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Assessing Climate Change and Wildfire's Impact on Tourism Sustainability and Resilience

Ocena wpływu zmian klimatu i pożarów na zrównoważony rozwój i stabilność turystyki

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Abstract: This paper examines the mounting threats to sustainability and resilience of international tourist destinations resulting from climate change and the increasing frequency of wildfires. The primary focus of this investigation is examining environmental risks and stability of tourist systems while focusing on ecological, economic, and social aspects. Researchers measured industry weaknesses and response plans through qualitative research involving extensive field investigations in wilderness wildfire-prone zones. The researcher collects secondary data and examines case studies that undergo thematic analysis to uncover impact and resistance patterns. Research demonstrates that wildfires cause severe damage to fundamental infrastructure combined with disturbances that limit visitor access and diminish tourism attractions. The adaptation solutions for tourism development include service diversification, early warning systems, and sustainable land management programs involving the community. Investigative research provides touristic establishments with means to enhance their environmental adaptation abilities and deepen their knowledge of climate conditions as regards travel. The research helps expand sustainability dialogues about tourism development in stressful climates by showing management challenges and adaptable solutions that guide climate resilience implementation for politicians, planners, and tourism operators during planning processes. Protective measures for tourist resources and sustainability advancements become possible through preventive measures established by this system.

Keywords: climate change, wildfires, tourism resilience, sustainable tourism, destination management, economic impact

Streszczenie: Niniejszy artykuł analizuje rosnące zagrożenia dla zrównoważonego rozwoju i stabilności międzynarodowych ośrodków turystycznych wynikające ze zmian klimatu i rosnącej częstotliwości pożarów. Głównym celem tego badania jest analiza zagrożeń środowiskowych i rozwiązań turystycznych, przy jednoczesnym skupieniu się na aspektach ekologicznych, ekonomicznych i społecznych. Badacze ocenili słabości branży i plany reagowania poprzez badania jakościowe obejmujące szeroko zakrojone badania terenowe w strefach zagrożonych pożarami. Autorzy zbierają dane uzupełniające i analizują studia przypadków, które poddawane są analizie tematycznej w celu odkrycia wzorców wpływu i wytrzymałości. Badania wykazały, że pożary powodują poważne uszkodzenia podstawowej infrastruktury w połączeniu z zakłóceniami, które ograniczają dostęp turystom i zmniejszają atrakcyjność odwiedzanych lokalizacji. Rozwiązania adapta-

cyjne dla rozwoju turystyki obejmują dywersyfikację usług, systemy wczesnego ostrzegania i programy zrównoważonego zarządzania gruntami z udziałem społeczności. Badania naukowe zapewniają placówkom turystycznym środki mające na celu zwiększenie ich zdolności adaptacji do środowiska i pogłębienia wiedzy na temat warunków klimatycznych w odniesieniu do podróży. Badania pomagają rozszerzyć dialog na temat zrównoważonego rozwoju turystyki w warunkach kryzysu klimatycznego, pokazując wyzwania związane z zarządzaniem i możliwe do zaadaptowania rozwiązania, które pomagają politykom, planistom i operatorom turystycznym we wdrażaniu rozwiązań w zakresie odporności na zmiany klimatu podczas procesów planowania. Środki zapobiegawcze ustanowione przez ten system umożliwiają wprowadzenie środków ochronnych dla zasobów turystycznych oraz postęp w zakresie zrównoważonego rozwoju.

Słowa kluczowe: zmiany klimatu, pożary, stabilność turystyki, zrównoważona turystyka, zarządzanie destynacjami, wpływ na gospodarkę

Introduction

The tourism sector, a significant part of the global economy, is facing previously unheard-of difficulties due to climate change and its ripple effects, such as the increase in wildfires. Environmental, social, and economic systems are closely linked to tourism, one of the industries with the most efficient economic growth rate (Cioccio and Michael 2007). However, it is incredibly susceptible to changes caused by climate change due to its stable weather patterns and healthy ecosystems (Dogru et al. 2019). Wildfires have become a significant threat among these disturbances, destroying natural landscapes, endangering species, and negatively impacting the lives of people who depend on tourism (Gössling and Peeters 2015). Wildfires are increasing in frequency and intensity, often due to prolonged droughts, harsh meteorological events, and rising global temperatures. These phenomena are likely in high elevations, arid temperatures, and wooded landscapes (Zhang, Lv, and Sarker 2024). Wildfires' immediate impact on tourism includes infrastructure damage, decreased accessibility, and a decline in the quality of a region. Longer-term effects that further undermine the sustainability of tourism in affected areas include altered ecosystems and a negative perception of safety (Arabadzhyan et al. 2021).

Stakeholders in the tourism industry, such as destination managers, legislators, and local communities, must balance strengthening the resilience of tourism systems with reducing the adverse economic and environmental effects of wildfires (Tanrisever, Pamukçu, and Baydeniz 2024). In this sense, resilience refers to a destination's ability to adjust to and bounce back from outside shocks, ensuring the long-term viability of tourism as a cultural and economic endeavour (Njoroge et al. 2020).

Figure 1 explains how climate change contributes to the increasing frequency and intensity of wildfires, which leads to vulnerabilities within the tourism industry. It highlights the role of adaptive strategies in mitigating these effects and promoting sustainable and resilient tourism development.

This study examines the complex relationships between wildfires, climate change, and the resilience and sustainability of tourism. This research aims to provide stakeholders and policymakers with valuable information by examining the impact of wildfires on popular tourist destinations and implementing adaptive measures. It also highlights the importance of community involvement, sustainable practices, and proactive planning to create a resilient tourist industry that is resilient to the heightened risks associated with climate change. Moreover, the paper examines the methodological framework as well as case studies of locations vulnerable to wildfires. It also provides policy suggestions in the selected areas to promote a more resilient and sustainable tourist sector in the face of climate change.

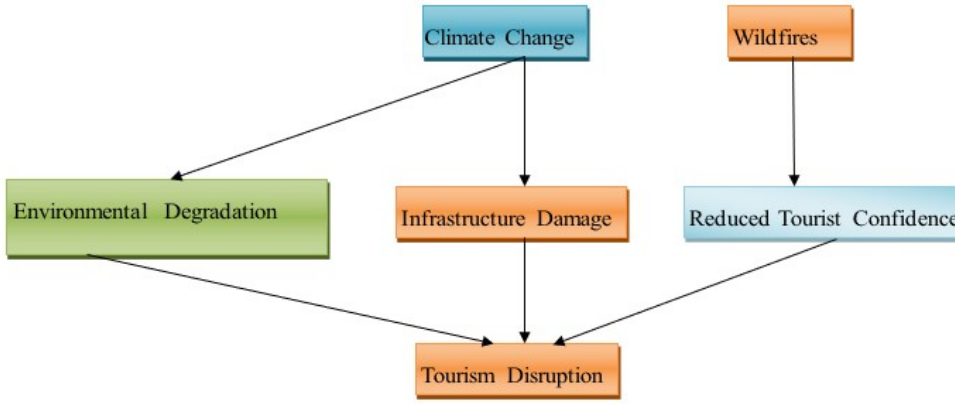

Figure 1. The figure illustrates the Impact of Climate Change and Wildfires on Tourism Sustainability and Resilience
Source: Authors' compilations based on (Xie and Meng 2024).

1. Literature Review

The theoretical stances thoroughly explained the intricate relationships between wildfires, tourism, and climate change. Each of the following theories—vulnerability, resilience, sustainability, risk management, tourism life cycle, and social-ecological systems—offers a distinct perspective on the difficulties and solutions for preserving the sustainability and resilience of travel destinations in the face of climate change (Kutzner 2019). This study aims to provide comprehensive information on how tourist locations could adapt to the hazards of wildfires and help create more resilient, sustainable tourism systems by combining these ideas (McCool and Mandic 2024). The theoretical basis for comprehending the impact of wildfires and climate change on tourism's sustainability and resilience is based on several well-established ideas from risk management, environmental science, and tourist studies (Nguyen and Hens 2019). These ideas provide a glimpse into both the adaptive strategies employed to enhance resilience and the susceptibility of tourist sites to ecological disruption (Malakar et al. 2023). The study's primary theoretical stances are as follows:

The study's theoretical implications include sustainability, resilience, and environmental change, highlighting the connection between wildfires, tourism, and climate change. Understanding the effects of wildfires on tourism requires an understanding of theories such as the Sustainable Tourism Development Framework, which promotes integration of environmental, economic, and social considerations in tourism management, and the Resilience Theory, which highlights systems' ability to adapt to shocks and disturbances (Hossain et al. 2024)National Adaptation Planning. Furthermore, ecological modernization theory investigates how policy adaptation and technological advancement could reduce the environmental consequences of wildfires (Cumming et al. 2015). Additionally, the study utilizes the Danger Perception Theory, which examines how travellers' environmental danger and safety assessment affect their destinations in areas threatened by wildfires. The study intends to provide a comprehensive overview of how the difficulties encountered by wildfires caused by climate change contribute to the sustainability and resilience of tourism by combining various theoretical frameworks (Rodríguez Fernández-Blanco et al. 2024).

Figure 2 illustrates the relationships between key concepts and theories related to the impact of wildfires on tourism sustainability and resilience. The framework integrates Sustainable Tourism Development,

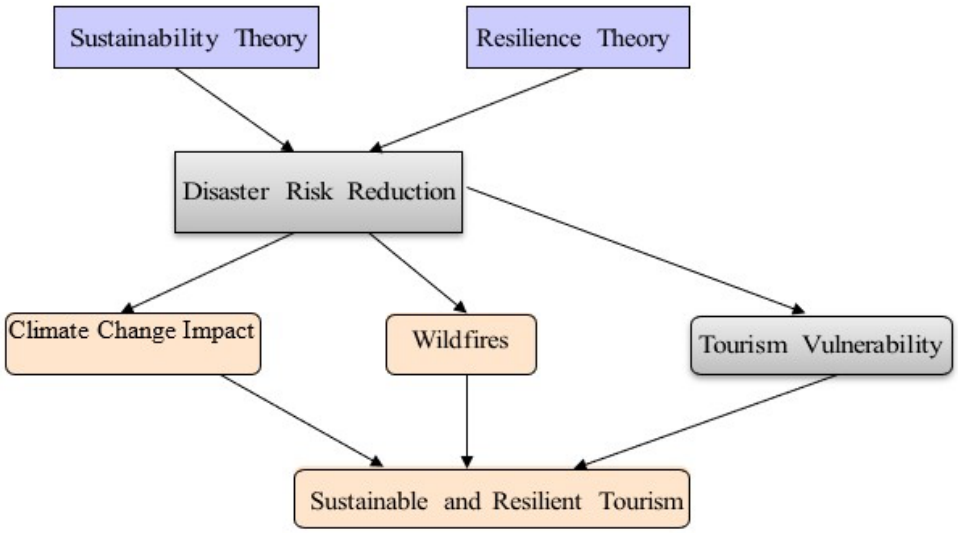

Figure 2. Theoretical framework on the impact of wildfire on tourism sustainability and resilience
Source: Compiled by Authors based on (Reiner et al. 2024).

Resilience Theory, and Disaster Risk Reduction as the analysis's core components.

The nexus between climate change, wildfires, and sustainability of tourism has been a significant factor in recent years (Sharma et al. 2025). Due to the rapid acceleration of climate change, the tourist sector is experiencing an increasing number of hazards, particularly when it comes to extreme weather events such as wildfires (Martin et al. 2025)with the five largest fires on record since 2018. Over the same period, licensed cannabis production has grown to a high-grossing industry, while remaining an important source of rural livelihood. Importantly, the geography of cannabis production overlaps with high fire hazard areas more than any other crop in the state. We developed and deployed a state-wide survey of licensed outdoor producers to determine direct and indirect impacts of wildfire, as well as how producers have responded to these threats. Quantitative and narrative data were subjected to statistical and thematic analyses, demonstrating key findings around fire-related losses, mitigation tools and techniques, and perceptions of risk. Producers experienced a range of impacts beyond direct burning, including reduced light (affecting grow rates. With a specific emphasis on the consequences of wildfires on tourism destinations and the measures for strengthening resilience and sustainability, this literature review looks at the most essential studies investigating climate change's effects on tourism (Woodroffe, Thirgood, and Rabinowitz 2005).

1.1. Climate Change and Its Impact on Tourism

The consequences of climate change on tourism destinations, both directly and indirectly, have been the subject of numerous studies, which have led to climate change being a key topic in tourism research. According to Gössling & Peeters (2015), climate change impacts tourists' behaviour, the accessibility of destinations, and the quality of the natural and cultural resources that are the foundation of tourism experiences. Increasing temperatures, shifting patterns of precipitation, and extreme weather events like wildfires and floods all have the potential to impact the appeal of destinations in countries that have warmer climates (Scott et al. 2012). As a result of the disruption of ecosystems, tourist locations become less

desirable, which may result in changes in travel patterns.

1.2. Wildfire and Tourism

As a result of climate change, wildfires are becoming an increasingly significant threat (Yletyinen et al. 2019) and conducted research demonstrates how wildfires not only cause direct damage to tourism infrastructure but also cause degradation of environmental assets that are attractive to tourists. Due to wildfires, there is an instant decrease in the number of tourists who visit the area since wildfires disrupt recreational activities, ruin ecosystems, and pose safety concerns. According to Hein et al. (2009), locations most susceptible to disruptions caused by wildfires generate revenue from forest-based tourism, adventure tourism, or nature-based attractions.

The long-term effects of wildfires on tourism have been investigated in several studies. The Queensland Government in 2020 stated that the bushfires that occurred in 2019–2020 significantly impacted Australia's tourism, particularly in areas such as the Blue Mountains, resulting in decreased visitors and income (Yazdanpanah, Barghi, and Esmaili 2016). There is a possibility that wildfires will have long-term effects on tourism demand since they impact perceptions of safety and brand image, as well as change the physical terrain (Belias, Rossidis, and Valeri 2022).

1.3. Vulnerability of Tourism Destinations

Numerous factors contribute to the occurrence of wildfires in tourist destinations. These factors include the geographical position of the destination, the local climate, and the degree to which the economy depends on tourism (Student, Lamers, and Amelung 2020). Hotels, resorts, and transportation networks are examples of the types of infrastructure frequently constructed in places at a high risk of fire destruction in countries prone to wildfires (Calgaro, Lloyd, and Dominey-Howes 2014). Furthermore, areas dependent on outdoor tourism, such as those that provide activities such as hiking, camping, and animal viewing, are more vulnerable to interruptions caused by fire hazards. Several locations, such as California and the Mediterranean, have experienced an increase in the prevalence of wildfires, affecting tourist operations.

1.4. Resilience and Adaptation Strategies in Tourism

The idea of resilience in tourism has gained popularity as a reaction to the dangers posed by climate change and wildfires on the tourism industry (Tsao and Ni 2016). Resilience of tourism destinations is understood here as a destination's capacity to absorb, adapt to, and recover from external shocks, such as wildfire. (Kendell et al. 2023). The most critical measures for resilience are diversification of tourism goods, improvement of infrastructure, planning of risk management, and participation of the community (Suneeth et al. 2021). As an illustration, Mohammad et al. (2024) believes diversifying tourist offers might help places remain appealing despite environmental difficulties. Promoting tourism during off-seasons and developing new products that are less dependent on fragile ecosystems are also important.

Additionally, it is essential to implement adaptive management methods to reduce the risk of wildfires in tourist areas. According to Pappas, Michopoulou, and Farmaki (2023), these strategies include fire preventive measures, sustainable land use planning, and emergency response procedures. Implementing early warning systems, modern firefighting technology, and efforts to promote awareness and collaboration among local stakeholders can improve readiness and response.

1.5. Integrating Climate Change and Wildfire Risk into Tourism Planning

It is essential to have tourism planning frameworks that consider the hazards posed by wildfires and climate change to ensure the industry's long-term sustainability. Becken et al. (2020) researched the significance of incorporating climate adaptation

methods into the tourist development and management process. Among them are the consideration of fire hazards during construction of infrastructure, planning of tourism activities, and formulation of laws that promote preservation of the environment and reduction of carbon emissions (Zakowski et al. 2023). To successfully anticipate, plan for, and respond to climate change disruptions, climate-resilient tourism locations have a greater chance of thriving. Additionally, community-based approaches to tourism resilience have proved to be more effective in adaptability (Neger, León-Cruz, and Gössling 2024). When it comes to preventing wildfires, monitoring them, and recuperating from them, local communities are an essential component. It is possible to strengthen resilience through promotion of shared responsibility for management of environmental hazards through collaborative efforts among tourist operators, local governments, and people (Bonn et al. 2009).

1.6. Integration of Theory and Literature

Combining theory and literature may provide a complete grasp of the issues that tourism sites impacted by climate change and wildfires confront. Risk management theory provides concrete frameworks for readiness (Walters, Mair, and Lim 2016). In contrast, vulnerability theory assists in identifying regions at risk (Becken et al. 2020), resilience theory emphasizes adaption techniques, sustainability theory assures long-term viability, and vulnerability theory helps identify at-risk areas. In contrast to the social-ecological systems theory, which emphasizes the significance of collaborative approaches, the tourism life cycle theory provides insights into the stages of adaptation (Ritchie 2008). These ideas and observations from literature create a solid framework for investigating strategies to improve the tourist industry's resilience and sustainability in the face of climate change and wildfires (Hannah et al. 2002) therefore, have the potential to provide significant improvements in the effectiveness of conservation planning. We suggest a collaboration involving biogeography, ecology and applied conservation. The resulting Climate Change-integrated Conservation Strategies (CCS.

Understanding how tourist locations adapt to and recover from environmental disturbances requires incorporating theoretical frameworks with current literature on climate change, wildfires, and sustainable tourism operations (Nyaupane and Chhetri 2009). Through integration of vulnerability theory, resilience theory, sustainability theory, risk management theory, tourism life cycle theory, and social-ecological systems theory, this research offers a comprehensive approach to understanding how climate change and wildfires impact tourism, as well as different ways in which tourism destinations can improve their resilience (Scott 2021)one that is increasingly influencing tourism sector investment, planning, operations, and demand. The paper provides an overview of the core challenges climate change poses to sustainable tourism, key knowledge gaps, and the state of preparedness in the tourism sector. As we begin what is widely considered a decisive climate decade, low sectoral preparedness should be highly disconcerting for the tourism community. Put bluntly, what we have done for the past 30 years has not prepared the sector for the next 30 years of accelerating climate change impacts and the transformation to a decarbonized global economy. The transition from two decades of awareness raising and ambition setting to a decade of determined collective response has massive knowledge requirements and necessitates broad sectoral commitments to: (1.

2. Case Studies of Locations Vulnerable to Wildfires

2.1. Wildfires on Tourism in Los Angeles, California

The flames raging in Los Angeles in the year 2025 are having a significant influence on the economy of the United States and are still ongoing. Los Angeles, located in California, is widely considered among the most popular and diversified tourist destinations

in the United States. Its destination draws millions annually due to its well-known landmarks, beaches, entertainment industry, and cultural attractions. On the other hand, the city and the territories surrounding it are vulnerable to wildfires, which have become more frequent and more severe due to climate change. This case study aims to investigate wildfires' impact on tourism in Los Angeles, with a special emphasis on the destructive wildfire season in 2020.

Additionally, this study will investigate the resilience tactics and recovery efforts undertaken by the tourist sector. The Mediterranean climate is characterized by hot, dry summers and moderate, rainy winters. Los Angeles is located in an area that has a Mediterranean climate. The city and the surrounding lands are incredibly vulnerable to wildfire because the conditions are dry, the winds are strong, and the vegetation is dense. Over the past two decades, there has been a considerable increase in the severity and frequency of wildfires, resulting in significant damage to the natural environment and infrastructure. Tourism experienced significant repercussions due to the wildfire season that occurred in 2020, which included several significant flames in and around Los Angeles.

High temperatures and strong winds contributed to the wildfires that occurred in Southern California in the year 2020. These flames were responsible for the devastation of significant swaths of land and properties across the region, including the Angeles National Forest, the Santa Monica Mountains, and other areas close to the city. During this season, such as the Bobcat Fire and the Lake Fire consumed thousands of acres of land, resulting in the closure of roads, evacuation of residents, and poor air quality in the region, all of which affected tourism.

2.2. Wildfire Impact on Tourism in the Blue Mountains, Australia

Located in New South Wales, Australia, the Blue Mountains are one of the most popular tourist sites in the country. Millions of people travel there yearly to experience the breathtaking scenery, engage in outdoor activities, and learn about the region's rich cultural legacy. On the other hand, the area is also highly vulnerable to bushfires, which have become fierce and more frequent due to climate change. In this case study, we analyse the consequences of the 2019-2020 bushfire season on tourism in the Blue Mountains, the resilience tactics that stakeholders have undertaken, and the recovery process that the region is going through. The Blue Mountains have been designated as a UNESCO World Heritage site due to the extraordinary biodiversity, stunning cliffs, and deep valleys it contains. Tourism is a substantial contributor to the economy of this region, with ecotourism, hiking, and historical tourism being among the most important types of tourism. The "Black Summer" wildfire season, which occurred in 2019-2020, was one of the most destructive in the history of Australia. It was responsible for the destruction of significant areas of the Blue Mountains. The fires inflict enormous damage to natural ecosystems and disrupt tourism operations, resulting in substantial economic losses.

2.3. Wildfires and Tourism Impact in California's Wine Country

Wine Country in California is an area that is well-known for its vineyards, wineries, and high-end tourism experiences. This region includes locations such as Napa Valley and Sonoma County. The region can draw in millions of tourists annually through wine tours, gourmet experiences, and outdoor activities. On the other hand, the region has been highly prone to wildfires, especially in recent years, due to climate change. This case study investigates the effects of wildfires in 2017 and 2020 on the tourist business in California's Wine Country and how the region recovered from the disaster. One of the most well-known wine-producing regions in the world is the Wine Country region of California. This region is renowned for its scenic landscapes, agricultural

heritage, and lucrative luxury tourist industry. Several wildfires occurred in the region in 2017, the most devastating of which happened in the counties of Napa and Sonoma. The fires in 2017 destroyed hundreds of houses and businesses and significantly impacted the tourism industry. A fire season comparable to the one that occurred in 2020 but considerably more catastrophic had an even more significant impact on the region, resulting in further destruction and difficulties in recovery.

3. Methodology of the Study

This research aims to investigate the influence of climate change and wildfire on tourism's sustainability and resilience by using a qualitative, exploratory technique that incorporates thematic analysis within a framework of several case studies. Using a qualitative methodology, it is possible to gain a more nuanced knowledge of the social, ecological, and economic vulnerabilities faced by communities dependent on tourism in regions prone to wildfire and the initiatives implemented to build resilience.

3.1. Research Design

Three regions were purposively selected as case studies based on their recurrent wildfire exposure and significant tourism dependence: Los Angeles (California, USA) and New South Wales (Australia). These locations represent varied socio-economic and environmental contexts, providing an opportunity to identify common and distinct patterns across global wildfire-affected tourism destinations.

3.2. Data Collection Methods

Most of the data came from secondary sources, such as government reports, evaluations from tourist boards, academic research, coverage in the media, and policy papers. It was possible to capture the voices of tourist experts, emergency planners, and community people touched by wildfire by conducting interviews with stakeholders and analysing narrative reports that were available to the public in some instances. These many sources provide a sturdy foundation for qualitative interpretation and the development of themes.

3.3. Sampling Techniques

This thematic analysis was carried out using the six-step approach (Fig. 3) developed by Braun and Clarke (Cunningham 1984). Initially, the data were examined thoroughly to ensure they were known. After that, the first codes were created to determine the most essential portions of the consequences of wildfires, vulnerabilities of tourism, and resistance mechanisms. These codes were grouped into more general categories, such as "economic loss," "policy responses," "infrastructure damage," and "adaptive tourism strategies." After assessing and refining the themes to ensure they were coherent and relevant, the final themes were established and contextualized within theory and practice frameworks.

3.4. Ethical Considerations

By analysing numerous data sources across multiple locations, triangulation was accomplished to guarantee the reliability of the findings. The coding process was open and transparent, and it encouraged the creation of memos to capture analytical views. To bolster the legitimacy of the findings, we also utilized peer debriefing and input from academic collaborators.

4. Findings

The results of this study shed light on the significant ways in which wildfires, which are made worse by climate change, affect the resilience and sustainability of the tourist industry. With proactive resilience mechanisms, such as diversification, public-private partnerships, and sustainable tourism practices, destinations exhibit a greater capacity to recover from the effects of wildfire. On the other hand, regions that do not have these plans will have to deal with protracted economic difficulties and a delayed

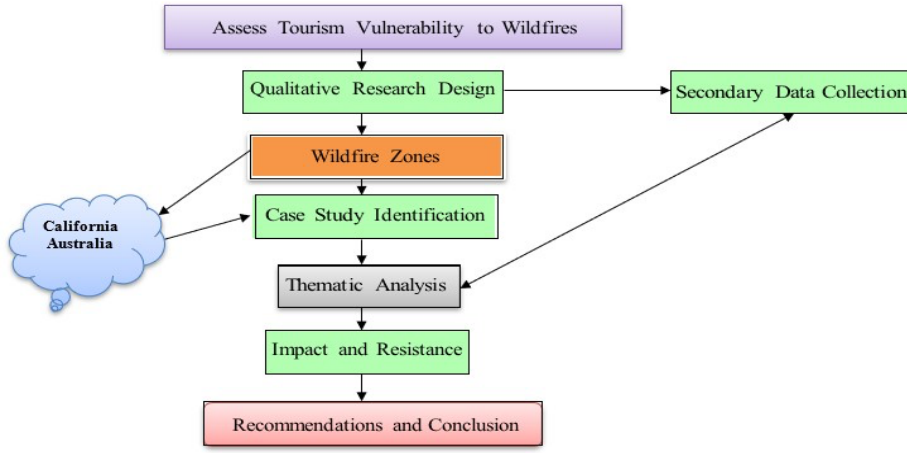

Figure 3. Methodological Framework
Source: Authors' compilation.

recovery. The research highlights the importance of integrating strategies for managing wildfires, adapting to climate change, and planning tourism to guarantee the long-term viability of tourism in areas prone to wildfires. The five primary themes (Fig. 4) that emerged from the thematic analysis of the selected case studies and the qualitative data that supported them highlight the complex and interwoven implications that climate change and wildfires have on the resilience and sustainability of the tourist industry.

Theme 1: Disruption of Tourism Infrastructure and Activities

Research has shown that wildfire causes substantial damage to the infrastructure associated with tourism. This includes natural parks, transportation networks, recreational facilities, and lodging establishments. Large-scale evacuations, road closures, and devastation of picturesque landscapes directly disrupted the flow of tourists, and the services needed to accommodate them in Los Angeles and New South Wales. During and soon after wildfire incidents, this disruption caused a significant drop in visitors, indicating a clear connection between environmental disasters and reduction in the accessibility and appeal of destinations.

Theme 2: Economic Vulnerability of Tourism-Dependent Communities

The heightened economic vulnerability of areas largely dependent on tourism was another recurrently arising issue. Wildfires caused small and medium-sized tourism businesses to experience financial pressure, many of them having neither insurance nor recovery help. The instance of Attica, Greece, brought this to light. Not only did the cancelation of tourists result in a loss of cash for local economies, but it also resulted in the loss of jobs and caused disruptions to supply chains. In most areas, it was clear that there was a lack of provision for emergency funding and preparation for business continuity.

Theme 3: Policy Gaps and Preparedness Deficiencies

According to the findings, there is a significant absence of risk assessments, particularly for wildfires in tourism planning. There was no evidence of targeted, industry-specific plans for tourist resilience despite certain areas having generic disaster management frameworks. According to the stakeholders, there is a lack of cooperation between emergency services and tourist authorities, poor training, and limited early warning distribution. Confusion and delays occurred during

significant response periods due to these policy gaps.

Theme 4: Community-Based Adaptation and Local Innovation

Several adaptation strategies evolved at the grassroots level despite the present difficulties. In regions such as New South Wales, local communities and tourist operators worked together to educate people about fire protection, diversify tourism activities (including wellness and agritourism), and build infrastructure resistant to fire. These bottom-up efforts highlighted the potential of locally based innovation and community participation in constructing tourism resilience to the risks associated with climate change.

Theme 5: Environmental Sustainability as a Foundation for Resilience

This theme supports the argument that sustainable tourism and climate resilience must be integrated holistically. One of the recurring insights was that destinations previously invested in ecological sustainability, such as forest management, reforestation, and protected area governance, were in a better position to recover. Thematic findings demonstrated that such destinations had physical buffers against fire damage and stronger institutional networks that facilitated faster recovery.

5. Results and Discussions

According to this study's findings, wildfires caused by climate change represent a substantial risk to the long-term viability of tourism. These fires immediately impair tourism infrastructure, diminish the attractiveness of destinations, and result in significant economic losses. Across all of the case studies examined, including those from Los Angeles, New South Wales, and Attica, wildfires were responsible for the temporary closure of key tourist sites, destruction of natural and cultural assets, and initiation of long-term harm to organizations' reputations. Additionally, these findings align with previous research, emphasizing tourism's vulnerability to environmental disturbances and the need to include climate risk in tourist planning.

The thematic analysis of the survey also demonstrates that communities dependent on tourism are extremely vulnerable economically, particularly in places where tourism is the predominant source of income. Recovering was difficult since there was no contingency planning or financial buffers. This conclusion is like the findings of Scott et al. (2020), who highlighted the varied ability for adaptation among tourism destinations. According to the investigation findings, local tourist industries would continue to be vulnerable to collapse in the aftermath of major climatic events if economic assistance mechanisms were tailored. These mechanisms include catastrophe insurance schemes and emergency tourism recovery funds.

In the context of climate readiness policies, the gap between tourist development and climate preparedness policies is an essential topic of contention. Despite the rising awareness, most of the case regions did not have tourism risk assessments relevant to wildfires, and there was relatively little sector-specific cooperation with emergency services. This policy vacuum reflects deeper structural challenges in tourist governance, which are characterized by the marginalization of environmental risk in favour of short-term growth. The findings have highlighted the importance of incorporating climate resilience into tourist initiatives through integrated planning, policy harmonization, and collaboration across different sectors.

On the other hand, the research finds new types of community-based adaptation that provide promising avenues toward resilience. There is evidence that bottom-up techniques may address gaps created by top-down governance systems. Some examples of local innovations include eco-friendly infrastructure, diversification of tourist goods, and proactive visitor education. According to Talukder (2020), these findings are consistent with the framework of the Resilience

Theory, which emphasizes adaptive capacity, redundancy, and community agency in the context of handling environmental shocks.

In addition, the research discovered that environmental sustainability is an essential component that acts as a basis for long-term resilience. Locations that had already invested in ecosystem restoration and sustainable land use (such as buffer zones, reforestation, and controlled burns) enjoyed a quicker recovery and fewer long-term consequences than those that had not made such investments. According to Badruddoza et al. (2024), this lends credence to their contention that to future-proof the tourist business in a warming world, it is necessary to seek both sustainability and resilience simultaneously.

In a nutshell, the findings and the debates illustrate the critical requirement for a fundamental shift in how tourism deals with the threats posed by climate change. Through integrated planning, local empowerment, and sustainable resource management, it is possible to lessen the impact of wildfires, even though their frequency and severity are anticipated to grow. The results of this study provide compelling evidence in support of recasting resilience not as a reactive measure but rather as a proactive approach ingrained in the very fabric of tourist development.

Conclusion and Recommendations

This study presents an in-depth analysis of these challenges by providing a detailed analysis of the complex and expanding issues that climate change and wildfire pose to the sustainability and resilience of the tourism industry. The research has shown, via thematic analysis and case studies from locations prone to wildfires, that wildfires not only interrupt tourism operations and infrastructure but also inflict significant ecological harm and economic instability. These effects, if not addressed, threaten the long-term survival of many well-known places. The research highlights the need for proactive adaptation, technological innovation, and community participation in the tourist industry, highlighting the urgent need to include climate resilience methods in tourism planning and governance. The research findings also underline that resilience is not a fixed state but a dynamic process that calls for ongoing investment, cooperation, and education. By implementing a more comprehensive and forward-looking strategy, stakeholders in the tourism industry can lessen the negative impacts of wildfires, guarantee the safety of tourists and the communities that host them, and contribute to the overarching objective of sustainable development in the face of climate change.

Recommendations

When it comes to tourist planning and management, it is vital to use a multi-dimensional strategy to maintain the sustainability and resilience of the tourism industry in the face of a growing number of wildfires caused by climate change. Incorporating climate risk assessments into destination development strategies must be a top priority for policymakers and tourist authorities. Included in this is the incorporation of wildfire hazard mapping, environmental sensitivity evaluations, and vulnerability assessments into tourist master plans, particularly in areas that have a high fire occurrence. According to the findings of the study, early warning systems and real-time monitoring tools that use geospatial technology and predictive analytics should serve as institutionalized tools. Tourist operators and local communities must have access to these technologies to improve their ability to respond to wildfire incidents. In addition, mobile alert systems and digital information hubs can deliver fast and accurate updates to visitors, enhancing the overall safety of the destination and fostering trust in administration of a destination. Businesses in the tourist industry can also consider adopting flexible business structures and diversifying their offerings to lessen their reliance on

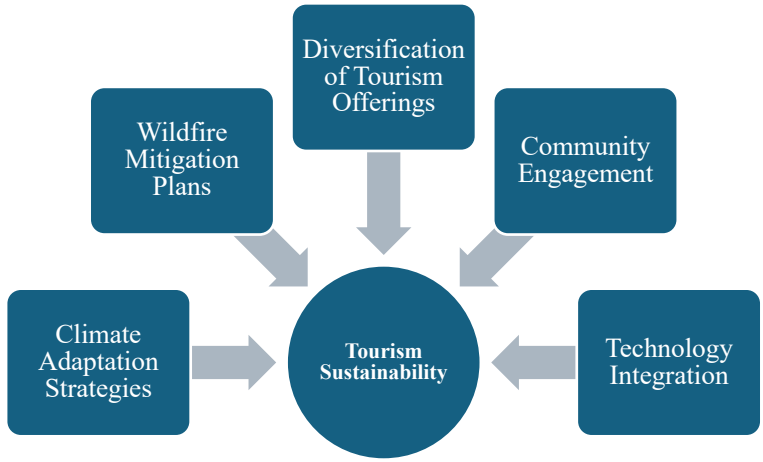

Figure 4. Conceptual Framework for Enhancing Tourism Sustainability in Response to Climate Change and Wildfires
Source: Authors' Compilation.

high-risk seasons or a single type of attraction. For example, venues might offer cultural, educational, and wellness tourism as alternatives to traditional tourism during increased fire risk. There should be incentive programs and training opportunities accessible to small tourist businesses to encourage them to embrace environmentally responsible practices and creative service offerings that align with the preservation of the environment and resilience of the economy.

Additionally, it is strongly suggested that community-based tourist resilience initiatives be developed. It is possible to improve adaptive capacity by providing local stakeholders access to microfinance, training in disaster preparedness, and participatory governance. These initiatives must incorporate engagement with indigenous populations and local knowledge systems, frequently providing vital insights regarding sustainable land and fire management methods.

As a final recommendation, the study suggests formation of partnerships that span many sectors, including those between government agencies, environmental non-governmental organizations (NGOs), academic institutions, and the commercial sector. By fostering knowledge sharing and promoting integrated decision-making, these collaborations can bridge the gap between science, policy, and practice. For tourist systems to become more adaptable and ready to deal with the growing dangers posed by climate change and wildfires, collaborative and forward-thinking governance is required before they can achieve this goal.

Future Research Directions

While this study offers valuable insights into the intersection of climate change, wildfires, and tourism sustainability, it also opens several avenues for future research. Firstly, there is a need for quantitative assessments of wildfire impacts on tourism revenues, employment, and visitor patterns to complement the qualitative findings. Secondly, future research should explore the effectiveness of different adaptation strategies across varying geographic and socio-economic contexts. Comparative analyses can help identify transferable best practices between destinations with similar risk profiles.

Moreover, the role of advanced technologies—such as AI, remote sensing, and digital twin simulations—in wildfire prediction and tourism risk management could provide actionable tools for proactive decision-making. Understanding how tourists perceive climate risks, particularly wildfires, is another promising area, as perception

heavily influences travel behaviour. Additionally, interdisciplinary research that bridges tourism, environmental science, public health, and disaster management is essential for developing holistic and integrated solutions.

Finally, future studies should pay closer attention to marginalized and indigenous communities within tourism zones, whose voices are often underrepresented in policy dialogues but who possess deep knowledge of local ecological systems. Investigating their perspectives and contributions can enrich resilience frameworks and promote inclusive and equitable tourism development. As climate threats continue to intensify, advancing this line of research will be critical to preparing the tourism sector for a more uncertain future.

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