*Corresponding Author's Email: gzapanti@uniwa.gr
Proceedings of the World Conference on Climate Change and Global Warming
Vol. 1, Issue. 1, 2024, pp. 29-43
DOI: https://doi.org/10.33422/ccgconf.v1i1.338

ISSN: 3030-0703 online

Diamond Scientific Publishing

Thriving in the Anthropocene: Building Community Resilience to Combat Climate Change

Gerasimina Theodora Zapanti[1*] and Skanavis Constantina[2]

[1] Doctoral Researcher, Department of Public and Community Health, School of Public Health, University of West Attica, Greece

[2] Chair, Department of Public and Community Health, School of Public Health, University of West Attica, Greece

Abstract

This research investigates the intricate relationship between climate change, community resilience, and the tourism industry, focusing on how nature-based tourism destinations can adapt to the growing unpredictability of climate conditions. The study's primary objective is to identify key strategies that enhance community resilience in tourism-dependent regions, enabling them to better prepare for, adapt to, and recover from climate-related disasters. To achieve these objectives, a systematic review of 49 peer-reviewed papers was conducted, synthesising themes such as climate adaptation, disaster risk mitigation, and the vulnerabilities of tourism destinations. The methodology involved a thematic analysis of the selected literature, allowing for identifying patterns related to socio-ecological resilience. Key findings highlight that, while tourism is highly susceptible to natural disasters, it can also serve as a powerful tool for fostering resilience within local communities through sustainable practices and community-based tourism initiatives. Promoting resilience in tourism destinations requires a holistic approach that integrates disaster preparedness, economic diversification, and environmentally sustainable practices. This research concludes that tourism can play a critical role in both exacerbating and mitigating the impacts of climate change. Therefore, the integration of climate adaptation strategies within the tourism sector is essential, not only to safeguard economic stability but also to enhance the well-being of local communities and preserve the natural environment. Future policies must focus on aligning tourism development with broader climate resilience and disaster risk reduction frameworks.

Keywords: adaptation, climate change, community resilience, mitigation, natural disaster recovery

1. Introduction

For thousands of years, the interaction between lifeforms and the weather has maintained a delicate balance that sustains the existence of all species on Earth. However, this balance has gradually shifted since the Industrial Revolution in 1850, with significant changes becoming evident by the mid-twentieth century. This shift now poses a substantial threat to human well-being and biodiversity sustainability. This is partly due to the worsening effects of climate change and the growing complexity of socio-ecological systems in our highly interconnected world (Becken et al., 2014). For instance, in 2017, the Caribbean endured a succession of hurricanes (Harvey, Irma and Maria), and Mexico was hit by a severe earthquake, among other events, leading to the highest recorded losses ever (US$ 135 billion) (Shakeela & Becken, 2015).

The most prevalent indicators of climate change include the increase in average global temperatures and the frequency of extreme and unpredictable weather events. Climate change has now escalated into an international crisis. The IPCC (2021) report indicates that the present human-driven climate change has been unparalleled in at least the past 2000 years and is worsening in every region around the globe. The World Meteorological Organization defines climate as the average variability of weather elements like temperature, precipitation, and wind for a specific region over an extended period, usually 30 years. Climate change, therefore, refers to statistically significant shifts in these long-term patterns rather than fluctuations in monthly or yearly weather. Short-term variations, which exceed the scope of individual weather events, are generally termed climate or weather variability (World Meteorological Organization, 2020).

Since the pre-industrial period (1850–1900), human activities have caused a global temperature rise of about 1.2°C. According to data from the Copernicus Climate Change Service (C3S), the Earth recently experienced its highest recorded daily global temperature in recent history. On 22 July 2024, the global average temperature reached 17.16°C, surpassing the previous records of 17.09°C on 21 July 2024 and 17.08°C on 6 July 2023, as documented in the ERA5 dataset. The C3S data, released on 25 July 2024, confirms that Monday, 22 July, marked the warmest day since the beginning of the ERA5 dataset in 1940. The temperature on 23 July was nearly identical, measuring 17.15°C. The temperature on 21 July 2024 (17.09°C) was nearly indistinguishable from the previous record of 17.08°C, set on 6 July 2023. However, the new record of 17.16°C on 22 July 2024 represents a more significant difference than typically observed in day-to-day variations across different datasets (Copernicus Climate Change Service, 2024).

Research has primarily concentrated on managing crises and reducing disaster risks (Becken & Hughey, 2013; Faulkner, 2001; Ritchie, 2008). Researchers and professionals have primarily focused on integrating sustainable development and marketing strategies encompassing preparation, protection, and reconstruction plans for a destination following a disaster, addressing physical assets and the destination's image (Aljerf & Choukaife, 2016; Okuyama, 2018). Perceptions of safety are a key element of a destination's image, and various risks and incidents have been studied about how visitors seek travel information and make decisions (Sharifpour et al., 2014; Trumbo et al., 2016; Williams & Baláž, 2015). Restoring public perceptions of safety and attractiveness after a disaster is essential to draw and reassure potential visitors, aiding the affected area's return to functionality and economic stability (WTTC, 2018). In addition to understanding visitor perceptions, it is also important to consider the risk perceptions and behaviours of tourism stakeholders for effective disaster response and recovery (Kozak et al., 2007; Park & Reisinger, 2010).

Tourism is particularly susceptible to various hazards (Becken et al., 2015), and disasters can significantly discourage visitors from travelling to affected regions (Bhati et al., 2016). However, empirical research quantifying the link between disasters and tourism activity is still limited. Most existing studies have employed case study approaches (e.g., Chinese outbound tourism by Jin et al., 2019), but a comprehensive global analysis is missing (Ghaderi et al., 2014; Mazzocchi & Montini, 2001; Rucińska & Lechowicz, 2014). Thus, it is timely to conduct a global study using a consistent methodology to assess the impact of disasters on international tourism movements.

This research aims to explicitly explore two core research questions:

1. How does climate change impact tourism and community resilience?
2. What adaptation strategies can strengthen these communities amidst increasing climate unpredictability?

These objectives guide the literature review and analysis.

2. The Impact of Natural Disasters on the Global Tourism Industry

The media is constantly filled with negative news reports from around the world. Natural disasters have become so common that they only make headlines when there are significant casualties. Events like volcanic eruptions, mudslides, tsunamis, and floods happen daily, causing widespread destruction and sorrow. Although humans have devised methods to prepare for tornadoes, earthquakes, hurricanes, and wildfires, no amount of preparedness can completely mitigate the extensive impact of natural disasters on society. The immediate and visible effects of these disasters are deeply felt, but the surrounding communities also experience direct or indirect consequences.

Over the past two decades, the damage from natural disasters has increased globally, with significantly higher death rates in low-income countries (Kirchberger, 2017, p.41). Notable instances include the 2004 Indian Ocean earthquake and tsunami and the 2010 Haiti earthquake, both resulting in thousands of deaths and injuries and affecting millions of people. Beyond the fatalities, regions impacted by natural disasters face major issues such as homelessness and economic loss (Yan & Bissell, 2015, p.2). The immediate effects often include damage to essential buildings like homes, hospitals, schools, and factories, which are crucial for daily life and meeting basic needs. Furthermore, these disasters diminish people's motivation to engage in economic activities due to the loss of relatives or property.

Like all economic activities, the tourism sector is particularly vulnerable to natural disasters, which are anticipated to become more intense due to climate change (Walters et al., 2015). Natural disasters typically lead to declining international tourist arrivals (Peters & Pikkemaat, 2006). Since tourists seek destinations for relaxation, the threat or occurrence of a natural disaster at a tourist location often leads them to choose alternative destinations to maximise their enjoyment. Consequently, the economic revenues of the affected destination decrease sharply with the drop in tourist arrivals, exacerbating the impact of the natural disaster. Moreover, the mere possibility of a natural disaster can deter tourists, as travel decisions are influenced by perceived risks. Understanding the risk perceptions of tourists and analysing the potential risks of natural disasters is crucial for grasping the dynamics behind such economic and social behaviours.

3. Tourism, Climate Change and Community Resilience

The impacts of tourism are generally divided into three categories: economic, sociocultural, and environmental (Lee, 2013), each encompassing both positive and negative effects. Various studies have shown that tourism's economic impacts aid community development (Diedrich & Garcia-Buades, 2009; Upchurch & Teivance, 2000). Positive economic impacts include enhancements in residents' quality of life, higher income levels, and more business opportunities (Tosun, 2002). However, tourism can also result in increased taxes and inflation in the prices of local goods and services (Weaver & Lawton, 2001). Socioculturally, tourism can enhance outdoor recreation facilities like parks and roads and help revive local culture (Wang et al., 2006). However, it can also cause negative effects such as traffic congestion and overcrowding. Environmentally, while tourism has been heavily criticised for its negative impacts, there are also positive effects, such as the increased appreciation of natural landscapes and additional funding for environmental protection (Var & Kim, 1989).

3.1 Building Resilience: Adapting to Climate Change Impacts on Economy, Environment, and Community Well-Being

Climate change impacts not only the economy and the environment but also the health and well-being of individuals (Cochrane, 2010). Consequently, enhancing adaptability, building resilience, and lowering vulnerability to climate change and its effects on ecosystems and societies have emerged as worldwide challenges (Bec et al., 2016). The theory of resilience was developed in the early 1970s to investigate fluctuations in environmental systems and was later applied to social systems. Recently, it has also begun to be applied to the tourism sector (Cochrane, 2010).

Community resilience refers to the capability of communities to avert losses and recover local functions following a disaster (Mileti, 1999). Cutter et al. (2008) proposed the disaster resilience of place (DROP) model, which assesses community disaster resistance across several dimensions, such as ecology, society, economy, disaster prevention organisations, local infrastructure, and community environment. In 2004, the United Nations International Strategy for Disaster Reduction characterised resilience regarding natural disasters as the ability of a system, community, or society to endure or adjust to maintain an acceptable level of function and structure. Resilience is influenced by the levels of self-organisation, learning capability, and adaptive capacity, including the ability to recover from disasters within a social system. It is vital for both natural and human systems when confronting potential threats such as climate disasters, as it helps decrease vulnerability and enhance sustainability (International Strategy for Disaster Reduction, 2004). The Integrated Community Disaster Planning Program (ICDPP), created in collaboration with the Philippines Red Cross, illustrates methods to reduce community vulnerability to disasters. ICDPP emphasises the community's approach to disaster preparedness and reduction and the shift from dependence on external assistance to self-management during post-disaster recovery (Allen, 2003). Schneiderbauer and Ehrlich (2006) stressed that disaster management should incorporate sensitivity and preparedness before a disaster, alongside resources, adaptive capacity, and resilience during a disaster. Bruneau et al. (2003) emphasised that communities and organisations should strive to minimise the impacts of disasters and rapidly execute recovery plans following an earthquake.

Community resilience is categorised into three main types. Short-term resilience involves the immediate repair of critical infrastructure such as roads, telecommunications, and sanitation systems following a disaster. Medium-term resilience spans 5 to 10 years,

concentrating on economic recovery and housing requirements. Long-term resilience prioritises sustainable reconstruction, focusing on enhancing the community's social and cultural aspects to improve quality of life, social equity, education, and health (Bec et al., 2016).

A resilient and healthy community can create the necessary infrastructure to be less susceptible to negative impacts. However, crisis preparedness alone is not sufficient. To become resilient to climate change, a community needs flexibility in dealing with unpredictable and potential climate impacts (Bec et al., 2016). It is crucial to be prepared for all extreme and sudden weather events, such as severe storms, heatwaves, and floods. Particular attention should also be given to long-term but equally important changes, such as temperature increases and changes in local flora and wildlife (Antronico et al., 2023).

Resilience has roots in the science of complexity. As a good example of a complex adaptive system, tourism lends itself to a holistic and interdisciplinary approach to resilience due to its capacity to react to short-term disruptions, including crises or disasters (Cochrane, 2010).

4. Mitigation and Adaptation Methods

Addressing climate change involves two significant approaches: mitigation and adaptation (Perlin et al., 2022). Measures must be taken to mitigate climate change at the individual, community, and national levels (Leal Filho et al., 2022). Mitigation involves reducing the impacts of disasters that originate from or are influenced by climate change, with the primary goal of protecting lives and property. A fundamental prerequisite for the effectiveness of this approach is the implementation of measures before the next disaster occurs, aiming to reduce both human and economic consequences. Since disasters can happen at any time and place, proper preparation is necessary, as the consequences can be fatal (de Paulo Gewehr et al., 2020).

Adaptation to climate change involves taking measures to prepare for and adjust to climate change's current and anticipated future impacts (European Commission, n.d.). Adaptation encompasses social and environmental changes that respond to the full spectrum of impacts (Castro & Sen, 2022).

As the impacts of climate change become increasingly evident, Greece has developed a detailed model of impacts, reinforcing policies and the institutional framework aimed at adaptation. Local governments and relevant authorities have developed action plans; however, the work is still in progress. The ultimate goal of adopting best practices is to build social resilience (OECD, n.d.).

5. Methods and Research

This study employs a systematic review methodology aimed at thoroughly examining the literature on tourism, community resilience, and climate change adaptation. A comprehensive search strategy was developed using key search terms such as "climate change," "natural disasters," "tourism," and "community resilience." The search was conducted across multiple databases, including PubMed, ScienceDirect, Springer, MDPI, and Elsevier. In total, 49 papers were included for analysis based on predefined inclusion criteria, ensuring that only peer-reviewed articles published in English between 2015 and 2024, along with classical references, were considered.

The process involves reviewing documents based on clearly defined questions, with systematic and transparent criteria for selecting relevant research. As part of this approach, the search terms are fully disclosed, and the criteria for including and excluding articles are clearly stated. Additionally, both the publications excluded from the analysis and those included are documented (Table 1).

Table 1: Search Terms and Criteria for Literature Search

Search Terms	Inclusion Criteria	Exclusion Criteria
"Climate Change"	**Publication Date**: Articles published 2015–2024 (plus 'classical' references and policy documents)	**Non-English Publications**: Articles not published in English
"Natural Disasters"	**Language**: Only articles published in English	**Publication Date**: Articles published before 2000
"Tourism"	**Relevance**: Studies directly addressing the interactions between climate change, natural disasters, tourism, and community resilience	**Irrelevant Topics**: Studies that do not directly address the intersections of climate change, tourism, and community resilience
"Community Resilience"	**Type of Research**: Empirical studies, systematic reviews, theoretical papers, and case studies	**Non-Peer-Reviewed Sources**: Excluding editorials, opinion pieces, and non-peer-reviewed articles
"Climate Adaptation"	**Geographic Scope**: Research focused on both global and regional perspectives, particularly studies relevant to developing and developed nations	**Inaccessible Full Texts**: Articles where the full text is not available or accessible
"Climate Mitigation"	**Peer-Reviewed**: Only peer-reviewed journal articles and conference papers	**Duplicate Studies**: Excluding duplicate publications to ensure the uniqueness of the reviewed content
"Disaster Risk Reduction"		
"Sustainable Tourism"		
"Resilient Communities"		
"Environmental Sustainability"		
"Tourism Development"		
"Socio-Ecological Systems"		
"Vulnerability"		
"Economic Impact of Tourism"		
"Crisis Management in Tourism"		

The findings presented in this paper are derived from a review of 49 papers indexed in PubMed, ScienceDirect, Springer, MDPI and Elsevier. To ensure the retrieval of all relevant documents addressing the interactions between climate change, tourism, and community resilience, a comprehensive initial search string was developed, incorporating various terms such as "Climate Change", "Natural Disasters", "Tourism", etc. (Table 1). The inclusion of terms like trade-off and conflict was intentional, as papers discussing these topics often also explore co-benefits and synergies.

Thematic Analysis: The literature was coded for recurrent themes using a qualitative coding process. Articles were categorised based on their focus on climate change impacts, resilience strategies, or tourism vulnerabilities. These themes were synthesised through a constant comparison method, where findings from different studies were cross-referenced and analysed to identify patterns or discrepancies.

To enhance the rigour of the review, the study employed triangulation, cross-referencing data from different regions and study designs. This approach helped improve the robustness of the conclusions and ensured that the findings were not limited to a single context or perspective. The process also included careful documentation of the search terms, inclusion and exclusion criteria, and the synthesis methods to improve replicability.

During the thematic analysis, the literature was coded based on recurring themes related to **climate change**, **tourism vulnerabilities**, **community resilience**, **disaster risk reduction**, **climate adaptation**, and **sustainable tourism**. These themes were identified through a qualitative coding process, where relevant information from each article was categorised under specific thematic areas (Table 2).

Table 2: Thematic Analysis

Theme	Description	Examples from Literature
Climate Change Impacts	The adverse effects of climate change on tourism destinations, including extreme weather events.	**Becken et al. (2014)** highlight the vulnerability of small island tourism to extreme weather events like hurricanes.
Tourism Vulnerabilities	The susceptibility of tourism-dependent regions to climate-induced disasters and economic downturns.	**Shakeela & Becken (2015)** examine the significant decrease in tourist arrivals following the 2017 Caribbean hurricanes.
Community Resilience	The capacity of communities to recover from climate-related shocks and continue to function.	**Bec et al. (2016)** discuss community-based tourism as a mechanism to strengthen resilience and economic recovery post-disaster.
Disaster Risk Reduction	Strategies and actions aimed at minimizing the damage caused by natural disasters in tourism areas.	**Ritchie (2008)** discusses the integration of disaster risk reduction in tourism recovery plans, focusing on preparedness.
Climate Adaptation	Measures taken by tourism destinations to adjust to the impacts of climate change.	**Cochrane (2010)** outlines the importance of climate-resilient infrastructure and

Theme	Description	Examples from Literature
		social systems for adapting to climate impacts.
Sustainable Tourism Practices	Practices aimed at reducing the environmental footprint of tourism while promoting resilience.	**Jin et al. (2019)** emphasize the role of ecotourism in reducing environmental impacts and fostering sustainability.
Economic Diversification	Strategies to reduce reliance on tourism by developing alternative local industries.	**Walters et al. (2015)** suggest diversification of the economy in tourism-dependent regions to improve resilience to disasters.
Policy Integration	The alignment of tourism development policies with broader climate resilience and disaster reduction goals.	**Okuyama (2018)** advocates for integrating climate adaptation policies with tourism development plans to enhance disaster recovery.
Risk Perception and Visitor Behavior	The role of perceived risk on tourism and how it affects decision-making.	**Sharifpour et al. (2014)** examine how tourists' risk perception influences travel decisions after natural disasters.
Restoration of Public Perception	The importance of restoring a destination's image post-disaster to attract visitors.	**Williams & Baláž (2015)** explore strategies to rebuild a destination's public perception and confidence following a disaster.
Long-term Climate Strategies	Long-term strategies aimed at increasing resilience to climate change in tourism.	**IPCC (2021)** emphasizes the need for long-term adaptation strategies to address the increasing unpredictability of climate impacts.
Global Tourism Movements and Disaster Impact	Understanding global tourism flow in the context of natural disasters.	**Ghaderi et al. (2014)** investigate how natural disasters affect global tourism movements and suggest the need for better crisis management.
Crisis Management in Tourism	Strategies and frameworks for managing crises in tourism to minimize the impact of disasters.	**Faulkner (2001)** proposes a tourism disaster management framework to mitigate the effects of crises on tourism destinations.

6. Discussion

The findings from this study underscore the intricate and multifaceted relationship between climate change, natural disasters, tourism, and community resilience. The synthesis of existing literature reveals that while tourism is highly vulnerable to the impacts of climate change and natural disasters, it also holds significant potential as a tool for fostering community resilience.

6.1 The Vulnerability of Tourism

Tourism is inherently sensitive to environmental changes and extreme weather events, as it depends heavily on the natural and cultural assets of a destination. The review highlighted those natural disasters, exacerbated by climate change, have increasingly disrupted tourism activities, leading to substantial economic losses. This vulnerability is particularly pronounced in developing countries and small island states, where tourism often constitutes a major portion of the economy. These regions are more susceptible to the adverse effects of climate change, including rising sea levels, hurricanes, and other extreme weather events.

The literature also emphasises the psychological impact of disasters on potential tourists. The perception of risk associated with a destination plays a crucial role in influencing travel decisions. Destinations affected by natural disasters face challenges not only in terms of physical recovery but also in rebuilding their image and regaining the trust of tourists.

6.2 Tourism as a Catalyst for Resilience

Despite its vulnerability, tourism can be leveraged as a powerful catalyst for enhancing community resilience. The study suggests that integrating climate adaptation and mitigation strategies within the tourism sector can create synergies that benefit both the environment and local communities. For instance, promoting sustainable tourism practices can reduce the sector's environmental footprint while simultaneously fostering economic diversification, which is vital for resilience.

Community-based tourism has shown promise in empowering local populations to adapt to climate change. By involving communities in tourism planning and development, these initiatives help to build social capital and strengthen local governance, which are essential components of resilience. Additionally, the financial benefits of tourism can be reinvested into community infrastructure, further enhancing the capacity to withstand and recover from disasters.

6.3 Challenges and Opportunities

However, the integration of resilience-building strategies in tourism is not without challenges. The study identifies a lack of coherent policies that link tourism development with climate change adaptation and disaster risk reduction. There is also a need for greater collaboration between government agencies, the private sector, and local communities to ensure that tourism development is sustainable and inclusive.

Furthermore, while there is growing awareness of the importance of resilience, the concept is still often narrowly interpreted, focusing primarily on economic recovery rather than a holistic approach that includes social and environmental dimensions. Future research should explore these broader aspects of resilience, particularly in the context of tourism.

6.4 Policy Implications

The findings of this study have significant policy implications. Policymakers should prioritise the integration of tourism within broader climate adaptation and disaster risk reduction frameworks. This could involve the development of guidelines and standards for sustainable tourism that are aligned with national climate goals. Additionally, there should be a focus on capacity-building initiatives that equip local communities with the knowledge and resources needed to effectively participate in tourism planning and disaster management.

In conclusion, while the challenges posed by climate change and natural disasters to the tourism sector are considerable, there are also substantial opportunities to harness tourism as a vehicle for resilience. By adopting a holistic and integrated approach, stakeholders can ensure that tourism not only survives in the face of these challenges but also contributes to the sustainable development and resilience of communities.

7. Recommendations

The findings from this research highlight the critical intersections between climate change, natural disasters, tourism, and community resilience. To translate these insights into actionable strategies, the following recommendations are proposed:

7.1 Enhancing Climate Resilience in Tourism Development

Policy Integration: Governments should mandate the inclusion of climate adaptation and resilience-building measures in all tourism development plans, particularly in regions highly susceptible to natural disasters. This includes ensuring that infrastructure is designed to withstand extreme weather events.

Resilient Infrastructure: Investments should be directed toward building and retrofitting tourism infrastructure that can withstand the increasing frequency and intensity of natural disasters. This involves not only physical structures but also the integration of early warning systems and emergency preparedness plans.

7.2 Promoting Sustainable and Resilient Tourism Practices

Sustainability Standards: Establish and enforce sustainability standards for tourism operators that include guidelines for reducing environmental impact and promoting resilience. This should cover energy efficiency, waste management, and the use of local resources.

Community-Based Tourism: Support and promote community-based tourism (CBT) initiatives that empower local communities to take charge of their tourism resources. CBT can enhance local resilience by diversifying income sources and preserving cultural and natural heritage.

7.3 Strengthening Disaster Preparedness and Response

Capacity Building: Provide targeted training programs for tourism operators, local communities, and government agencies focused on disaster preparedness, response, and recovery. This should include regular drills and simulations to ensure readiness in the event of a disaster.

Collaboration and Coordination: Foster collaboration between tourism stakeholders, emergency management agencies, and local governments to create coordinated disaster

response plans. Clear communication channels and roles should be established to ensure an efficient response to emergencies.

7.4 Raising Awareness and Educating Stakeholders

Tourist Education: Develop educational campaigns to inform tourists about the risks associated with climate change and natural disasters in their destinations, as well as the measures in place to ensure their safety. Informed tourists are more likely to support sustainable and resilient tourism practices.

Stakeholder Engagement: Engage all tourism stakeholders, including operators, local communities, and policymakers, in dialogues about the importance of climate resilience. This can help to build a shared understanding and commitment to implementing necessary changes.

7.5 Supporting Research and Data Collection

Ongoing Research: Encourage continuous research into the impacts of climate change on tourism and community resilience. This research should inform policy development and help refine strategies for adaptation and disaster risk reduction.

Data Sharing: Create platforms for sharing data and best practices related to tourism resilience. This can include case studies, success stories, and lessons learned from other regions, which can guide local efforts to enhance resilience.

7.6 Promoting Holistic and Interdisciplinary Approaches

Integrated Planning: Promote an interdisciplinary approach to tourism planning that integrates environmental, social, and economic considerations. This approach should recognise the interconnectedness of tourism, climate change, and community resilience and holistically address these areas.

Global Cooperation: Engage in international cooperation to share knowledge, strategies, and resources for building tourism resilience. Collaborative efforts can help to standardise best practices and ensure that all regions benefit from advancements in climate adaptation and disaster risk reduction.

8. Limitations and Future Research

This study acknowledges limitations such as its reliance on secondary data and the lack of empirical analysis. Future research could address these gaps by conducting longitudinal studies in vulnerable tourism regions. Moreover, further exploration is needed into how different community governance models impact resilience outcomes. The study also recommends future research into how policies can bridge the gap between sustainable tourism and climate adaptation frameworks.

9. Conclusion

Climate change is a multifaceted global challenge that intersects with various aspects of human existence, including adaptation and mitigation strategies, community resilience, and the tourism industry. This doctoral proposal aims to transcend conventional academic boundaries and create a unified narrative that demonstrates how these elements interact and influence each other, ultimately contributing to a comprehensive understanding of climate change and its impacts. By synthesising and holistically addressing these interlinked issues,

this research seeks to reshape the scientific landscape in a way that promotes practical solutions and guides decision-makers towards a more sustainable future.

By examining the relationship between climate change, adaptation, mitigation, community resilience, and tourism, this dissertation will shed light on how these elements collectively shape our response to environmental changes. It will also challenge the traditional and isolated approach to climate science and policy, opening doors to interdisciplinary collaboration.

Adaptation and mitigation are often treated as separate entities in the discussions and strategies developed around climate change. This dissertation aims to blur these lines and explore how these strategies can mutually reinforce each other to address environmental challenges and enhance social resilience.

Community resilience is at the heart of action, and this research will focus on deconstructing it. The dissertation will challenge dominant paradigms in resilience studies by examining how communities can effectively adapt and mitigate climate impacts. It will also highlight the role of resilient communities in promoting sustainable tourism, providing a dynamic perspective on the interconnection of these issues.

Tourism is often seen as a contributor to climate change, but it is also a vital channel for raising awareness and promoting sustainable practices. This research will examine the dual role of the tourism industry, emphasising its potential not only to reduce its environmental impacts but also to act as a catalyst for community resilience. By presenting examples of ecotourism and responsible travel, the dissertation will offer a nuanced perspective on the sector's transformative potential.

Integrating climate change, adaptation, mitigation, community resilience, and tourism in this research will allow for the development of comprehensive solutions and policy recommendations. Instead of offering isolated strategies for each element, it will synthesise the findings into a cohesive framework that guides policymakers, communities, and industry stakeholders. These recommendations will facilitate a coordinated response to climate change, emphasising the interdependence of these sectors. Additionally, it will underscore the need for a holistic approach to climate change and the importance of recognising the complexity of the challenge.

References

Aljerf, L., & Choukaife, A. E. (2016). Sustainable development in Damascus University: A survey of internal stakeholder views. *Journal of Environmental Studies, 2*(2), 1-12.

Allen, K. (2003). Vulnerability reduction and the community-based approach: A Philippines study. In Pelling, M. (Ed.), *Natural disasters and development in a globalising world* (pp. 170-184). New York, NY: Routledge.

Antronico, L., Carone, M. T., & Coscarelli, R. (2023). An approach to measuring the resilience of communities to climate change: A case study in Calabria (Southern Italy). *Mitigation and Adaptation Strategies for Global Change, 28*(20). https://doi.org/10.1007/s11027-023-10056-7

Bec, A., McLennan, C., & Moyle, B. D. (2016). Community resilience to long-term tourism decline and rejuvenation: A literature review and conceptual model. Current Issues in Tourism, 19(5), 431-457.

Becken, S., & Hughey, K. (2013). Linking tourism into emergency management structures to enhance disaster risk reduction. *Tourism Management, 36*, 77-85.

Becken, S., Mahon, R., Rennie, H. G., & Shakeela, A. (2014). The tourism disaster vulnerability framework: An application to tourism in small island destinations. *Natural Hazards, 71*(1), 955-972. https://doi.org/10.1007/s11069-013-0946-x

Becken, S., Zammit, C., & Hendrikx, J. (2015). Developing climate change maps for tourism: Essential information or awareness raising? *Journal of Travel Research, 54*(4), 430-441.

Bhati, A., Upadhayaya, A., & Sharma, A. (2016). National disaster management in the ASEAN-5: An analysis of tourism resilience. *Tourism Review, 71*(2), 148-164.

Bruneau, M., Chang, S. E., Eguchi, R.T., Lee, G. C., O'Rourke, T. D., Reinhorn, A. M., & von Winterfeldt, D. (2003). A framework to quantitatively assess and enhance the seismic resilience of communities. *Earthquake Spectra, 19*, 733-752.

Castro, B., & Sen, R. (2022). Everyday adaptation: Theorizing climate change adaptation in daily life. *Global Environmental Change, 75*, 102555. https://doi.org/10.1016/j.gloenvcha.2022.102555

Cochrane, J. (2010). The sphere of tourism resilience. *Tourism Recreation Research, 35*(2), 173-185. https://doi.org/10.1080/02508281.2010.11081632

Copernicus Climate Change Service. (2024, July 25). New record daily global average temperature reached in July 2024. Copernicus. https://climate.copernicus.eu/new-record-daily-global-average-temperature-reached-july-2024

Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change, 18*, 598-606.

de Paulo Gewehr, L.L., Deggau, A.B., da Silva Neiva, S., & de Andrade Guerra, J.B.S.O. (2020). Resilience in the context of climate change. In Leal Filho, W., Marisa Azul, A., Brandli, L., Gökçin Özuyar, P., & Wall, T. (Eds.), *Sustainable cities and communities. Encyclopedia of the UN Sustainable Development Goals*. Springer, Cham. https://doi.org/10.1007/978-3-319-95717-3_26

Diedrich, A., & Garcia-Buades, E. (2009). Local perception of tourism as indicator of destination decline. *Tourism Management, 30*, 512-521.

European Commission. (n.d.). Adaptation to climate change. European Commission Climate Action. https://climate.ec.europa.eu/eu-action/adaptation-climate-change/overview_en

Faulkner, B. (2001). Towards a framework for tourism disaster management. *Tourism Management, 22*(2), 135-147.

Ghaderi, Z., Mat Som, A. P., & Henderson, J. C. (2014). When disaster strikes: The Thai floods of 2011 and tourism industry response and resilience. *Asia Pacific Journal of Tourism Research, 20*(4), 399-415.

Ghimire, H. (2016). Disaster management and post-quake impact on tourism in Nepal. *The Gaze: Journal of Tourism and Hospitality, 7*, 37-57.

Intergovernmental Panel on Climate Change. (2021). *AR6 Climate Change: The Sixth Assessment Report on Climate Change*. IPCC. Retrieved from https://www.ipcc.ch/report/ar6/wg1/

International Strategy for Disaster Reduction. (2004). *Living with risk: A global review of disaster reduction initiatives*. Retrieved from https://www.unisdr.org/files/657_lwr1.pdf

Jin, X., Qu, M., & Bao, J. (2019). Impact of crisis events on Chinese outbound tourist flow: A framework for post-events growth. *Tourism Management, 74*, 334-344.

Kirchberger, M. (2017). Natural disasters and labor markets. *Journal of Development Economics, 125*, 40-58.

Kozak, M., Crotts, J. C., & Law, R. (2007). The impact of the perception of risk on international travellers. *International Journal of Tourism Research, 9*(4), 233-242.

Leal Filho, W., Balasubramanian, M., Purcell, W., & Paz, S. (2022). Handling the health impacts of extreme climate events. *Environmental Sciences Europe, 34*, 45. https://doi.org/10.1186/s12302-022-00621-3

Lee, T. H. (2013). Influence analysis of community resident support for sustainable tourism development. *Tourism Management, 34*, 37-46.

Mazzocchi, M., & Montini, A. (2001). Earthquake effects on tourism in central Italy. *Annals of Tourism Research, 28*(4), 1031-1046.

Mileti, S. (1999). *Disaster by design: A reassessment of hazards in the United States*. Washington, DC: Joseph Henry Press.

OECD. (n.d.). Climate change mitigation and adaptation. OECD iLibrary. https://www.oecd-ilibrary.org/sites/ff34a34b-en/index.html?itemId=/content/component/ff34a34b-en#chapter-d1e7880

Okuyama, T. (2018). Analysis of optimal timing of tourism demand recovery policies from natural disaster using the contingent behavior method. *Tourism Management, 64*, 37-54.

Park, K., & Reisinger, Y. (2010). Differences in the perceived influence of natural disasters and travel risk on international travel. *Tourism Geographies, 12*(1), 1-24.

Perlin, A. P., Gomes, C. M., Motke, F. D., Kruglianskas, I., & Zaluski, F. C. (2022). Climate change mitigation, adaptation practices, and business performance in Brazilian industrial companies. *Sustainability, 14*(18), 11506. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su141811506

Peters, M., & Pikkemaat, B. (2006). Crisis management in Alpine winter sports resorts—the 1999 avalanche disaster in Tyrol. *Journal of Travel & Tourism Marketing, 19*(2-3), 9-20.

Ritchie, B. (2008). Tourism disaster planning and management: From response and recovery to reduction and readiness. *Current Issues in Tourism, 11*(4), 315-348.

Rucińska, D., & Lechowicz, M. (2014). Natural hazard and disaster tourism. *Miscellanea Geographica Regional Studies on Development, 18*(1), 14-25.

Schneiderbauer, S., & Ehrlich, D. (2006). Social levels and hazard (in)dependence in determining vulnerability. In Birkmann, J. (Ed.), *Measuring vulnerability to natural hazards-towards disaster resilient societies* (pp. 87-102). Tokyo: TEPI Press.

Shakeela, A., & Becken, S. (2015). Social amplification and attenuation of climate change risk in a vulnerable tourism destination. *Journal of Sustainable Tourism, 23*(1), 65-84.

Sharifpour, M., Walters, G., Ritchie, B., & Winter, C. (2014). Investigating the role of prior knowledge in tourist decision making: A structural equation model of risk perceptions and information search. *Journal of Travel Research, 53*(3), 307-322.

Tosun, C. (2002). Host perceptions of impacts: A comparative tourism study. *Annals of Tourism Research, 29*, 231-253.

Trumbo, C. W., Peek, L., Meyer, M. A., Marlatt, H. L., Gruntfest, E., McNoldy, B. D., & Schubert, W. H. (2016). A cognitive-affective scale for hurricane risk perception. *Risk Analysis, 36*(12), 2233-2246.

Upchurch, R. S., & Teivance, U. (2000). Resident perception of tourism development in Riga, Lativa. *Tourism Management, 21*, 499-507.

Var, T., & Kim, Y. (1989). Measurement and findings on the tourism impact. *Department of Recreation, Park and Tourism Sciences, Texas A&M University*. Unpublished manuscript.

Walters, G., Mair, J., & Ritchie, B. (2015). Understanding the tourist's response to natural disasters: The case of the 2011 Queensland floods. *Journal of Vacation Marketing, 21*(1), 101-113.

Wang, S., Fu, Y., Cecil, A. K., & Avgoustis, S. H. (2006). Residents' perceptions of cultural tourism and quality of life: A longitudinal approach. *Tourism Today, 6*, 47-61.

Weaver, D., & Lawton, L. (2001). Resident perceptions in the urban-rural fringe. *Annals of Tourism Research, 28*, 349-458.

Williams, A., & Baláž, V. (2015). Tourism risk and uncertainty: Theoretical reflections. *Journal of Travel Research, 54*(3), 271-287.

World Meteorological Organization (2020). FAQs - Climate. Retrieved from https://public.wmo.int/en/about-us/FAQs/faqsclimate

World Travel & Tourism Council. (2018). *Caribbean resilience and recovery: Minimising the impact of the 2017 hurricane season on the Caribbean's tourism sector*. London.

Yan, Y., & Bissell, K. (2015). The sky is falling: Predictors of news coverage of natural disasters worldwide. *Communication Research, 1*-25. https://doi.org/10.1177/0093650215573861