

Impact of Natural Disasters on Small and Medium Enterprises (UMK) in Indonesia

Dwi Mahroji¹, Muhamad Halilintar²
{dwimahroji@stimaimmi.ac.id¹, mohamad_halilintar@borobudur.ac.id²}

Universitas Borobudur, Indonesia

Abstract. Business operations and their long-term viability suffer greatly from natural disasters' direct and indirect effects. Over the course of the past few years, this catastrophic event has had a significant impact on Indonesia's Small and Medium Enterprises (SMEs). Little and medium-sized undertakings (SMEs) represent almost 66% of all confidential area occupations in created countries like the European Association and record for roughly 99.99 percent of monetary movement. In developing nations, where small and medium-sized businesses account for more than 90% of all businesses, the situation is similar. In 2020, small and medium-sized enterprises (SMEs) will account for 15.7 percent of Indonesia's exports and employ 97% of the nation's workforce. In any case, SMEs are likewise presented to different dangers, for example, cataclysmic events, that can possibly hurt their organizations. This paper means to recognize the sorts of cataclysmic events that influence little and medium-sized ventures (SMEs) in Indonesia, assess the impacts of those debacles, and pinpoint issues with SMEs' catastrophic event moderation. The study information were examined by graphic measurable investigation to figure out which catastrophic events experienced more the respondents. An overview was led among SMEs in Indonesia in 2021 to recognize the kinds of debacles that happened and their effects. The survey is also used to find out what SMEs need help with when it comes to preventing natural disasters. According to the findings of this study, SMEs in Indonesia are impacted by natural disasters, with flooding being the most common type. These findings lead to suggestions for SMEs on how to either avoid or at least lessen the impact of natural disasters on their businesses.

Keyword: small and business sized enterprises (SME); natural disaster; disaster information

1 Introduction

Over the past 15 years, there has been a significant rise in the number of natural disasters worldwide. The quantity of debacles that have been accounted for has expanded by 63%, while the quantity of passings that have been accounted for has expanded by over 85%, as demonstrated by the Crisis Occasions Information base (EM-DAT). During a similar time period, monetary misfortunes brought about by cataclysmic events likewise expanded by in excess of 120%.

In 2020, Asia will be the reason for 46% of all cataclysmic events around the world. Asia is the most weak area on the planet as far as the quantity of debacles, the quantity of passings, the quantity of individuals impacted, and the financial harm since it has represented 50-70 percent of all catastrophic event measurements starting around 1985. [1].

Individuals and businesses alike are affected by these disasters in Asia, from large multinational corporations to medium, small, and microbusinesses. The 2011 floods in Thailand affected at least 557,637 businesses, 90% of which were small and medium-sized businesses (SMEs), according to historical data. Additionally, this catastrophe cost it approximately 2.3 million jobs [2]. According to [3], SMEs account for the majority of the estimated \$45.7 billion in economic losses. Since 2012, SMEs have accounted for 98% of Thailand's total businesses, making them the backbone of the country's economy, just like they are in other developing nations [4]. 80.4 percent of the workforce and 37.0 percent of GDP came from small and medium-sized enterprises (SMEs). In addition, Thai SMEs were responsible for 31.9 percent of all imports and 28.8 percent of all exports by value.

In Malaysia, for instance, small and medium-sized businesses (SMEs) accounted for 32% of GDP in 2010, contributed 19% of national exports in 2010, and employed 59% of the workforce [5]. In excess of 13,000 little and medium-sized organizations were affected by floods in December 2014, as per a public statement given in 2015 by the Service of Worldwide Exchange and Industry (MITI) [6]. Despite the fact that there are no statistics indicating how much SMEs contribute to the Philippine economy, they also play a significant role in the expansion of the economy. The Philippines' most recent government census reveals that SMEs employ 65% of the workforce and represent 99.6% of the country's registered businesses.

2 Literature Review

2.1. Natural Disaster

According to [8,9,10], in addition to natural hazards, social, political, and economic factors also play a role in disasters. These factors must be considered in relation to one another. The widely accepted definition of disaster can be found in the 2004 annual report of the International Strategy for Disaster Reduction (ISDR):

“a serious disturbance to the functioning of a community or society that causes widespread harm to people, goods, the economy, or the environment that is greater than the affected community or society's capacity to cope with using its own resources”

[11] An unusual natural or man-made event, such as a technological system failure that temporarily disables a human community, group of people, or the natural environment's response capacity and results in significant damage and financial loss, is another definition of a disaster. disruption, harm, and/or death As indicated by [13], fiascos comprise of the event of dangers or occasions that can inflict damage and the failure of society to deal with the outcomes of the occasions. Disasters are social events in which the likelihood of harm is determined by how humans interact with one another and how they use the physical and social worlds [12].

This definition contains a few qualities of calamity. They are major events that disrupt and harm people. They ordinarily happen out of nowhere and the impacts are capable over an extensive stretch of time. The definition likewise underlines that conquering the effect of a fiasco requires a ton of exertion and once in a while even needs support from others. Another characteristic of disasters is that they can be either natural disasters like hurricanes, floods, and earthquakes, or man-made disasters like fire, terrorism, and war.

[14] discovered a number of ideas that are inextricably linked to disasters. Disaster is an event that takes place somewhere. A hazard is the likelihood that a potentially harmful event

will occur over a long period of time. Is a condition that has the likelihood to cause an occasion that can have an adverse consequence. On the other hand, vulnerability refers to how vulnerable a place is. This is how much a local area's designs, administrations or climate are probably going to be harmed or upset by the effect of a peril. The probability that an adverse event will result in a loss or an anticipated loss (life, injury, property damage, disruption of economic activity) is referred to as risk.

Additionally, disasters harm lives and cause financial losses. Natural disasters killed 9655 people in 2012, affecting 124.5 million people, and lower-middle-income countries were responsible for 68.2% of those deaths [15]. Statistics from [15] show that earthquakes, hurricanes, and floods were responsible for 80% of the deaths and 90% of the economic losses caused by natural disasters in Asian nations over the past three decades. The next leading causes of death on this continent are epidemics and famine, which are closely linked to hydrological and meteorological conditions. These hazard patterns will become more intense, more frequent, and more variable as climate change continues.

2.2 Small and Medium Enterprises(SME)

According to Menkop and UKM, the State Service of Cooperatives and Little and Medium Ventures, small businesses, as well as micro businesses, are those with a maximum net worth of Rp. MSMEs, on the other hand, are business entities owned by Indonesian citizens with a net worth of more than Rp200,000,000.- up to Rp10,000,000,000,- excluding land and buildings [16]. In 1998, MSMEs demonstrated that they were able to withstand the Indonesian economic crisis brought on by the decline in the value of the currency and the erosion of public and market confidence. Despite their resistance to a variety of economic conditions, micro, small, and medium-sized enterprises (MSMEs) can experience decline as a result of their inability to keep up with the current industrial revolution, and among MSME actors, they still lack technology and market competition [17].

2.3 SME and Natural Disaster

Most of metropolitan regions in Asia are along deltaic and seaside regions, which are more helpless to environmental change and catastrophic events like floods and avalanches. Numerous SMEs like to work in metropolitan regions on account of the presence of banks and other monetary establishments, key business conditions, and the fast development of the metropolitan market. [19]. If they do business there, small and medium-sized businesses (SMEs) will be more vulnerable to natural disasters.

Factors like size and financial constraints also make small and medium-sized businesses (SMEs) more susceptible to disasters. For instance, according to [20], SMEs' location and lack of financial expertise make them susceptible to both natural and man-made disasters. [21] found in 2012 that Asia-Pacific countries experience no less than 14 fiascos every year, including psychological warfare, atomic mishaps, pandemics, floods, storms, seismic tremors, and floods. Given that [21] states that SMEs are the region's engine of growth and innovation, this is not a good sign for SMEs. Small and medium-sized enterprises (SMEs), which represent over 97% of all organizations, utilize over portion of the labor force in Asia-Pacific economies. Little and medium-sized organizations (SMEs) contribute altogether to financial development in most of economies in the Asia-Pacific area, representing somewhere in the range of 20% to half of Gross domestic product.

Worldwide, disasters have a significant impact on SMEs. For instance, the floods in Bangkok in 2011 disrupted at least 550,000 small and medium-sized businesses and impacted

more than 2 million jobs. The floods additionally decreased Thailand's public Gross domestic product by 37% [22]. Similarly, 13,337 SMEs, or 37.7% of all SMEs in the state of Kelantan, were affected by the massive flooding in December 2014. As a result, one important lesson from previous disasters like the floods in Thailand and Kelantan is that small and medium-sized businesses (SMEs) typically are not prepared for disasters. In Thailand, for instance, flood insurance only covered 14% of SMEs that were impacted by the 2011 Bangkok floods [2]. According to [23], SMEs in developing nations are not covered by disaster insurance due to affordability or financial constraints.

All in all, SMEs are vital in persuading financial movement in a nation, so guaranteeing their endurance during and after a catastrophe is vital. The government ought to learn from previous disasters, such as the 2011 Bangkok floods and the Japanese tsunami, about how these disasters can affect GDP and small and medium-sized businesses.

3 Methodology

A survey with a questionnaire was sent out to Indonesian small and medium-sized businesses for this study. 300 studies disseminated on the web. This survey aims to determine which natural disasters have the greatest impact on SMEs and how they affect them. The survey was also used to identify obstacles and limitations that SMEs in Indonesia face when it comes to disaster mitigation.

Unmistakable measurable examination was utilized to take a gander at the study information to see which catastrophic event greatly affected the respondents in light of the normal of every debacle that was referenced by the respondents. With the end goal of the overview, 44.1 percent of respondents were approached to determine the sort of catastrophic event they had encountered in the past five (five) years. In order to accomplish this, respondents were provided with information about nine natural disasters, six of which, according to a number of related reports, had the greatest impact on Indonesia. Likewise, respondents are additionally given the choice to make reference to other cataclysmic events assuming that their business is impacted by other catastrophic events.

4 Analysis, Finding and Discussion

When compared to other types of disasters, descriptive statistical analysis reveals that floods are the most affected. According to previous research, flooding is a major natural disaster in Indonesia. This result is predictable. Figure 1 depicts the proportion of each natural disaster that has affected SMEs in Indonesia over the past five years. For example, 34% of respondents have been affected by flooding over the past five years. In the meantime, 5% of small and medium-sized businesses select "other" disasters, citing political risks, falling commodity prices, and oil price fluctuations. However, because it is not a natural disaster, this risk cannot be taken into account in this study.

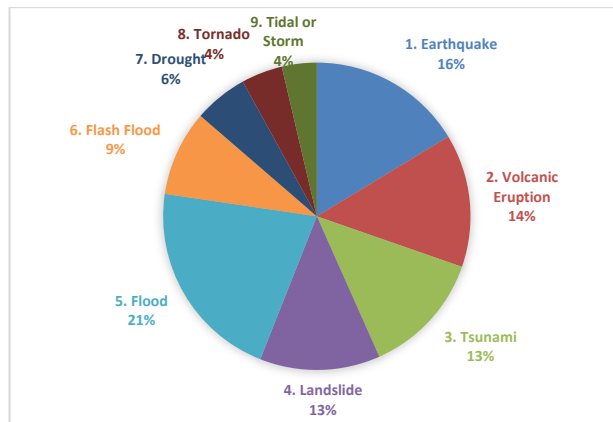


Fig1. Natural disasters that hit SMEs in Indonesia (in %)

Additionally, respondents were asked about the effects of natural disasters on their businesses in the survey. They were given 17 options for both positive and negative impacts, and the results show that the top three impacts that respondents identified were lost sales, employee absenteeism, and property damage. The subtleties of the effect on the studied SMEs are displayed in Figure 2. Figure 2 also demonstrates that the respondents have very little, if any, positive impact from natural disasters.

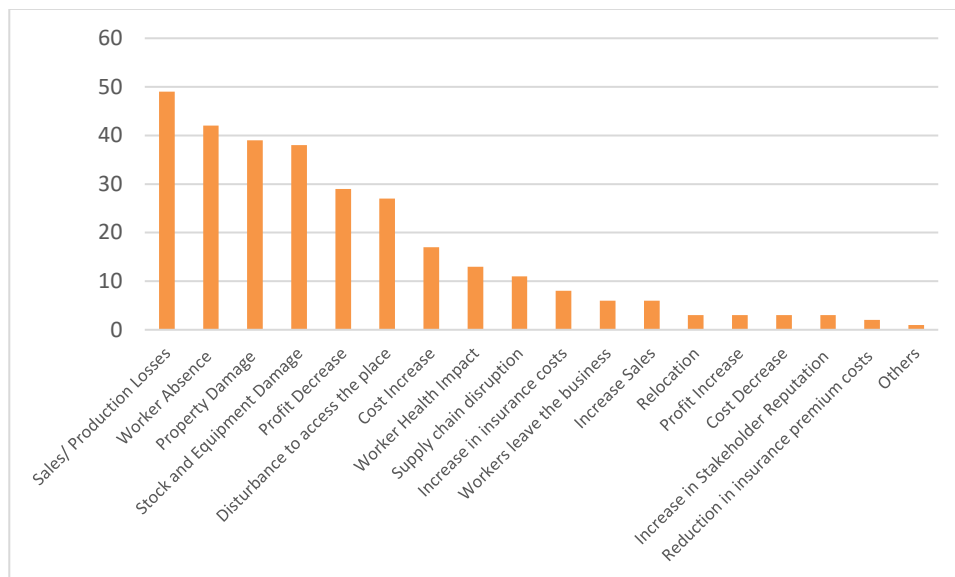


Fig 2. Impact of natural disasters on surveyed SMEs

Additionally, respondents were asked about the natural disasters that affected their businesses. Respondents were given some information about the effect of catastrophic events, mindfulness and alerts they got before catastrophic events in light of Likert Scale firmly concur; agree; not sure; disagree with; and are vehemently opposed.

Table 2. shows the average values for each statement;

Statement	% response with the lowest weight	% response with the highest weight	Mean Weight
Natural disasters are very bad for my business	24,0	-	4,08
I am aware my business is in a natural disaster area	8,5	-	3,75
The information/warning I received was adequate before the natural disaster occurred	1,7	-	3,17
Sufficient waiting time to take action after receiving an alert	-	3,4	2,98

Table 2 shows that a lot of respondents said that natural disasters had a big effect on their businesses. With an average score of 4.08, most of impacted respondents concur with the assertion. Likewise, 15 of the impacted respondents firmly agree with the statement. The meaning of the mean incentive for the subsequent assertion can be utilized to deduce that the respondents know about cataclysmic events in their nearby area. Regardless, the amount of responses that immovably agreed with the third and fourth affirmations generally lessened. The principal clarification that respondents immovably went against was the last excess one about the sufficient holding up time. The way that the assertion got a mean score of under 3, showing that a large number of those influenced were uncertain or differ that they were given adequate opportunity to make the important moves following getting data or admonitions about expected cataclysmic events, likewise demonstrates that a considerable lot of those influenced were uncertain or clashed.

According to the survey, flooding is the natural disaster that has the greatest impact on Indonesian SMEs. Since flooding is a major natural disaster in Indonesia, this finding is expected and is consistent with existing research from a number of local and international institutions. Numerous little and medium-sized organizations (SMEs) announced encountering flooding no less than one time each year, with some encountering it two times or more each year throughout the course of recent years. Nonetheless, the review additionally uncovers an expansion in unexpected catastrophic events like torrents and seismic tremors. Albeit these catastrophic events are not new to Indonesia, they have not recently been broadly examined or viewed as representing a critical danger to SMEs there. Albeit numerous Indonesian little and medium-sized endeavors (SMEs) recognize that the seismic tremor and wave affected their organization, not many of them referred to the extent of the harm.

Indonesian small and medium-sized businesses suffer greatly from natural disasters. Most small and medium-sized businesses (SMEs) agree that they face operational risks like lost sales and production, damage to inventory and equipment, employee absenteeism, and property and business premises damage. Subsequently, they can't maintain their business, which has greater results like income and deals misfortunes. As was mentioned earlier, small and medium-sized enterprises (SMEs) in developing nations like Indonesia operate their businesses with limited capital and financial resources, so any unanticipated event can have significant financial repercussions for them. This finding is consistent with the findings of other studies and indicates that none of the respondents to the survey agree that natural disasters can have a positive impact on their business.

Additionally, many small and medium-sized businesses are aware that their location and other factors make them susceptible to various natural disasters. According to the literature, these SMEs prefer to operate in urban areas along coastal and deltaic areas due to support from infrastructure and logistics. However, many of these regions are reluctant to invest in disaster risk reduction programs because they are impacted by a variety of natural disasters. Again, the main reasons for this are a lack of expertise and financial constraints. This finding is like different examinations that have been talked about in the past writing.

A lot of these small and medium-sized businesses also said that they didn't get enough information or warnings before natural disasters happened. This demonstrates that the methods for providing information prior to and during a disaster remain inadequate. Despite the fact that no specific explanation was provided for this pattern, the significance of the media has been emphasized in [24,25].

Last but not least, participants in this study were questioned regarding the amount of time it took to act upon information or early warnings of natural disasters. The majority of respondents stated that they could not complete the task in the allotted time. Again, this situation demonstrates the need for improved information dissemination from authority bodies like the Regional Disaster Management Agency (BPBD) in Indonesia and the affected areas.

5 Conclusion and Recommendation

In conclusion, numerous nations, including Indonesia, rely heavily on small and medium-sized businesses (SMEs). Social inclusion, local employment, and innovation all depend on these SMEs. SMEs, on the other hand, face a variety of other threats, including catastrophes. According to the survey conducted for this study, SMEs in Indonesia are severely impacted by natural disasters. Due to their limited financial resources and expertise, many of the affected SMEs are unable to address and manage natural disaster risk. Another issue that may exacerbate the situation for SMEs is the inadequate dissemination of information about natural disasters. When dealing with natural disasters, the government or other competent authority should play a more effective role, particularly in terms of providing information, so that all impacted SMEs can take the necessary precautions to reduce their losses prior to the disaster.

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