transformations that change the whole business model.
	Openness to change significantly influences resilience, as indicated in Table 5.	Strategic Promotion- responding to market shifts and customer demands like proactive promotion of products and services. Community Enterprise- engaged with their communities and may collaborate with local partners or organisations.	

Table 8. Integration of the Quantitative and Qualitative Studies (Continued)

Aspect	Quantitative	Qualitative	Integrated results
Innovativeness	<p>In the quantitative analysis, innovativeness demonstrates a significant positive relationship with resilience, as shown in Table 4.</p> <p>Furthermore, innovativeness significantly influences resilience, as indicated in Table 5.</p>	<p>The qualitative data unveil specific dimensions of innovativeness, represented by themes of Innovative Marketing- leveraging emerging digital platforms, developing unique advertising campaigns, or exploring inventive marketing techniques: a Product Reinvention- the capacity of MSMEs to reconfigure and transform their existing products or services.</p>	<p>Integrating quantitative and qualitative findings emphasises that businesses displaying innovativeness have introduced tangible innovations, including innovative marketing, product reinvention, and exploration of novel sales approaches, such as live selling on social media platforms.</p> <p>This assertion aligns with the conceptual definition of innovation provided by Anderson et al. (2015), which underscores that innovation involves translating ideas into action or transforming existing products, systems, and resources to create something new.</p>

The quantitative and qualitative study integration regarding the resilience and experiences of MSME owners during the pandemic provides a well-defined narrative that connects quantitative findings to qualitative insights, demonstrating a deeper understanding of how particular traits and behaviours contributed to MSME resilience during the COVID-19 pandemic. This integration seeks to answer research question 3: How do the quantitative statistics on self-efficacy, openness to change, and innovativeness correlate with the qualitative descriptions of MSME owners' experiences during the COVID-19 pandemic?

Self-Efficacy and Resilience

The qualitative findings underscore the significance of self-efficacy as a predictor of resilience, revealing how organisations with high self-efficacy responded swiftly to challenges by leveraging digital platforms and exploring innovative strategies. In contrast to the findings of Ragoobur et al. (2023), our study contends that limited access to finance and digital connectivity has left micro-companies more susceptible to market disruptions and less agile in their responses. Notably, microbusinesses turned to social media as a means to sell products without requiring immediate cash from customers, often operating as resellers on behalf of the company.

These findings align with data from the Department of Trade and Industry (2021), which indicates a 1.54% growth in microenterprises during the pandemic. This growth reflects how community members harnessed the prevailing need to establish their small businesses, seizing opportunities despite challenging circumstances. These insights have significant implications

for support programmes and training initiatives aimed at MSME owners. By increasing their self-efficacy, we can better prepare individuals to overcome future challenges and successfully adjust to shifting market conditions.

Openness to Change and Resilience

The research findings underscore the pivotal role of "openness to change" in building resilience within small and medium-sized enterprises (SMEs). This vital connection becomes evident when we delve into how organisations have adapted their operational strategies, embraced digital transformation, and strategically promoted their businesses. This notion is supported by Resmi et al. (2020), who asserted that small business owners exhibit a remarkable ability to swiftly adapt to changing circumstances across various aspects of their operations. Embracing change allows these business owners to extend their networks, capitalising on the opportunities presented within their communities. SMEs effectively become bridges connecting microenterprises and the broader community, enabling business operations despite limited resources.

These findings extend beyond the academic realm and have practical implications for policymakers and business advisors. They emphasise the value of flexibility and adaptability in the ever-changing business environment. The ability to embrace change, as evidenced by the experiences of these MSMEs, proves to be a key factor in building resilience, ultimately contributing to business continuity and growth.

Innovativeness and Resilience

Innovativeness appears as an additional essential characteristic of resilience. The qualitative data elucidates how small businesses recreated their products, implemented novel marketing methods, and adapted their business models (e.g., community enterprise). As innovation is pivotal in bolstering resilience during crises, a notion corroborated by Hung et al. (2020) posited that businesses might leverage technology to revamp their operational model, aligning it more closely with prevailing market demands. This notion corroborates Russell and Faulkner's (2004) perspective, which argues that entrepreneurs often find solace in disruption in turbulent times, capitalising on opportunities and endeavouring to shift the status quo to set new benchmarks. Consequently, this underscores the emerging recognition among business owners of innovation's pivotal role in shaping a business ecosystem that fosters entrepreneurial creativity and innovation.

The integrated results demonstrated how the quantitative-qualitative insights provided a more comprehensive understanding of the characteristics that supported resilience. This research has

practical ramifications for MSME owners, business instructors, legislators, and consultants. It emphasises that specific attributes and actions can dramatically increase corporate resilience in times of crisis, a lesson that transcends the current pandemic and applies to future challenges.

Implication of the Study

Despite the challenges presented by COVID-19, the findings of this study carry significant economic implications.

First, technology has benefited MSME owners by enabling them to expand their networks and market their goods domestically and worldwide. Such adaptive use of technology resonates with Hung et al.'s (2020) suggestion that businesses can harness technology to reshape their operational models, making them more aligned with contemporary market needs. Not only did MSMEs utilise technology for their growth, but they also harnessed it to empower others, offering support through channels like distribution and retailing. The outcome of this digitisation is evident: enhanced product and service offerings and a surge in innovative ideas. As businesses further digitise, they are unlocking greater value-generation possibilities.

Secondly, the emergence of community-based enterprises stands out. These are ventures where MSMEs bolster the distribution of products and services within local communities. As scholarly works highlight, community-based enterprises enable local communities to initiate collaborative business ventures that boost economic and social development (Peredo & Chrisman, 2006). Amidst the COVID-19 pandemic, these enterprises have been a lifeline for many, including employees and business proprietors. They have enabled individuals to launch small businesses, foster connections, establish networks, and adapt their operations to suit contemporary needs. While the present crisis has shifted the landscape for MSME owners compared to pre-pandemic times, their resilience and adaptability underline their sustained significance. Even amidst adversity, the importance of MSMEs remains undiminished.

MANAGERIAL IMPLICATIONS IN THE SOUTHEAST ASIAN CONTEXT

In Southeast Asia, policymakers must support the digital transformation of micro, small, and medium-sized enterprises (MSMEs). The COVID-19 crisis laid bare vulnerabilities in traditional, face-to-face business models, making it evident that quick adaptation to digital platforms is pivotal for MSME survival. Governments should incentivize and facilitate this transition, ensuring widespread access to affordable digital infrastructure. Moreover, a renewed focus on risk management and contingency planning is essential, along with support programmes and partnerships with financial institutions to bolster MSME resilience. Encouraging innovation,

market diversification, and community engagement should be central to policy initiatives, fostering a collaborative, community-oriented ethos ingrained in Southeast Asian cultures. Regular data-driven assessments will enable policy adjustments and ensure that measures align with the ever-evolving needs of the dynamic MSME sector.

THEORETICAL IMPLICATIONS

The findings of this study offer valuable insights into the practical applications of the effectuation and causality theories in comprehending the attitudes and behaviours of MSME owners in times of crisis. As we delve into the experiences of these entrepreneurs, it becomes evident that our research contributes not only to the established theoretical landscape but also intersects with the emerging framework of Psychological Capital Theory (PsyCap).

First, on Resilience and Optimism, the demonstrated perseverance and unwavering optimism of MSME owners align closely with the core tenets of PsyCap. This theory emphasises the significance of four essential psychological resources: hope, efficacy, resilience, and optimism. Our findings underscore how MSME owners exhibit high levels of resilience and optimism, precisely the psychological resources advocated by PsyCap. Second, on the Surge in Microenterprises, in the face of economic adversity, we observe a remarkable surge in microenterprises. A portion of these entrepreneurs' psychological capital can be attributable to this phenomenon. Their hope, efficacy, resilience, and optimism drive their willingness to take calculated risks and explore innovative strategies, which are central elements of PsyCap. Lastly, on the Role of MSMEs in Economic Resilience, the study reaffirms the substantial and often underappreciated role of MSMEs in bolstering a nation's economy. These small businesses, which possess high levels of psychological capital, are essential in promoting economic resilience, especially in turbulent times.

CONCLUSION

The COVID-19 crisis challenged the resilience of micro, small, and medium-sized enterprises (MSMEs). This study explored how MSME owners' characteristics influenced their responses to the crisis. We combined the first-hand experiences of MSME owners before, during, and after the pandemic with a quantitative analysis of the impact of self-efficacy, openness to change, and innovativeness on their resilience. Our findings suggest that resilient MSME owners perceive opportunities in challenging situations. Their belief in their ability to overcome crises fosters an openness to change. They creatively respond to unexpected circumstances, leveraging technology

to expand networks, improve service delivery, and forge collaborations among small businesses. Despite having a relatively small individual impact on the economy's income, MSME owners' perseverance helps to reduce unemployment and poverty dramatically. This study reaffirms the indispensable role of MSMEs in economic development, particularly during unexpected crises. It underscores the enduring importance of these enterprises, even in uncertain times.

Limitation of the Study

In the design of this research, the study did not encompass pre- and post-COVID-19 surveys. Therefore, the integration of results primarily centres on the experiences and responses of MSME owners during the COVID-19 pandemic. This specific focus might limit the comprehensive understanding of the entire trajectory of MSMEs' resilience behaviours and strategies before the onset of the crisis and as they navigate the aftermath. The absence of pre-pandemic data means we lack a baseline to evaluate the extent of shifts in behaviours, attitudes, and strategies. In contrast, the absence of post-pandemic data may limit insights into the long-term adaptations and potential lasting changes brought about by the pandemic.

Future research initiatives may benefit from a longitudinal strategy that captures the whole narrative of MSMEs' resiliency throughout the various phases of such unusual events affecting Southeast Asian MSMEs. This initiative may create policies to boost MSMEs in Southeast Asian nations.

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