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Disaster-Resilient SMEs in International Trade: Insights from Japan's Business Continuity Planning Model

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Abstract

This study examines how small and medium-sized enterprises (SMEs) engaged in international trade can enhance disaster resilience through business continuity planning (BCP). While BCP is widely discussed in the literature, a discernible gap persists regarding proven, applicable models for SMEs, particularly in disaster-prone economies. Japan, with its high exposure to natural hazards yet advanced institutional ecosystem of BCP, is selected as the case study. By analyzing this model, the paper derives lessons that are transferable to other contexts. The research employs qualitative document analysis, focusing on the *Guidelines for Formulating and Implementing Business Continuity Plans for SMEs* issued by Japan's Ministry of Economy, Trade and Industry. The guideline's forms were classified into five thematic categories—design and framework, core operations and resources, employee and communication strategies, risk and emergency management, and community relations—and systematically interpreted to identify how resilience principles are embedded in SME practice. Findings reveal that the success of the Japanese model rests on four fundamental elements: a coordinated multi-actor ecosystem involving government, industry, and civil society; tiered and standardized BCP guidelines tailored to SME capacities; proactive strategies for strengthening supply-chain resilience; and the institutionalization of BCP as a prerequisite in international commercial contracts. Together, these elements demonstrate that SME disaster resilience is not achieved solely through internal strategies but requires integration into broader governance and market systems. The study contributes to the limited SME-focused BCP literature by linking institutional frameworks with firm-level sustainability. Practically, it offers actionable insights for SMEs and policymakers in emerging economies to strengthen resilience and competitiveness. Limitations include reliance on secondary data and the exclusive focus on Japan; future studies should test the applicability of the model in different cultural and economic contexts.

Keywords: International Trade, Business Continuity Plan, Disaster Management, SMEs, Japan Recovery Model

1. INTRODUCTION

Disasters are sudden and undesirable events that exceed local response capacities, often necessitating international support and causing severe human, economic, and environmental losses (Gökçe and Tetik, 2012; IFRC, 2023; Moe and Pathranarakul, 2006). They may be natural (earthquakes, floods, droughts, droughts, epidemics, volcanic eruptions) or man-made (fires, explosions, building collapses, toxic gases, nuclear accidents) (De Boer, 1990; Akar, 2013). Natural disasters occur either unexpectedly or within certain periods, altering daily life in both residential

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and production areas (Şahin, 2014). They profoundly affect life, property, economies, and environments, often surpassing the resilience capacity of affected communities (Specht, 2005).

Recent global events underline their growing economic burden: in the first six months of 2023 alone, the Türkiye–Syria earthquakes caused USD 91 billion in damages and over 59,000 deaths; the La Plata Basin drought in Brazil, Argentina, and Uruguay caused USD 9.9bn in losses; the Emilia-Romagna floods in Italy caused USD 9.7bn; two severe storms in the US caused USD 11.6bn; and the six-month drought in Spain caused USD 5.6bn (Aon Turkey, 2023). Such statistics illustrate that disasters increasingly disrupt economic and social systems worldwide. These large-scale economic disruptions disproportionately affect SMEs, which often form the backbone of national economies and their global supply chains, yet typically lack the resources of larger corporations to absorb such shocks.

In this complex environment, disaster management emerges as an integrated, multi-stakeholder field spanning planning, prevention, mitigation, preparedness, response, and recovery (Gündüz, 2009; Ha, 2019). Its goal is to minimize disaster impacts through coordinated action before, during, and after crises (Ertürkmen, 2006; Demirci and Karakuyu, 2004). In Türkiye, the establishment of AFAD and its Integrated Comprehensive Disaster Management (ICDM) framework reflects a shift from crisis management toward risk management (AFAD, 2022).

Disaster management is generally comprised of five interrelated phases (Figure 1). The prevention phase seeks to reduce risks through measures such as evacuation planning, land-use regulation, and safety design standards. Mitigation reduces adverse impacts of disasters and strengthens community resilience. Preparedness includes training, drills, and cooperation protocols to enhance readiness. Response focuses on minimizing human and financial losses through immediate interventions, while recovery emphasizes restoring normal social and economic life as quickly as possible (Manyasi and Mukuna, 2016; Sabri et al., 2024).

Figure 1. Disaster Management System (Manyasi and Mukuna, 2016).

Disasters have direct and indirect economic impacts on businesses—damaging assets, interrupting production, and disrupting supply chains—which can translate into long-term losses for firms and economies (Pelling et al., 2002; McKnight and Linnenluecke, 2017). Business Continuity Planning (BCP) therefore emerges as a strategic organizational response to preserve operations and maintain market relations (Herbane, 2010; Komut, 2013). It is increasingly recognized not only as a tool for reducing losses but also as a requirement in global supply chains (Baba et al., 2013; Chiba and Nagamatsu, 2023). In many countries, BCP practice remains limited among SMEs despite its potential to reduce systemic risk.

Despite the extensive literature on disaster and crisis management (Gökçe and Tetik, 2012; Kadıoğlu, 2012), there is a paucity of studies that systematically examine how official BCP guidelines operationalize resilience specifically for SMEs (Sutton and Tierney, 2006; Runyan, 2006), particularly in the context of international trade. To our knowledge, no prior study has analyzed Japan's METI guidelines for SMEs to extract transferable policy and operational lessons. The paper contributes theoretically by linking institutional policy documents to firm-level resilience practices and practically by providing actionable recommendations for policymakers. The study employs a document analysis approach, focusing on Japan as a benchmark case.

2. BCP CONCEPTUAL FRAMEWORK AND BACKGROUND

Pre-disaster planning is crucial to minimize risks during and after a disaster. Business continuity (BC) is a strategic and planned organizational procedure for planning and responding effectively to disruptions in processes caused by threatening factors to maintain business operations at a predetermined level (Russo et al., 2023; Wysokińska-Senkus and Górna, 2021). BCP, which is a result of business continuity management, has been seen as a tool that can save businesses from interruptions caused by natural disasters and their consequences (Herbane, 2010). Businesses and organizations with business continuity plans have been successful and effective in response and improvement phases by minimizing business interruptions and disruptions (Panoottıkorn, 2018). ISO 22301, the Business Continuity Management System (BCMS) standard is a framework created by the International Organization for Standardization (ISO). ISO 22301 was developed to protect an organization from possible interruptions in business operations and to ensure continuity in critical processes (Muflihah and Subriadi, 2019). This standard covers the Plan, Perform, Control and Act (PDCA) cycle model to ensure, maintain and improve the business continuity of an organization (Technical Committee ISO/TC 223, 2012). ISO 22301 aims to maintain the business at a predetermined level after the disruptions in business operations, to ensure the continuity of business activities again and to bring the business to the current situation quickly by implementing proactive and reactive plans to protect against the impact of crises (TS EN ISO 22301 Business Continuity Management System, 2023). Business Continuity Management (BCM) and Planning (BCP) is the ability of organizations to anticipate, prevent or reduce the likelihood of these disruptions and interruptions that may occur and thus respond in a pre-prepared manner to ensure that business activities resume (Dey, 2011). BCP is adopted as an effective approach to protect businesses from risks and maintain their core business activities during and after emergencies along with crises (De Matteis et al., 2023). With BCP, businesses can identify priority actions to protect all stakeholders, infrastructure, resources, technology and reputation before an emergency or crisis occurs (Wysokińska-Senkus and Górna, 2021). The goal of BCP is to minimize the losses that the business may face by maintaining at least the minimum level of its functions and services in as short a time as possible for the business to survive (Michelberger and Horváth, 2017). Businesses that want to ensure the continuity of these functions and services use the BCP approach (Karim, 2011). Every business should prepare a BCP by taking into account the possible threats and bad outcomes. This plan is a key element that helps businesses cope with disasters in the event of a crisis (Dey, 2011). Disaster Recovery Plan (DRP), which emphasizes the immediate impact at the time of the event, is an element of the broader perspective of business continuity (Dey, 2011; Mäkelä, 2024; Moşteanu et al., 2020). While the broader concepts of BCM and BCP focus mainly on organization management and business processes, DRP focuses on information technology areas such as technology infrastructure, software and hardware (Ali et al., 2023). The continuity plan ensures that the DRP is audited and updated in the process when all kinds of preparations are completed and that it is memorable until the crisis occurs (Mäkelä, 2024).

DRP is the description of an organization's response to any internal or external factors in order to maintain its strategic business activities without being subjected to obstacles (Karim, 2011). The

main purpose of an effective DRP is to help businesses reconfigure and restore their systems after the failure of technological infrastructure components (Abualkishik et al., 2020). DRP protects the continuity of information technology services and is usually of a technical nature (Dey, 2011). It also involves implementing the necessary steps to protect the important resources of businesses and reduce the negative effects of crises (Karim, 2011). In general, the phases of disaster recovery planning are divided into various actions, but when the disaster occurs, the conditions are not as planned as stated, and as a result, these actions quickly lose clarity during the implementation of the plan (Moşteanu et al., 2020). Additionally, other plans developed under the business continuity program are shown in Table 1.

Table 1. Plans developed under the business continuity program (UNDP, 2023)

Plan/Procedure Document Name	**Scope**
Emergency Response Plan	It includes interventions for the implementation of operations and business activities to be carried out in emergency situations that may occur in enterprises (Istanbul Project Coordination Unit (IPKB, 2023).
Crisis Management Plan	Before the crisis, in order to ensure that businesses are prepared for emergencies, there are works to be done, measures to be taken, crisis management centers and teams, necessary resources, duties and responsibilities of stakeholders (Genç, 2009).
Crisis Communication Plan	It covers information about the spokesperson, communication costs and other activities and communication strategies of businesses during a crisis (Lando, 2014).
Business Continuity Plan	It is defined as a comprehensive process of developing preventive steps and practices to ensure business disaster preparedness (Botha and Von Solms, 2004).
Information Technology Disaster Recovery Plan	It includes actions such as ensuring the security of business data, maintaining the continuity of IT systems, preventing problems that will interrupt business continuity and backing up data (Özdemir and Gökgöz, 2018).

For businesses, disaster preparedness includes establishing, equipping, supporting and managing emergency operation centers; collaborating between businesses and different sectors; and raising public awareness about reducing the negative effects of disasters (Sutton and Tierney, 2006). A preliminary effort is needed to discover which strategies will be most effective in taking risk mitigation measures and what kind of support will help businesses recover when faced with disasters (Webb et al., 2000). The faster businesses can return to their routines in disaster situations, the faster communities can access products and services. There is no loss of jobs and markets and thus, they can enable society to recover more robustly, so disaster-prepared businesses are always better placed to maintain and improve their competitive advantage (McKnight and Linnenluecke, 2017). Recovering from a disaster is a group activity, not an individual one. Since identifying important processes and implementing plans require the participation of everyone in the team, there needs to be a consensus of individuals in the organization when disaster strikes (Fallara, 2004).

BCP is a plan that describes the policies and procedures by which businesses can take precautions against disruptions and interruptions in important business activities when natural disasters such as earthquakes, epidemics, and terrorist attacks occur, and to ensure the continuity of critical business (Chiba and Nagamatsu, 2023). Disaster preparedness for businesses generally focuses on activities designed to prevent physical damage and inventory loss, protect critical business records, and prevent disruptions (Sutton and Tierney, 2006). While efforts to raise awareness and expand practices in developed countries regarding business sustainability in disasters are increasing rapidly, it is possible to say that the literature is still in its infancy. According to the

results of Dahlhamer and Reshaur (1996) based on the 1994 Northridge earthquake in California, it was observed that the preparedness plans of the enterprises in the region were low, not because of low awareness, but because the enterprises did not have sufficient access to resources, incentives and technical assistance. The study concluded that pre-earthquake preparedness is linked to the age, number of full-time employees, type of business, and financial condition of the business, and that special programs for businesses are needed because small businesses have difficulty taking basic disaster preparedness measures due to a lack of resources, incentives, and technical assistance. Analyzing the consequences of the 1997 floods in North Dakota, Flynn (2007) concludes that businesses that started operations after the floods were twice as likely to have sustainability plans as those that did not.

Cook (2015) created a six-stage business continuity and disaster recovery plan for disaster preparedness of businesses, which includes technical infrastructure, personnel, processes and overall strategic goals of the organization. This study guides on identifying and mitigating potential operational risks and planning, not only when business operations cease, but also before a disaster strikes. Josephson et al. (2017) examined the responses of small business owners to the security challenges their businesses experienced in response to Hurricane Katrina and found that small businesses in particular were not prepared for disasters. The findings of this study indicate that the most prevalent preparedness strategies were risk transfer and structural mitigation, while the least implemented were activities related to the ensuring of business processes and non-structural assets. The location of the business entity exhibited a substantial influence on the probability of undertaking specific preparedness activities. Furthermore, preparedness practices exhibited variability in accordance with the status and characteristics of the business owner. Furthermore, the adoption of preparedness activities was found to be differentiated by business size, as measured by the number of employees, and by sector.

According to the findings of Dushie's (2014) study, which examined 120 publicly traded businesses in Africa, the effectiveness of businesses' disaster preparedness is influenced by four primary factors: high cost, inadequate staffing, insufficient information, and low perceived urgency. Given the correlation between effective disaster preparedness and BCP, the primary objectives of business continuity should be the protection of employees, property, machinery, information, products, and profitability.

Disaster preparedness for businesses includes preliminary studies, training, drills, expertise and financial support, and the evaluation of information technologies is among the priorities when making business continuity plans. ISO/IEC 27001 Information Security Management Standard and ISO 22301 Social Security and Business Continuity Management Standards are used in risk assessments and planning related to disasters in information systems (Gazdağı and Çetinyokuş, 2020). Miller et al. (2006) emphasize in their study that the vulnerability to natural disasters increases with factors such as the increasing dependence of businesses on computers, telecommunications and other technologies and their tendency to integrate suppliers and business partners into their daily business operations. The paper under discussion herein delineates methodologies for the identification of threats and scenarios, the description of disaster recovery plans, and the articulation of the four elements of an overall disaster recovery plan — mitigation, preparedness, response, and recovery. Moreover, it provides types of software that can assist disaster recovery experts in the planning and execution process. Suguna and Suhasini (2014) state that all organizations should possess a BCP or DRP, which incorporates a recovery time objective and a recovery point objective for its data in the event of a disaster. The authors further present diverse methods for data backup and disaster recovery systems in the cloud system.

Castillo (2004) developed a new model for Boeing's disaster preparedness program and BCP following the events of September 11, aiming to strengthen business continuity plans and respond

more effectively to disaster situations. As a result of the study, the model aims to ensure that business-related information such as business processes, customer commitments and access to this information can be managed by other supporting personnel.

The BCP is predicated on assessments that are conducted for the purpose of developing recovery plans. A process for maintaining customer contact is established and a customer contact person is identified to inform customers about the business's ability to meet its commitments, and plans for moving people and goods when major transportation modes are shut down are developed and maintained. Canpolat's (2012) study results show that businesses are generally ready to take responsibility in times of crisis and see the media as a business partner. The fact that all of the companies participating in the study have a proactive crisis plan and think about possible crisis scenarios in advance suggests that public relations agencies are aware of the risk society. It is also observed that awareness of BCP in Turkey is on the rise. In Kılıç's (2019) study, 43% of the participants think that BCP has become prominent and its value is constantly increasing in Turkey, and 78% of them think that BCP has become more prominent in Turkey.

In disasters, SMEs can be affected more than large enterprises due to their limited resources. It is recommended to realize that the existing disaster management system in Turkey is inadequate and to create a new system that does not carry the existing deficiencies and is applicable. (Gündüz, 2008). Reyhanoğlu and Habiboğlu (2023) conducted interviews with twenty-five SME owners in the Antakya district 6 months after the earthquake of February 6, 2023. According to the results of the interviews, 19 SMEs started their operations with less labor force after the earthquake, five SMEs have not yet started their activities, and one SME has completely quit its business. Excluding those that started operations immediately after the earthquake, enterprises started doing business after an average of 2.5 months. Lack of personnel, increased costs, supply/price imbalance and the psychological effects of the earthquake reduced the efficiency of enterprises. In some sectors, business revenues decreased by 95%. Disruptions in goods and services and losses in the product supply chain were also reported. In particular, the most important problem was the damage to infrastructure and cash flows, which meant that they were unable to start their businesses at all, or started with low performance. It is also emphasized that SMEs are seriously unprepared for disasters. Asgary et al. (2020) conclude that global, economic and geopolitical risks are serious concerns for SMEs in Turkey. In particular, financial crises, structural unemployment and management failures are emphasized as the main risks, while environmental risks are ranked lower. In their study, Tetik and Öner (2023), it is stated that approximately 14 million people living in eleven provinces in the earthquake zone centered in Kahramanmaraş in 2023 tend to migrate to different provinces and they give policy recommendations such as increasing the loans provided by KOSGEB for SMEs, extending the maturity dates and concentrating the loans to the disaster-affected regions. In the Great East Japan Earthquake disaster that occurred in 2011, policies such as alternative transportation arrangements and diversified supplier networks before the disaster positively affected the sales of businesses after the disaster, in addition to aid from local banks and trade partnerships positively affected sales after the disaster, while direct cash payments made by the government had no statistically significant effect (Cole et al., 2017).

There is a need for qualitative studies to reduce loss of life and material damage by making preparations against possible disasters (Yavuz and Dikmen, 2015). In Turkey, there is a need to revise the current disaster management regarding pre-disaster planning and studies in this field should be prioritized (Erkal and Değerliyurt, 2011). In addition, it is imperative to re-evaluate and change the preparations against disasters that may occur in enterprises after disaster experiences (Gözüm and Arslan, 2017). Besides disasters, it is necessary to provide special plans for SMEs in crises and to increase solidarity with public and non-governmental organizations under the leadership of researchers (Reyhanoğlu and Habiboğlu, 2023). In Turkey, awareness, preparedness, response and recovery measures should be given more importance and activities

should be carried out in cooperation with public, private and non-governmental organizations' stakeholders (Ulugergerli, 2021).

At the opening of the training, which aims to increase the resilience of SMEs against earthquakes, Prof. Dr. Şerif Barış said, "Businesses should also create disaster management. Since disasters cause great damage to the economy, necessary measures should be taken to minimize these damages." Training should be given to business owners and employees on this subject" and emphasized the importance of the subject (URL 1). BCP databases can help businesses continue their international trade by minimizing their economic damages through timely and accurate policies to be implemented by the responsible units of governments (Tetik and Akbulut, 2023).

3. INTERNATIONAL TRADE DIMENSION OF THE BCP

The impact of disasters on international trade can occur directly or indirectly. Loss of life and injuries to human resources of enterprises and damages to physical capital and equipment in foreign trade directly affect exports (Gassebner et al., 2010). Natural disasters lead to a decrease in exports and a temporary increase in imports. Thus, the foreign trade balance of countries is damaged. The decrease in exports reduces production and increases the import of materials and products (Akar, 2013). Even if the disruptions in transportation and communication infrastructure as a result of the disaster do not affect production, marketing activities and consumption may be suspended (Pelling et al., 2002). However, disruptions in transportation and communication infrastructure can cause problems in the supply chain of foreign trade (Gassebner et al., 2010). For example, the destruction of roads after an earthquake and the suspension of operations at ports and airports can cause logistical problems and this situation creates serious difficulty in the import and export process (Tetik and Akbulut, 2023). Natural disasters, which have negative effects on human and physical capital, also cause disruptions in trade networks (Akar, 2013). It has been observed that disasters can affect supply chains regardless of the sector (Mpekiaris et al., 2020). Disasters affect all sectors and this implies that the mitigation strategy for large-scale disruptions needs to be integrated into the supply chain. A business without any preparedness plan will disrupt the entire supply chain. Although they are considered unlikely events, disasters occur significantly more frequently in some countries. Firms outsourcing in these countries should have a plan in place, carefully considering the possibility of major disruptions (Altay and Ramirez, 2010). Businesses rely on outsourcing providers to support their business operations and outsourced suppliers are key components of an organization's business continuity plan. In this context, it is important for businesses to have information about whether their suppliers have a BCP. This will assure the business that the supplier's level of care and attention in the main components of the BCP is adequate (Friedmann and Hayes, 2014). Mitigation and intervention in the supply chain should include both the business itself and all suppliers and sub-suppliers. It is emphasized that businesses should work together to deal with the challenges of supply chain risk management and BCP and should include such demands in their supply contracts (Rashid et al., 2014).

Integrating a business continuity plan in the context of international trade is beneficial for all stakeholders involved in business processes (Hicks, 2018). Implementing the plan to include suppliers and other stakeholders increases the capacity of businesses to respond to disasters and offers businesses a clear competitive advantage (Benyoucef and Forzley, 2007). This is because employees, customers and partners will expect both resilience and recovery capacity from key suppliers (Marshall, 2007). Stakeholders clearly define their responsibilities and duties through contracts. As a result, the power relationship between stakeholders is balanced. For example, businesses require suppliers to specify contact persons and channels of communication and emergency teams in the contract (Järveläinen, 2012). BCP focuses on protecting against costly interruptions, loss of revenue and unemployment due to disaster. Business continuity preparation

includes contracting with suppliers for post-disaster activities such as data storage and equipment repair (Sutton and Tierney, 2006). "BCP policy addresses the items that should be included in any contract, including language that addresses the need for third parties to comply with an organization's policies, procedures and standards" (Peltier, 2004). Communicating BCP-related requirements to all stakeholders can be included in the contracting process. A BCP may include expectations that a supplier has a valid and formulable BCP that can be implemented within the stipulated timeframes (Marshall, 2007). Cook (2015) argues in his study that in the event of a disaster, the supply of products are not dependent on chance and that all stakeholders in the supply chain should have a BCP/DRP. Half of the businesses in his study revealed that they want their business partners to have an active disaster recovery plan (Cook, 2015). It is a strategic business approach for businesses to collaborate and assess not only their recovery plans but also the disaster resilience of critical partners in the supply chain (Marshall, 2007).

4. RESEARCH: SUSTAINABILITY PLANS IN SMES IN JAPAN

This study selects Japan as a strategically significant case for examining SME sustainability planning. The choice is not merely based on Japan's high frequency of natural disasters, but on the unique paradox it presents: a context of extreme vulnerability coexisting with one of the world's most institutionalized ecosystems of BCP. This combination of high risk and high institutional response makes Japan an ideal "critical case" (Yin, 2018; Flyvbjerg, 2006) for understanding how SMEs, which are typically resource-constrained, can be successfully integrated into broader national resilience strategies. Unlike general disaster preparedness studies, the Japanese case provides a theory-relevant context that allows for the generation of transferable lessons on the institutional scaffolding required for SME sustainability, directly addressing the research gap identified in this study. "

Surveys illustrate that despite extensive government efforts, only a minority of SMEs adopt formal BCPs. In May 2021, 17.6% of Japanese enterprises reported having a BCP, while in 2024 this rate rose slightly to 19.8% (Matsuoka, 2021; URL 2). Large companies reached 37.1%, but SMEs lagged behind at 16.5%. These figures, although higher than in many OECD countries (OECD, 2020), demonstrate two structural issues: first, capacity gaps, as SMEs cite lack of knowledge (41.6%), limited human resources (34.3%), and lack of time (28.4%) as reasons for non-formulation; and second, perceived irrelevance, since 24.7% of firms consider self-created BCPs "useless," while 20.5% feel no need for one. These figures are more than descriptive statistics; they empirically illustrate two core theoretical challenges in SME resilience literature. First, they reveal persistent capacity gaps, as SMEs cite a lack of knowledge (41.6%) and limited human resources (34.3%) as primary barriers —findings that align with previous studies on SME disaster preparedness in different contexts (Dahlhamer and Reshaur, 1996). Second, the data highlights the problem of perceived irrelevance, with a significant portion of firms considering BCPs "useless". This finding connects directly to theoretical claims that SME resilience depends not only on external institutional support but also on the firm's internal absorptive capacity and strategic prioritization (Battisti and Deakins, 2017). Therefore, the Japanese case exemplifies the critical tension between the availability of top-down national frameworks and the persistent, SME-specific barriers that hinder their effective adoption, providing a nuanced context for this study's analysis.

This study adopts document analysis as its qualitative research design, defined as the systematic review of existing documents to elicit meaning and empirical knowledge (Bowen, 2009). The selection of this method is deliberate and directly linked to the research purpose. Document analysis is particularly appropriate here for three reasons. First, the research problem is concerned with the institutional frameworks shaping SME sustainability, which are best captured through official policy guidelines and organizational documents rather than surveys or interviews

that reflect individual perceptions. Second, this method allows access to policy intent and prescribed operational procedures, providing a stable and non-reactive data source (Bowen, 2009). Third, in disaster research where primary fieldwork with vulnerable SMEs can be constrained, document analysis offers a robust alternative for understanding embedded institutional logics and cultural norms from a distance. By focusing on the official METI guideline, this study can systematically deconstruct the state-endorsed model for SME resilience. The central document examined is the "Guidelines for Formulating and Implementing Business Continuity Plans for Small and Medium Enterprises" prepared by Japan's Ministry of Economy, Trade and Industry (2011). This guideline is both a policy instrument and a practical manual: it prescribes the roles, responsibilities, and forms through which SMEs are expected to operationalize sustainability.

Following Bowen (2009) and Morgan (2022), a three-step process guided the analysis: selection, examination, and interpretation. After selecting the METI guideline and examining its forms by classifying them into five categories, the interpretation phase was conducted through thematic analysis. This was not merely a summary of the forms' content. Instead, "making inferences" in this study involved a structured analytical process: each form and its requirements (e.g., documenting alternative suppliers, creating employee contact cards, planning for drills) was systematically questioned to reveal the underlying institutional logic. For instance, we asked: "What specific vulnerability does this requirement address for an SME?", "What level of organizational capacity is assumed for its successful implementation?", and "How does this practice contribute to the broader ecosystem of resilience described in the literature?" This process of structured questioning allowed the analysis to move beyond description and draw out conceptual insights on how Japan's national BCP framework operationalizes SME resilience at the micro-level. This qualitative design thus strengthens the study by systematically linking macro-level institutional policies with the prescribed micro-level organizational practices for SMEs. Document analysis is especially suited to disaster and sustainability research where primary SME fieldwork may be constrained, as it allows access to policy intent, operational procedures, and embedded cultural norms. By interpreting the METI guideline alongside survey data and secondary sources, this study builds an integrated understanding of how Japanese SMEs are positioned within national sustainability strategies.

4.1 Actors and Responsibilities in the Japan BCP Ecosystem

Japan's BCP ecosystem is not limited to individual firms but is structured as a multi-actor system in which government agencies, business organizations, large enterprises, non-profit associations, and even customers collectively shape SME disaster preparedness. This systemic approach illustrates how institutional scaffolding compensates for SME resource limitations, thereby offering transferable lessons for other countries struggling to embed BCP practices. The actors involved in Japan's BCP implementation—ranging from central government to business federations and non-profit associations—are presented in Figure 2.

Figure 2. Actors involved in Japan's BCP implementation

At the core of this system lies Japan's central government (Figure 3), which coordinates disaster management through the Cabinet Office and the Central Disaster Management Council. The Council includes the Prime Minister, cabinet ministers, designated public organizations, and academic experts, ensuring both political authority and technical expertise (Tanaka, 2012). By embedding BCP in the national countermeasures policy, the government elevated business continuity from a voluntary practice to an indispensable element of disaster management (Okutani et al., 2008; Maruya, 2017).

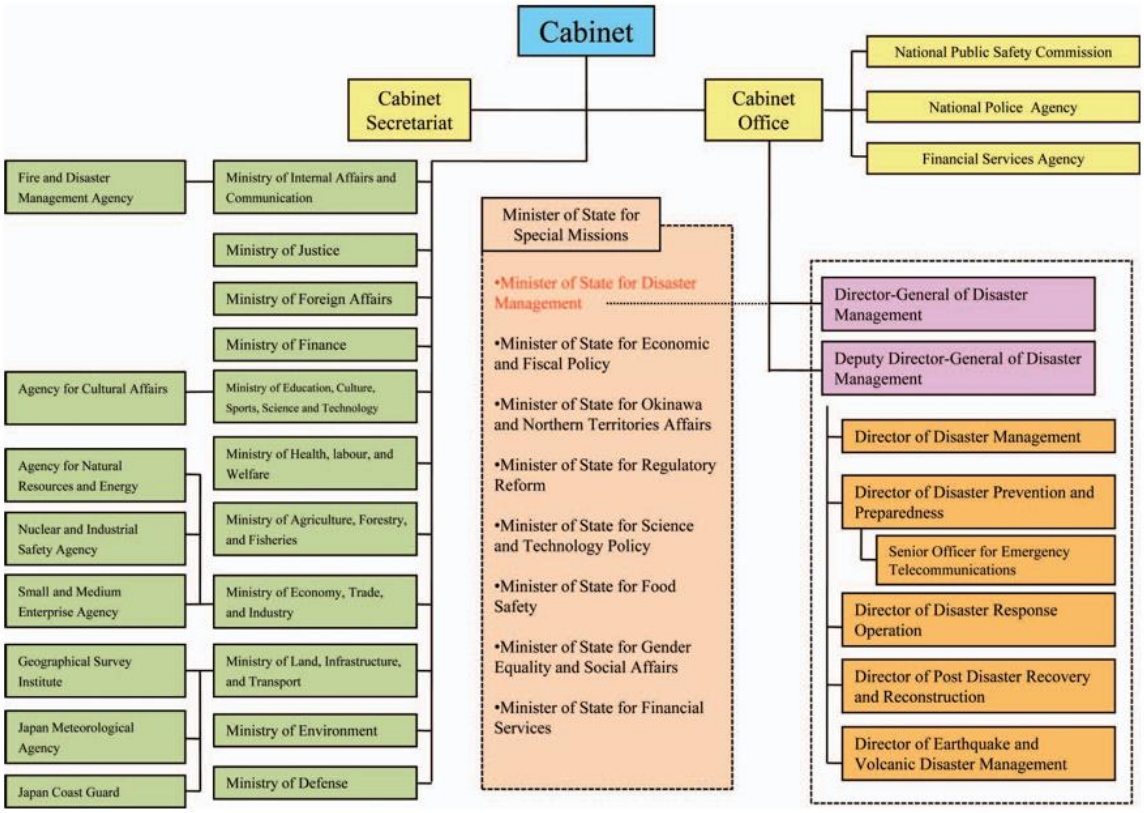

Figure 3. Organization of the national government and Cabinet Office (Disaster Management) (Tanaka, 2012)

A landmark step was the introduction of the "Business Continuity Guidelines" in 2005, revised continuously up to 2023 (Chiba and Nagamatsu, 2023). These guidelines are crucial because they not only simplify implementation but also standardize BCP across sectors, highlighting how government-led standardization reduces uncertainty for SMEs. This institutional support was reinforced after crises such as the September 11 attacks and the 2011 Great East Japan Earthquake, which revealed the vulnerability of SMEs and the cascading effects of supply chain disruptions (Maruya, 2022).

In parallel, the Small and Medium Enterprises Agency, under the Ministry of Economy, Trade and Industry, plays a dedicated role by embedding BCP support within its "Management Support" programs. Since 2011, it has issued guidelines specifically tailored for SMEs, structured as a formulation and operation cycle (Figure 4). These five steps—from understanding operations to testing and updating plans—demonstrate how disaster preparedness is institutionalized as a continuous learning process rather than a one-time checklist (Matsuno et al., 2022).

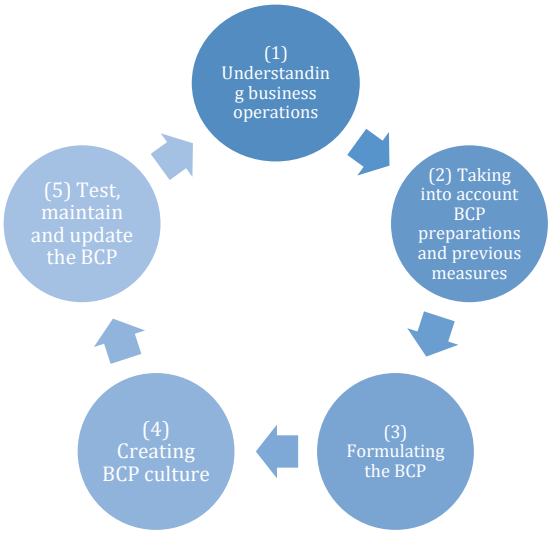

Figure 4. BCP Formulation and Operation Cycle (Ministry of Economy, Trade and Industry, 2011).

Large companies such as Suzuyo Co. Ltd., Sumitomo Forestry, and Fujikura also assume a critical role. By creating internal crisis management committees and subcommittees, they not only safeguard their own operations but also extend support to SMEs within their supply chains (Liao and Sone, 2022; Sumitomo Forestry, 2024; Fujikura Group CSR Integrated Report, 2016). This illustrates the importance of supply-chain governance: large firms act as "anchors" that disseminate BCP practices downward to SMEs.

Civil society organizations and non-profits further strengthen the ecosystem. The Business Continuity Advancement Organization (BCAO), established in 2006, exemplifies how knowledge communities institutionalize best practices by training experts, setting standards, and fostering peer learning among firms (BCAO, 2023; Maruya, 2016). Likewise, Keidanren (Japan Business Federation) has actively shaped inter-firm collaboration, proposing policies on supply chain coordination, joint drills, and standardization of parts (Keidanren, 2014).

Finally, customers themselves emerge as influential actors. According to UNDRR (2021), SME adoption of BCPs is significantly higher when clients explicitly demand it—68% compared to only 8% without such demand. This finding underscores the market-driven logic of resilience: in Japan, institutional and market pressures converge to make BCP adoption more than a symbolic gesture.

Taken together, these actors and their interdependencies highlight that SME resilience in Japan is not the result of isolated firm-level strategies but the outcome of an integrated governance system. For SMEs in other contexts, this demonstrates that effective BCP adoption requires not only awareness but also coordinated support across multiple levels—government, industry, civil society, and markets. It is within this complex, multi-actor ecosystem that the METI guidelines—the focus of our document analysis—operate and derive their effectiveness."

4.2 BCP guidance for SMEs

In Japan, the Japanese government has been heavily promoting business continuity for businesses through BCP Guidelines, strategies and responses for recovery from critical incidents. The purpose of the Guidelines on Formulating and Implementing Business Continuity Plans for Small and Medium-sized Enterprises prepared by the Ministry of Economy, Trade and Industry of Japan is to guide SMEs in Japan to develop business continuity plans in disaster management so that they can continue and manage their daily operations. In this way, templates for important steps such as disaster preparedness, training of people involved in crisis management, restoration of business operations and management of financial crises are presented to businesses. It also includes a guideline on where to be located in the event of a disaster and the roles and responsibilities of business owners and other stakeholders. It explains how to develop business continuity plans for managers and the importance of such planning (Ministry of Economy, Trade and Industry, 2011). The guide includes three courses for businesses (Figure. 5). The basic course is based on the business continuity plan based on the ideas of business managers and the estimated time to develop the plan is 1-2 days. The intermediate course involves existing business managers building their business continuity plan step by step and comprehensively building its phases and takes about 3-5 days. Finally, the advanced course formulates existing business continuity plans and includes a comprehensive analysis and evaluation of the process. Businesses can also use these plans to develop collaborations with other companies that have implemented them through the previous course. This process takes one week with a manager and a leader. However, the duration of the course varies according to the structure and organization of SMEs (Ministry of Economy, Trade and Industry, 2011).

In this study, the "Business Continuity Plan Forms" in the guideline are analyzed by classifying them into five categories according to their scope and purpose.

4.2.1. Design and Framework of a BCP

A BCP is defined as a comprehensive document that highlights responsibilities, necessary steps and improvement processes to ensure continuity and protection during and after an emergency (Engemann and Henderson, 2012). The first form includes a table that provides information about the content of the BCP and includes the name and content of each form. In Form 2, the key elements for business continuity during an emergency in terms of the company's characteristics and BCP needs are included and an instruction is given for businesses to fill in. There is an assessment area for customers, employees, the local community and others for the formulation of the BCP and the business objective. There is an area for basic steps to maintain business operations during an emergency. There is a writing space line to be filled in by businesses for corporate ties, corporate ethics, regional solidarity, utilization of public resources and others. In the last part of the page, there is a field for the update date of the BCP and disaster prevention plan and the number of updates per year should be written in this field. Form 3 provides information and instructions to enterprises about the operational framework of the BCP. It is emphasized that the organizations involved in formulating the BCP, encouraging the adoption of the BCP except in unusual circumstances and implementing the BCP for continuity of operations during an emergency are summarized. It is also emphasized that business managers assume all kinds of responsibilities and that sub-leaders and responsible persons during an emergency should be indicated in the allocated section. There is a space to fill in information about the person responsible for implementing the BCP, sub-leaders, partner companies, associations and

organizations, and targeted people to implement the plan. In addition, the information of the systems that will implement the BCP in case of emergency is indicated as backup persons. For example, the responsible backup person consists of five fields: the backup person responsible for customers and partnerships, the backup person responsible for business resources, the backup person responsible for financing, and the backup person responsible for employee support. Form 5 asks for details about the collaborating enterprises to establish the operational framework of the BCP involving the partnership of several companies. The enterprise chooses one of the items available in the form and requests detailed information to describe the data contained in that item. For example, the form provides options for the type of enterprise and the content of the cooperation, and the enterprise should choose the appropriate one and fill in the data such as the name of the cooperating enterprise and contact information in the fields provided. In the last field of the form, it should be indicated who will bear the costs arising from the collaborative activities and it is emphasized that the manager should hold a meeting with the responsible employees of the collaborating enterprises at least once a year to review the content of the collaboration. The BCP is a strategy-based decision to overcome problems potentially affecting business operations and should be reviewed at regular intervals and its performance measured to reshape and adjust objectives (Wickström, 2024). In essence, these initial forms do not just collect data; they compel the SME to formally articulate its own identity, objectives, and internal governance structure, creating the foundational framework upon which the rest of the BCP is built.

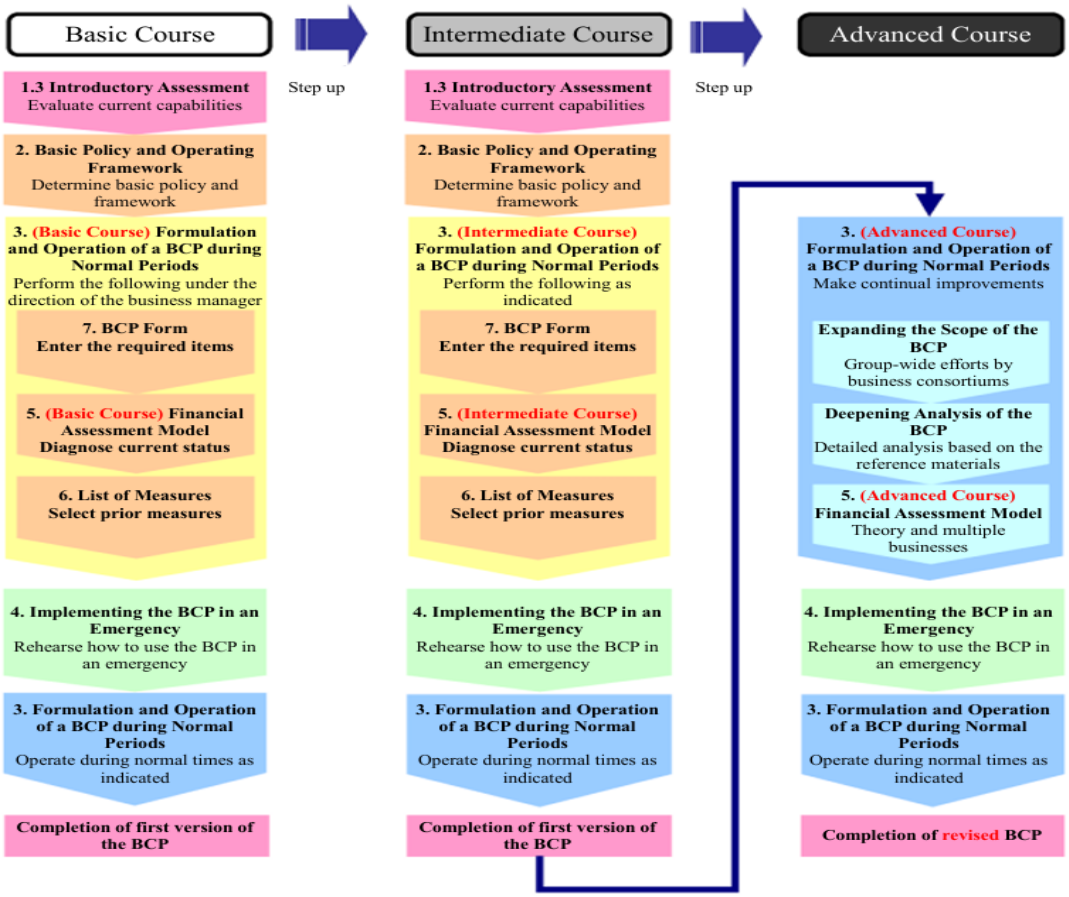

Figure 5. Japan's use and content of BCP guidelines for SMEs (Ministry of Economy, Trade and Industry, 2011).

4.2.2. Core Business Operations and Critical Resources

Form 16-1 requires the specification of the machinery and equipment that will cause problems for the basic business continuity of the enterprise and whether the machinery and equipment will be moved to a safe area for the disaster warning. Required fields to be filled in include: Important

internal work to utilize resources, responsible person, status of resources, equipment name and model, suppliers, location to be set up in case of business continuity, time to replace/set up equipment, items required for resources, and descriptions of equipment and machinery that may cause problems. In Form 16-2, computers, peripherals and software that may disrupt core business continuity should be specified, and in Form 16-3, machinery and equipment necessary to continue the company's core business activities in a backup facility should be specified. For example, the name of products such as basic office supplies and furniture, the number of units, suppliers and where these materials will be installed should be specified in this form. Items other than the materials specified in "Form 16-3" required to save or continue business activities should be written in Form 17-1. Form 17-2's requirement to identify and document substitute vendors in detail is a cornerstone of the model's approach to supply chain resilience. This proactive measure moves beyond internal asset protection and compels SMEs to map their external dependencies, thereby mitigating the 'domino effect' of disruptions. By embedding this requirement, the framework operationalizes the idea that an SME's continuity is inseparable from the resilience of its entire supply network.

4.2.3. Employee and Communication Strategies

The Japanese BCP model places a profound emphasis on human capital and communication infrastructure as central pillars of organizational resilience. In the event of a disaster, maintaining the flow of information is critical. This principle is first operationalized at the individual level through Form 4, which requires a portable employee card containing essential personal, medical, and contact information, alongside basic emergency instructions. This seemingly simple tool is significant as it operationalizes individual responsibility and ensures that critical information is decentralized away from the potentially compromised workplace, a key principle in effective disaster response.

This strategic focus on maintaining the organization's nervous system extends to both external and internal stakeholders. Form 11 requires a detailed list of critical external organizations, such as banks, creditors, local governments, and insurance companies. This moves beyond a simple address book, functioning as a strategic map for maintaining essential business relationships and activating the company's external support ecosystem during a crisis.

Internally, the model treats employees not merely as personnel to be accounted for, but as a dynamic recovery asset. Forms 12-1, 12-2, and 12-3 collectively create a comprehensive human capital database. Beyond standard contact details, the framework requires the documentation of employees' specific responsibilities, alternative roles, and, most importantly, their unique qualifications and skills that could be vital for business sustainability. This requirement is a clear indicator of a sophisticated strategy focused on human resource flexibility. It enables management to identify and redeploy skilled personnel to address unforeseen operational challenges, thus transforming the workforce into an adaptable component of the business continuity solution itself.

4.2.4. Risk and Emergency Management - Disaster Preparedness

The BCP framework systematically guides SMEs from abstract risk awareness to concrete, prioritized action. This process begins with Form 6, where the business must articulate its core activities, identify the internal person responsible, estimate potential losses from disruption, and crucially, set a Recovery Time Objective (RTO). This initial step is foundational; it compels the SME to define what "survival" means in concrete, measurable terms before any further planning can occur.

Building on this foundation, Form 7 introduces the framework's core analytical tool: a risk assessment matrix designed for strategic prioritization. The process requires a methodical evaluation: businesses list critical resources (Column 1), rate their importance on a scale (Column

2), and then assess the impact a disaster would have on them (Column 3). The multiplication of these two values (Column 4) yields a quantified impact rate. This is more than a simple calculation; it is a structured methodology that forces resource-constrained SMEs to make data-informed decisions. It ensures that limited capital and effort are allocated to protecting the most critical assets, providing a rational basis for risk mitigation strategies.
The framework then expands this prioritized approach into a holistic, multi-layered defense strategy.

- Personnel Safety is meticulously addressed in Form 10, the evacuation plan. It requires specifying the evacuation location, the on-site leader, and the protocols for ceasing business activities. The recommendation to co-design this plan with neighboring businesses underscores the model's emphasis on inter-firm collaboration.
- Operational Command and Control is secured through Form 13, which details the communication equipment plan. SMEs must list equipment types, their current status (owned, rented), and contingency plans, such as identifying suppliers for emergency rentals. This ensures the leadership's ability to coordinate a response is not compromised.
- Financial and Logistical Resilience are covered in Forms 18 and 19. Form 18 demands a detailed inventory of insurance policies—including policy numbers, coverage limits, and contact information—to expedite financial recovery. Form 19 provides a checklist for disaster relief vehicles and equipment, ensuring logistical assets are ready for deployment.

Taken together, these forms provide SMEs with a comprehensive toolkit that moves far beyond a simple checklist. They instill a systematic approach to risk management that integrates strategic, operational, financial, and logistical preparedness into a single, coherent plan.

4.2.5. Strategic Planning and Community Relations

The final stage of the METI framework moves the SME from internal preparedness to long-term strategic planning and external integration, ensuring the business is not only ready for a crisis but also strategically positioned for recovery. This is evident in Form 8, which requires the enterprise to pre-define a wide range of substitute policies. These include designating alternative locations for operations and information management, identifying backup support staff, securing financing lines, planning for utility backups (electricity, gas, water), and ensuring critical documentation is accessible. This detailed planning builds deep operational redundancy, providing the firm with the strategic flexibility to adapt and function even in a severely disrupted environment.

This is complemented by a focus on long-term capital investment in physical resilience, as detailed in Form 9. The form provides an exhaustive checklist for facility and equipment preparations, covering everything from seismic retrofitting and fire resistance upgrades to flood prevention, equipment stabilization, and the acquisition of generators and emergency water supplies. Crucially, the form's recommendation to "use public financing practices effectively" provides tangible evidence of the public-private partnership that underpins the entire Japanese ecosystem. It demonstrates a system where state support actively enables and encourages private-sector investment in disaster mitigation.

Furthermore, the framework emphasizes the proactive management of key external relationships as a strategic asset. Forms 14 and 15 require the business to identify and prioritize critical communication lines and key customers. This is not merely a contact list but a mechanism for strategic stakeholder management in a crisis. It ensures that in the chaos of a disaster, the enterprise has a clear plan to maintain communication with the partners most vital to its survival and recovery, thereby preserving its relational capital.

However, the capstone of the framework is Form 20, which institutionalizes the SME's role as a proactive agent of community resilience. The form explicitly asks the enterprise to detail its

contributions to the safety of the local population, covering both "daily activities" and "activities during an emergency." This requirement fundamentally transforms the BCP from a private, inward-looking survival document into a tool for fulfilling a social contract. By positioning the SME as an active partner in the local community's safety, this final element provides the most compelling evidence for the multi-actor ecosystem at the heart of the Japanese model, where corporate, state, and community resilience are inextricably linked.

5. CONCLUSION

According to the World Economic Forum's Global Risks Report 2024, extreme weather events represent one of the most severe global risks over the next decade, highlighting the urgent need for resilience. The devastating effects of such natural disasters on international trade and SMEs underscore the critical importance of robust Business Continuity Plans (BCPs). This study examined Japan's comprehensive model for disaster resilience to offer transferable strategies for SMEs operating in a volatile global landscape.

Our in-depth analysis of Japan's METI guidelines reveals that the model's success lies not merely in providing standardized templates, but in cultivating a holistic ecosystem and a strategic mindset for resilience. The key findings demonstrate that the Japanese framework transforms the BCP from a simple checklist into a multi-faceted strategic tool.

First, it serves as an instrument for strategic prioritization, compelling resource-constrained SMEs to make data-informed decisions about their most critical assets.

Second, it establishes a multi-layered defense strategy integrating physical safety, operational command, and financial resilience.

Third, it uniquely treats human capital as a dynamic recovery asset, promoting a culture of organizational flexibility. Most distinctively, the model moves beyond the firm's boundaries by positioning the SME as a proactive agent of community resilience, effectively turning the BCP into a social contract that enhances both corporate and societal stability .

This deep-seated resilience has direct implications for international trade. Natural disasters can profoundly impact a country's trade balance by causing declines in exports and temporary surges in imports. Japan has mitigated these risks by embedding resilience throughout its supply chains. The disruptions faced by the global automotive sector after the 2011 Great East Japan Earthquake, for instance, underscored the necessity of BCPs integrated into global supply chains. By demonstrating such robustness, Japanese firms gain a significant competitive advantage, reassuring international partners and solidifying their credibility in a market where BCPs are increasingly a contractual prerequisite.

For a disaster-prone nation like Türkiye, which is still recovering from the 2023 Kahramanmaraş earthquake that exposed vast SME vulnerabilities and anticipates a major earthquake in its economic heartland, these lessons are critical. Based on the Japanese model, policy recommendations should move beyond general incentives to focus on:

- Developing government-supported BCP frameworks that encourage community-integrated drills and supply chain mapping.
- Promoting a holistic risk management approach that includes assessing the resilience of critical suppliers and fostering flexible human capital.
- Strategically positioning BCP as an element of credibility and competitive advantage in international markets.

While this study provides a deep analysis of the Japanese model through its official guidelines, future research could complement these findings through qualitative interviews with Japanese SME owners to explore the on-the-ground challenges of implementation. Furthermore, comparative studies analyzing the adaptation of the Japanese model in other cultural and economic contexts would be a valuable contribution.

In conclusion, this study asserts that building disaster resilience is not merely an operational necessity for SMEs but a strategic imperative for sustainable participation in the global economy. Through continuous improvement, multi-stakeholder collaboration, and the integration of resilience into their core identity, SMEs can secure their long-term viability and thrive as reliable partners in an increasingly uncertain World.

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