



**Awakening the Giant Within: Turning SME's Survival Strategy into Improved Performance**

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## Awakening the Giant Within: Turning SME's Survival Strategy into Improved Performance

### Abstract

**Purpose** – This study examines the positive impact of strategies on the viability of small and medium-sized enterprises (SMEs) in times of crisis. Specifically, it investigates the influence of resource utilization as an initial survival strategy on innovation practices and SMEs' performance. It further assesses the potential impact of government aid and partnerships on the relationship between resource utilization and innovation.

**Design/methodology/approach** – This study employed a mixed-method approach that integrates phenomenology and quantitative research. This phenomenological study conducted in-depth interviews with 23 SME owners. Based on qualitative findings, a quantitative research design was developed, and this study surveyed 352 SMEs. Structural equation modeling was used for hypothesis testing.

**Findings** – Resource utilization as an initial survival strategy has a positive effect on increasing organizational innovation practices and ultimately affects business performance. Furthermore, government support and external partnerships significantly enhance the relationship between resource utilization and innovation.

**Practical implications** – The COVID-19 pandemic brought a crisis for businesses but has provided many positive transformations. SME entrepreneurs should sustain their survival strategies and seize external support to enhance their potential. Due to the pandemic, various efforts have created innovations, honed business resiliency, and increased competitiveness.

**Originality/value** – SMEs struggled with the crisis and responded by utilizing many retrenchment strategies. This study is among the first to provide empirical evidence of an emergency response that has resulted in fruitful impacts. The findings can be generalized to represent the behavior of SMEs, especially in emerging countries.

**Keywords** COVID-19, Survival strategy, Resource utilization, Innovation, Government Support, Partnerships, Productivity, Indonesian Batik

**Paper type** Research paper

## 1. Introduction

The COVID-19 pandemic, which **has** occurred for more than two years, has caused disasters **in** the global economy, disrupted national stability, and changed the global business landscape. Small and medium enterprises (SMEs) are among the sectors most affected by the pandemic (Caballero-Morales, 2021; Qehaja, 2021). This situation is vital **because** SMEs **contribute** significantly to a country's economy, especially in developing countries (Huynh, 2022; Rahman *et al.*, 2022).

Indonesia, an emerging country with a high economic growth rate (World Bank, 2019, 2022) and one of the newly industrialized countries or NICs (Boddin, 2016), has experienced a significant decline in economic activity, a decrease in public purchasing power, and **an** increase in unemployment (World Bank, 2022). Before the pandemic, SMEs in Indonesia accounted for 99.99% of their businesses, contributing more than 96.9% of employment and approximately 61.1% of GDP in 2019 (OECD, 2022). These figures are similar to those **in** other developing countries (Cepel *et al.*, 2020). The decline in people's purchasing power has resulted in a decrease in the sales of SME products, whereas limited capital has resulted in many SMEs in Indonesia going bankrupt. A survey conducted by the Indonesian Central Bank in September 2020 showed that approximately 24.8% of SMEs experienced decreased incomes during the COVID-19 pandemic.

In addition, many SMEs in Indonesia **need help managing debt and maintaining** their businesses. In early 2021, the Indonesian Ministry of Cooperatives and SMEs reported that approximately 6,878 SMEs were registered as beneficiaries of the credit restructuring program issued by the government. Available reports show that this pandemic has significantly impacted SMEs in Indonesia and created many **hurdles to their** survival.

However, some SMEs have extraordinary capabilities that emerged during the crisis. Previous studies have shown various strategies for micro, small, and medium enterprises to survive the pandemic (e.g., El Chaarani *et al.*, 2021; Katare *et al.*, 2021; Rahman *et al.*, 2022; Arslan *et al.*, 2022). Generally, the first survival strategy is 'retrenchment' (efficiency), which involves laying off employees and reducing material quality (Yunus *et al.*, 2023). Although these initiatives are not always effective (Klyver and Nielsen, 2021), they allow businesses to remain afloat in the short term. As an illustration, small and medium-sized business owners strive for employees to achieve maximum productivity and utilize distribution networks (e.g., resellers/distributors/retailers) to market products or services that can generate short-term income. Internal resources, such as production facilities, business premises, and online promotional media are also maximized.

Awaken by the pandemic, SMEs have begun to evaluate their business processes and resources **in order** to survive. Their initial maneuvers align with Resource-Based Theory (RBT), **in which** internal resources are the main factor determining market advantage (Barney, 1991; Barney *et al.*, 2011). According to RBT, the competitive advantage of organizations depends on their ability to utilize and develop these internal resources effectively and efficiently. Several previous studies have examined the effect of unique, valuable, inimitable, and non-substitutable resources on the competitive advantage of SMEs (Rahman *et al.*, 2022; Estensoro *et al.*, 2022). Studies show that internal resources increase the advantage over competitors and determine firm survival (e.g., Chatzoudes *et al.*, 2022).

Furthermore, according to the absorptive capacity (ACAP) theory, SMEs that assimilate and apply new knowledge and external information would utilize internal resources, develop new products (Zahra and George, 2002), and quickly adapt to the crisis (Miroshnychenko *et al.*, 2021). SMEs can apply the resource-based perspective and absorptive capacity theory in times of crisis to gain a competitive advantage in the long run. Both theories are pertinent in explaining the survival behaviors **of SMEs** and in enriching the existing literature. This study took the first step by revealing SMEs' responses to the pandemic crisis, clustering them into

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2  
3 themes, and verifying the findings through a large-scale survey. The following two research  
4 questions were explored.

- 5 1. What are endeavors signifying SMEs' responses to the COVID-19 pandemic crisis?
- 6 2. Will this set of endeavors significantly result in better performance?

7  
8 Many studies have been conducted on post-pandemic survival strategies for COVID-19,  
9 but the current study has departed from prior studies in several respects. First, this study  
10 employed an integrative qualitative and quantitative approach in which in-depth interviews  
11 were conducted to explore the experiences of business actors during the crisis. This  
12 quantitative study verified the experiences of more SMEs in Indonesia. We expect these  
13 results to be an initial map of SMEs' struggles during crises in other developing countries.

14  
15 Second, this study examines small and medium enterprises, where in developing countries,  
16 this type of business generally dominates the country and contributes to the national  
17 economy. Reflections on the impact of the pandemic on SMEs have also started to bloom,  
18 and a recent study by Islam and Fatema (2023) revealed that the probability of surviving  
19 SMEs is higher than that of larger firms. The current study sheds light on how SMEs,  
20 specifically in an emerging economy, reacted to the crisis, stretched beyond the business-as-  
21 usual mindset, and reaped extraordinary advantages.

22  
23 Finally, as governments of developing countries design and implement assistance  
24 programs to improve their economies, the Indonesian government has developed special  
25 programs to help SMEs, such as the National Economy Recovery Program, launched in 2020  
26 (OECD, 2022). This study assesses whether the assistance received by SMEs increases their  
27 survival capabilities during the pandemic and whether collaboration with external partners  
28 improves SMEs' resilience during the crisis.

29  
30 Therefore, this study will contribute to the literature by examining the impact of strategies  
31 beyond a crisis on innovation and business performance. The findings from this study also  
32 provide empirical evidence on the role of government assistance and partnerships with other  
33 parties, such as suppliers, distributors, or competitors, in increasing the competitiveness of  
34 SMEs in implementing strategies and producing innovation.

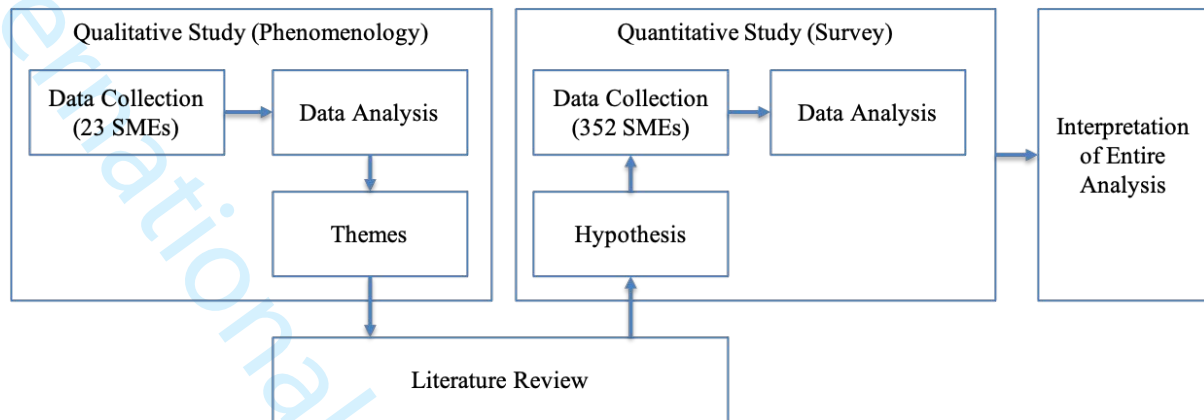
35  
36 The remainder of this paper is organized as follows. The next part of the paper, Section 2,  
37 discusses the research design to address two research questions. Section 3 describes the first  
38 study stage (i.e., a quantitative study), the methodology employed, and the results. Section 4  
39 describes the second stage (i.e., quantitative study) regarding hypothesis development,  
40 methods, and results. Section 5 discusses the findings and their applications in theory and  
41 practice. Finally, this paper ends with conclusions and limitations, which serve as  
42 opportunities for further research.

## 43 44 45 **2. Research Design**

46 This study used two successive qualitative and quantitative approaches to capture the crises  
47 experienced by SMEs in Indonesia. Mixed-method research is advisable in social sciences  
48 because problems or phenomena are often complex (Creswell, 2009). At the same time,  
49 either approach is adequate to capture the whole picture (Benitez *et al.*, 2022). Combining  
50 qualitative and quantitative data also provides richer insights that could expand the literature  
51 on the phenomenon under study (Creswell, 2009).

52  
53 Phenomenological research is most appropriate because the impact of the COVID-19  
54 pandemic is unexplored and unexpected, and phenomenology can investigate the "lived  
55 experience" (Pietkiewicz & Smith, 2014) when SME owners try to save their businesses.  
56 This study used a phenomenological approach (i.e., a qualitative study), followed by a  
57 quantitative study, to verify the generalizability of the qualitative findings. We did not  
58 conduct a literature synthesis or formulate hypotheses before the field study because  
59

phenomenology requires researchers to be free from theories and concepts to prevent bias. Figure 1 depicts the research design suggested by Creswell (2009).



**Figure 1. Research Design of this Study: Sequential Mixed-Method Approaches**

SMEs in Indonesia are diverse, with thousands of different types of businesses, such as the food and beverage industry, crafts, fashion, information technology, and professional services. According to data from the Indonesian Ministry of Cooperatives and SMEs, there were approximately 64.2 million businesses, including non-SMEs, in 2020. Up-to-date data on the exact number of SMEs in Indonesia are unavailable. As business type might affect the results, we choose one homogenous type that contributes significantly to a country's economic growth.

In this study, we selected a non-essential SME sector that had to remain closed during the strict lockdown. During the lockdown, the Indonesian government only allowed essential sectors, such as food and beverages, pharmaceuticals, health care, and logistics. The non-essential businesses experienced a brutal hit; how they struggled and survived would enhance our knowledge. We chose a batik business because batik is the Indonesian nation's work, a blend of art and technology by Indonesian ancestors (Indonesian Ministry of Industry, 2020a). Statistically, the batik creative industry has an economic output value of up to IDR 1,100 trillion, or 7.4 percent of Indonesia's GDP in 2020, and this industry is also the second-largest sector after the culinary sector (which is an essential sector during the pandemic) in Indonesia, contributing to 18.2 percent of Indonesia's total net value of the industry in Indonesia (Widjaja, 2023).

In addition, the batik SME sector has contributed significant export value, has become a leader in the world batik market, and has absorbed more than 200 thousand workers in Indonesia (Indonesian Ministry of Industry 2020b, 2021). As part of the creative industry, batik is always innovative (Arthur *et al.*, 2022). However, when the pandemic hampers the economy, the batik industry must go beyond mainstream creativity and learn from each other's successes.

According to data from the Indonesian Ministry of Industry, batik is dominated by producers on Java, the largest island in Indonesia, which accounts for approximately 75% of the business, and the rest are outside Java. Therefore, the Batik SMEs on Java Island in Indonesia are the unit of analysis.

### 3. Stage 1: Qualitative Study

#### 3.1 Qualitative study: Phenomenology

Phenomenology is a methodology for investigating phenomena from the perspective of subjects who have experienced certain situations. Phenomenology can help "uncover 'lived'



experiences" and is used to explore management concepts and phenomena (Anosike *et al.*, 2012, p. 5). This qualitative study was carried out directly on the occurring phenomena and aimed to reveal the experiences, not to use conceptualization or theory (van Manen and van Manen, 2021). Spiegelberg (1975, p. xiv) in van Manen and van Manen's (2021) study suggests "doing phenomenology on the phenomenon itself." Considering that the COVID-19 pandemic has been a distinct situation over the last decade, phenomenology is an appropriate study for revealing and uncovering the various experiences of business actors during a crisis.

Phenomenological studies are descriptive and include direct exploration, analysis, and description of phenomena that are free from assumptions (Anosike *et al.*, 2012). One of the keywords in the operationalization of phenomenology is phenomenological reduction, that is, the suspension of theoretical bias regarding the situation being investigated. The researcher directly explored the informants' experiences and analyzed and described them as a picture of the reality of the participants (Goulding, 2005; van Manen & van Manen, 2021).

The study of the impact of COVID-19 on business using the phenomenological method is critical because "engagement with a phenomenological research approach would provide an opportunity for managers to articulate their experiences and therefore *become more aware of themselves and their management actions* – more importantly, how their actions constitute the bases for empirical knowledge and for shaping organisational policies." (Anosike *et al.*, 2012, p. 14, italic added). Thus, through a phenomenological study in which business actors reveal their remarkable experiences in pulling through the pandemic, they become more mindful of what they have been through and aware of both deliberate and unintentional strategies. In doing so, other stakeholders (i.e., the government and society) also benefit from the findings.

This study employed Goulding's (2005) steps in performing phenomenology: (1) collecting data and thoroughly reading all transcripts of interviews, (2) identifying keywords that emerged from the informants' narratives, (3) formulating meanings, (4) conducting steps (1) to (3) with other informants and in-depth interviews with previous informants, (5) integrating meanings into themes and producing rich statements, and (6) reducing matching themes and compiling explanations. Goulding (2005) recommended validating themes by cross-checking with interviewees; however, due to several constraints, four researchers mainly performed a cross-check to verify theme extraction and did not involve interviewees in this last step. **Appendix A** presents a list of interview questions.

The phenomenological literature suggests exploring experiences from certain situations from at least to 6-8 sources (Pietkiewicz & Smith, 2014) or as many sources as possible until no new insights are obtained in addressing research questions (Mack *et al.*, 2005). This study used a semi-structured guide to interview batik small and medium-sized business owners in Java. Since most batik businesses were closed, the researchers contacted owners whose shops managed to operationalize post-lockdown. **The researchers directly approached the SME owners and asked them to participate in the study. Several business owners also recommended that their colleagues be included in the study (snowball approach).** From the time allotted for the data collection, this study obtained 23 informants, each representing one SME business.

### 3.2 Results of Phenomenology

Four researchers interviewed 23 SME owners from several batik centers in Java. The profile is detailed in **Appendix B**. Most owners are female and usually build their businesses as subsidiaries of their parents'. Some are mainly continuing the family business (i.e., businesses dating back to the 1980s or the 1990s).

During the interviews, informants expressed their struggles in dealing with the early stages of the pandemic. In March 2020, similar to most countries, the Indonesian government

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2  
3 enforced a massive lockdown. **No** nonessential businesses are allowed to open. When the  
4 government lifted the lockdown and allowed businesses to operate in mid-2022, the  
5 researchers visited batik centers in Java, which are usually busy with buyers, including  
6 foreign tourists. Only one batik shop **remained** open in a craft center that previously  
7 accommodated dozens of SMEs. The batik SMEs experienced an average 70-80% decrease  
8 in sales; many could no longer support themselves and went bankrupt. This situation **is**  
9 typical **for** other batik centers.

10  
11 The informants mentioned that **the period from mid-2021 (around July of that year) to**  
12 **early February 2022** was the most challenging. Most have laid off employees while still  
13 paying modest wages. SMEs survive by utilizing all internal resources to obtain cash flow.  
14 The quotes below represent the sentiments of most business owners:

15  
16 "In the early pandemic, ma'am, we cannot work; the fishing business (next door) was  
17 closed, we were closed, almost everything was closed. At **the** time, I had no guests  
18 (buyers). If this continued, I would have to lay off employees, right? I didn't want to. I  
19 have **a team of cuttings and tailors. Therefore, jobs were switched to the back of the**  
20 **store to make personal protective equipment (PPE).** PPE was what the hospital needed  
21 and was in huge demand then." (bold added.)

22  
23 "During the pandemic, employees worked from home to lengthen our breath (cashflow).  
24 There were no batik orders, so **the** employees made prayer mats during that time. We then  
25 **created various things**, including Middle Eastern rice. It is simply rice with spice. We  
26 also need cash flow during the pandemic, right? So, **employees must be willing to sell [**  
27 **Middle Eastern rice].**" (bold added.)

28  
29 "It is more efficient if **we work to utilize the available materials.** For example, negligee.  
30 Let **us first** focus on nightgowns. We **can** start doing the usual things, **such as** shirts and  
31 uniforms when it **is** normal. **we will** create a lot more." (bold added.)

32 As business actors, informants maintained their establishment as firmly as possible. They  
33 made use of **the** available materials, production facilities, and workers. When the government  
34 allowed non-essential sectors to operationalize, they collaborated with other batik SMEs (**i.e.**,  
35 their competitors) to jointly **purchase** materials from suppliers to gain bargaining power by  
36 reaching greater volume. They also made arrangements to cross-sell, where they entrusted  
37 each other **with** **selling** products in their respective shops. Here is a quote describing  
38 wholeheartedness.

39  
40 "My employees were sent home, but I still give them (salary) as much as possible. Yes, as  
41 much as I can, using my savings. Later, I ended up making masks after my savings **ran**  
42 out. Whatever it takes (to save the business and employees)."

43  
44 Following Goulding's (2005) guidance, this study extracted two themes: SMEs' endeavors  
45 during the pandemic and one representing expected outcomes. Each theme represents a  
46 cluster of actions and aspirations of SMEs. To validate the findings, four researchers  
47 thoroughly studied the narratives and listed the efforts and changes experienced by **the** SMEs.  
48 After coding separately, researchers discussed the results and suggested a meaningful theme  
49 for each coding group. Table 1 provides details of these results.  
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**Table 1. Results of Phenomenology**

SMEs' Endeavors	Informants	Emerging Theme	Operational Definition
The use of production facilities to operate as fully as possible	A, E, G, Q	<b>Resource Utilization</b>	The motivation or drive to use existing facilities and resources*
Employees achieve the maximum productivity possible	F, M, N, Q		
The use of place of business (e.g., shop/kiosk/home) as much as possible	F, I, K		
More frequent use of online promotional media (e.g., Instagram/Facebook/Website/Line/Whatsapp Group) to market any products or services that can generate income	A, F, I, J, K, N, O, P		
The use of distribution network (e.g., reseller/distributor/retailer) to market any products or services that can generate income	C, D, E, G, H, N, O, V		
<i>*Note: One SME might perform more than one method of resource utilization strategy</i>			
Creating a new type of batik product	A, B, C, F, G, I, J, K, L, M, N, O, P, R, T, U, V	<b>Innovation</b>	Renewal efforts (products, processes, marketing, and organization) carried out by MSMEs in the batik industry
Using a new method in the process batik production	E, G, L, M, N, O, Q, U, V, W		
Implementing a new distribution method in the delivery of batik products	C, E, N, O, Q, V		
Expanding business in the batik business	D, F, I, K, Q, R, S, U		
Using new media or techniques in promoting the product	E, F, G, H, I, J, K, L, N, O, P, Q, R, S, T, U, V, W		
Expected outcomes: Sales, profit, productivity (output over input)	All informants	<b>Performance</b>	Results or achievements of endeavors

*Resource utilization* comprises SMEs' strategies **for** exploiting existing resources to survive the pandemic. The interviews revealed that the **owners'** efforts **to save** and utilize excess or idle resources during the crisis resulted in innovation. The qualitative findings also indicated that informants did anything arbitrarily to consume the remaining materials or **to** use the skills of the remaining employees. *innovation* is a byproduct of an initial survival strategy that produces novelty in products, processes, and marketing. *Performance* is the level of SME achievement **resulting** from various endeavors.

#### 4. Stage 2: Quantitative study

This study developed instruments based on themes that have emerged from phenomenological studies. The interviews revealed several main themes: *resource utilization*, *innovation*, and *performance*. Other variables were added based on input from one entrepreneur, namely, *government assistance* and *partnerships*. These themes **were used as** variables in the quantitative **analysis**. One theme represented one variable, and the researchers used prior studies as a reference to develop the hypotheses and survey instruments.

The concept of organizational survival strategy is a growing stream of research (Rahman *et al.*, 2022; Islam *et al.*, 2021). However, with the unprecedented COVID-19 pandemic,



more research has been directed toward organizational behavior during and after the crisis. This pandemic began with a viral outbreak that forced governments worldwide to close national borders and stop economic activities. Although policies, strategies, and patterns vary between countries, their consequences are similar, impacting the global community's public health, economic conditions, education, and social life. Hence, previous studies categorize organizational strategies for surviving a pandemic as considerably more intensive than when dealing with previous crises (Sharma *et al.*, 2020), and there is a call for more research (Chatzoudes *et al.*, 2022).

#### 4.1 Theoretical background and hypotheses development

The pandemic, which created uncertainties in the business environment, forced companies to shift their focus to maximizing internal utilization (Chatzoudes *et al.*, 2022). Studies have argued that the basis of organizational success is more internal resources and capabilities than products (Lukovszki *et al.*, 2021). Aligned with Resource-Based Theory (RBT), companies obtain a competitive advantage from resources and capabilities that are unique, valuable, and difficult to imitate or replace (Barney *et al.*, 2011). These resources, including physical, financial, human, and intellectual capital and capabilities, such as employees' skills and talent, can be maximally utilized during uncertain times of crisis to maintain a company's cash flow (Bettiol *et al.*, 2022).

According to Wenzel *et al.* (2020), there are at least four survival strategies during a crisis: *retrenchment* or efficiency; *persevering* or maintaining as-is conditions with persistence; *innovation*; and *exit*. In a study of SMEs in Indonesia, Yunus *et al.* (2023) mapped four strategies implemented in the short and long terms. Another study on SMEs' struggles showed that SMEs engaged in more innovation practices during a crisis (El Chaarani *et al.*, 2021; Caballero-Morales, 2021) while seeking government support (Arslan *et al.*, 2021; Chatzoudes *et al.*, 2022), or seeking assistance from the external environment during a crisis, such as from families and even competitors (Safari and Saleh, 2020; Arthur *et al.*, 2022; Yunus *et al.*, 2023). RBT is insightful in shedding light on the behavior of SMEs to sustain their businesses.

Similarly, previous studies have also linked SMEs' actions, which can be sporadic, in offering new or existing products with new value propositions and their ability to survive during crises (Cottrell and Nault, 2004; Rahman *et al.*, 2022). In this case, the keyword is SMEs' ability of SMEs to continuously develop innovation (i.e., innovation capability). Previous studies have shown that a company's ability to develop innovation increases during crises, particularly for SMEs (Lukovszki *et al.*, 2021; Rahman *et al.*, 2022). **SMEs were found to innovate their business model to improve their survivability (Corvello *et al.*, 2023; Jabeen *et al.*, 2023).** Miroshnychenko *et al.* (2021) further prove that the ability to absorb and utilize external information can increase company innovation and ultimately affect organizational performance.

Drawing from the qualitative findings, this study revealed two pertinent themes as SMEs' survival responses during the pandemic: resource utilization and innovation. Resource utilization emerged as an intuitive strategy in the early days when SMEs sensed the urgency to save their businesses. Efforts have been made to develop innovative practices for these purposes.

During a crisis in which the external situation of the organization becomes increasingly turbulent and uncertain, the company will try its best to survive (Rahman *et al.*, 2022). Even when companies have qualified internal resources and capabilities, only those that can utilize them consistently and persistently can maneuver to produce new products that consumers primarily need during emergencies (Valaei *et al.*, 2022; Huynh, 2022).

This phenomenon is even more pronounced in SMEs with few resources and limited external assistance (Adam & Alarifi, 2021; Qehaja, 2021). Drawing from RBT, this study argues that SMEs that utilize production, technology, and distribution facilities, as well as their employees' skills and talent, will transform into new creations that are commercially viable during a crisis (Runyan *et al.*, 2007; Huynh, 2022). Therefore,

*H1: Resource utilization positively affects SMEs' innovation in times of crises.*

Previous studies have consistently provided empirical evidence regarding the impact of innovation capabilities and practices on performance in both large- and small- and medium-sized companies (Saunila *et al.*, 2014; Saunila, 2016). Ismail (2023) defined *innovation performance* as “a firm’s capacity to effectively leverage its innovation resources and capabilities to create innovative outputs that ultimately lead to market success” (p. 2). Innovation performance has significantly improved economic and social performance (Rauter *et al.*, 2018). It is especially pertinent to investigate SMEs since they face greater challenges than larger companies, and more so in developing countries (Le and Do, 2023).

The ability to innovate does not necessarily improve performance; however, if followed by sustained practices, companies will produce products and services that are superior to those of competitors. Companies can generate discipline through a conducive corporate culture (Ismail, 2023) and innovation initiatives emerge from employees' knowledge, skills, and commitment (Rubel *et al.*, 2023). Especially in small- and medium-sized business sectors, the ability to innovate must be fostered through a willingness to learn from experimentation, failure, and success (Shaik *et al.*, 2023).

Under crisis conditions, innovation capabilities and practices become more critical (Chesbrough, 2020) because companies face situations in which buyers have lower purchasing power and compete for smaller markets. This study projects similar results for SMEs in developing countries. We investigated economic performance in this study because it is more relevant in a crisis. Moreover, Rauter *et al.* (2018) provided evidence of a positive correlation between economic and sustainable performance.

*H2: Innovation positively affects company performance in times of crisis*

Small and medium enterprises will be the first to be affected by economic crises due to limited working capital (Adam and Alarifi, 2021); hence, they will turn to the government as one such source of assistance (Safari and Saleh, 2020; Arslan *et al.*, 2022; Huynh, 2022). Studies have confirmed the impact of government support on improving SMEs' resilience (e.g., Trieu *et al.*, 2023). A recent study by Aslam *et al.* (2023) provided evidence of the positive impact of government assistance on the viability of SMEs. The assistance program was also pertinent for SMEs to cope with the crisis situation (Wang and Kang, 2023).

It would be valuable if academic research also validates the benefits of government assistance in increasing SMEs' fighting power to survive crises. These findings have important implications for policymakers. In this case, there is a difference between SMEs receiving assistance and those that do not. Therefore, this study hypothesizes the following.

*H3: There is a significant difference between SMEs that receive and do not receive government assistance in the relationship between resource utilization and innovation such that SMEs that receive assistance are more able to increase innovation through resource utilization than those that do not.*

Previous studies have shown that SMEs try to maximize their use of resources for business continuity. However, during a prolonged crisis, SMEs require external assistance and use their networks to survive (Lukovszki *et al.*, 2021). SMEs can collaborate with their supply

chain partners and competitors to create new creations that the market needs. These collaborative practices were also observed in the Indonesian batik community.

In the current era, open innovation is becoming increasingly crucial. Open innovation, according to Carrasco-Carvajal et al. (2023), is "a strategy that firms adopt to innovate by incorporating knowledge from both outside and inside their firms, exploiting their knowledge, and exploring the knowledge of their environment." (p. 397). Studies have examined companies' joint innovation practices with their strategic partners. Despite their size, SMEs can utilize external partners (e.g., consumers, suppliers, and vendors) to transform their business models (Jabeen et al., 2023). In fact, in their recent study, Corvello and colleagues (2023) highlighted the importance of partnerships to improve "antifragility" in small firms. Anti-fragility is a parameter of a company's ability to innovate in its business models due to the crisis.

The absorptive capacity (ACAP) theory also supports companies in absorbing new information from their environment and utilizing it to produce new products (Müller et al., 2020). Based on our observations and interviews with Indonesian batik SMEs, we would argue that SME owners collaborating with their suppliers, distributors, or competitors during their initial survival strategy would become more innovative.

H4: There is a significant difference between SMEs that partner with external parties in the relationship between resource utilization and innovation, such that SMEs that engage in partnerships are more able to increase innovation through resource utilization than those that do not.

#### 4.2 Quantitative study: Instrument development

Instrument development began with a literature review of SMEs' endeavors and outcomes. Four researchers developed the instrument and conducted face validity through confirmation with SME entrepreneurs. The scale used was a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). *Resource utilization* consisted of five items, *innovation* had seven items, and *performance* had six items. For questions regarding *government support* ("Did you get a government assistance program for your business during the pandemic?"), the choices were "Yes/No" answer, and the respondent wrote down the form of the assistance program received (if any). Meanwhile, for *partnerships*, respondents determined the extent of collaboration in innovation activities with other parties using a 5-point Likert scale.

Before starting the full-scale survey, the researchers conducted an instrument pre-test with 30 batik business owners to ensure the ease and consistency of the narratives. The pre-test indicated that the instrument was valid and reliable; therefore, we proceeded with a survey. Appendix D presents the measurement of each construct along with its psychometric properties.

#### 4.3 Survey data collection and analysis

For quantitative research, this study determined the sample size by considering the 95% confidence interval level, with the number of Batik SMEs in Indonesia being 4900 businesses. With 75% of them on Java, the minimum sample size was 298. This study used convenience sampling and a snowball sampling approach. Since most SMEs were closed even after the government lifted the lockdown policy, we contacted those who opened their businesses and asked for their willingness to participate in our study. We could not calculate the response rate, as there was no published sampling frame, but based on those contacted, 100% were willing to share their survival stories; therefore, we found no issues during data collection.

Data collection took approximately four months, from May to August 2022. The researchers gathered data directly by visiting batik centers in Java and requested SME owners

to **complete** a printed questionnaire. This study obtained 352 SMEs with the most extensive distribution occurring in the West and Central Java regions.

This study performed several analyses, including Exploratory Factor Analysis for Harman's single-factor test (Podsakoff *et al.*, 2003), Confirmatory Factor Analysis for instrument testing (that is, convergent **and** discriminant validity and reliability tests), **and** Structural Equation Modeling (SEM) for hypothesis testing. All data were checked for completeness and processed using JASP ver. 0.16.4, based on R Lavaan.

#### 4.4 Survey results: profiles

The survey showed that the oldest SME was established in 1923 (one SME owner did not remember the year of establishment since the business had been passed down for generations). Most small and medium-sized enterprises (SMEs) were established in 2017. Table 2 displays the detailed profiles of the 352 Batik SMEs who participated in the survey.

**Table 2. Profiles of Batik MSMEs ( $n = 352$ )**

Description	Frequency	%
<b>Year of establishment</b>		
Before 1980	8	2,3%
1980 - before 1990	10	2,8%
1990 - before 2000	25	7,1%
2000 - before 2010	97	27,6%
2010 - before 2020	205	58,2%
Missing/unsure	7	2,0%
<b>Employees</b>		
Full time and/or part time	349	99,1%
No employees (help by family members if needed)	3	0,9%
<b>Net assets</b>		
USD 3200 or less	173	49,1%
More than USD 3200	178	50,6%
Missing	1	0,3%
<b>Turnover/revenues</b>		
USD 19,200 or less	273	77,6%
More than USD 19,200	79	22,4%
<b>Market coverage</b>		
National	247	70,2%
Asia	55	15,6%
Global	22	6,3%
<b>Government Support</b>		
Yes	57	16.2%
No	295	83.81%

Before progressing to the hypothesis, we tested the data to ensure **that** they were free from violations, and further tested the instrument to ensure good psychometric properties. The normality test was checked by observing the Q-Q plot of standardized residuals and each



variable's skewness and kurtosis values (Kline, 2016). The results indicated that the data were normally distributed. Levene's test further showed that the data met the assumption of variance homogeneity. The multicollinearity test produced a Tolerance and variance inflation factor (VIF) below the threshold: all tolerance values greater than 0.1 or VIF below 10 (Hair *et al.*, 2019). Finally, a linearity test using the residuals and predicted values revealed no curve pattern, confirming that the data met the linearity criterion (Hair *et al.*, 2019).

The study of social behavior is prone to "common method variance" (CMV); namely, the existence of variance in the measurement method of research, not in the construct being measured (Podsakoff *et al.*, 2003). Podsakoff *et al.* (2003) listed four primary sources of bias from CMV (see Table 2 in their paper, p. 882). This study avoids common method bias by separating the prediction and criterion variables. It is not always possible to assign different informants to measure predictor variables and criteria, especially for SMEs, since business owners usually play a full role and control all aspects of the business. This study allowed respondents to be anonymous and voluntary when collecting survey data because there were no right or wrong answers; hence, they refrained from common-method issues.

We also performed statistical diagnostics to detect common method bias using Harman's one-factor test (Podsakoff *et al.*, 2003). We loaded all variables into the exploratory factor analysis (EFA), and the results showed that the data were spread into three underlying factors. The first factor was not the dominant factor (26.44%), and the three factors explained 65.79% of the variance in the data. The EFA also shows that each item is incorporated into the relevant factors (i.e., resource utilization, innovation, and performance). Only one item did not meet the loading requirements above 0.5 (Performance Item-5). Considering that no single factor appears or that one factor dominates the entire measurement, this study concludes that common method variance is not an issue. **Appendix C** presents the EFA results.

The study continued with Confirmatory Factor Analysis (CFA), where the CFA results confirmed the level of unidimensionality and convergent validity of the measurement. The CFA showed that the measurement met unidimensionality, with a goodness-of-fit value above the threshold (Gerbing & Anderson, 1988; Hair *et al.*, 2019), namely  $\chi^2/df = 2.912$ , CFI = 0.9577, TLI = 0.9477, NFI = 0.9373, IFI = 0.9579, GFI = 0.9900, RMSEA = 0.0737. CFA also confirmed the EFA results that one item should be removed due to low loading, as suggested by Anderson and Gerbing (1988). After one item deletion, all standardized factor loadings were above the 0.5 threshold (Hair *et al.*, 2019). Hair *et al.* (2019) also suggested that variance-extracted measures should be greater than 0.5, whereas construct reliability should be above 0.7. We also checked each variable's reliability using Cronbach's alpha, and all three showed a good internal consistency level above 0.80 (Hair *et al.*, 2019). **Appendix D** (Table D1) presents the convergent validity and reliability of the survey's measures.

This study assessed discriminant validity using guidance from Hair *et al.* (2019). To guarantee that a conceptual measurement or construct differs from other constructs, the AVE of the specified construct must be greater than the squared correlation values with other constructs. Table D2 in **Appendix D** compares the AVE of each variable with its squared correlation estimate. As AVE was above the squared correlation associated with the variable, discriminant validity was not an issue.

#### 4.5 Hypothesis testing

After confirming that we had an excellent distribution of data and measurements, we proceeded with hypothesis testing using covariance-based Structural Equation Modeling from JASP ver. 0.16.4. This study tested a positive direct relationship between resource utilization and innovation and between innovation and performance. Furthermore, two moderating



effects are tested: government support and partnership. Each variable is expected to strengthen the influence of resource utilization on innovation.

The model met the goodness-of-fit parameters ( $\chi^2/df = 2.68$ , CFI = 0.9606, TLI = 0.9499, NFI = 0.9389, IFI = 0.9608, GFI = 0.9909, and RMSEA = 0.0691) so that it could be continued for the path analysis using SEM. The first test examined the direct relationship between resource utilization and innovation. The SEM results show a significant positive relationship ( $\beta = 0.3676$ ,  $p < 0.001$ ). These results support H1. The next test was the direct relationship between innovation and performance, in which a higher level of innovation impacts business performance. The results of this test were significant ( $\beta = 0.4883$ ,  $p < 0.001$ ), thus supporting H2.

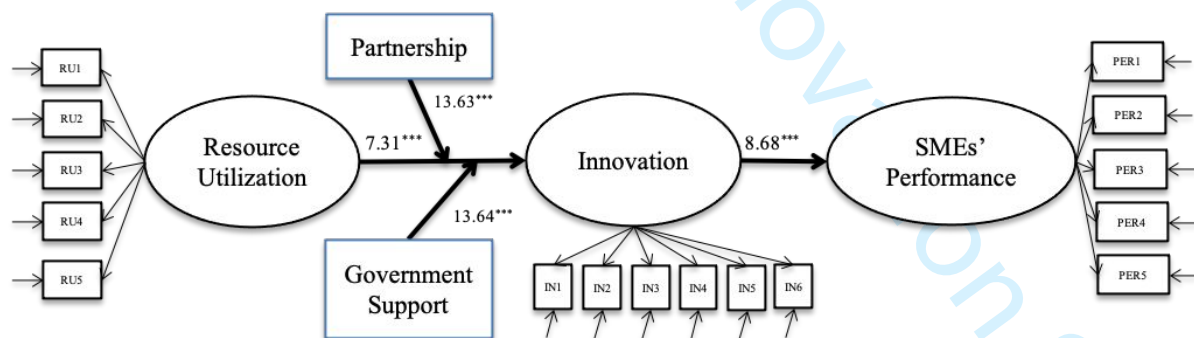
**Table 3. Results of Structural Equation Modeling**

Path (from-to)	Standardized parameter estimates ( $\beta$ ) and $t$ -value (in parenthesis)	Conclusion
1. Resource Utilization – Innovation	0.3676 (7.3130) ***	H1 supported
2. Innovation – Performance	0.4883 (8.6824) ***	H2 supported
3. Resource Utilization x Govt Support – Innovation	0.5853 (13.637) ***	H3 supported
4. Resource Utilization x Partnership – Innovation	0.5781 (13.633) ***	H4 supported

$\chi^2/df = 2.68$ ; CFI = 0.9606; TLI = 0.9499; NFI = 0.9389; IFI = 0.9608; GFI = 0.9909; RMSEA = 0.0691

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

The final stage tested the moderating effect on the relationship between resource utilization and innovation. The results were also significant for government support ( $\beta = 0.5853$ ,  $p < 0.001$ ) and partnership ( $\beta = 0.5781$ ,  $p < 0.001$ ), thus supporting H3 and H4. The overall results are shown in Table 3 and mapped in Figure 2.



**Figure 2. Results of Structural Equation Modeling**

Note:  $t$ -values are reported; \*\*\* $p < 0.001$

Finally, we graphically depict the impact of each moderating variable. Figure 3 shows a positive relationship between resource utilization and innovation, and the slope is steeper when SMEs receive government assistance or collaborate with external partners. The findings are discussed in the next section.

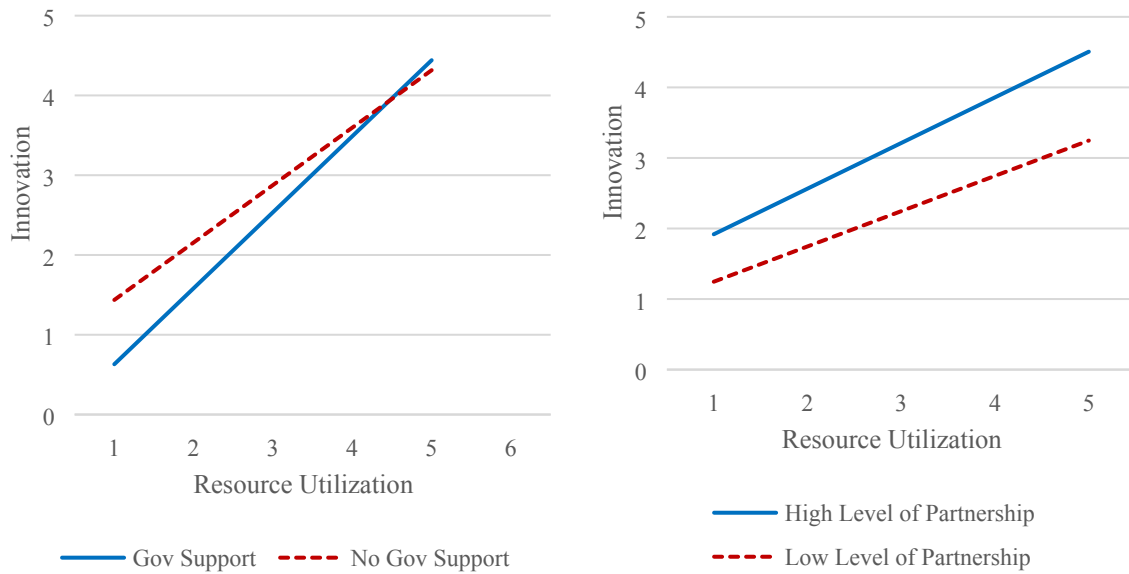


Figure 3. The interaction effects of Government Support and Partnerships

## 5. Discussion

This study evaluated the impact of various initiatives conducted by SMEs in Indonesia to survive the 2020-2022 pandemic. This study uses two approaches to achieve comprehensiveness, starting with a phenomenological study using in-depth interviews with 23 batik SMEs, followed by a survey to verify and test the initiatives carried out by batik SMEs in Indonesia. The results show that SMEs in Indonesia make various efforts to maximize their internal resources and capabilities. These efforts increase innovation in products, processes, and organizations, and further improve the performance of SMEs. The motivation for utilizing existing resources (personnel, production facilities, and distribution networks) is not to initially innovate. However, the interviews revealed that their ability to innovate had increased. This relationship was validated by surveying 352 Indonesian small and medium-sized enterprises (SMEs).

These findings are similar to those of previous studies (Wenzel *et al.*, 2020; Rahman *et al.*, 2022; Chatzoudes *et al.*, 2022), in which SMEs initiated rescue endeavors during short- and long-term crises. In general, SMEs economize in multiple aspects, progressing into innovation capabilities that benefit businesses (Lukovszki *et al.*, 2021; Trieu *et al.*, 2023). Bettiol *et al.* (2022) argued that the pandemic increased the urgency to innovate and survive these challenging situations.

The results also show that SMEs take advantage of networks and partners with various parties. Suppliers and competitors can leverage their efforts to utilize resources to increase their ability to innovate. This result aligns with those reported by Lukovszki *et al.* (2021). Likewise, government assistance increases SMEs' ability to develop innovation through the utilization of resources, as previously argued by Zhang and Xu (2019), Safari and Saleh (2020), and Chatzoudes *et al.* (2022). The overall effort will ultimately improve the performance of SMEs, not only in terms of turnover and sales, but also in terms of productivity and profit. The implications of this study are as follows:

### 5.1 Implications for literature

The COVID-19 pandemic is an unpredictable and immensely challenging phenomenon for vulnerable SMEs and even more so for the non-essential sector, which experienced substantial restrictions on business activities. Phenomenological studies are needed to

investigate the experiences of SME business actors, their maneuvers, and the fundamental changes **that** they experience. This study collects data in the middle of 2022 and draws lessons from the surviving SMEs. A qualitative study followed by a survey provided more comprehensive findings.

**Using** these two approaches, this study found that SMEs in Indonesia exploit their capabilities and resources to obtain cash flow**s** that allow them to continue to pay for their employees. This finding aligns with several previous studies that argue that internal capabilities would significantly affect defensive actions during crises (Huynh, 2022). Resource exploitation gives birth to SMEs' ability to innovate, not just within the mainstream, but beyond the current mindset, such as by adding new businesses. In line with this, Christensen *et al.* (1998) argue that companies that venture into new markets through innovation are more successful than those that depend merely on their existing markets. Batik SMEs that expand their target segments, such as the youth market or career women working from home through **their** newest creations, will survive better. Several SMEs **have** sold food or produced personal protective equipment (PPE) during the pandemic to maximize the utilization of their facilities and employees to acquire new profitable and sustainable businesses. **Employees can** engage in innovation initiatives by utilizing their knowledge, skills, and commitment (Rubel *et al.*, 2023).

**Resource-based theory (RBT)** emphasizes the unique, valuable, and irreplaceable resources and capabilities to win long-term competition (Barney, 1991; Barney *et al.*, 2011). However, in times of crisis, SMEs do not face competition because **their** existing business is at a halt (consumers do not need it). Nevertheless, RBT helps explain how SMEs that identify, analyze, and exploit their existing capabilities and resources become more innovative and ultimately survive.

This study empirically shows **the** fundamental differences between SMEs that exploit their networks and those that receive governmental aid. Both (partnership and assistance) do not directly improve innovation but increase the capacity of SMEs to utilize resources to create new products/services. **The** ability of SMEs to gain external knowledge and assimilate it into a company is essential. Thus, absorptive capacity theory (ACAP) plays a role in explaining the impact of absorbing new information or skills from external parties and increasing innovation in SMEs. **A** company's ability to assimilate various new and valuable information increases **its** innovation power (Cohen and Levinthal, 1990; Miroshnychenko *et al.*, 2021; Corvello *et al.*, 2023), **which is align with the open innovation practices that boosted SMEs survivability (Carrasco-Carvajal et al., 2023; Jabeen et al., 2023).**

This study links two well-established strategic management theories: Resource-Based Theory (Barney, 1991; Barney *et al.*, 2011) and Absorptive Capacity (Cohen and Levinthal, 1990; Zahra and George, 2002). Instead of assuming that the two theories are at odds, this study considers both essential to fully explaining SMEs' maneuvers when the phenomenon occurs.

Finally, several SMEs convey the importance of technology and digitalization during crises. Studies confirm the need for SMEs to adopt digital technologies to accelerate innovation (Bettiol *et al.*, 2022) and survival strategies (Adam & Alarifi, 2021; Zutshi *et al.*, 2021). However, since technology adoption might require new skills and further investments, SMEs must be observant in choosing technology that can facilitate their operations without incurring additional costs, **such as** using open-source software for business process effectiveness.

### 5.2 Implications for practice

The COVID-19 pandemic has only recently recovered, and many countries have **begun** to liberate their social and business activities so that their economies can return to normal. Many

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3 lessons can be drawn from the efforts to survive the crisis, primarily actions that have  
4 produced extraordinary results beyond expectations. As the essence of a phenomenological  
5 study, by disclosing all the initiatives and drives of SME business actors during the research  
6 process, they become more aware of their endeavors during the pandemic and ultimately  
7 provide valuable knowledge to themselves and their stakeholders.

8  
9 Based on these findings, this study suggests that SMEs utilize their internal resources and  
10 existing production facilities and raw materials for immediate survival. Initially only for  
11 short-term survival, these efforts have been proven to increase innovation capabilities to  
12 provide better value-added products than competitors. When the business climate recovers,  
13 the ability to innovate remains and becomes one of the sustainable strengths of SMEs.

14  
15 Simultaneously, SMEs should remain receptive to government assistance. In Indonesia,  
16 the government provides direct cash subsidies to businesses; however, if SMEs merely rely  
17 on this kind of aid from the government, their business life will only last for a while. More  
18 critical is assistance that can increase SMEs' capabilities in utilizing available internal  
19 resources, such that it can impact their innovation capabilities. One type of help deemed  
20 beneficial for batik business actors was training on dyeing batik cloth using natural materials.  
21 Thus, SMEs are better able to utilize internal resources to produce new creations.

22  
23 The study also recommends that business actors engage in closer relationships with  
24 suppliers and consumers. Cooperation with competitors in times of crisis is also suggested  
25 because it will strengthen the competitiveness of small businesses in the industry.

### 26 27 28 *6.3 Study limitations and suggestions for future research*

29  
30 This study can be strengthened in several ways. First, this study examines only one non-  
31 essential business sector affected by the pandemic. The selection of non-essential business  
32 sectors was by design. Non-essential sectors are businesses not allowed to operate during the  
33 government lockdown. They were allowed to open after the lockdown period (around two  
34 months), but the impact of the government's decision caused them to struggle to survive. The  
35 study's results still need to be compared with those of other types of businesses to obtain a  
36 more all-encompassing survival strategy map.

37  
38 Second, this study accommodates the curiosity regarding the effectiveness of government  
39 assistance. The results show that government assistance increases the effect of resource  
40 utilization on innovativeness. However, there is only one question regarding government  
41 assistance with the various subsidies SMEs may receive. So, bias can occur. Therefore,  
42 further research can explore the aspects of assistance and partnerships in greater depth.

43  
44 Lastly, this study develops construct measures that are grounded in qualitative studies.  
45 Although this approach is most suitable to actual business practices, the measurements would  
46 be ideal to be validated further to warrant their psychometric properties. We encourage future  
47 research to employ the measurement in a larger context.

### 48 **Conclusion**

49  
50 Indonesian Batik SMEs are chosen as central because they reflect the philosophical meanings  
51 and symbols of the heritage of Indonesian culture, as well as local wisdom that must be  
52 preserved. Studies on batik are rare, and although studies on batik suggest Indonesia's  
53 uniqueness, the efforts are likely representative of the various strategies of SMEs across  
54 countries. These SMEs struggled and responded by utilizing many retrenchment strategies  
55 such as resource utilization initiatives. SME entrepreneurs should sustain their survival  
56 strategies and seize external support and partnerships to enhance their potential. Various  
57 endeavors due to the pandemic have created innovations, increasing the organization's  
58 competitiveness and honing business understanding and resiliency.

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3 This study uses a particular SME sector as the research setting; nevertheless, the findings  
4 provide insights into small- and medium-sized companies in various emerging countries that  
5 exploit their internal resources and capabilities while seeking external support. Therefore, we  
6 hope that this study can be generalized to a broad industrial context in global countries.  
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### Appendix A. List of interview questions

1. How long has this batik business been established (year founded)?
2. What is the history of its establishment (the origin of the batik business)?
3. How many employees and how is the division of jobs?
4. What business-related changes have you experienced during the pandemic?
5. What are your survival endeavors?
6. What are the obstacles?
7. What lessons did you learn from this experience?

### Appendix B. Profile of SMEs in Phenomenology Study

Informant ID	Year of establishment	Gender of owner	Product mix
A	2005	Female	Batik fabrics, clothes, prayer gown
B	2014	Female	Batik fabrics, clothes
C	1992	Female	Batik fabrics, clothes, ladies dress
D	1992	Female	Batik fabrics, clothes, ladies dress
E	2007	Female	Batik fabrics, clothes, ladies dress, batik souvenirs
F	2011	Female	Clothes, tote bags, prayer mats, masks, hats
G	1993	Female	Batik fabrics, batik souvenirs
H	2007	Female	Batik fabrics, clothes (limited)
I	2010	Female	Batik fabrics, clothes
J	2014	Male	Batik fabrics, clothes
K	2010	Female	Batik fabrics, clothes, tote bags, prayer mats, masks
L	2008	Female	Batik fabrics, clothes, batik souvenirs
M	1987	Female	Batik fabrics, clothes, prayer gown, batik souvenirs, bags, masks
N	2005	Female	Batik fabrics
O	2014	Male	Clothes, non-batik (tie dye) clothes
P	2004	Male	Clothes, shirts, batik fabrics, ladies dress, praying gown, masks
Q	2007	Female	Clothes, batik fabrics (for individual or group sales)
R	2015	Female	Batik fabrics, striated clothes, blouse, shirts
S	2015	Male	Batik fabrics
T	2007	Male	Batik fabrics, striated clothes, blouse, shirts, bags
U	2009	Female	Clothes, shirts, nightgown, bags, batik souvenirs, batik fabrics, ethnic necklace, masks, hats, sandals
V	2004	Female	Batik fabrics, clothes, shirts, nightgown, masks, praying gown
W	2013	Female	Batik fabrics, striated fabrics, shirts, bags, pencil pouch, customized batik souvenirs

### Appendix C. Results of Exploratory Factor Analysis

Factor Loading			
	Factor 1	Factor 2	Factor 3
RU1	0.7743		
RU2	0.7656		
RU3	0.8327		
RU4	0.6835		
RU5	0.6989		
IN1		0.7168	
IN2		0.8588	
IN3		0.8856	
IN4		0.8395	
IN5		0.7890	
IN6		0.9321	
IN7		0.6614	
PER1			0.8631
PER2			0.9365
PER3			0.9614
PER4			0.9169
PER5			<i>-deleted-</i>
PER6			0.8831

Overall MSA = 0.9116; Bartlett's test  $\chi^2 = 5102.1125$  ( $p < 0.001$ )

Legend: RU=Resource Utilization; IN=Innovation; PER=Performance

## Appendix D. Measurement Items, Results of Confirmatory Factor Analysis, and Reliability Analysis

**Table D1. Results of Construct Validity and Reliability**

Items and loading	AVE*	Cronbach's alpha	Construct reliability
<b>Resources Utilization</b>	0.566	0.8728	0.865
1. I try to keep my production facilities operating as fully as possible (loading: 0.6176)			
2. I try to make my employees achieve the maximum productivity possible (0.7308)			
3. I try to make the most of my place of business (e.g., shop/kiosk/home) as much as possible (0.6713)			
4. I try to make the most of online promotional media (e.g., IG/FB/Website/Line/WA Group) that I have as much as possible to market any products or services that can generate income (0.8786)			
5. I try to make the most of my distribution network (e.g., reseller/distributor/retailer) to market any products or services that can generate income (0.8323)			
<b>Innovation</b>	0.667	0.9233	0.923
1. Creating a new type of batik product (0.7599)			
2. Using a new method in the process batik production (0.8349)			
3. Implementing a new distribution method in the delivery of batik products (0.8565)			
4. Changing the packaging of batik products (0.8339)			
5. Expanding business in the batik business (0.8704)			
6. Using new media or techniques in promoting the product (0.7337)			
<b>MSMEs' Performance</b>	0.812	0.9550	0.956
1. Experiencing sales growth (0.8560)			
2. Experiencing market growth (0.9365)			
3. Experiencing turnover growth (0.9278)			
4. Experiencing an increase in profit (0.8944)			
5. Experiencing a decrease in operational costs (< 0.05, deleted)			
6. Experiencing increased business productivity (0.8869)			

### Government Support

Did you get any government assistance program for your SMEs during the pandemic? (Answer Yes/No). If your SME receives government assistance, mention the government assistance program you received.

### Partnership

Collaborating in carrying out innovation activities with other parties (5-pt. Likert scale)

$\chi^2/df = 2.912$ , CFI = 0.9577, TLI = 0.9477, NFI = 0.9373, IFI = 0.9579, GFI = 0.9900, RMSEA = 0.0737

\*AVE=average variance extracted

**Table D2. Results of Discriminant Validity**

	<b>RU</b>	<b>IN</b>	<b>PER</b>
<b>RU</b>	0.566	0.217	0.206
<b>IN</b>	0.466***	0.667	0.210
<b>PER</b>	0.326***	0.458***	0.812

\*  $p < 0.5$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Legend: RU=resource utilization, IN=innovation; PER=performances

Note: Values above the diagonal are squared correlations among variables, values below the diagonal are correlation estimates, and diagonal values are the average variance extracted of each variable.