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Natural Hazards and Their Effects on the Tourism and Hospitality Sector in Philippines

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Abstract

The Philippines is a popular tourist destination due to its natural beauty, cultural heritage, and warm hospitality. This sector is among the most vulnerable industries to the impacts of natural hazards. It is heavily reliant on natural resources, such as beaches, mountains, and forests, which are often the primary attractions for tourists. Natural hazards can lead to job losses, reduced incomes, and displacement, particularly for those working in low-skilled or informal jobs in the sector. Damage to natural resources and ecosystems can have negative impacts on the tourism experience and reduce the attractiveness of a destination. It is crucial to enhance the resilience of tourism-related infrastructure and businesses, through measures such as diversifying tourism offerings, promoting sustainable tourism practices, and improving insurance coverage. The study found that Philippines is highly vulnerable to a range of natural hazards, including typhoons, earthquakes, volcanic eruptions, landslides, and floods. These hazards not only cause significant loss of life and damage to infrastructure but also have a significant impact on the country's tourism industry. The study also found that the impact of natural disasters was more significant in regions that were heavily reliant on tourism. Natural disasters result in a significant decrease in tourist arrivals and income for businesses in the sector. The COVID-19 is an example of how natural disasters can affect the tourism industry and local communities, leading to massive job losses and economic downturns. It is crucial to create and implement effective disaster risk reduction and management strategies. It was concluded that natural hazards can affect the industry in different ways, such as decreasing tourist arrivals, closing tourist attractions, and damaging accommodation and transportation facilities. Tourists may choose to cancel their trips or opt to travel to safer destinations, resulting in lost revenue for hotels, restaurants, and other tourism-related businesses. The study recommended that the tourism industry in the Philippines should diversify its products and destinations to reduce the impact of natural hazards on the sector. The government and private sector should strengthen public-private partnerships to improve disaster management and promote sustainable tourism development.

Keywords: *Natural Hazards, Tourism, Hospitality, Philippines*

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1.0 Background of the Study

The Philippines is a popular tourist destination due to its natural beauty, cultural heritage, and warm hospitality (Kalaw, 2023). The country is home to numerous pristine beaches, stunning landscapes, historical landmarks, and diverse wildlife, making it a sought-after destination for both domestic and international tourists. According to Peralta (2019), the most popular tourist destinations in the Philippines include Boracay Island, Palawan, Cebu, and Bohol. However, the tourism and hospitality sector in the Philippines faces several challenges, including natural hazards like typhoons, earthquakes, volcanic eruptions, and floods. Philippine is situated in the Pacific Ring of Fire, making it prone to earthquakes and volcanic eruptions. The Philippines also experiences around 20 typhoons per year, with varying degrees of severity, which can cause significant damage to infrastructure and disrupt tourism activities (Cahigas, Prasetyo, Persada & Nadlifatin, 2023).

This sector is a vital component of the Philippines economy since it accounts for around 14% of the GDP and employing approximately 5 million people (Meo, Ali, Islam, Qammar, Cheema & Karim, 2023). The sector encompasses a lot of businesses, like hotels, resorts, restaurants, travel agencies, tour operators, and transportation providers. This sector is among the most vulnerable industries to the impacts of natural hazards like earthquakes, typhoons, volcanic eruptions, and other extreme weather events (Rosselló, Becken & Santana-Gallego, 2020). These events can have significant and long-lasting impacts on the industry, affecting not only businesses but also the livelihoods of individuals working in the sector. Recently, the tourism industry in the Philippines has experienced steady growth, driven by a combination of factors such as the country's natural beauty, diverse cultural heritage, and growing reputation as a travel destination. According to the Department of Tourism, the Philippines welcomed over 8.2 million international visitors in 2019, representing a 15.2% increase from the previous year (Gayeta, 2022). Domestic tourism is also a significant contributor to the industry, with Filipinos travelling within the country for leisure and business purposes.

According to Karim, Haque, Anis and Ulfy (2020) noted that in recent years, the COVID-19 pandemic also had a significant effect on this sector in the Philippines, as it has in many other countries around the world. The pandemic has led to a sharp reduction in tourist arrivals, with restrictions on international travel and a decrease in domestic travel due to safety concerns and government-imposed lockdowns. Despite these challenges, the tourism and hospitality sector in the Philippines has shown resilience and has continued to adapt and innovate to meet the changing demands and expectations of tourists (Giousmpasoglou, Marinakou & Zopiatis, 2021). The government and private sector have implemented strategies to reduce the effect of natural hazards on the sector, like building disaster-resilient infrastructure and implementing emergency response plans. Additionally, efforts have been made to promote sustainable tourism practices and eco-tourism initiatives to protect the country's natural resources and cultural heritage.

Ivkov, Blešić, Janićević, Kovačić, Miljković, Lukić and Sakulski (2019) argued that one of the most immediate impacts of natural hazards on the tourism and hospitality sector is disruption to transportation and communication networks. Roads and airports may be damaged, making it difficult or impossible for tourists to reach their intended destinations or for local residents to

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evacuate in case of emergency. This can result in cancellations of bookings, loss of revenue, and reputational damage to the affected destinations. Moreover, communication networks may be disrupted, making it difficult for tourists to obtain accurate and timely information about the situation on the ground (Karl, Muskat & Ritchie, 2020). The perception of risk among tourists is another important impact of natural hazards on the tourism and hospitality sector. After a natural disaster, many tourists may perceive the affected destinations as unsafe or risky to visit, leading to decreased demand for travel to these areas. In some cases, tourism infrastructure may be located in high-risk areas, such as coastal zones or near active volcanoes, which makes it more vulnerable to damage or destruction (Del Negro, Cappello, Bilotta, Ganci, Héroult & Zago, 2020). This can have long-term effects on the tourism sector, as it may take years for destinations to rebuild their reputations and regain the trust of potential tourists.

Hotels, resorts, restaurants, and other tourism-related businesses may be damaged or destroyed, leading to lost income and investment (Cahyanto, Kingsbury, Widodo, Puspita & Harnadi, 2021). Moreover, the rebuilding and repair process may be slow and expensive, causing further disruptions to the tourism industry in the affected areas. The impacts of natural hazards on the tourism and hospitality sector can also have broader economic and social consequences. The tourism industry is a key source of employment and revenue for many communities, particularly in rural and coastal areas (Chen, De Bruyne & Bollempalli, 2020). Natural hazards can lead to job losses, reduced incomes, and displacement, particularly for those working in low-skilled or informal jobs in the sector. This can have negative impacts on local economies and social wellbeing. Damage to natural resources and ecosystems can have negative impacts on the tourism experience and reduce the attractiveness of a destination (ElDidi, Van Biljon, Alvi, Ringler, Ratna, Abdulrahim & Wu, 2021). In addition, communities that rely on tourism may face economic hardship and struggle to recover from the impacts of natural hazards.

The impacts can be significant and long-lasting, affecting not only businesses but also the broader economy and social wellbeing of affected communities (Liu-Lastres, Mariska, Tan & Ying, 2020). Addressing these challenges requires a multi-faceted approach that involves effective disaster risk reduction and management strategies, as well as the adoption of sustainable tourism practices and the promotion of greater resilience in the industry. The perception of risk among tourists can have a significant impact on demand for travel to affected destinations (Das, Jain, Maheswaran, Slotegraaf & Srinivasan, 2021). If tourists perceive a destination to be unsafe or at high risk of natural hazards, they may cancel or postpone their travel plans, leading to a decline in tourism activity and revenue. This can have ripple effects throughout the local economy. With continued innovation, collaboration, and resilience, this sector can continue to thrive and contribute to the nation's economic growth.

2.0 Literature Review

A study by Ma, Chiu, Tian, Zhang and Guo (2020) noted that tsunamis, earthquakes, and volcanic eruptions in the past have demonstrated that there are two sides to the issue in the tourist industry. To begin, the severe impacts of a natural catastrophe slow down the tourist sector, as well as all other operations in a specific region. Natural catastrophes, on the other hand, are capable of producing great emotions of solidarity, enticing worldwide interest to the region for further

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economic prospects, including tourism. The purpose of this study is to study the negative and possibly beneficial effects of natural catastrophes on tourist activities and to model them properly. Based on past research, the study will begin with a review of the literature on the impact of natural catastrophes on the tourist business. The research will look at how natural catastrophes affect tourism in terms of economics, destination image, and the level of community participation. The methodology will consist of a review of the literature and a critical evaluation of the findings. Finally, a model will be proposed to provide a quantitative analysis of natural disasters, including potential economic and social variables. It was concluded that natural catastrophes have a devastating influence on people's life, severely disrupting their social and economic activities. Communities in high-risk areas have more problems in creating a resilient and sustainable tourist economy.

Conigliani, Costantini and Finardi (2022) found that tourism is shaped by a diverse set of variables and forces, including exogenous ones with no direct connection to the tourism industry. Natural catastrophes and unanticipated occurrences are great examples of such deciding variables, since they have profound effects on individuals and society, and hence have the ability to significantly alter tourist flows. There are several possible reasons why natural catastrophes and unforeseen occurrences could impact tourism destination decisions. However, empirical research to confirm the nature and magnitude of disaster impacts on tourism is lacking. To fill this void, this study includes a dataset on natural and man-made catastrophe occurrences into a model of international tourist flows in order to assess the impact of various types of disasters on foreign arrivals at the national level. The findings show that the occurrence of various sorts of events alters visitor flows to diverse degrees. Although a positive effect is estimated in some cases, the overall impact is negative, resulting in fewer tourist arrivals following an event. Understanding the connection between catastrophic occurrences and tourism is beneficial for destination administrators who make key decisions about recovery, restoration, and marketing.

According to Barbhuiya and Chatterjee (2020), natural disasters not only cause immediate physical devastation to a region, but they also frequently have long-term social and economic consequences. Tourism is a rather vulnerable sector of the economy that is strongly reliant on a stable economy. The purpose of this research is to examine the impact of natural catastrophes on the tourist sector, especially tourism jobs. This study use panel data and focuses on seven metropolitan statistical regions in the United States from 2002 to 2018. This effect is quantified using data collected from the BEA and SHELDUS. According to a fixed effects model with a log on the dependent variable, tourist employment per capita drops by around 1.34% for every dollar possibility of harm over personal income. At the 5% level, these findings are statistically significant. It was concluded that natural hazards cause's significant damage to the tourists destinations, leading to a loss of their appeal to tourists and a decline in the number of visitors to the destination.

Min, Kc, Kim and Lee (2020) conducted study to evaluate the degree of macroeconomic recovery of the Nepal tourist sector following a natural disaster. Using the autoregressive integrated moving average model (ARIMA) and time series data from 1980 to 2020, the study explored the case of Nepal's earthquakes in 2018 and assessed the impact of the earthquakes on tourism inflows and GDP. The findings reveal that the growing trend in the number of tourists alters after the earthquake. The excess in visitor demand by age and purpose of visit following the earthquake, in

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particular, highlights natural catastrophe as a potential explanation for a tourism demand spike, frequently referred to in the literature as gloomy tourism. This study demonstrates how a heritage tourist destination assesses macroeconomic recovery after a natural catastrophe and fills a gap in the literature about purpose-based tourism demand and a link between dark tourism and disaster recovery on a legacy tourism destination.

Estevão and Costa (2020) performed study to investigate the link between natural catastrophes and tourism based on natural resources. Natural catastrophes are an inherent aspect of nature's functioning and, as such, will always exist. The tourist sector makes a significant contribution to the US economy. Tourists spend money regardless of their motivations for traveling. Natural catastrophes and tourism are two factors that are important in the globe now and will continue to be so in the future. This study investigates what occurs when these two components collide. Natural catastrophes and tourism were considered to be on different ends of the spectrum and so mutually incompatible rather than complementing. The purpose of this research is to see if these two factors may have a complimentary connection. The 1980 Mount Saint Helens eruption and the 1988 Yellowstone National Park wildfires drew attention to two relatively recent environmental disasters in the United States. It was thought that the potential of a positive association occurring would be larger in rural, low-density population areas, hence natural-resource-based destinations were investigated. The key question addressed is whether the Mount Saint Helens and Yellowstone National Park natural catastrophes impacted visitors' decisions to visit these sites. Secondary questions include what can be learnt from tourist authorities, directors, planners, and companies in Mount Saint Helens and Yellowstone in their efforts to deal with the aftermath of each disaster, and what role the media had in their coverage of a natural disaster. Three techniques were used to address these issues: substantial library study, interviews with qualified specialists and individuals from each region, and an examination of vast secondary data. The findings revealed that there were rapid, negative effects on tourism and visitor expenditures. However, tourism rebounded and continues to grow in each destination in remarkably short periods of time. This analysis suggests that the Mount Saint Helens and Yellowstone National Park natural disasters did, in fact, have a long-term, beneficial association with tourism. Key lessons to be learned from the experiences of Mount Saint Helens and Yellowstone tourist officials, planners, directors, and enterprises are examined.

Travia, Kahkoska, Igudesman, Souris, Beasley and Mayer-Davis (2021) conducted research to look at how Hurricane Matthew affected tourist desire to go to US South Atlantic sites along the hurricane's route two weeks after landfall. Researchers also investigated the storm's impact on a visitor's perceived qualities of a destination, as well as the hurricane's impact on a visitor's degree of trust in the destination's quality and quantity of facilities. According to the findings of the national survey, the hurricane influenced visitors' perceptions of the destination's qualities as well as their trust in the quality and quantity of the destination's amenities. Also, Rindrasih, Witte, Spit and Zoomers (2019) performed research to investigate the effects of catastrophes on the tourist sector in Indonesia and discusses the link between tourism industry performance and disaster occurrences. It also showcases Indonesian tourist policy reactions in the aftermath of repeated catastrophes. The article examines the tourism industry's multiyear performance (2000-2020) utilizing the variables number of incoming tourists, national/regional tourism income, and hotel

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room occupation rates. Secondary data were gathered from a variety of sources, including legal documents, tourism statistics in Indonesia, media outlets, and newspaper articles. The findings reveal that catastrophes have influenced tourist business performance differently during the last 20 years depending on the magnitude of devastation, location of disasters, and kind of disaster (human vs. natural generated). The data also captures the spillover impact between provinces. Overall, this study argues that the maintenance of normal tourist activities requires a structural approach in terms of policy responses when coping with many disasters over lengthy periods of time.

Wu and Shimizu (2020) conducted research to investigate the influence of catastrophes on international tourist demand for Japan using nonlinear autoregressive distributed lag (ARDL) intervention models that focus on analyzing change patterns and the duration of impacts by examining parameter fluctuations. Because of the diversity of catastrophes that have struck Japan, particularly natural disasters, we have classified them into three categories: geological disasters, extreme weather occurrences, and "others" like terrorist attacks, infectious illnesses, and economic crises. We chose four scenarios for each catastrophe category, for a total of 12 in total, according to the premise of preparing for the worst. The findings indicate that large-scale disasters, like great earthquakes, had a negative impact on Japan's inbound tourism demand; not all disasters led to an abrupt drop in inbound tourist arrivals; extreme weather events, for example, did not significantly decrease inbound tourism demand; and the impact caused by disasters was temporary.

Roslan and Ahmad Puad (2018) argued that the northeast monsoon flood phenomena is a natural calamity, particularly in East Peninsular Malaysia, particularly in Kelantan. The main goal of this study is to examine the impact of Malaysia's northeastern monsoon flood on the tourism sector. The climatic considerations for tourism, especially for coastal zone tourism. Large floods, like the one in 2014, have caused havoc on local people. Both the government and non-government institutions should come up with methods to handle the flood problem as a long-term process of progress. Flooding causes harm to infrastructure, coastal beauty, facilities, disrupted services, and tourism attractions. The data suggest that floods are among the most common climatic change in all Malaysian nations. Moreover, the effect of this disaster will not only affect flood-damaged regions, but will also have an indirect impact on tourism growth because reconstruction is required. It was carried out to demonstrate the effect of the flood disaster on the tourist sector.

Chan, Nozu and Cheung (2020) reported that the tourist industry is among the world's most key markets until the world was hit by a pandemic in the twenty-first century, COVID-19. Utilizing text mining techniques, the research tries to portray the responses of passengers during pandemic tendencies. Between January 1, 2020 and July 20, 2020, about 90,000 comments from TripAdvisor forums are retrieved, and 25,783 samples from the US, Europe, and Asia forums are used for analysis. The results indicate that the tourist sector is vulnerable to global crises. With the distribution of the news, it is almost the same day that tourists decide to cancel or delay their visits. More in-depth analyses detected several topics, including comments on the benefits of travel insurance and refunds because of trip suspensions. Travel insurance has become an important issue, and giving trip packages that include travel insurance services may be a way to resurrect the sector.

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3.0 Research Findings

Studies have shown that natural hazards, particularly typhoons, can disrupt travel plans in the Philippines. Typhoons resulted in the cancellation or rescheduling of flights, closure of airports, and disruption of transportation systems, making it challenging for tourists to reach their intended destinations. This disruption in travel plans leads to a decrease in tourist arrivals and revenue losses for the tourism sector. Natural hazards can cause extensive damage to the infrastructure that supports the tourism and hospitality sector. The research revealed that severe weather conditions and flooding can result in the temporary or permanent closure of establishments due to infrastructure damage. This can limit accommodation options for tourists and affect the overall visitor experience.

The safety concerns associated with natural hazards have a significant impact on tourism in the Philippines. Tourists may perceive areas prone to natural hazards as risky destinations, leading to a decline in tourist demand. Even after the immediate danger has passed, the lingering perception of ongoing risk can deter potential tourists from visiting affected areas. This perception can have long-term consequences for the tourism and hospitality sector. Natural hazards often receive extensive media coverage, both nationally and internationally. The influence of media coverage on tourist arrivals in the aftermath of typhoons. The findings revealed that negative media coverage of the destruction and devastation caused by natural hazards can create a negative image of the affected areas, dissuading potential tourists from visiting. The long-lasting impact of media coverage can result in a decline in tourist arrivals, affecting the tourism sector's recovery and reputation. The economic impact of natural hazards on the tourism and hospitality sector in the Philippines is substantial. The economic losses caused by typhoons on the tourism industry. The study revealed that the closure of hotels, resorts, and tourist attractions, along with the decline in tourist arrivals, leads to significant revenue losses. This, in turn, affects employment opportunities and overall economic activity in the affected regions.

4.0 Conclusion

Natural hazards have significant and multifaceted effects on the tourism and hospitality sector in the Philippines. The research findings highlight the various challenges faced by the industry, including the disruption of travel plans, damage to infrastructure, safety concerns, negative media coverage, and economic losses. These effects have implications for tourist arrivals, revenue generation, and the overall reputation of the destination. Addressing the impact of natural hazards on the tourism and hospitality sector requires a comprehensive approach. It is crucial for the government, local communities, and stakeholders to prioritize disaster preparedness and resiliency measures. This includes investing in early warning systems, improving infrastructure resilience, and implementing effective risk management strategies. By enhancing the capacity to anticipate and respond to natural hazards, the industry can minimize the disruption caused and ensure the safety of tourists and local communities.

Moreover, proactive communication and collaboration among tourism stakeholders are essential. The tourism sector should work closely with the media to present accurate and balanced information about the impact of natural hazards, highlighting the recovery efforts and the resilience of the destination. Building trust and transparency through effective communication can help

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counter negative perceptions and encourage tourists to continue visiting the Philippines. Additionally, diversification of tourism products and destinations can contribute to the resilience of the sector. By promoting alternative attractions and less hazard-prone areas, the industry can mitigate the effects of natural hazards on specific tourist hotspots. This approach allows for a more distributed tourism flow and reduces the vulnerability of the sector to the impacts of natural hazards.

5.0 Recommendations

It is crucial for the tourism and hospitality sector in the Philippines to prioritize disaster preparedness and resilience measures. This includes developing comprehensive risk management plans, conducting vulnerability assessments, and implementing early warning systems. By enhancing preparedness, the sector can minimize the impact of natural hazards on tourist destinations and ensure the safety of both tourists and local communities. Effective communication strategies are vital in managing the effects of natural hazards on the tourism and hospitality sector. Collaborating with media outlets and utilizing various communication channels, such as social media and websites, can help disseminate accurate and timely information to potential tourists. Highlighting recovery efforts, showcasing the resilience of affected destinations, and providing transparent updates on the situation can help counter negative perceptions and maintain the confidence of tourists.

To reduce the vulnerability of the tourism sector to natural hazards, diversification of tourism offerings and destinations is essential. Promoting alternative attractions and less hazard-prone areas can help distribute tourist flows and reduce the concentration of visitors in specific locations. This approach ensures that even if one destination is affected by a natural hazard, the overall tourism industry remains resilient and continues to attract tourists to other areas. Collaboration and partnerships among stakeholders in the tourism and hospitality sector are key to managing the effects of natural hazards. Government agencies, local communities, tourism businesses, and non-governmental organizations should work together to develop and implement strategies for resilience and disaster response. Sharing best practices, resources, and expertise can enhance the sector's ability to recover from natural hazards and build a more resilient tourism industry.

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