

SENSEMAKING CAPABILITY AND SOCIO-TECHNICAL ARRANGEMENT IN REINFORCING SMEs' RESILIENCE

Asputia Damayanti¹, Andreo Wahyudi Atmoko²

Abstract

Purpose: The objective of this study was to identify the key factors of SME's resilience after Covid-19 pandemic.

Theoretical framework: Recent literature of sensemaking has shown its impact on the organization's action and decision making as it designed to deal with the uncertainty and ambiguity limiting SME competition (Wahyudi, 2018). The SMEs environment becomes an open and social system consisting of various interrelated and influencing aspects called technology that use certain methods to produce outputs. Therefore, it is difficult to separate the social system from the technical aspect.

Design/methodology/approach: This research uses a systematic review and description to identify, evaluate and synthesize the developed knowledge. Literature sources used are in the form of papers related to SMEs, sensemaking, social, and technical systems published between 2011-2022.

Findings: COVID-19 greatly affects and creates uncertainty in the world's economy, specifically for small and medium enterprises (SMEs). This condition causes SMEs to maintain their existence in a complex environment. Organization needs to adapt to and integrate external conditions by empowering their sustainable resources. To capture business complexity, organizations need to develop sensemaking abilities to obtain a unity of knowledge and vision for socio-technical systems that optimize sustainable resources. Sensemaking ability and socio-technical arrangement tend to strengthen SMEs' resilience after the pandemic.

Research, Practical & Social Implication: The sensemaking approach needs to be used as a cognitive framework to create knowledge that SMEs can use in a changing environment. This approach is required to be a guide for decision-making and organizational action because it integrates individual behavior through the interpretation of information and knowledge. Further research and study related to sensemaking capabilities and its

¹ Post Graduate Degree (on-going), Department of Administrative Science, University of Indonesia, Jakarta, Indonesia, asputia.damayanti@ui.ac.id

² Doctoral Degree, Department of Administrative Science, University of Indonesia, Jakarta, Indonesia, atmokowahyudi@gmail.com

impact on organization, shall be highlighted for organizational development.

Originality/value: This research develops a model that integrates the sensemaking process in the socio-technical and environmental systems called the Sensemaking Socio-technical Arrangement (SSA) to answer SMEs' resilience. The method shows that this process tends to affect the resilience after the pandemic.

Keywords: economic growth, COVID-19, organizational resilience, sensemaking, SMEs, socio-technical model.

INTRODUCTION

COVID-19 greatly affects all business sectors and the economy, specifically small and medium enterprises (SMEs). This effect causes several institutions to examine the innovation changes that re-align and re-focus organizations during the pandemic. The Partnership for Australian-Indonesian Research (PAIR) examined a total of 204 or 31% of SMEs listed on the Indonesia Stock Exchange (IDX) in March 2022. Therefore, this research aims to determine how these organizations respond to the pandemic (COVID-19-and-Digital-Innovation-How-Indonesias-Listed-Companies-Have-Responded-to-the-Global-Pandemic, n.d.).

The pandemic started in 2020 and create uncertainty in all business sectors in the country. This negative effect causes SMEs to work harder to predict the development of the national economy. An organization turns uncertainty into an opportunity through innovation that is used to maintain its existence in a dynamic environment. Therefore, organizations are required to adapt to environmental conditions.

In Indonesia, SMEs become the largest contributor to Gross Domestic Product (GDP) because they reached about 64.19 million. According to Bahtiar (2021), SMEs need the government's attention to recover the country's economy during the pandemic. Moreover, SMEs are regarded as economic transformers at the national level (Ritchie & Brindley, 2005). The results showed that SMEs' competitiveness is positively related to the development of quality initiatives, information technology, organizational culture, and human resource (Singh et al., 2009, Pujiyono, et al, 2017). Maranto-Vargas & Rangel (2007) indicated that the maturity factor of internal capability becomes an aspect in this competition.

According to the Statistics Central Bureau, National Development Planning Agency, and the World Bank, COVID-19 created several obstacles including accessing capital, shrinking customer base, as well as delays in delivery and production times. The research of Baktiyar (2021) emphasized economists need to anticipate changes in the

mapping between consumer and organizational behavior due to trade barriers. Lusiantoro et al. (2022) indicated that about 67% of the world's SMEs are greatly affected because there is a decrease in demand and raw materials.

The PAIR uses a different perspective to focus on the digital readiness of SMEs during the pandemic. This research indicated that organizations need a change in mindset to adjust to environmental conditions, thereby developing resilience. Resilience is described as a positive transition during stressful and traumatic situations. Also, it is a mindset that allows people to explore new experiences and view life as an ongoing process (Campbell-Sills & Stein, 2007). Notoatmodjo (2010) emphasized that exercise tends to be a learning experience that helps in solving problems while being performed continuously. According to Bungin (2012, Riyanta, 2020), the three basic aspects of knowledge include what is carried out, what is known, and what media is created and used in life. In essence, the formation of mindsets becomes a process of interpreting people's knowledge to create new meanings. The changes in these mindsets produce outputs by developing a model called innovation that enables SMEs to perform several activities.

In the process of creating new meanings, there is a real gap that becomes a problem within the organization. According to Valaei (2017), this gap needs to be solved jointly to produce a sensemaking process. Individually, sensemaking is about the common understanding of a particular context (Paul & Morris, 2011). Wahyudi (2018) and Yngve (2021) emphasized it is designed to deal with the uncertainty and ambiguity limiting SME competition. Therefore, management theory is based on how organizations adapt to new environments, ways, and structures, as well as processes, specifically while faced with an unknown situation and doubts (Gana, 2003). According to Nonaka & Takeuchi (1995), Suwadi (2022) and Choo (1998), knowledge tends to be created by interpreting information as a form of sensemaking which becomes a guide for decision-making and organizational action.

Concisely, sensemaking is triggered by environmental changes that need to be understood and created using innovation (Biswas et al., 2021). Organizations are required to adapt to and maintain these changes as a form of resilience efforts (Rich et al., 2022; Hübel, 2022). Therefore, individuals and groups need to continually understand what is happening around their businesses. According to Leedom (2001), information about the environment is interpreted based on organizational cognition. Recently, changes in SMEs are not a program but a continuous cycle. This shows the organization's transformation into the underlying cognitive framework (Kieran et al., 2022).

Intelligently, sensemaking is a learning process that enables individuals and groups to interpret experiences and change behavior according to their understanding (Choo, 1998). It allows good information that is needed to be sought or used in a particular sector. Although sensemaking is a cognitive framework, but efforts are needed to allow sharing of meaning and goals to be followed up (Gana, 2003; Alvesson & Jonsson, 2022; Sahay & Dwyer, 2021). In a knowledge-based economy, the company's value is highly dependent on intellectual property assets in terms of capability and competitive growth (Kaplan & Norton, 2004; Shao et al., 2012)

The modern perspective indicated an organization to be a technology that converts inputs into outputs for consumption. This shows technology is not a tool but a method or system used to produce an output. According to Samahita Virotdama, and others, a reform process is needed to move the organization from the old ways and systems to new ones. Therefore, SMEs are required to adapt to the environment and expand resources (Poerwanto et al., 2013). This environment is an open system in which entities or businesses are influenced and related to each other (Poerwanto, 2006).

However, it is difficult to separate the social system from technology because these two models help organizations produce an output. According to Scottish scientist Tristram Bamforth (1951), technology and society play an important role in a coal mining company. The research introduced a new approach called the socio-technical to indicate the Tavistock Institute of Human Relations in London.

Initially, this approach aimed to increase efficiency and mass production such as clothing, electronics, and food. The Tavistock Institute incorporates a socio-technical perspective and provides four developments including (1) basic systems-technical understanding, (2) the concept of organization as a system, and (3) the principles of organizational choice comprising the need for better social and technical relations. This shows there is a need to understand more about the issues involved while workers feel strange (Muasal Pandangan Sosio-Teknis « Ilmu Perpustakaan & Informasi, n.d.).

The research of PAIR broadly showed social and technical systems by using a sensemaking approach in the organizational environment. These interrelated systems include the economic, the digitalization, and the external. The economy comprises the SME's performance, strategy, model, sales and marketing, revenue, as well as competitors. Meanwhile, the digitization system includes product and service innovation, as well as media, while the external consists of the customer experience, perspective, behavior, organizational peers, and other stakeholders.

Organizational members need to interpret the system complexities to produce integrative modeling and approach to guide the development of new ideas and innovations. This integrative modeling attempts to relate the main features of society and the economy with its environment and atmosphere. Also, it aims to accommodate informed strategy in climate change, human and social development areas including economic processes. The integrative model becomes holistic based on complexity and cost-benefit levels.

This research develops a model that integrates the sensemaking process in the socio-technical and environmental systems called the Sensemaking Socio-technical Arrangement (SSA) to answer SMEs' resilience. The method shows that this process tends to affect the resilience after the pandemic.

METHODOLOGY

This research uses a systematic review and description to identify, evaluate and synthesize the developed knowledge. It aims to analyze and synthesize knowledge related to the subjects studied. Okoli and Shabram (2012) set several goals by (1) providing a research framework or context, (2) understanding the research depth related to the topic, and (3) understanding the background. Moreover, the research question should also be answered (Okoli & Schabram, 2012). The literature review sources used are in the form of papers related to SMEs, sensemaking, social, and technical systems published between 2011-2022.

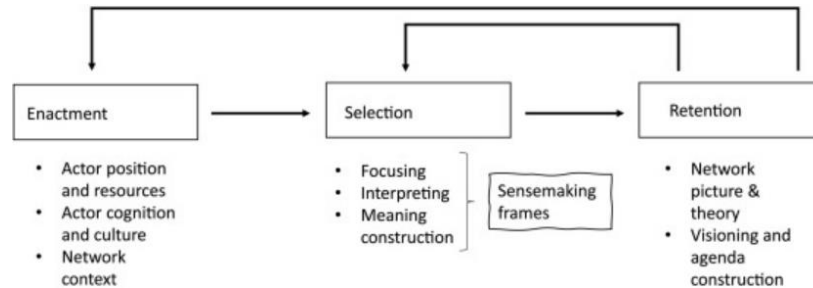
RESULT AND DISCUSSION

1. The role of sensemaking in the organization

Geographically, organizations are always in a complex and unpredictable environment. According to Weick (2001), sensemaking which reduced the degree of uncertainty through communication becomes the main task of SMEs. Meanwhile, the continuous communication process or perception is regarded as a two-way interaction between interconnected behaviors which creates a reaction. This perception helps to reduce the ambiguity that arises from organizational data. According to Muhammad (2009), uncertainty tends to be emanated from a mismatch between available and expected information. This also tends to prevent the organization from processing the information needed to achieve the ultimate goal. Therefore, institutional coordination is needed to reduce uncertainty in SMEs. Organizational members easily achieve their goals because sensemaking is a process where information is completely collected

and interpreted with the same meaning through the communication process.

Figure I. Sensemaking Stages



Source: ScienceDirect

1. Making is an explanation of a problem or a statement about the existence of ambiguous information. Organizational members need to focus on performance and ensure there are uncertainties.

2. The second method is the choice of organizational members to accept particular information and reject others. Sampling narrows the field by removing ambiguity from the original data.

3. Furthermore, the third way is to save objects for future use. This is because the stored data tends to be entered into the existing one. The organizational members need to select an environment with a new perspective (Editor Stephen W. Littlejohn, 2016).

This sensemaking approach is needed to respond to environmental changes and answer questions such as what is going on, why is this important, and what does this mean for the organization (Gana, 2003). Furthermore, this research discusses how sensemaking is used to shape SMEs' resilience in dynamic environmental conditions.

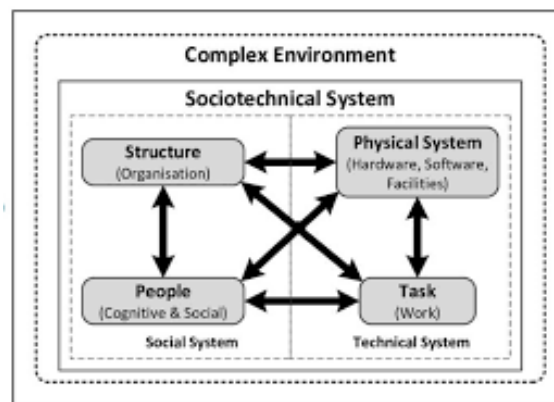
The development of sensemaking enables organizations to deal with emerging threats and use operational concepts more precisely, as well as ensure effective decision-making related to its existence. A successful sensemaking process help to define common goals and build identity, as well as teamwork (Brockman, 2011).

In business and non-business fields, this process is influenced by factors such as (1) information input system, (2) state of consciousness, (3) cognitive, (4) understanding, (5) reasoning, (6) decision effectiveness, (7) the purpose of the command, (8) plans, and (9) determination (Leedom, 2001). In an organization, sensemaking failed due to misperceptions, misinterpretations, misunderstandings, miscalculations, communication errors, misdirections, relationship errors, distribution errors, and others.

PAIR uses a sensemaking approach to examine the changing factors of the business and economic environment during the pandemic. The research indicated social and technical systems adopted through the Socio-Technical System model. Furthermore, it identified organizational scale, performance, structure, management, economic conditions, market behavior, competitiveness, consumers, external parties, innovation, and digitalization that influence the optimization of the design, function, and goals achievement.

2. Socio-Technical System (STS) model

Figure II. Socio-Technical System



Source: slidetodoc

The Socio-Technical System (STS) believes that organizational design and performance are only understood and developed when the social and technical aspects are treated as interdependent parts. SMEs perform and realize certain goals because the STS helps to optimize all aspects of their activities (Kjorstad et al., 2021). This optimization tends to only be achieved when the social and technical dimensions are designed to complement each other (Socio-Technical Systems Theory | Centres and Institutes | University of Leeds, n.d.). According to Clegg (2000), this thinking shows the core philosophy of socio-technical that "design is systemic". These technical and social factors need to be considered when an organization introduces a change involving technology or a program (Cherns, 1976). SMEs are considered complex systems consisting of interdependent parts. Therefore, designing changes to a certain part of the system without considering the effect on others tends to affect the limitations of its effectiveness (Hendrick, 1997).

The STS examines the social aspects of individuals with technical systems in performing organizational activities. However, the social system includes individual and team behavior, culture, management

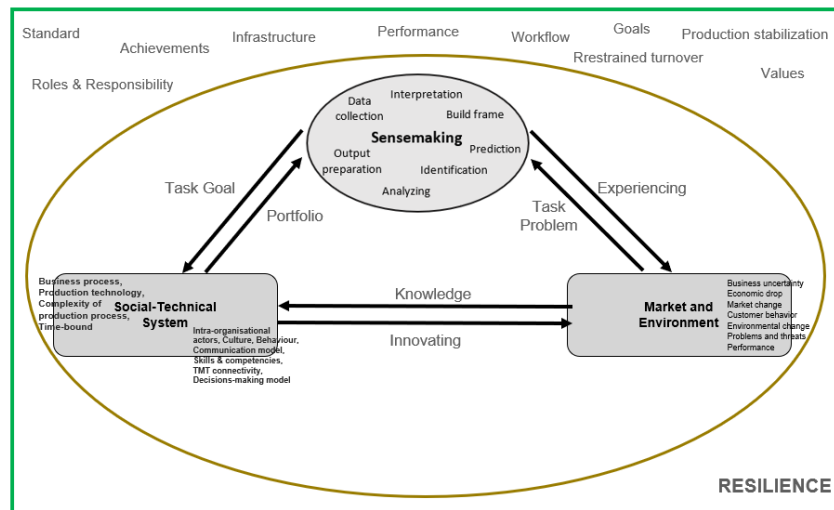
activities, leadership styles, forms of communication and openness, as well as desires/ambitions. This system is largely shaped by people's attitudes and habits constantly repeated in organizations. The social aspect influences the division of labor, tasks performed, work roles, workflow, goals, and values, as well as SMEs' skills and abilities. Meanwhile, technical systems which are in the form of small batches, mass production, and others include more complex things. The work process creates a degree of interdependence, physical arrangements, the complexity of the production process, the nature of raw materials, and time pressures.

Furthermore, the STS is about how the social and technical aspects collaborate in SMEs. These two systems make an organization smoothly run and achieve the expected performance. The STS includes economic and behavioral perspectives that come from the external environment of SMEs. Moreover, it is a method used to consider human and technical factors in developing a system (Davis et al., 2014). It consists of six perspectives including goals, processes, people, culture, technology, and infrastructure (Challenger & Clegg, 2011, Pujiyono, 2021).

3. SSA Structure for SMEs Resilience

Figure III shows that the synthesis of sensemaking and the socio-technical system is influenced by external factors including the economy and market.

Figure III. SSA Structure for SMEs Resilience



Source: Researcher's development

In the sensemaking process, experience and knowledge are the two main things for data and information. The experience was extracted by observing past events that were felt and stored in memory (Saparwati, 2012). Also, it is in the form of past problems such as failures and successes, observations of environmental changes, observations of market and economic conditions, as well as others. Experience serves as input for sensemaking that is related to past problems and observations, good or bad, as well as positive or negative.

According to the Australian Academy of Science, knowledge is systematically arranged and verified based on scientific and objective methods (“Inilah Bedanya Ilmu Dan Pengetahuan” – WIDURI.AC.ID, n.d.). It is in the form of science such as organization, economics, and others. Knowledge serves as input for sensemaking that is related to goals, objectives, and organizational achievements.

Resilience is the ability to reduce costs in the face of economic shocks. According to the OECD, an economy can reduce its vulnerability to shocks and recover quickly (Bahtiar, 2021). However, sensemaking helps organizations improve their cognition and response to changes in the environment. It enables SMEs to process data and information through experiences and knowledge to set their goals and objectives.

In the SSA structure, the sensemaking process enables organizational members to share their experiences on business uncertainty, economic drop, market, and environmental change, customer behavior, problems, and threats, as well as performance indicators during the pandemic. These experiences certainly provide different meanings to each member. However, the degree of equivocality tends to increase along with the problems faced by SMEs.

Organizational members have the same vision and glasses to picture a problem because of their shared values. This experience is in the form of past problems such as failures or successes, observations of environmental changes, observations of market and economic conditions, as well as others. Experience and knowledge serve as input for sensemaking by combining and interpreting data, building a frame of mind, identifying, analyzing, predicting, and preparing outputs from certain actions. These two basic things are described as a reciprocal interaction of seeking information, interpreting certain assumptions, and taking action (Thomas et al., 1993, Suwadi, 2022).

Experience serves as input for sensemaking that is related to past problems and observations, good or bad, as well as positive or negative. Therefore, problems tend not to be interpreted as faults of individuals or groups. This shows the sensemaking process brings the organization to the stage of changing its mindset.

In the market system and environment, all information that passes through a sensemaking process becomes a knowledge transfer into STS. This knowledge is processed through social and technical aspects. Meanwhile, the social system includes members' behavior, communication channels, intra-organizational actors, culture, and leadership, while the technical aspect comprises business processes, production technology, process complexity, and timeframe. The knowledge needs to be explicitly and implicitly accessible to generate creative ideas (Valaei, 2017, Pujiyono, 2017). In the STS, knowledge processing is in the form of changes, improvements, as well as product and service innovations which become inputs for the market system and environment. Subsequently, the innovation is implemented because the achievements are recorded as a portfolio.

An organization performed a sensemaking process to interpret its goals and processed them into social and technical aspects. The portfolio records need to be processed, adjusted, and aligned with these goals and objectives. Therefore, the sensemaking cycle needs to be continuously performed by synthesizing various experiences and knowledge within the organization. This shows that the consistency of the sensemaking cycle, STS, and SMEs environment tends to shape resilience. Furthermore, the implications formed within the organization are in the form of performance improvement, production mechanisms and workflow standardization, well-distributed tasks and responsibilities, profit achievement, production stabilization, controlled turnover, adequate infrastructure, and value creation.

CONCLUSION

In an organization, sensemaking helps to define common goals, build identity, and promote teamwork. The increase in the capability of this approach within the SSA structure tends to develop the level of SMEs resilience. Therefore, SMEs need to use sensemaking to face challenges after COVID-19.

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