

A DIFFERENT MAGNITUDE OF SME BUSINESS MODEL INNOVATION: A LESSON FROM THE PANDEMIC

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Abstract: The COVID-19 pandemic has significantly affected SME businesses and forced them to respond to the situation. Business model innovation (BMI) is considered as a suitable choice of innovation mode for the sustainability of SMEs. The change in the business model (BM) in SMEs varies among organizations. Therefore, this study attempts to further explain the changes in BM for SMEs during the pandemic. Through this research, the understanding of BMI is expected to increase substantially, especially in the context of SMEs. The study performed a qualitative approach through multiple case studies to analyse the information and obtain factual findings to understand this phenomenon. Eight cases with different backgrounds were submitted and interviewed through semi-structured online interviews to obtain information about the BMI in SMEs. The findings show that although SMEs intervene through BM changes, the changes adjust to SMEs' internal and external situations. In other cases, BM changes only focus on several sub-value systems (value capture, value creation, or value proposition). In certain other cases, SMEs were forced to radically change their value systems due to the extreme impact of the pandemic on their businesses and environment. This study conceptualizes BM changes in SMEs, as classified into type 1, type 2, type 3, and type 4, arranged based on the level of complexity (x-axis) and novelty of change (y-axis). The model can be justified through eight cases in this study. This study contributes to the scientific development of BM/BMI and justifies changes in BM empirically. For practitioners, this study clearly defines the direction of changing BMs in extreme situation.

Keywords: BMI, multiple case studies, different magnitude, pandemic, SMEs

Abstrak: Fenomena pandemi mempengaruhi bisnis UKM secara signifikan dan memaksa mereka untuk merespon situasi tersebut. Inovasi Model Bisnis (IMB) merupakan moda inovasi yang cocok bagi keberlangsungan bisnis UKM. Faktanya, perubahan model bisnis (MB) pada UKM berlangsung berbeda-beda antar organisasi. Oleh karenanya, penelitian ini ingin menjelaskan lebih lanjut bentuk perubahan MB pada UKM selama pandemi. Melalui penelitian ini, pemahaman tentang IMB diharapkan dapat meningkat secara substansial, terutama dalam konteks UKM. Untuk memahami fenomena tersebut, pendekatan kualitatif melalui studi kasus jamak diadopsi untuk menganalisis informasi dan memperoleh temuan faktual. Delapan kasus dengan latar belakang berbeda diajukan dan diwawancarai melalui wawancara semi terstruktur untuk mendapatkan informasi mengenai IMB pada bisnis UKM. Temuan menunjukkan meskipun UKM melakukan intervensi melalui perubahan MB namun perubahannya menyesuaikan dengan situasi internal dan eksternal UKM. Pada beberapa kasus, perubahan MB hanya fokus pada beberapa sub-value system (value capture, value creation atau value proposition). Beberapa kasus lainnya, UKM mengubah value systemnya secara radikal karena dampak ekstrim akibat pandemi pada bisnis dan lingkungannya. Studi ini mengkonseptualisasi perubahan MB pada UKM yang terklasifikasi menjadi tipe 1, tipe 2, tipe 3, dan tipe 4, disusun berdasarkan tingkat kompleksitas (sumbu-x) dan kebaruan perubahan (sumbu-y). Model tersebut mampu dijustifikasi melalui delapan kasus pada penelitian ini. Studi ini berkontribusi pada pengembangan keilmuan MB/IMB sekaligus mejustifikasi perubahan MB secara empiris. Bagi praktisi, studi ini mendefinisikan perubahan model bisnis pada situasi ekstrim.

Kata kunci: IMB, studi kasus jamak, perbedaan ukuran, pandemi, UKM

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INTRODUCTION

The COVID-19 pandemic has presented formidable challenges for human beings since it has radically changed their social interactions. This situation has forced organizations, including Small and Medium Enterprises (SMEs), to change their activities to overcome these challenges. SMEs are the most directly affected by the pandemic, as 87.5% of SMEs have faced challenges, mainly due to falling demand and insufficient cash to cushion uncertainty (BI, 2020). In Indonesia, SMEs play significant roles as catalysts for economic growth and employment. During the crisis, such as in 1998, SMEs survived and saved the Indonesian economy because they primarily provided basic needs and were less dependent on debt. Therefore, the alternative solution for SMEs to survive is reconfiguring or changing their system or Business Model (BM).

BM is a new paradigm in the entrepreneurship and management area which initially developed in the dot-com (Internet) era and became a trend (Yip, 2004). The BM concept enables SMEs to encounter dynamic business challenges. Although customers are the centre of attention, this concept does not forget how SMEs operate. This concept seeks harmony between environmental changes, customer-centred actions, and SMEs as creators of products/services. Users of this concept believe that the SME is no longer the centre of attention. There has been a shift that customers should be a source of attention since the SME's main objective is to meet their needs. Chesbrough and

Rosenbloom (2002) defined BM briefly as a concept of commercializing products or services provided by SMEs. Conceptually the definition is accurate but forgets the essence of BM, where there is a process of capturing value, creating value, and delivering value to its customers. BM is a powerful concept to make SMEs more competitive. Although many experts consider BM more efficient than other modes of innovation, such as product innovation and process innovation, BM architecture needs distinct capabilities. This adjustment process is like a puzzle that combines logic and emotion. Chesbrough (2010) believes that BM's use is more effective than organizations that use the latest technology. The development of BM encouraged scholars to improve their understanding of BM/BMI. The Fundamental Concept of BMI in Figure 1.

Business model innovation (BMI) is a concept that attracts scholars since it can adapt to environmental changes and show an SME's significant impact. Moreover, García-Gutiérrez and Martínez-Borreguero (2016) emphasized the importance of BMI's presence in encouraging SMEs' competitiveness. Through the pivot process, SMEs will find the most effective forms of BM. Inigo and Albareda (2016) expressed a similar argument that a non-linear business system and complexity require SMEs to continue to adapt. Economic success has been felt by several SMEs that have adopted the concept of BMI (Groeger et al. 2019). The learning point is SMEs must be able to respond to every form of change. Not just changing to survive, but changing the BM can be an opportunity to bring SMEs success.

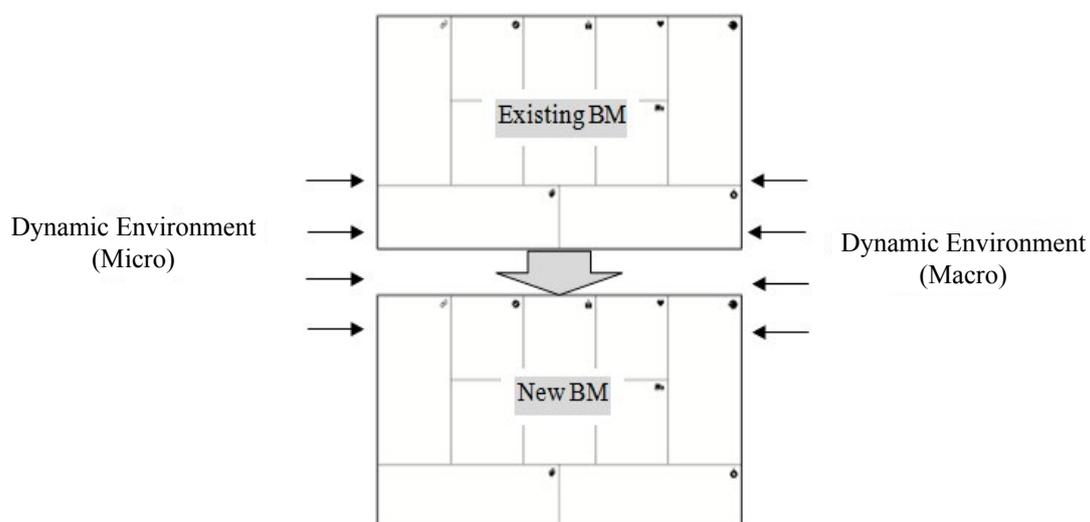


Figure 1. The Fundamental concept of BMI

A BMI can be achieved if the SMEs have sufficient resources. Teece (2018) asserted that dynamic capabilities enable SMEs to have sufficient access to understand business situations that are moving dynamically. The premise is in line with an adequate BMI, where innovation refers to changes in the dynamic environment. Changes in BMs should consider a balance between demand and supply and refer to organizational logic. The design mismatch will hamper the SMEs' potential to exclude their capabilities, including changing BMs. Through their research, Pandit et al. (2018) argued the importance of dynamic capabilities in BMI. Current market dynamics termed the turbulence of VUCA (volatility, uncertainty, complexity, and ambiguity) must be responded to well to survive in the current situation. With dynamic capabilities, organizational innovation can run more effectively to absorb and respond to VUCA.

The open innovation paradigm increasingly reinforces the position of BM and BMI in SMEs. BMI enables SMEs to create value through partnerships (Wiesner et al. 2014). They argued that entities should collaborate to perform common values and achieve success. Value sharing is introduced as a concept that supports effective BM and BMI. Leih et al. (2015) asserted that innovation is not just about seeing opportunities from changing people's behaviour but also balancing with SME values. Effective innovation will occur if there is a harmony of values among entities in the specific system. In other words, the collaboration will occur if each party involved has similar objectives and values. Asymmetric values among entities will cause failure for the organization.

Evans et al. (2017) declared that the power of innovation is essential for maintaining SMEs' survival rate. However, innovation becomes ineffective due to a lack of quality in building value. According to them, value capture and value creation alone are not enough to fulfil the organization's sustainability. Although the organization can interpret consumer behaviour, it does not guarantee the effectiveness of an innovation. Value networks are an essential part of BM to achieve firm sustainability. The value network will function as a test of the validity of information in the BMI process. Larosa and Mysiak (2019) stated that a value network has a significant role in a dynamic environment. Value networks enable the creation of a partnership process, so that there is a shared learning process that is the background for innovation. The partnership process will

lead to mutually beneficial collaboration to encourage effective innovation or co-creation. This collaboration enables radical innovation to be more possible (Ibarra et al. 2018). In line with technological developments that make it easier for people to access information and carry out their activities, collaboration can benefit the organization and its environment. The increasingly affordable flow of information makes it easier for organizations to understand people's behaviour and needs. This information can be used as a reference for organizations to capture the values and create values needed by societies.

BMI intensity in SMEs moves dynamically, depending on the external and internal environment of the organization (Wirtz & Daiser, 2017). The intensity depends on the ability to formulate problems and creativity in solving them. Spieth and Schneider (2016) emphasized using BMI comprehensively at the level of innovation novelty. The novelty is divided into several elements or system activities in the BM. Taran et al. (2015) considered BMI from a different perspective, which was defined as a change in the BM with a measure of radicality (a fundamental change that is different from the previous BM), complexity (a change in elements), and a range of novelty.

There are several factors which cause ineffectiveness in SMEs' BMI. Friedrich von den Eichen (2015) explained the limitations of knowledge, searching, systems, logic, and culture as SMEs' failures in implementing BMI. A lack of insight into consumer and organizational behaviour changes will make it difficult for organizations to determine the direction of innovation. As an essential reference, the limitations of knowledge will affect other limitations. According to Geissdoerfer et al. (2018), the failure of BMI is because the SMEs are unable to adapt to changes in the business paradigm. They stressed that an organization's sustainability is not only determined by economic factors but also their ability to contribute to society. Bocken et al. (2019) broadened the understanding of the paradigm by touching on the environment as the next element after the economy and society. In his study, environmental elements are included in BM architecture, known as the Ecological Business Model. Davies and Chambers (2018) expressed that an entrepreneur's success will be determined by one's paradigm in understanding business as a whole. Afterwards, the process of innovation in BM needs to be a concern.

The BMI process also determines SMEs' performance, which is often overlooked. From the BMI literature, there is not much evidence discussing the process of BMI (Foss & Saebi, 2016). Heikkilä et al. (2018) discussed the complexity faced when innovating in BM. According to them, success is determined by how the actors involved in BMI understand the dynamic environment and then find solutions to solve problems encountered. Once the complexity of BM makes the BMI, the process involves three main pillars: sequential, non-linear, and iterative. The more persistent the organization is in following the rules, the more chances for success. Baldassarre et al. (2017) added that capturing the needs and desires of consumers is a skill that an organization must possess to produce sustainable value propositions. Osterwalder and Pigneur (2010) explained the BM process logically and sequentially through their work. The logical sequence starts with customer behaviour as the object of research and then translates it into a value proposition. Then it proceeds with the value creation and delivers it to the customers. The logic of the BMI process is transformed into a prolific area of BMI performance.

The pandemic has forced many countries to implement restrictions that have implications for SMEs (Béland et al. 2021; Lu et al. 2020), including Indonesia (Surya et al. 2022). Therefore, many SMEs chose to close their businesses temporarily, and some even decided to close them permanently. After some time, despite the easing of policies, not many businesses have survived because people's behaviour has changed drastically. Some SMEs that survived had to make changes to their businesses to adapt to the current environmental situation (Idris et al. 2020). For SMEs, innovation is a challenge since it requires sufficient capabilities. Snihur and Wiklund (2019) are convinced that BMI is a possible mode of innovation for SMEs from the many modes of innovation. Unlike other modes of innovation, products, and technology, SMEs are more suitable to apply BMI. BMI focuses on thinking logically, being creative, and being open-minded to situations. Based on this idea, changes in BM can vary according to the orientation of SMEs' responses to changes in a dynamic environment. Several prominent scholars have clearly explained the study of differences in innovation (Spieth & Schneider, 2016; Taran et al. 2015). However, empirical evidence on differences in BMI is still lacking. Therefore, this study attempts to fill that gap and contribute to the literature.

This study aims to understand BMIs in Indonesian SMEs in response to the COVID-19 pandemic and measure the changes experienced through multiple case studies. The pandemic provides an opportunity to understand BMIs among SMEs, since many economic agents experience this phenomenon. Current discussions of BMI in SMEs focus on concept extension (Bouwman et al. 2019; Westerlund, 2020). BMI is carried out based on the organizational tendency or attitude when deciding to change. The discussion reveals research gaps to construct different BMI magnitudes, both conceptually and empirically. The scope of discussion of BMI also needs to be strengthened from the perspective of SMEs. Therefore, this study considers addressing the gaps by asking the following research questions: (i) What changes do SMEs enact to deal with a suppressed situation like the COVID-19 pandemic? and (ii) How significantly do the BMs change? Through a cross-case analysis, this study attempts to answer these questions. The findings are expected to provide insights into BMIs performed by SMEs and measure the extent of change initiated. Also, these findings will serve as additional empirical evidence for changes in BM in the context of SMEs and the pandemic.

METHODS

Social phenomena such as the impact of a pandemic on business activities can be understood using empirical studies through a case study (Awuzie and McDermott, 2017). Changes in the BM during the pandemic are a reality to maintain SME sustainability. The pandemic disrupts social interactions and implies the need for radical changes in business behaviour. Changes in demand require SMEs to reconfigure their BMs to survive and even take advantage of the situation to seize new business opportunities. Through a case study research strategy, this study aims to identify the changes in the SMEs' BMs and the differences among cases as the contribution of this study to the BMI literature on SMEs. Eastwood et al. (2014) argued that to perform abductive reasoning, the stages of a study should begin from an exploratory study in constructing the model. Then, it is followed by a deduction using the best explanation from the available evidence. Case studies validate the model through interviews with SMEs and experts (Figure 2).

The case selection for this study was conducted using a referral approach from the SME community or snowball sampling. The case selection process was explicitly explained in Figure 3 and resulted in eight SMEs that survived during the pandemic, specifically more than one year since the restriction policy was enforced. Determining a business that meets these requirements was the main challenge in this research. This study took the initiative to explore the SME business community for references that meet these criteria.

A rigorous selection process helped this study gain its findings (Figure 3). This study required businesses to still operate during the pandemic in the initial selection process. Then, the process continued with a further selection to identify the BM's intervention and the willingness to be key informants in this study. The data was obtained through online interviews, which included an interview protocol sent via email. The formulation was downsized again to eight cases. Yin (2014) suggested that more than three cases comprise significant findings.

Data collection is a process to collect relevant data/information from available resources. This study used a depth interview (DI) method as the primary data collection instrument because BMI is an organizational framework and can only be revealed by the business owner through synchronous interview. The study targeted direct business owners who also act as decision-makers in this process. The number of key informants from the eight cases amounted to twelve informants. One organization presented the possibility of being owned by more than one person. In such a case, DI was performed separately, and the interviewers used a semi-structured approach in the interviewees' native language. This approach provided convenience for the key informants to provide clear and detailed information. The interview duration was more than 30 minutes for each informant, as shown in Table 1. This study revealed that DI requires a lot of time and effort but is the most effective method to gain insights from key informants.

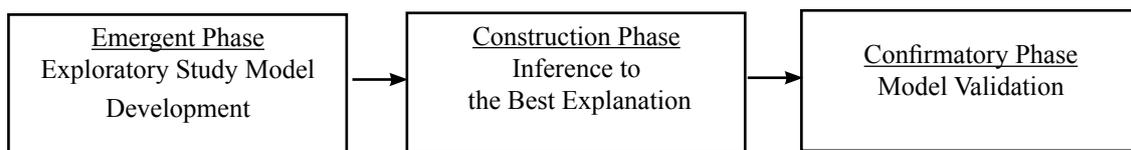


Figure 2. Research stages (Eastwood et al. 2014)

Selection Process	Activity and Parameters	Source
Prospective potential cases	SMEs that survive from the pandemic through a BM change and continue to operate.	Secondary
Preliminary selection	Case selection based on the business area and innovation process during the pandemic.	Primary
Advanced selection	The following selection stage focuses on the BMI initiative as well as confirms the willingness of the SME to provide the data/information needed by this study.	Primary and Secondary
Selected case formulations	Case formulations are based on two dimensions, the quality of BMI and willingness to contribute to this study, disclosing all required data/information.	
Selected case recommendations	Case selections resulted in eight cases in different areas.	

Figure 3. Case selection process

Table 1. Case description and data collection

SME*)	Business Description	P (1)	P (2)	DI Duration
SnackFood Co.	A snack business that is in the stage of starting a business. Its products are sold to small retailers in a specific area.	41:53	35:37	1:17:40
RestBali Co.	A restaurant located in Bali that previously had two outlets in Denpasar. It targets family consumers through unique cuisine and facilities.	45:14	40:10	1:25:24
CafeBistro Co.	A café located in an elite area of Jakarta that focuses on the interactive segment. It offers exceptional nuanced food to support interactions among visitors.	47:20	30:15	1:17:35
BatikArt Co.	A batik producer who aims to elevate Rembang batik through handicrafts typical of the area.	38:24	32:13	1:01:37
PlasticPrint Co.	The SME provides plastic printing services as a brand deployment of a product or firm.	37:16	32:45	1:10:01
ClothFabric Co.	An apparel producer located in the largest wholesale centre in Indonesia, targeting females who wear Muslim clothes.	43:21	25:31	1:08:52
BuildCon Co.	A building construction service provider and building equipment installation aggregator.	51:35	36:05	1:27:40
AlumWork Co.	A service provider of the design, assembly, and installation of aluminium-based frames.	49:27	27:20	1:16:47

*) Pseudonym

This study used inductive coding to analyse the transcripts, consisting of several phases. Open coding in this study used a line-by-line analysis, followed by a discussion among the research team. This process was performed iteratively to do solid coding. Later, the axial coding in this study compared the coding produced in the previous process. This coding process ended with selective coding, which re-examined the results of the axial coding to be submitted as a finding in qualitative research. This coding process involves the entire research team expressing their opinions to build a new theory (Eisenhardt et al. 2016). Because it is in the form of a model, the relationship between elements must be clearly defined by exploiting each element of the new value system (Spieth & Schneider, 2016). After the process was completed, the research team independently confirmed the case analysis results to the SMEs to evaluate the results. This study paraphrased explanations from the interviewees, as presented below.

This study develops a model for measuring BMI among SMEs using a two-dimensional approach involving the level of relative novelty and relative complexity (changing elements). The first dimension, the level of novelty, is measured using three indicators: (i) BM performance, (ii) BM specialization, and (iii) BM features. At one end of the novelty, the dimension shows the relative newness of the previous BM. Furthermore, the degree of novelty is defined by the high degree of novelty of the BM compared to the previous model.

On the other end, the low level of novelty is not a significant change compared to the previous BM. For another dimension, one end indicates the complexity of changing the BM relative to the previous BM. The complexity of the BMI can be measured by several indicators, including (i) the number of elements involved, (ii) the interactions between the elements, and (iii) the pattern of relationships between the elements. On the other end, the complexity of change is relatively low compared to the previous BM. Based on this explanation, four different quadrants can be generated in the model for measuring BMI in SMEs, as shown in Figure 4 and Table 2. This model was tested on several experts and academics with experience and expertise in applying BMI in SMEs.

Type 1. In this quadrant, the novelty and the complexity of changing the BM are relatively low compared to the previous BM. The lack of novelty of the BM does not mean that it does not intervene in its BM. Despite the pandemic, SMEs believe that their performance, specialization, and features are still relevant to solve the current business problems. In other dimensions, the complexity of the BM does not change significantly, and there is only a slight modification of the BM elements. The changes in the interactions among the elements are relatively static, and changes in the relationships between elements are exclusive or do not affect other elements. The main characteristic in this quadrant is a slight change in the value proposition and a minor change in the system. Thus, this quadrant illustrates

a product-oriented BMI. This situation is based on an SME's belief that its products and services are superior to those of its competitors (Lessing and Brege, 2015). The slight change means that the BM is still relevant and does not require significant change (Gebauer et al. 2017). This quadrant considers that significant changes without good reason can increase business risk, which is more difficult to control.

Type 2. In this quadrant, the novelty of the BMI is relatively high compared to the prior BM. However, there is only a slight change in the interaction elements in the activity system. This conditioning occurs because the SME aims to maintain its infrastructure or is resource-oriented. The prime characteristic in this quadrant is that the SME shifts to new customers in

different segments while retaining most of its system. The implication is that the value proposition in this quadrant does not change significantly. This quadrant defines the SME as looking for a target market to accept the existing value proposition. In this quadrant, the choice of not changing the system in the SME is driven by several factors: (i) it does not have other capabilities that must be maintained, (ii) it has a unique product or service, and (iii) a significant effort to change is required to switch to another business because they must start from scratch. This quadrant can be described in resource-based businesses such as perishable goods. SMEs believe that their current competitiveness has been validated by the community (Chuang and Lin, 2016; Fellnhofer, 2017). They consider the higher business risk if they change their resources.

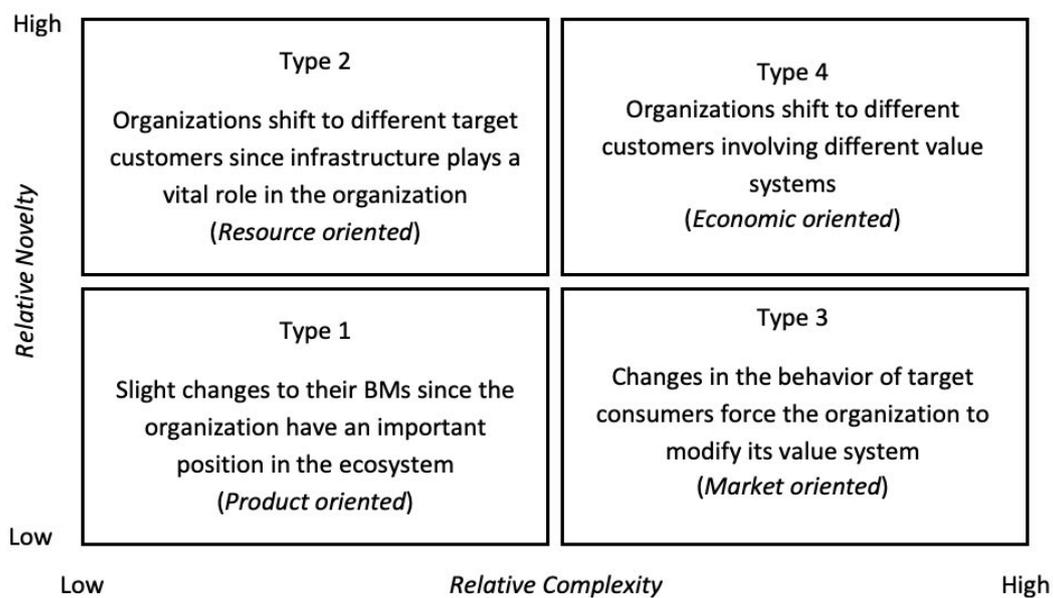


Figure 4. Magnitude of the BMI Conceptual Model

Table 2. Qualitative measurement of the conceptual model

Dimension	Indicators	Type 1	Type 2	Type 3	Type 4
Novelty	Performance	Low	High	Low	High
	Specialization	Low	High	Low	High
	Features	Low	High	Low	High
Complexity	Elements	Low	Low	High	High
	Interactions	Low	Low	High	High
	Relationship	Low	Low	High	High

Type 3. In this group, the novelty is low, but the complexity of changes in the BM elements is higher than that of the prior BM. This conditioning occurs because the SME aims to maintain its target market rather than shift to other segments. The main characteristic of this quadrant is that there is a change in the target consumers' behaviour, which requires the SME to modify the value proposition and make implications for other value systems. The SME chooses to remain in the target segment (market-oriented) based on its competence. Non-perishable goods are an excellent example to describe this quadrant. Usually, businesses in this quadrant are highly competitive. Therefore, SMEs prefer to modify their systems rather than switch their target market. They adjust the systems to accommodate the consumers, but they still pay attention to their capacity (Newman et al. 2016; Yang et al. 2020).

Type 4. This quadrant is symbolized by the high novelty and high complexity of changes in the BM elements. The main characteristic in this quadrant is a fundamental change in the target market that affects the entire value system of the SME's BM. The high intensity of this change is because the target cannot access the SME's product or service. However, the SME still believes in its experience and competence. SMEs try to realize these changes by developing a relatively new system that differs from previous ones. A perfect example to illustrate this quadrant is as a custom-based or made-to-order business. Service changes arise due to changes in the consumer segment, and the value proposition radically changes the infrastructure system. SMEs have a realistic view of doing business and performing economic gains (Coomes et al. 2016). Therefore, realizing a different value offer opens the possibility of system changes since the previous system does not support being applied to the new value offer.

They can develop a partnership to overcome the system change (Spieth and Schuchert, 2018).

RESULTS

This study identified several similarities and differences among these cases, as shown in Table 3. A similarity among the cases reveals that the BMIs in all cases remain steady in a similar industry (Snihur & Wiklund, 2019). SnackFood Co., RestBali Co., and Caf Bistro Co., which are engaged in the food industry, changed the BM that did not make any of them shift to non-food industries. Likewise, BatikArt Co. and ClothFabric Co. remain in the apparel industry, while AlumWork Co., BuildCon Co., and PlasticPrint Co. are still in the processing industry.

The specific value creation similarities and differences in several cases lie in several points, including the technological adoption, partnerships, and changes in activities. SnackFood Co., RestBali Co., Caf Bistro Co., and BatikArt Co. utilize technology to deliver their value propositions to their consumers (Bouwman et al. 2019; Westerlund, 2020). SnackFood Co. and BatikArt Co. adopted social media activities, while RestBali Co. and CafeBistro Co. took advantage of instant delivery applications. Later, the pattern of partnerships and changes in business activities became the choice of RestoBali Co., Caf Bistro Co., ClothFabric Co., and BuildCon Co. (Spieth and Schuchert, 2018). However, the partnership pattern among SnackFood Co. and BatikArt Co., only as delivery services and lacking involvement in the value system, contrasts with the other two cases of RestoBali Co. and Caf Bistro Co. However, ClothFabric Co. and BuildCon Co. changed significantly more than the other two cases in the activity element.

Table 3. Cross-case analysis

SME	New Value Creation			New Value Capture			New Value Proposition	
	TE	PA	AC	CU	MO	NE	EC	NC
SnackFood Co.	•	-	-	•	-	-	•	-
PlasticPrint Co.	-	-	-	•	-	-	•	-
RestBali Co.	•	•	•	-	•	-	•	-
Caf�Bistro Co.	•	•	•	-	•	-	•	-
BatikArt Co.	•	-	-	-	•	-	•	-
AlumWork Co.	-	-	-	-	•	-	•	-
ClothFabric Co.	-	•	•	-	-	•	-	•
BuildCon Co.	-	•	•	-	-	•	-	•

*) TE: Technology, PA: Partnership, AC: Activity, CU: Current, MO: Modification, NE: New, EC: Existing Customer, NC: New Customer

Three changes were identified in the value capture element, namely the current model, modification, and new model. The classification of the current model in the SME case involved SnackFood Co. and PlasticPrint Co., which both exhibited little change in the financial model. Snack Food Co. reduced its product shipments directly and shifted them to forwarding services. In contrast, PlasticPrint Co. took the initiative to design packaging materials using more efficient materials. The other four cases, RestBali Co., CafeBistro Co., BatikArt Co., and AlumWork Co., notably modified their economic formulation. These changes can be seen in the cost structure of the current products. ClothFabric Co. and BuildCon Co. show a significant change in their economic formulation (Spieth & Schneider, 2016). These changes are the implications of changes in the target market, value proposition, and organizational system.

Meanwhile, six cases can be classified as staying focused on the target market in the value proposition. From the six cases, four did not make significant changes to their BMs: SnackFood Co., PlasticPrint Co., BatikArt Co., and AlumWork Co. The other two cases made minor adjustments to their BMs. RestBali Co. and CaféBistro Co. replaced some elements in the previous value propositions to adapt to the changing consumer

behaviour. The radical changes in consumer behaviour forced ClothFabric Co. and BuildCon Co. to change their value propositions. A value proposition change occurs because the new target market has different needs than the previous consumers. This conditioning needs to align the target market's needs with its value offer (Fellnhofer, 2017).

Upon further analysis, several cases in this study were classified into four categories, as described in Figure 5 and Table 4. The BMIs of PlasticPrint Co. and SnackFood Co. are convincingly classified as product-oriented, which align with Gebauer et al. (2017) and Lessing and Brege (2015). During the pandemic, PlasticPrint Co. made nearly no changes in its BM. The slight change is because PlasticPrint Co. believed its products offer superior competitiveness to its competitors. Minor improvements in the value capture sub-system come through more frugal designs to reduce the production costs and selling prices. At SnackFood Co, technology is used to convey value. Previously, the SME delivered its products directly to its customers and participated in a relationship management program. The pandemic caused SnackFood Co. to reduce the frequency of delivery to its consumers through technology adoption. The adoption is also a medium to maintain good relations with consumers.

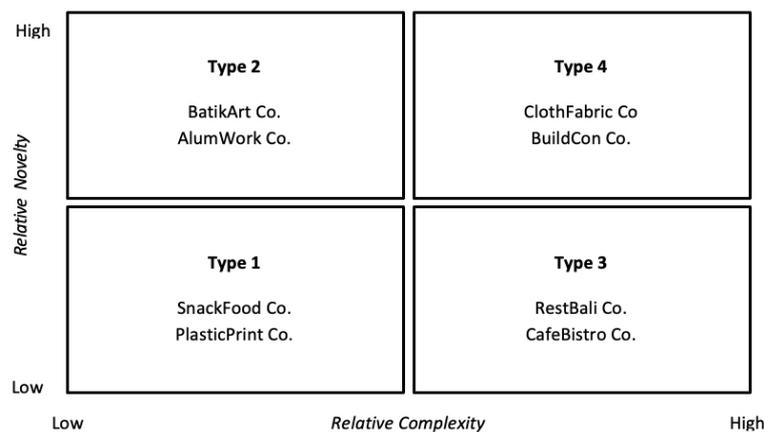


Figure 5. Case Classifications of the Magnitude of BMI

Table 4. Cluster case analysis to justify the conceptual model

Indicators	SnackFood Co	PlasticPrint Co	BatikArt Co	AlumWork Co	RestBali Co	CafeBistro Co	ClothFabric Co	BuildCon Co
Performance	Low	Low	High	High	Low	Low	High	High
Specialization	Low	Low	High	High	Low	Low	High	High
Features	Low	Low	High	High	Low	Low	High	High
Elements	Low	Low	Low	Low	High	High	High	High
Interactions	Low	Low	Low	Low	High	High	High	High
Relationship	Low	Low	Low	Low	High	High	High	High

The type 2 quadrant can be represented by the case of BatikArt Co. and AlumWork Co. since this quadrant is resource-oriented, as mentioned by Chuang and Lin (2016) and Fellnhofer (2017). In the case of BatikArt Co., a significant change occurred in the SME's target market. Initially, the SME's target consumers were tourists who visited the shop directly to observe the batik-making processes. During the pandemic, the SME shifted its target to consumers who care about the originality of handmade batik. This change was offset by adopting technology, especially social media such as Instagram and WhatsApp, to convey its value proposition instead of radically changing its infrastructure. In the case of AlumWork Co., SME executed changes with a different approach to its customers. The SME is shifting from large-scale consumers to small-scale groups with a conventional approach without technological intervention. These changes affect the value creation element, and in order to serve consumers of small numbers, AlumWork Co. is currently focusing on a more significant number of transactions.

The cases of RestBali Co. and CafeBistro Co. can be classified in the type 3 quadrant. Both SMEs are market-oriented through minor adjustments to some elements of the previous BM (Newman et al. 2016; Yang et al. 2020). Changes in consumer behaviour are forcing some of the SME's value proposition to be no longer relevant. RestBali Co. builds facilities that support the value of family restaurants, and CaféBistro Co. facilitates a comfortable place to interact over food and beverages. Changes in behaviour have made both SMEs modify their value offered by adding ready-to-eat food that can be enjoyed anywhere. Both build partnerships with instant service applicators to actualize the value since neither has the infrastructure to support this value. Delivery services that are not within their ability have the potential to increase business risks. Such a partnership is a modification of the activity

system, so that consumers can continue to enjoy the value of these services and products, despite restrictions on community interactions.

Type 4 is represented by the ClothFabric Co. and BuildCon Co. cases, since both were identified as being profit-oriented, supporting the study of Coomes et al. (2016). Both BMs were initiated by weak demand from the previous target consumers, which forced them to change their target consumers, as found in a study conducted by Spieth and Schuchert (2018). However, the changes are still similar to BuildCon Co. in the construction sector and ClothFabric Co. in the fashion sector. The segment differences force the SME to change its value offering due to the different problems faced by its new consumers. BuildCon Co., which previously targeted the commercial warehouse building segment, has changed its direction to building shophouses. Likewise, ClothFabric Co., a manufacturer of men's clothing, began offering Muslim women's clothing. The value creation element uses different resources, activities, and partnership patterns from the previous model. These changes affect changes in the SME's financial structure: (i) operating costs, (ii) investments, and (iii) selling prices.

The case classifications based on the conceptual model indicate different situations in innovating BMs. In type 1, the SMEs did not modify their BMs due to the relatively stable demand when business resumed. Type 2 indicates a change in the BM by focusing on competence, even though the previous segment is no longer within the SME's reach. This type intensely utilizes social media to deliver the value proposition to its new customers. However, in type 3, the BM modification is carried out to accommodate the behavioural changes of the target market through technological adoption. Hereafter, these SMEs collaborate with delivery service applicators to deliver their products instantly because the products must be consumed immediately (perishable goods). In

the last type, type 4, changes in the SME's BM occur systemically. The context of the change arises because the previous market no longer has access to SME services due to declining purchasing power. Changes in target consumers cause radical system changes in the SME through adaptation to the needs of its new target consumers. From this classification, although there are differences in response to the changes in BMs, there is no doubt that they have a dynamic capacity to absorb changes in the dynamic environment.

Managerial Implication

This study explained further about the concept of BMI. First, the conceptual model could identify BM changes at different magnitudes, such as the work of several previous researchers, the intensity of BMI by Wirtz and Daiser (2017), and the BMI measurement by Spieth and Schneider (2016). The model presented four quadrants that explained the different magnitudes of BMI in SMEs. This study related the size of these changes to organizational tendencies in business decision making, as outlined by Taran et al. (2015). The BM conditioning requires several considerations (what is happening and what will happen) and organizational beliefs to promote a change.

This study provided empirical information on SME BMI during the pandemic. In addition, differences in BMI in several SME cases were addressed through the model in measuring changes in the developed BMs. It is difficult to find studies that describe changes in BMs and fully explain them. This study could also determine how organizations change their BMs for practitioners in extreme circumstance. During the pandemic, changes in BMs occurred in different sectors. The findings of this study reinforce Taran et al. (2015), in that changes made in some cases of SMEs require the dynamic ability to absorb environmental changes. In addition, BM changes can also be carried out on an SME scale (Snihur and Wiklund, 2019).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

BMI empirically does not occur only in large-scale companies but also at the SME scale. These changes are conditional in the business context and can be systemic or partial. It must be noted that technology adoption has

made an enormous contribution to the changing BMs. However, technological adoption is an alternative to modify a BM. Understanding the dynamic conditions, identifying the change orientation, executing the changes, and consistently evaluating them are essential for BMI success. This process has enabled some SMEs to survive, even in the darkest times, such as the current pandemic.

This study can provide empirical evidence that BMIs in SMEs have specific characteristics as described in the case studies. A similarity in all the cases is that BMIs are performed in the similar sector or industry. This initiative was taken since switching sectors would represent a more systemic risk and significantly affect these companies' survival. However, a further analysis of the elements of each case reveals a different magnitude of BM changes. Several SMEs have made radical changes in the value proposition by developing opportunities in new market segments because the current segment has a fundamental problem. Meantime, others stay with their current target market. In response to the value proposition conditioning, several SMEs have adjusted their value capture through several approaches, such as adopting the necessary technology to survive, creating partnerships, and changing business activities. The implications of these changes affect the value capture, in which some cases change the financial structure and modify the financial model. Changes in BMs between these cases can define a deeper understanding of changing BMs.

This study measured the BM changes consisting of two dimensions: relative novelty and relative complexity. On the two axes, there are conflicting ends as indicators of change in the BM. At one point, the relative newness dimension indicates a high level of novelty with a different model appearance, changes in specialization, and variations in features from the previous BM. Another point indicates a contradictory measurement. In other dimensions, one point indicates the complexity of changes based on the number of elements, increasingly intense interactions, and the complexity of the pattern of relationships between elements. Based on the development of the model, the eight cases were evenly distributed across all quadrants. A cluster analysis puts SnackFood Co. and PlasticPrint Co. in type 1, BatikArt Co. and AlumWork Co. in type 2, RestBali Co. and CaféBistro Co. in type 3, and ClothFabric Co. and BuildCon Co. in type 4.

Recommendations

Although qualitative studies are value-laden, the subjectivity of researchers in interpreting a problem has the potential to become a stumbling block. However, this study tried to overcome this through several approaches to validate the developed model and interpretation of the analysis, among others, through several data sources with various backgrounds, some research literature, and the utilization of experts. In the future, research conducted with different methods is an alternative for further research. Hereafter, data sources can be expanded to ensure that generalizations have been created. Although it examined eight cases, this study recognizes the need for a wider variety of cases, particularly in the unexamined sectors.

REFERENCES

- Awuzie B, McDermott P. 2017. An abductive approach to qualitative built environment research: A viable system methodological expose. *Qualitative Research Journal* 17(4):356-372. <https://doi.org/10.1108/QRJ-08-2016-0048>
- Baldassarre B, Calabretta G, Bocken NMP, Jaskiewicz T. 2017. Bridging sustainable business model innovation and user-driven innovation: A process for sustainable value proposition design. *Journal of Cleaner Production* 147:175-186. <https://doi.org/10.1016/j.jclepro.2017.01.081>
- Béland D, Cantillon B, Hick R, Moreira A. 2021. Social policy in the face of a global pandemic: Policy responses to the Covid-19 crisis. *Social Policy & Administration* 55:249-260. <https://doi.org/10.1111/spol.12718>
- BI. 2020. *Jalanan Sinergi Pulihkan Ekonomi Indonesia*. Jakarta: Bank Indonesia.
- Bocken N, Boons F, Baldassarre B. 2019. Sustainable business model experimentation by understanding ecologies of business models. *Journal of Cleaner Production* 208:1498-1512.
- Bouwman H, Nikou S, de Reuver M. 2019. Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs? *Telecommunications Policy* 43(9):101828.
- Chesbrough H. 2010. Business model innovation: Opportunities and barriers. *Long Range Planning* 43(2-3):354-363. <https://doi.org/10.1016/j.lrp.2009.07.010>
- Chesbrough H, Rosenbloom RS. 2002. The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change* 11(3):529-555.
- Chuang S, Lin H. 2016. Performance implications of information-value offering in e-service systems: Examining the resource based perspective and innovation strategy. *Journal of Strategic Information Systems* 1:22-38. <https://doi.org/10.1016/j.jsis.2016.09.001>
- Coomes OT, Takasaki Y, Abizaid C, Arroyo-mora JP. 2016. Environmental and market determinants of economic orientation among rain forest communities: Evidence from a large-scale survey in western Amazonia. *Ecological Economics* 129:260-271.
- Davies IA, Chambers L. 2018. Integrating hybridity and business model theory in sustainable entrepreneurship. *Journal of Cleaner Production* 177:378-386.
- Eastwood JG, Jalaludin BB, Kemp LA. 2014. Realist explanatory theory building method for social epidemiology: A protocol for a mixed method multilevel study of neighbourhood context and postnatal depression. *SpringerPlus* 3(12):1-12. <https://doi.org/10.1186/2193-1801-3-12>
- Eisenhardt K, Graebner M, Sonenshein S. 2016. From the editors: Grand challenges and inductive methods: Rigor without rigor mortis. *The Academy of Management Journal* 59(4):1113-1123.
- Evans S, Vladimirova D, Holgado M, Van Fossen K, Yang M, Silva EA, Barlow CY. 2017. Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models. *Business Strategy and the Environment* 26(5):597-608. <https://doi.org/10.1002/bse.1939>
- Fellnhöfer K. 2017. Drivers of innovation success in sustainable businesses. *Journal of Cleaner Production* 167:1534-1545.
- Foss NJ, Saebi T. 2016. Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management* 43(1):200-227. <https://doi.org/10.1177/0149206316675927>
- Friedrich von den Eichen S, Freiling J, Matzler K. 2015. Why business model innovations fail. *Journal of Business Strategy* 36(6):29-38.
- García-Gutiérrez I, Martínez-Borreguero FJ. 2016. The innovation pivot framework: Fostering business model innovation in startups. *Research Technology*

- Management* 59(5):48-56.
- Gebauer H, Saul CJ, Haldimann M, Gustafsson A. 2017. Organizational capabilities for pay-per-use services in product-oriented companies. *International Journal of Production Economics* 192:157-168.
- Geissdoerfer M, Morioka SN, de Carvalho MM, Evans S. 2018. Business models and supply chains for the circular economy. *Journal of Cleaner Production* 190:712-721. <https://doi.org/10.1016/j.jclepro.2018.04.159>
- Groeger L, Bruce K, Rolfe I. 2019. Adapt fast or die slowly: Complex adaptive business models at Cisco Systems. *Industrial Marketing Management* 77:102-115.
- Heikkilä M, Bouwman H, Heikkilä J. 2018. From strategic goals to business model innovation paths: An exploratory study. *Journal of Small Business and Enterprise Development* 25(1):107-128.
- Ibarra D, Ganzarain J, Igartua JI. 2018. Business model innovation through Industry 4.0: A review. *Procedia Manufacturing* 22:4-10. <https://doi.org/10.1016/j.promfg.2018.03.002>
- Idris, Adi KR, Wiradimadja A. 2020. Explorative study of m-commerce as a small business innovation strategy. *Indonesian Journal of Business and Entrepreneurship* 6(2):136-145.
- Inigo EA, Albareda L. 2016. Understanding sustainable innovation as a complex adaptive system: A systemic approach to the firm. *Journal of Cleaner Production* 126:1-20.
- Larosa F, Mysiak J. 2019. Business models for climate services: An analysis. *Climate Services* 17:100-111. <https://doi.org/10.1016/j.cliser.2019.100111>
- Leih S, Linden G, Teece DJ. 2015. Business model innovation and organizational design: A dynamic capabilities perspective. *Oxford Scholarship Online* 1-19.
- Lessing J, Brege S. 2015. Business models for product-oriented house-building companies: Experience from two Swedish case studies. *Construction Innovation* 15(4):449-472.
- Lu Q, Cai Z, Chen B, Liu T. 2020. Social policy responses to the covid-19 crisis in China in 2020. *International Journal of Environmental Research and Public Health* 17:5896. <https://doi.org/10.3390/ijerph17165896>
- Newman A, Prajogo D, Atherton A. 2016. The influence of market orientation on innovation strategies. *Journal of Service Theory and Practice* 26(1):72-90. <https://doi.org/10.1108/JSTP-02-2015-0044>
- Osterwalder A, Pigneur Y. 2010. *Business Model Generation*. (Clark ed.). USA: John Wiley & Sons.
- Pandit D, Joshi MP, Sahay A, Gupta RK. 2018. Disruptive innovation and dynamic capabilities in emerging economies: Evidence from the Indian automotive sector. *Technological Forecasting and Social Change* 129:323-329. <https://doi.org/10.1016/j.techfore.2017.09.035>
- Snihur Y, Wiklund J. 2019. Searching for innovation: Product, process, and business model innovations and search behavior in established firms. *Long Range Planning* 52(3):305-325. <https://doi.org/10.1016/j.lrp.2018.05.003>
- Spieth P, Schuchert S. 2018. Business model innovation alliances: How to open business models for cooperation. *International Journal of Innovation Management* 22(4):1850042.
- Spieth P, Schneider S. 2016. Business model innovativeness: Designing a formative measure for business model innovation. *Journal of Business Economics* 86(6):671-696. <https://doi.org/10.1007/s11573-015-0794-0>
- Surya B, Hernita H, Salim A, Suriani S, Perwira I, Yulia Y, Ruslan M, Yunus K. 2022. Travel business stagnation and SME business turbulence in the tourism sector in the era of the Covid-19 pandemic. *Sustainability* 14:1-37. <https://doi.org/10.3390/su14042380>
- Taran Y, Boer H, Lindgren P. 2015. A business model innovation typology. *Decision Sciences* 46(2):301-331.
- Teece DJ. 2018. Business models and dynamic capabilities. *Long Range Planning* 51(1):40-49.
- Westerlund M. 2020. Digitalization, internationalization and scaling of online SMEs. *Technology Innovation Management Review* 10(4):48-57.
- Wiesner S, Padrock P, Thoben K. 2014. Extended product business model development in four manufacturing case studies. *Procedia CIRP* 16:110-115.
- Wirtz BW, Daiser P. 2017. Business model innovation: An integrative conceptual framework. *Journal of Business Models* 5(1):14-34.
- Yang D, Wei Z, Shi H, Zhao J. 2020. Market orientation, strategic flexibility and business model innovation. *Journal of Business and Industrial Marketing* 4:771-784.
- Yin RK. 2014. *Case Study Research Design and Methods*. Ed. ke-5. USA: Sage Publications, Inc
- Yip GS. 2004. Using strategy to change your business model. *Business Strategy Review* 15(2):17-24.