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EARTHQUAKES AND BUSINESS RECOVERY STRATEGIES: A SYNTHESIS AND RESEARCH AGENDA

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Abstract

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This study presents the results of a systematic review of the literature on business recovery strategies after earthquakes. Business recovery strategies represents an important research area that has generated a substantial body of knowledge due to devastating earthquakes occurred in the worldwide. Therefore, the authors employ a systematic literature review method to delve into the existing body of literature. A total of 66 articles on this subject published in the period between 1998-2023 were examined in the review. As the main contribution, this study integrates prior fragmented research on business recovery by categorizing studies based on common themes. Thus, the research draws a picture of the literature on business recovery strategies after earthquakes by outlining its characteristics. After identifying knowledge gaps in the literature, the authors offer future research avenues for scholars with high contribution potential.

Keywords: Business recovery strategies, Earthquakes, Systematic literature review

Jel Codes: H12, M10, Q54.

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1. Introduction

On February 6, 2023, two earthquakes with magnitudes of 7.7 (focal depth=8.6 km) and 7.6 (focal depth=7 km) occurred at 04:17 and 13:24 Türkiye time, in Pazarcık and Elbistan districts of Kahramanmaraş. On February 20, 2023, an earthquake with a magnitude of 6.4 occurred at 20:04 Turkish time in Yayladagi, Hatay. These earthquakes influenced several cities as Kahramanmaraş, Hatay, Adıyaman, Osmaniye, Gaziantep, Şanlıurfa, Malatya, Diyarbakır, Adana, Kilis and Elazığ. The total population of the 11 earthquake-affected provinces was approximately 14 million in 2022. As a result of the earthquakes, more than 48 thousand people lost their lives, more than half a million buildings were destroyed, communication and energy infrastructure were damaged and significant material losses occurred (Presidency of Strategy and Budget, 2023).

The aforementioned cities and its nearby areas experienced repeated and significant disruptions due to frequent aftershocks throughout 2023. Following disastrous earthquakes, businesses have found themselves struggling with unprecedented challenges that threaten their business continuity. The aftermath of earthquakes imposes a myriad of obstacles, ranging from physical damages to economic consequences, thereby underscoring the urgency of comprehensive business recovery strategies. Considering the devastating effects of earthquakes on businesses, priority should be given to effective recovery strategies to ensure their resilience, continuity, and successful adaptation in the face of such disasters.

Business recovery is generally assessed by comparing the post-disaster state either against pre-disaster conditions or against achieving a stable state with reduced vulnerabilities (Platt et al., 2016). Business recovery mainly explores the factors that might influence the extent of damage experienced by businesses and enables them to allocate resources and efforts, both before and after disasters (Brown et al., 2015). Studying the impacts of earthquakes on businesses is crucial in developing effective mitigation strategies for refining damage assessments, making well-informed decisions regarding recovery processes, and increasing resilience for both businesses and communities (Whitman et al., 2014). Resilience refers to “the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks” (Walker et al., 2004: 2). Through recovery initiatives, businesses can enhance their preparedness, mitigate future disaster-related risks, and build a more robust foundation, thereby improving their overall resilience against potential earthquake impacts.

Business recovery has received increased attention from scholars due to devastating earthquakes that have repeatedly struck various regions across the world. Some studies have shown the impacts of an earthquake on organizations after a disaster, while several research have focused on existing preparedness measures of businesses, and determinants of business recovery. However, there has been no attempts to consolidate and integrate the literature on business recovery in a systematic way. Given the catastrophic 2023 earthquakes in Türkiye, and major disasters in the worldwide in the last two decades, this review aims at integrating the literature and providing important insights for future studies.

In the present paper, the authors conducted a systematic literature review and sought to answer the following specific research questions:

- (1) What are the key characteristics of the literature on business recovery strategies after earthquakes?
- (2) What are the gaps in this literature?
- (3) What are the future research avenues with high contribution potential?

2. Methodology

This study follows the systematic literature review (SLR) methodology described by Tranfield et al (2003). The systematic literature review method offers two types of advantages to researchers. First, it is a transparent process that can be replicated and validated by other scholars (Denyer et al., 2008). Second, it allows comparability of findings at different time points. SLR has been established as a commonly used method in business and management studies due to its many advantages (Petticrew & Roberts, 2008).

The first step in a SLR is setting conceptual boundaries according to the research objectives. In this regard, business recovery is defined as the process that restores individual businesses and their ecosystems to their former situation before the happening of a destructive phenomenon. Since this study is interested in recovery, the authors exclusively focused on the literature that covers the time horizon after earthquakes happen. Consequently, studies on the preparedness before earthquakes were excluded.

Secondly, we set out to form a comprehensive database of articles on business recovery after earthquakes. We excluded conference papers and grey literature to single out journal articles because they are subject to more meticulous evaluation procedures. Next, we identified search terms that are congruent with the multifaceted nature of disaster stricken economic structure. We searched for the articles that contained the word “earthquake” together with two

other sets of words. The first set includes the words “business”, “sme”, “enterprise”, “sector” and “industry”. The second set includes “recover*”, “resilien*” and “adapt*”. We ran this search through all the social sciences databases of Scopus. We limited document types to research articles and reviews published in English. As a result, the initial search yielded 252 results. Based on the analysis of titles, research themes, and key findings in the abstracts of these articles, we identified and selected the articles relevant to the research topic. In this respect, articles empirical and review articles focusing on the aftermath of the earthquakes and addressing recovery strategies within a business context were included. For example, if an article investigates recovery activities for urban development but lacks explicit reference to business context, we exclude it from the review. Through an iterative process, we obtained the final sample which comprises 66 articles published in the period between 1998-2023. This process increases the rigor of the review by providing evidence to support arguments that are directly related to the research questions. Simultaneously, it enhances the objectivity of the evaluation while mitigating limitations stemming from subjective assessments (Tian et al., 2018).

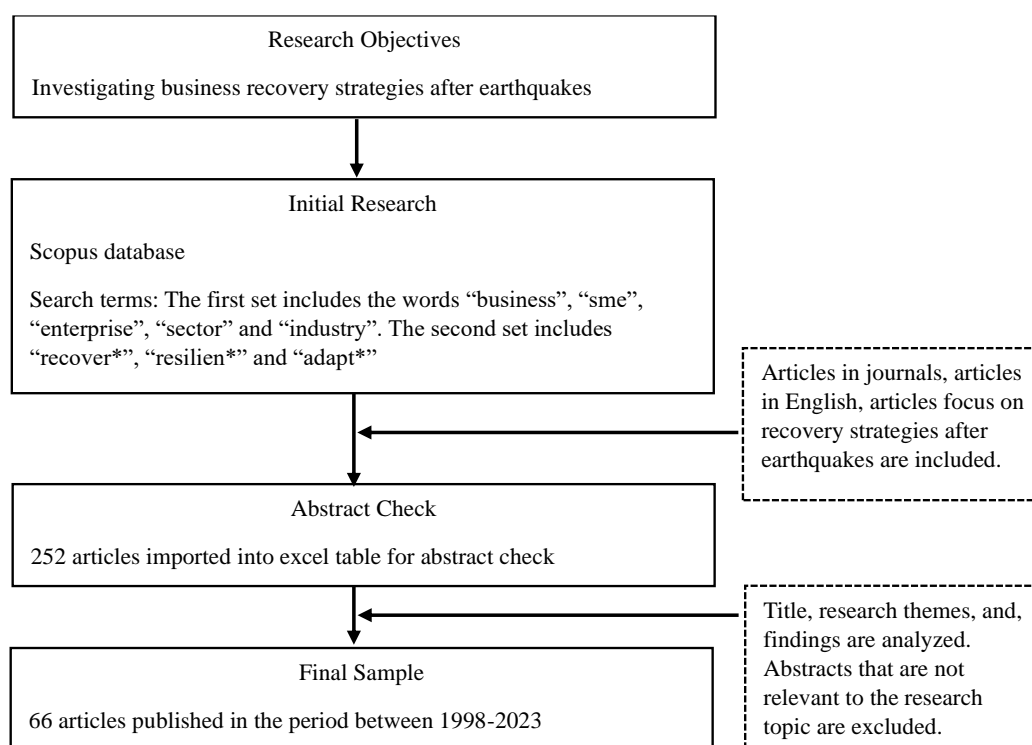


Figure 1.
Literature Review Process

3. Findings

In this part, we draw a general picture of the literature on business recovery strategies after earthquakes by presenting its characteristics.

First of all, we provide general information on our sample. The findings show that International Journal of Disaster Risk Reduction has the highest number of articles (n=13). The other prominent journals in terms of number of articles are Sustainability (Switzerland) (n=7) and Disasters (n=5). Second, we demonstrate the number of articles according to years in Figure 1. A rising trend after 2017 draws attention as 2021 being the year with highest number of articles.

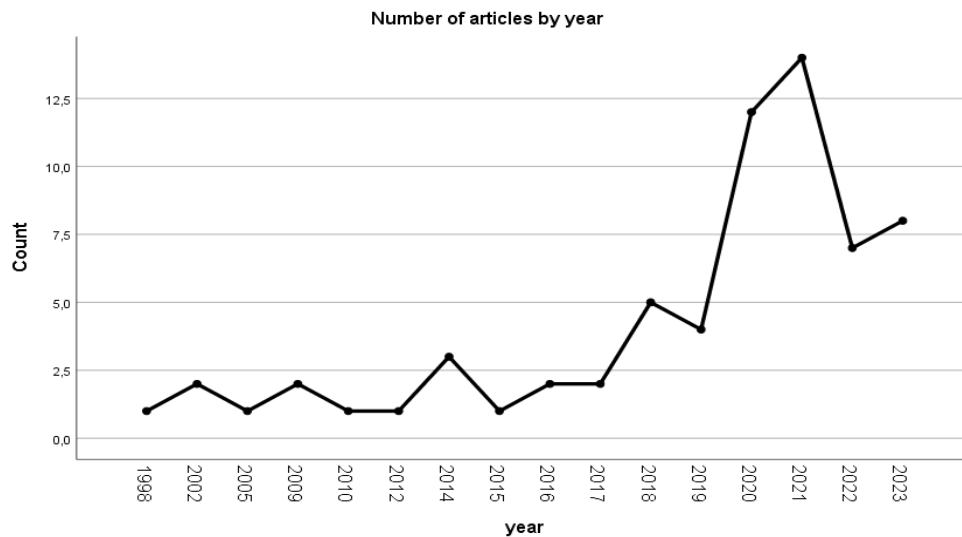


Figure 2.

Number of Articles Published over the Years

Thirdly we focus on research designs that were utilized in the sample. As it is shown in Figure 2, case study (n=28) and cross-sectional (n=20) designs are the most commonly preferred methodological frameworks in the sample. On the other hand, critical (n=2) and mixed method (n=4) studies are quite rare despite their potential to advance the literature.

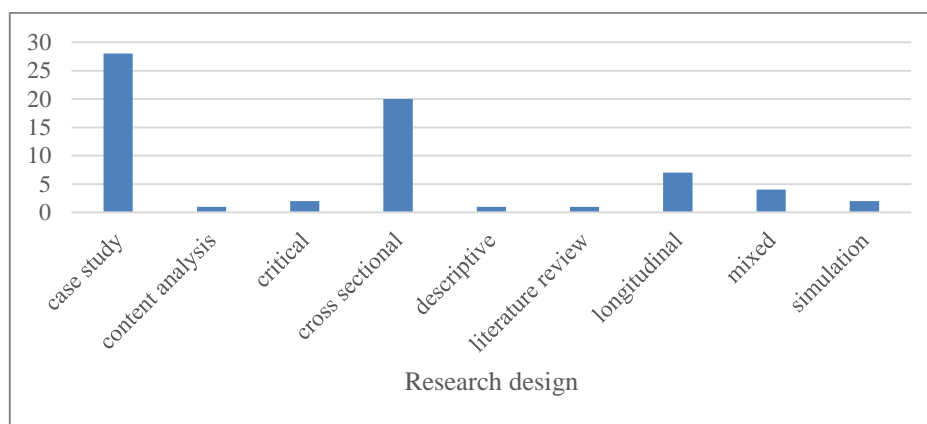


Figure 3.
Number of Articles by Research Design

Fourth, we group the articles according to the country context in Figure 3. The studies in our sample mostly focused on Japan (n=17) and New Zealand (n=15). China and Indonesia are other countries that set important contexts for business recovery studies. Although its location in the intersection of active fault lines and its history of catastrophic earthquakes, Türkiye could not draw sufficient attention from the scholarly community.

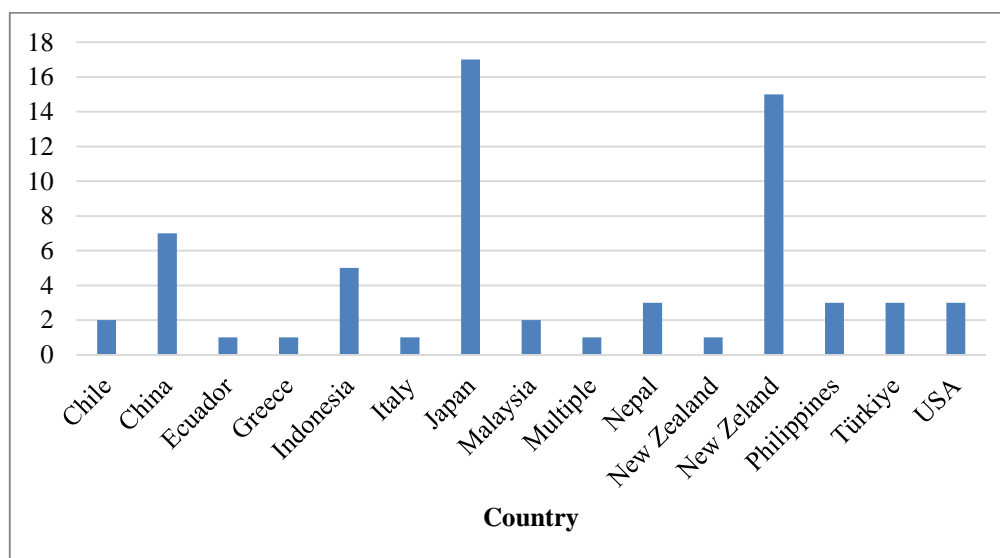


Figure 4.
Number of Articles by Country Context

Fifth, we checked whether the articles in our sample focused on business recovery in certain industries. We classified the articles that do not name certain industries as articles on multiple industries. Figure 4 shows that the tourism industry is by far the main sector that business recovery studies were conducted (n=27). Other specific sectors were largely neglected.

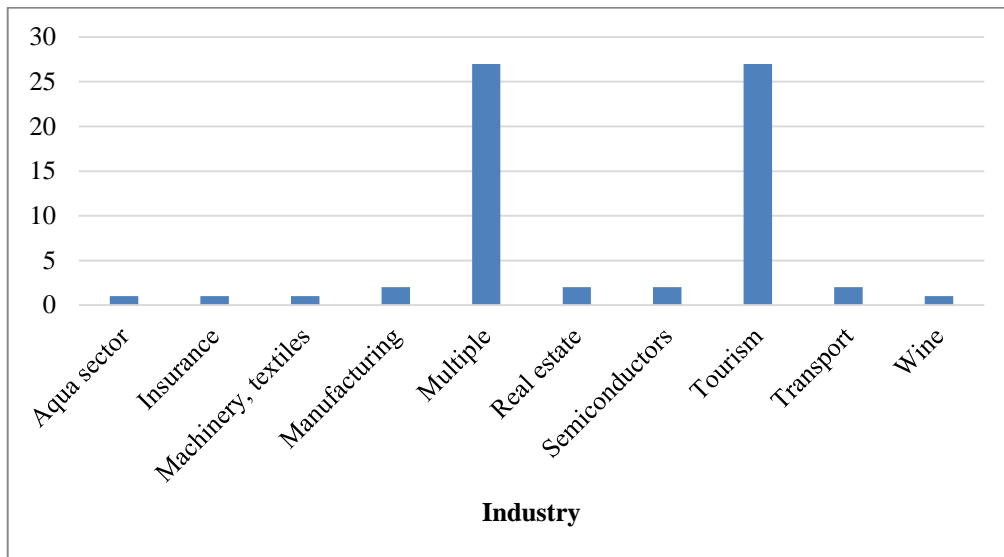


Figure 5.

Number of Articles by Industry Contexts

After providing descriptive characteristics about the literature, we classify the articles by their research topics in Table 1. With a thematical focus, we summarize the main findings of the literature on business recovery strategies after earthquakes. According to the findings, assessment studies lead the way among research topics (n=18). This group of studies generally focus on situation assessment after earthquakes to determine a recovery path. Articles on destination resilience follow this group as the second most crowded group (n=17). In this group, business resilience and recovery in tourism destinations are the main considerations. Organizational resilience (n=12), recovery performance (n=10), sectoral differences in recovery (n=4), urban resilience (n=3) and critical approaches (n=2) constitute the other topic groups in the sample.

Table 1.

Research Topics and Main Findings

Main Topic	Sub-Topics	Findings	Representative Studies
Destination resilience	Governance of collaboration	Local organizations have the potential to utilize social connections to promote business endeavors that restore economic stability to communities affected by disasters.	Alifa & Nugroho (2019); Kamarudin et al. (2019); Chan et al. (2020b); Cerquetti & Cutrini (2021); Nguyen et al. (2021); Chan et al. (2022)
		The recovery of a company heavily relies on factors such as a strong belief in bouncing back, support from family and relatives, a skilled local workforce, diversification of household incomes, and minimal damage.	
The development of products, enhancement of reputation, enrichment of local knowledge, and establishment of connections between individuals and locations all contribute to the sustainable growth of tourism.			
The abundance and comprehensiveness of grassroots cultural experiences that emerged after the earthquake can be seen as a manifestation of the social connections that aid in the economic recovery following such disasters.			
By fostering collaboration between businesses, local government, and the community, breweries were able to mitigate many of the adverse effects caused by the 2011 earthquake.			
		Post-disaster recovery can lead to the creation of new products, improved reputation, increased local knowledge, and the establishment of connections between individuals and locations, all of which foster sustainable tourism development based on long-term visions and strategies.	
		To enhance the resilience of destinations, effective cooperation between local stakeholders, the private sector, and non-governmental organizations is crucial.	
	Business diversification	Achieving resilience and revitalizing regional economic activity after natural disasters heavily relies on the diversity present in domestic tourism and business.	Zhang et al. (2021)

Environmental governance	The matrix of new and existing resources and users encapsulates the robustness of socio-ecological systems. Within this matrix, there are four possibilities for resource convergence: persistence, adaptability, changeability, and readiness.	Bui & Saito (2022)
Industrial policy	Following the earthquake, the government implemented efficient industrial policy measures that bolstered the resilience of tourism firms in Sichuan.	Xu et al. (2023)
Marketing strategy	Effective collaboration and communication among government agencies plays a crucial role in the response and recovery of the tourism industry. It is imperative for stakeholders to persistently prioritize the nurturing and enhancement of these relationships.	Orchiston & Higham (2016)
Volunteer tourism	<p>The restoration of Nepal's damaged infrastructure following the earthquake was greatly aided by volunteer tourism. However, as the affected areas recover, the number of volunteer tourists decreases. Therefore, it is crucial to develop support measures that can assist the local tourism sector in attracting new visitors.</p> <p>To maximize the potential of volunteer tourism in post-disaster scenarios, it is essential to establish a well-defined framework. This framework will ensure that communities receive all the necessary support to restore their destinations and community lifestyles, thus preventing them from missing out on any form of assistance.</p>	Beirman et al. (2018); Fukui & Ohe (2020); Wearing et al. (2020)
Positive impact of earthquake	The occurrence of the earthquake resulted in the creation of captivating natural landmarks and enticed numerous visitors to a village affected by the catastrophe. The significant surge in tourist arrivals in Melangkap subsequent to the geological calamity served as the catalyst for the development of ecotourism in the area.	Jafar et al. (2022)
Strategic planning	<p>In order to facilitate the recovery process after a disaster, it is essential to implement a comprehensive set of strategies. These strategies should encompass various aspects such as (a) establishing effective channels of communication, (b) efficiently managing the limited resources at hand, (c) fostering collaboration among key stakeholders, and (d) demonstrating unwavering determination.</p> <p>To ensure a successful recovery following an earthquake, it is imperative to adopt a range of strategies. These strategies should encompass (a) garnering support from higher levels of government, (b) implementing new marketing campaigns to raise awareness among different customer segments about the availability of the affected destination, (c) developing innovative tourism products, (d) targeting major production markets, (e) engaging in effective communication with the media, and (f) forging alliances and collaborations with industry partners.</p>	Orchiston (2013); Orhan (2016b); Xu & Grunewald (2009); Zhang et al. (2009); Huang et al. (2018)

Urban resilience	Governance of collaboration	<p>Two initiatives were undertaken during the reconstruction phase to transform the region into commercial establishments. One was spearheaded by a prominent local merchant, while the other was led by a small-scale local retailer with the backing of the community.</p> <p>Several obstacles to urban revitalization and reconstruction have been recognized, such as inadequate capabilities in handling interactions between the private and public sectors, a dearth of cooperation and collective drive, and a deficiency in visionary leadership and enduring partnerships.</p>	Komaki et al. (2021); Banwell & Kingham (2023)
	Social capital	<p>The level of resilience in towns differs based on specific attributes. The presence of businesses and social capital contribute to enhancing the resilience of towns in the aftermath of earthquake disasters.</p>	Gutiérrez (2021)
Organizational resilience	Resource dependencies	<p>Businesses that did not experience significant damage incurred substantial losses in terms of customers and revenue due to the destruction of neighborhoods and disruption of entire commercial districts.</p> <p>In times of crisis, resilience tools can play a crucial role. These tools include access to financial resources, suppliers, customers, and product markets that are geographically dispersed. Additionally, family and social support networks, both formal and informal insurance, rental status that allows for ease of movement, flexible employment arrangements, access to political and administrative mechanisms, and trade union membership can provide access to resources and political power.</p> <p>When it comes to medium-sized and large companies, employees are often the ones who receive restructuring assistance. On the other hand, small businesses heavily rely on family support as their most important resource.</p> <p>The size of a company directly impacts its ability to bounce back quickly. Smaller companies have the advantage of being able to return to their original production level at a faster pace. Furthermore, receiving grants can significantly improve the rate of recovery. The more subsidies a business receives, the quicker its recovery process.</p> <p>In Indonesia, similar businesses often come together to support each other during times of crisis. This practice of industrial clustering can be instrumental in providing the necessary support for businesses to recover effectively.</p>	Chang & Falit-Baiamonte (2002); Sapountzaki (2005); Powell (2010); Resosudarmo (2012);
	Employee resilience	<p>Employee resilience has a positive effect on the overall resilience of an organization. Additionally, the psychological resilience of each individual plays a crucial role in this regard. The psychological resilience of employees indirectly contributes to the organizational resilience by influencing their own resilience.</p>	Prayag et al. (2020)

	Managerial characteristics	The age of the manager, previous experience with disasters, financial situation before the disaster, duration of business closure, and reliance on support from family and friends were all factors that showed a positive correlation with the ability of a disaster-affected business to continue operating after an earthquake. On the other hand, there was a negative association found with the size of the company.	Li et al. (2021)
	Knowledge management	Knowledge management plays a crucial role in enhancing business adaptability and minimizing losses. Furthermore, mitigation efforts greatly contribute to boosting business adaptability, reducing losses, and facilitating business recovery. The interplay between business adaptability, losses, and recovery also holds substantial influence on overall business resilience.	Iqbal et al. (2023)
	Infrastructure	These organizations showcased a significant reliance on constructed infrastructure and highlighted the significance of stringent building regulations and the adoption of data management alternatives like cloud computing as a potential enhancement. The organizations also expressed a strong dependence on emergency services. Exploring alternative backup solutions is another aspect that offers potential for improvement in various domains.	Whitman et al. (2014)
	Dynamic capabilities	Family enterprises utilize a range of tactics to enhance their dynamic capabilities and bounce back, such as knowledge dissemination, ensuring consistent financial assets, fostering infrastructure growth, employee skill development, improved marketing approaches, and a steadfast commitment to sustainability.	Borazon et al. (2023)
	Cultural change	Moving management systems from Japanese cultural norms to more global values can yield numerous advantages. The company relinquished the organizational routines that were dependent on TMS and established fresh organizational habits.	Okada & Shirahada (2022)
	Business model	The resilience of the business model is the most accurate depiction of disaster recovery. Private owners, no matter how resilient they are, will face difficulties in surviving if their business model lacks resilience or cannot be designed to be resilient.	De Vries & Hamilton (2021)
	Ethical climate	The Renesas' flagship factory was severely impacted by the 2011 Great East Japan Earthquake, leading to a substantial decrease in production capacity. This event posed a significant threat to the global electronics industry. However, Renesas managed to overcome this crisis by relying on an ethical decision-making framework.	Mahoney et al. (2021)
Assessment	Impact assessment	Infrastructure was the most frequently reported impact of earthquakes, leading to disruptions in production, yields, and incomes. Processing and storage facilities were particularly affected by large-scale ground movements. The second most commonly reported impact was the disruption of transportation routes. Not only were winery staff affected, but also local and seasonal workers whose homes were damaged.	Cradock-Henry & Fountain (2019); Mendoza et al. (2021); Jumail et al. (2021); Suppasri et al.

	<p>By implementing effective strategies after an earthquake, the sector can mitigate the negative consequences of future events by promoting adaptability and incorporating lessons learned from previous experiences.</p> <p>The recovery of leisure and free time services was found to be the slowest, while hospitality and accommodation services showed higher levels of recovery.</p> <p>The crises resulted in a significant decrease in tourist arrivals, affecting business operations and creating opportunities for cultural tourism in specialized markets. The daily lives of local communities were disrupted, and the crises received extensive media coverage.</p> <p>The recovery of production capacity varies depending on the level of tsunami inundation. It can take anywhere from 1 to 2 months to as long as 10 to 12 months for production capacity to be fully restored, depending on the circumstances.</p> <p>Different industries experienced significant financial losses. The mining and quarrying sectors faced the highest levels of inoperability, followed by the chemical and non-metallic mineral product industries. Mining support activities also suffered significant financial setbacks.</p>	<p>(2022); Alam & Ali (2023)</p>
Paths to organizational recovery	<p>The results revealed that the fear of failure exhibited a strong and positive correlation with the impact of the earthquake, and it also displayed significant associations with the financial performance and well-being of small and medium-sized enterprises (SMEs).</p> <p>Prominent themes that emerged from the investigation encompassed the displacement and relocation of businesses, demographic alterations, and market shifts within the hospitality industry.</p> <p>The objective of this study was to formulate a recovery mechanism that would aid firms in their recuperation process following a disaster. It took into consideration the initial damage rates and the availability of essential services.</p> <p>In contrast to retrofitting, implementing measures such as price increases or alterations in shipping policies after an earthquake do not effectively alleviate the losses encountered by businesses.</p>	<p>Games & Sari (2020); Faisal et al. (2020); Liu et al. (2021); Rezvany & Kashani (2022)</p>
Paths to sectoral recovery	<p>Significant changes are expected to occur during the long-term recovery and resolution phases, particularly in relation to tourism. Tourism plays a vital role in various aspects such as gathering information, facilitating experiential learning during disasters, implementing institutional reforms,</p>	<p>Chan et al. (2020a); Tanaka & Huang (2021)</p>

	<p>devising sustainable tourism development strategies, and promoting destination marketing after a disaster.</p> <p>However, the aqua sector remains highly vulnerable and cannot fully recover solely through the capital-use subsidy, considering the financial limitations of Hakodate City. Nevertheless, the recovery policy can help reduce the impact of price fluctuations on output. On the other hand, the recreation sector has the potential to return to its pre-disaster state, although it may require significant fiscal and social expenses.</p>	
	<p>The efficacy of commercial insurance cover and the facilitation of business recovery can be improved by implementing several measures. Firstly, insurance companies can enhance the wording of policies to ensure clarity and comprehensive coverage. Secondly, they can offer sector-specific policies that cater to the unique needs and risks of different industries. Thirdly, the claims assessment systems can be improved to expedite the processing of claims and provide timely assistance to businesses. Lastly, implementing risk-based policy pricing can incentivize businesses to adopt risk reduction measures. These measures collectively contribute to the overall effectiveness of commercial insurance and support the recovery of businesses.</p>	Brown et al. (2017); Yan et al (2017); Fukumoto et al. (2018); Cremen et al. (2020)
Paths to regional economic recovery	<p>The recovery statuses and trends of post-disaster tourism, along with visually depicting the unfixed damages through photos, encompass the spatiotemporal knowledge.</p> <p>A crucial attribute of corporations that offered aid in the recovery process was their ability to engage in support activities prior to the onset of disasters. This proactive approach aimed to facilitate the efficient recovery of the affected regional society.</p> <p>The framework takes into account various forms of earthquake-induced downtime that can hinder business recovery, including both physical aspects like the time required for building recovery, and non-physical factors such as disruptions in the supply chain. Additionally, it considers the strategies implemented by businesses to mitigate these downtime periods.</p>	
Dark tourism	The post-earthquake period has witnessed a notable rise in the fluctuation of tourist numbers.	Min et al. (2020);
New assessment tools	The researchers have devised a systematic structure for the Tourism Recovery Scorecard (TOURS), which serves as an effective crisis communication tool for evaluating and tracking the advancement of a tourism destination's recovery after a disaster.	Khazai et al. (2018)
Recovery speed	The Business Recovery Assessment Framework offers a set of procedures for researchers who are keen on investigating the recuperation of organizations or businesses in a post-disaster environment.	Stevenson et al. (2018)

	<p>Smaller businesses faced more challenges in the aftermath of the earthquake compared to larger corporations. While physical damage may not directly affect all businesses, their proximity to areas with extensive disruption can hinder their ability to bounce back. Surprisingly, the utilization of post-disaster aid played a significant role in predicting business recovery, albeit in an unexpected manner.</p> <p>The most influential factor in determining long-term recovery is the perception of business owners regarding the overall business climate. It appears that businesses operating in crowded, highly competitive, and financially constrained economic niches encounter the most severe difficulties following a disaster.</p>	
Organizational characteristics	<p>Interestingly, organizations that experienced significant disruptions due to the loss of access to their premises exhibited the highest level of recovery relative to the impact they faced. Recovery outcomes are not solely determined by the level of impact, as some organizations have managed to overcome adversity more effectively than others.</p>	Dahlhamer & Tierney (1996); Webb et al. (2002); Brown et al. (2015); Orhan (2014); Orhan (2016a)
Recovery performance	<p>In terms of size, larger firms demonstrate superior performance in terms of recovery compared to their smaller counterparts. Additionally, it was discovered that older firms have a higher likelihood of recovering compared to younger ones. Furthermore, businesses that own their properties are more likely to recover than those that rent.</p> <p>Moreover, firms with regional connections have a higher probability of recovery compared to those with limited market reach confined to a neighborhood or urban area. Lastly, businesses managed by individuals with a higher level of education are more likely to recover compared to others.</p>	
Spatial characteristics	<p>The earthquakes caused a significant shift in the origins of visitors. The international market, in particular, experienced a substantial decline.</p> <p>The businesses' operational status had a notable positive global spatial dependence. This dependence followed an inverted "U" trend as time progressed after the Lushan earthquake.</p> <p>These findings indicate that when assessing regional economic effects in the aftermath of a disaster, both short-term and long-term aspects should be taken into account.</p>	Orchiston et al., (2014); Li & Hong (2019); Patandianan & Shibusawa (2020); Yonson et al. (2020); Xiao et al. (2021)

		<p>The impact of transportation disruptions on economic activity was evident and significant. Furthermore, it extended beyond the areas directly affected by the disaster due to the interconnected nature of transportation and the location-based nature of businesses.</p> <p>The ability to reconstruct and recover after a disaster is closely linked to factors such as location, population, and altitude.</p>	
	Organizational environment	When examining long-term recovery, factors such as industry sector, size, disaster preparedness, and disaster financing show statistical significance.	Costa & Baker (2021)
	Interconnectivity	This study identifies nine elements that facilitate modular transportation operations and emphasizes the crucial significance of physical, digital, operational, and inter-organizational connectivity in the aftermath of a catastrophic event.	L'Hermitte et al. (2023)
Sectoral differences in recovery		Different industrial sectors were affected in varying ways by customer issues, staff wellbeing, and disruption to utilities. Construction, ICT, logistics, and hospitality sectors experienced differential effects from these factors.	
	Type of sector	The impact of earthquakes on machinery and textiles resulted in increased efficiency. However, the textile industry experienced a significantly greater improvement in efficiency due to the recovery process lasting for a longer duration.	Kachali et al. (2015); Mohan et al. (2023); Liu et al. (2023)
		The ability to bounce back from the earthquake varied greatly depending on the industrial sector. Non-manufacturing sectors showed a faster recovery compared to manufacturing sectors.	
Critical approaches	Public policy	Despite the fact that the private sector primarily drives the recovery process, the state still assumes a greater responsibility for covering the costs associated with recovery. Additionally, the results indicate a lack of active involvement from the private sector in accounting for their efforts and making them publicly accessible. Furthermore, the research suggests that neoliberal reforms are more likely to be implemented following disasters. However, it is important to consider the existing politico-economic context.	Sandoval et al. (2020); Güney (2022)
		The impact of the 1999 Marmara Earthquake has been effectively utilized by both the neoliberal market and the government as a means of implementing a development model in Türkiye that is centered around construction. This approach has been favored by introducing new incentives, granting exceptional rights, and implementing interventions that would otherwise face opposition.	

4. Suggestions for Future Research

Research on business recovery strategies after earthquakes was classified based on different characteristics and the process of business recovery was illuminated through the systematic literature review. In this section, the authors suggest new avenues for future research based on the research findings.

First of all, the results of this research show that particular topics have attracted more attention while certain others have been largely neglected. For example, critical studies and studies on urban resilience are in short supply in this regard. Critical approaches may provide a fresh perspective especially on the inequalities and power conflicts brought by business recovery policies after earthquakes. By this way, critical studies may significantly contribute to strategy making processes of public authorities after earthquake disasters. Also, critical studies may inform research on market imbalances after earthquakes such as price gouging problems. On the other hand, resilience of urban economies has been evaluated in a limited fashion, taking into account mostly the tourism industry. Therefore, exclusive focus should be placed on other business activities in urban areas. A notable gap exists concerning international collaboration in business recovery. All of the studies on collaboration focused on local stakeholders in our sample. Future studies should address the international dimension of business recovery strategies. The role of multinational enterprises as an important stakeholder in earthquake-stricken regions can open a fruitful research path as a new topic.

Second, only a few countries have attracted scholarly attention while others have been overlooked. The studies in our sample mostly selected Japan and New Zealand as country contexts while other important seismic zones were neglected. Türkiye is a good example of such countries with high earthquake risk but insufficient research focus on business recovery strategies. Future research should widen the geographical focus to include other active seismic areas such as Türkiye, Iran, South America and Indonesia. In addition, researchers should pay attention to different institutional contexts and their impact on recovery efforts. Variations in cultural and social norms may be another promising research topic for further work in this literature.

Third, the industry context in most of the studies in our sample is hospitality and tourism. Tourism is a significant industry that has far-reaching economic and social consequences in earthquake prone areas. However, other sectors deserve more attention. For example, future studies may further delve into industrial characteristics and their impact on business recovery strategies. Depending on the type of industry, recovery efforts may need to be organized with

different strategic frameworks. In this line, comparative studies should be undertaken to reveal the mechanisms behind the variation in industrial recovery speed. Especially comparisons between high-tech and low-tech industries or local and international linkages will be useful in extending our knowledge of the literature.

Fourth, the prevalent methodologies in the literature were case studies and cross-sectional approaches, while longitudinal and mixed designs were seldom utilized. In this respect, future studies should adopt a diverse repertoire of methodologies to make meaningful contributions to the knowledge base. Another notable point is that the number of qualitative studies (n=33) are nearly identical to the number of quantitative studies (n=32). This indicates that the literature on business recovery strategies after earthquakes has not matured yet. Therefore, more studies with quantitative methodologies are needed. Especially longitudinal studies are likely to contribute to our understanding about the long-term recovery process after disasters.

5. Conclusion

Business recovery has garnered scholarly interest, particularly following the catastrophic earthquakes in Türkiye in 2023 and major global disasters over the last two decades. Therefore, business recovery strategies after earthquakes have been an important research field that has generated a considerable body of knowledge. Based on the systematic literature review, the present study consolidated previously fragmented research findings to expand our understanding of business recovery.

This study seeks to answer three research questions. The first question was answered in the findings section by outlining a general picture of the literature in terms of its development and current state. The answer to the second and third research questions were provided by our discussion regarding the current state and future potential of the literature.

Through answering these research questions, this study contributes to the literature in three significant ways. Firstly, to the best of authors' knowledge, this is the first systematic review of the literature on business recovery strategies after earthquakes. Second, the study integrates a fragmented research area by grouping studies based on shared themes. And lastly, the present study provides valuable insights into the knowledge gaps and how to address them.

Earthquakes are one of the major catastrophes that have profound effects on economies at the national, regional and urban levels. Therefore, business recovery strategies after earthquakes constitutes a very important area of research that is responsible for guiding economic and social recovery. The authors sought to illuminate gaps and present potential

future directions in this line of research. Future studies can contribute to theory and practice by taking our suggestions into account.

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