

ABSTRACT

The tourism industry is especially vulnerable to natural disasters and crises, requiring adaptive strategies to enhance the resilience of affected destinations. This study examines the

role of social media networks in strengthening tourism resilience during the response and recovery phases following the Al Haouz earthquake in Marrakech, Morocco. Adopting an interpretivist epistemological approach, this qualitative research draws on testimonies from key stakeholders, including tourism businesses (hotels, travel agencies, airlines,

restaurants), local elected officials, public sector actors (Royal Armed Forces, Security Forces, Ministry of the Interior, Civil Protection), as well as Moroccan citizens, foreign tourists, and associations. Data analysis using NVivo software highlights the essential contribution of social media to the resilience and rehabilitation of tourist destinations. The results of the study show that social media are strategic tools whose deliberate and targeted use can strengthen the resilience of tourist destinations in the face of natural disasters. Beyond their role in emergency communication and restoring the image of tourist destinations, targeted content shared on social media influences the thoughts, emotions, and behaviors of stakeholders, thereby promoting community engagement and national and international solidarity to overcome the crisis. By identifying key takeaways from this experience, this study provides practical recommendations for policymakers and stakeholders in the tourism industry to design effective and context-specific interventions.

Keywords: Earthquake disaster, Morocco, resilience, social media use, tourism destination.

1. Introduction

The tourism sector is widely recognized for its high vulnerability to crises and natural disasters. Earthquakes, in particular, cause the destruction of infrastructure, disrupt local dynamics, and have a lasting impact on the image of destinations. Marrakech and the Al Haouz region, struck by a violent earthquake on September 8, 2023, represent a significant case study for understanding the challenges of tourism and community resilience. In this context, a central question arises: how did tourism stakeholders and society at large mobilize innovative tools, particularly social media, to cope with the crisis? These digital platforms proved to be not only essential for managing emergencies and coordinating relief operations but also strategic instruments for supporting reconstruction and the recovery of the sector. Nevertheless, their use also raises major ethical concerns related to the protection of image rights, the dissemination of false information, and the risks of exploitation. The Moroccan case provides a particularly illustrative example of this dynamic. Citizen mobilization, the involvement of tourism businesses, the role of associations, and the communication of public authorities all converged toward a common objective: reinforcing cooperation, ensuring immediate responsiveness, and expressing collective solidarity. Two years after the earthquake, and in the wake of new tremors, social media continues to play a central role as a tool for monitoring and controlling rehabilitation policies, while simultaneously shedding light on both progress made and delays encountered.

The objective of this research is to analyse the uses of social media in crisis management and tourism resilience in Marrakech and the Al Haouz region, by identifying their concrete contributions to coordination, information, and mobilization, as well as the limitations and risks associated with them. This study contributes to the academic literature on crisis tourism and resilience by highlighting the role of social media as strategic instruments of management and communication in the context of disasters, the articulation between citizen, institutional, and entrepreneurial actions through digital platforms, the ethical dilemmas raised by media visibility in times of crisis, and offering perspectives to strengthen governance and digital regulation in the tourism sector.

2. Theoretical Framework

2.1. Disasters and Tourism Destination Resilience

The Global Facility for Disaster Reduction and Recovery (2017) describe a disaster as a sudden, extreme event that damages essential infrastructure and necessitates recovery assistance. Ecosystem resilience was initially defined by (Holling, 1793) as a system's ability to manage disturbances and return to a stable state near equilibrium. Later, (Holling & Gunderson, 2002) broadened this perspective, emphasizing the capacity to absorb disturbances rather than merely resist them and maintain stability. The term resilience, derived from the Latin "resilio," means "to spring back" or "the ability to recover from destruction" (Campanella, 2006). Resilience relates to the bounce-back effect and the ability to do things better or differently (Aldunce et al., 2014). Resilience refers to a destination's ability to adapt, learn, and reorganize effectively following disasters. It encompasses not only the capacity to maintain essential functions during periods of change but also the ability to thrive and grow in the face of challenges. Scutarri and Corradini highlight that resilience has come to be understood as a system's property, "managing inevitable disturbances towards a desirable and dynamic development path." The concept of "tourism destination resilience" represents the application of resilience theory within tourism and regional economic studies. It denotes "the ability to resist, adapt to, and prepare for disturbances" (Sönmez et al., 1999). Resilience in tourism research is described as the ability of tourism systems to manage stress by maintaining the stability of the regional tourism economy, while also promoting the flexibility and diversity necessary for innovation and ongoing development (Luthe & Wyss, 2014). It encompasses both stability—returning to a prior state of balance following a disruption—and adaptability, which involves absorbing shocks to establish new states of equilibrium (Hudec, 2017). A tourism system or destination

exhibits resilience to disasters when it can endure disruptions caused by catastrophic events and recover swiftly from their impacts (Watson & Deller, 2021). Urban resilience, on the other hand, is shaped by governance networks, interconnected material and energy flows, urban infrastructure, and design, as well as socioeconomic dynamics (Meerow et al., 2016). According to (Filimonau & De Coteau, 2019), key factors contributing to organizational resilience, such as strong leadership, adaptability, situational awareness, organizational culture, strategic planning, innovation, and collaboration, are equally critical in building the resilience of a tourism destination. In both cases, human and financial resources, effective communication, and well-defined disaster management strategies (DM2) play crucial roles in strengthening the ability to withstand crises and ensuring long-term sustainability. The Resilience Capacity Index (RCI), developed by Foster, is a composite measure comprising 12 variables grouped into three dimensions: Economic Capacity, Socio-Demographic Capacity, and Community Connectivity Capacity. (Meerow et al., 2016) propose a model to assess resilience in urban tourism destinations. Resilience spans both macro-level and micro-level perspectives. At the macro level, it relates to the overall functionality of the urban system, while at the micro level, it emphasizes the adaptive capacities of individuals and their communities. Ten key factors have been identified as contributors to the broader framework of destination tourism resilience, alongside five distinct resilience domains within tourism destinations. Social resilience, one of these domains, includes components such as social networks, social trust, social support, community bonds, and a sense of belonging (Sheppard & Williams, 2016). Notably, social networks, social support, and community bonds are highlighted for their importance: (1) individuals often expand their social networks to navigate uncertainty; (2) social support provides material or emotional assistance, serving as a vital foundation for resilience at both individual and community levels (Sherrieb et al., 2010); (3) community bonds and a sense of belonging create emotional connections between individuals and their communities (Guo et al., 2018), forming an essential component of community resilience. (Sheppard & Williams, 2016) B. Economic Domain Resilience: At the microeconomic level, individual income and livelihoods play a crucial role in resilience. At the macroeconomic level, resilience depends on the dynamics of the business ecosystem and the ability of capital to drive economic growth, generate income, and create decent employment opportunities. C. Environmental Domain resilience: At the microeconomic level, ensuring equity in the distribution of infrastructure and the built environment, as well as fair access to and allocation of resources, is essential for fostering resilience. At the macroeconomic level, the thoughtful development of public

infrastructure, including buildings, transportation, energy, and water networks, as well as urban green spaces and parks, combined with the protection of the ecological environment and biodiversity, forms a vital foundation for strengthening both economic and ecological resilience. D. Institutional Domain Resilience: At the macro urban level, institutional resilience is related to adaptive co-management by stakeholders, including government organisations, non-governmental organisations (NGOs), industry, research centres, and informed citizens (Meerow et al., 2016). E. Knowledge Domain Resilience: There is no fixed strategy for residents, organizations, or destinations to cope with these risks. Therefore, the capacity to learn plays a crucial role in destination resilience (Marshall & Marshall, 2007). Learning ability primarily reflects the system's potential. The crucial role of knowledge and adaptive learning is based on Learning to live with uncertainty and combining different types of knowledge that are essential for system resilience (Folke et al., 2002). Post-disaster periods offer destinations and their tourism enterprises valuable opportunities for learning and growth (Wilkinson & Nur, 2018), enabling them to redefine themselves through redevelopment (Seraphin et al., 2018). The more pronounced the impacts of these changing circumstances, the higher the likelihood for tourism industries to devise proactive strategies for future challenges (Hartman, 2018). Repeated and severe shocks strengthen resilience, facilitating quicker recovery.

Disaster management is a critical, nonlinear process that, when executed effectively, can reduce the adverse effects of disasters (Sydnor-Bousso et al.). This process relies on two interconnected strategies: a proactive approach, emphasizing risk management and strategic planning, and a reactive approach, which focuses on adapting, adjusting, and surviving as events unfold. In the tourism sector, disaster management comprises three key stages: (a) planning and preparedness activities before the disaster (predisaster stage), (b) immediate response and management during the disaster (post-disaster stage—short term), and (c) recovery efforts aimed at achieving an improved state (post-disaster stage—long term) (B. Ritchie, 2009). According to (Khazai et al., 2017), the impact of potential disasters can be minimized or even prevented through proactive disaster management plans that identify resource availability and prioritize areas for intervention when disasters strike. While disasters often lead to chaos, they can also foster innovation. Most stakeholders believe their role in building resilience lies in providing leadership and driving innovation. Innovative measures can be introduced across various aspects of the tourism industry affected by disasters, including products, processes, management practices, logistics, and institutional values (Hjalager, 2002). For such innovation to thrive, disaster

management frameworks must be established during the predicate planning and preparedness stages (B. Ritchie, 2009). The rehabilitation trajectory of a tourism destination involves three main steps (Zhang et al., 2024a): 1. Identifying key stakeholders for disaster management, 2. Assessing the tourism infrastructure, including accessibility, availability, and quality of tourism facilities (accommodation, transportation, and attractions) to identify urgent needs and estimate damages. And 3. Implementing tailored disaster response plans that include coordinated recovery efforts, the development of innovative tourism products, and a commitment to sustainable tourism growth (Espiner et al., 2017).

The resilience of tourist destinations affected by natural disasters is closely linked to the governance strategies implemented. A panoply of strategies has been identified to develop resilience and accelerate rehabilitation (Zhang et al., 2024b):

- Risk assessment and disaster preparedness: This step involves identifying the potential threats that the tourism destination may face and assessing the vulnerability of tourism infrastructure to these threats. Training staff in crisis management, proactively anticipating disasters through early warning systems, and formulating emergency response plans help prevent disasters and mitigate risks. Adequate preparedness and management of vulnerabilities in critical infrastructure at a destination are therefore crucial in mitigating the cascading effects (Filimonau & De Coteau, 2019).

- Collaborative planning: Effective disaster resilience requires the involvement of multiple stakeholders, including government agencies, businesses, non-governmental organizations, and local communities. Collaborative efforts among these groups foster a sense of ownership and collective engagement, enabling a coordinated and impactful response to crises. Stakeholder collaboration is thus a fundamental pillar in building resilient destinations. To enhance disaster resilience at the destination level, tourism stakeholders must first strengthen their own internal resilience (Lee et al., 2013). Tourism businesses should take a proactive approach by engaging more extensively in collaborative initiatives with other industry players and policymakers, both within and outside the affected region. Policymakers, in turn, should lead efforts by organizing capacity-building workshops, fostering networking opportunities, and facilitating knowledge sharing on disaster planning, preparedness, recovery, and resolution. The flexibility and dedication of all stakeholders are essential to achieving successful outcomes (B. W. Ritchie, 2004).

- Community Empowerment and Capacity Building: Through resources, training, or assistance, the government actively encourages community participation in disaster preparedness and recovery. Involving local communities ensures their preparedness for disasters and facilitates their active participation in the recovery process following disasters. Appropriate governance, tailored to the Context: The recovery strategies implemented must take into account the geographic, socioeconomic, environmental, legal, cultural, and local traditions specific to each tourist destination. This adaptive governance enables the leveraging of historical knowledge and local community expertise in crisis management.

2.2. The Role of Social Media in Strengthening Tourism Destination Resilience During Disaster Response and Recovery

Social media is now a critical apparatus for disaster risk reduction, particularly in terms of preparedness, response and recovery (Ogie et al., 2019). During emergencies, communities rely heavily on social media platforms such as Facebook, Instagram, WhatsApp, Twitter to keep in contact, share stories and get vital information and resources necessary for disaster response and recovery. Lam et al. singled out four important ways social media data supports the research and practice of disaster resilience. (2023). First of all, it is a great form of communication. Social media allows real-time update to be distributed promptly in times of emergencies. For example, tweets often provide first-hand information from affected areas, such as the state of roads, the number of people without power, and the level of flooding. The data can enhance and validate the models to prepare for emergencies, and also for damage assessment. Second, social media acts as a barometer of public sentiment during times of crisis. Researchers and authorities can assess the well-being and emotions of communities in disaster phases based on this online-shared data, which indicates how people are feeling and what they perceive at any given time (Mihunov et al., 2022; Hossain et al., 2022). The sentiment of texts can be expressed as scores between -1 (very negative) and +1 (very positive) using, for instance, Valence Aware Dictionary and Sentiment Reasoner (VADER). It is possible to learn about the relationship between public sentiment, public behavior, and the ability of affected communities to bounce back thanks to sentiment indicators. Third, social media data enhances predictive modeling of disaster management. For instance, during (Zou et al., 2021) demonstrated that inclusion of socioeconomic information along with sentiment data and Twitter engagement metrics boosted the accuracy of damage assessment by around 10%. Wang et al. also stressed the promise of social media data as a reliable indicator of disaster resilience. (2021) who also observed a significant positive

correlation between the Twitter activity levels and resilience indicators. In combination with the views expressed on social media, demographic factors such as age, gender and level of education also provide useful indicators of whether response and recovery measures are being effective. Lastly, social media makes it easier to respond to emergencies in real time. These platforms help communities and authorities make timely, well-informed decisions during disaster events by facilitating the quick gathering, organizing, and analysis of real-time information. This in the end also enhances the resilience of affected places. This also applies to victim's requests for help, buildings damage detection by images and necessities evaluation. Notwithstanding its potential, social media for disaster resilience still faces four challenges: 1. Spreading of false information: the rapid spread of fake news including misinformation (false or outdated information) and disinformation (maliciously created false information) is particularly challenging, and may be very damaging for the people and communities, the states and the resiliency. Reliable automated approaches for detecting false news, along with strategies to limit its spread, are urgently needed. 2. Social and geographical disparities in Twitter use: There are significant disparities in Twitter usage based on social and geographical conditions. Research shows that regions with better social and geographical conditions tend to tweet more (Zou et al., 2018). Such disparities could skew data and result in biased disaster resilience assessments. 3. Technical issues with big and noisy data: Processing and analysing large amounts of data from social media platforms can be challenging, especially when trying to improve the locational accuracy of tweets. Accurate location information is crucial for reliable disaster resilience research. Three common approaches to determining a tweet's location include geotags, user profile addresses, and locations mentioned in the tweet. In the case of Hurricane Harvey, the 'tweet about' locations were crucial for locating victims in need of rescue {Citation}. 4. Algorithmic bias in AI and modeling: Social and geographical disparities, such as limited access to social media among vulnerable groups, can lead to biased AI models that prioritize wealthier or urban neighbourhoods in disaster response efforts. This raises concerns about fairness and equity in emergency management. (Lam et al., 2023) highlight practical strategies that can be implemented to improve the use of Twitter in enhancing disaster resilience. for governments (GOV), NGOs, and media organizations (NMO), The proposed strategies to improve disaster resilience through Twitter use include utilizing the mitigation phase to build relationships and improve communications with community members, raising awareness of official accounts to serve as reliable sources for accurate information and reduce the chance of false news spread, and adopting social media use guidelines to facilitate faster responses to questions and comments posted.

Furthermore, upgrading the wired secours system to enable connection with web-based social media rescue requests, designing a template to allow speedy and accurate rescue requests, and developing a GIS for mapping rescue requests and planning are also crucial strategies. The strategies for individuals aimed at improving disaster resilience include the use of hashtags. Individuals would appreciate having access to a list of predetermined, relevant hashtags before a disaster, which would help them send rescue requests and organize communication in a timely manner. They would also like to have a mechanism to verify the validity of the news and a warning system for disseminating false information.

Smith and Wenger define disaster recovery as "the differential process of restoring, rebuilding, and reshaping the physical, social, economic, and natural environment through pre-event planning and post-event actions" (Smith & Wenger, 2007). Short-term disaster recovery refers to the initial months following a disaster, overlapping with emergency response, while long-term recovery begins afterward and can span several years, aiming to build community resilience (Rouhanizadeh et al., 2020). Recovery goes beyond rebuilding physical structures — it involves restoring survivors' lives and enhancing the sustainability of the built environment. According to FEMA, it must also address the emotional, financial, and physical needs of affected individuals while preparing the community for future challenges. Key aspects include mental health and emotional support, financial assistance, economic activity, social cohesion, access to vital information, and infrastructure restoration. Social media can effectively support each of these areas throughout the recovery process (Ogie et al., 2022). (Ogie et al., 2022) identify and summarise research findings on how social media supports various aspects of disaster recovery, including donations and financial support. Social media enables fast and responsive citizen-led aid efforts, allowing individuals and organisations to solicit donations locally and globally, and deliver support in ways that are swift, personalised, and aligned with the immediate needs of disaster victims (McKay & Perez, 2019). It also serves to help facilitate donation logistics, helping to match up those in need with those who can fulfil that need more efficiently. Social media can also play a role by drawing attention to the cause, generating donations, and supporting fund-raising efforts by addressing wider audiences (Chugh, 2018). Posting pictures of recipients is a great way to build trust between donor and beneficiary community. Outgoing, communicative and grateful campaigns often see a consistent influx of donations, which lead to repeat funding down the road (Chugh, 2018). Additionally, there is strong evidence of a direct positive correlation between the amount of donation activity on social media sites and actual donation amounts, suggesting online

engagement as a powerful proxy for giving behaviour in the context of disasters (Korolov et al., 2015). (2) SM as a Force for Social Cohesion and Solidarity Community resilience depends upon social solidarity, especially in post-disaster situation. Social networking sites make residents feel like part of the same community, and that everyone is on the same boat, through a way of participation and supporting each other. Specifically, six types of support are role-based support (engagement of police, community leaders, or first responders), symbolic support (presents or respectful acts for victims), informational support (providing confirmed updates and guidance), emotional support (prayer and words of comfort), tangible support (food, clothes, etc.), and circumstantial support (acts of gratitude in situ). These exchanges further promote a sense of group empathy and solidarity that supports communities in coping with stress more efficiently, and in rebounding and recovering more rapidly (Hong et al., 2018). Social media data also provide useful information on the evolution of collective emotions and community resilience over time (Hong et al., 2018). Data from the 2014 Sewol ferry disaster shows that evidence of solidarity and resistance can appear in the immediate aftermath of trauma, even through emotions and affects within social media post, such as posts conveying solidarity and hope for victims (Glasgow et al., 2017). But they have to be handled with care: communications that polarize or divide can undermine trust, break cohesion and undermine the shared values that are at the heart of collective recovery. (3) Monitoring Socioeconomic Health: This technology is also useful in tracking important socio-economic indexes during recovery, such as housing and used car markets. Growth in these areas may, in part, mirror better economic conditions in stricken areas. In addition, online conversations and mood about housing offer valuable signals to show how soon the displaced come back home and this works as a useful recovery index. Tourism and economic recovery in commercial sector There are considerable research about social media and economic recovery on tourism. (Yan et al., 2017) proposed a method to use the photos can be geo-referenced and posted to social media ``to observe recovery trends, and to examine the status of infrastructure and patterns of tourist flow and the change in the number of posts after disaster in a certain area". Likewise, the official information released by government department—such as the housing reconstruction, tourism facility recovery and the livelihoods can also have the big impact on tourists' behavior. Messages promoting efforts for rediscovering our cultural, historical or natural value, or post-disaster community revitalization, tend to have positive effects on access, whereas those using disaster-related words do not have such effects (Fukui & Ohe, 2019). These results are informative and suggest that effective control and monitoring of SMD is essential for driving economic regrowth

in disaster regions (Ai et al., 2023) . Moreover, the presence of local small businesses on social media platforms serves as an instantaneous barometer of economic revival. Social media also allows communities to buy from across the county and around the country in a show of solidarity and to help boost the economy. Programs such as Australia's "Spend With Them" and "Buy From The Bush" show the potential of online engagement in driving consumer action to support recovery in tourism-dependent areas. These aspects add to the doors that have already been opened to gain information from social media on housing reconstruction, tourism resume, and life in the regions at hand.

3. Methodology

The city of Marrakech has shown remarkable resilience by maintaining its development trajectory despite the impact of the Al Haouz earthquake. This ability to adapt makes it a relevant case study to examine the role of social media in strengthening the resilience of tourist destinations. Qualitative research provides deep insights into a topic and uncovers new research opportunities by revealing unknown aspects. It highlights meanings, attitudes, and participant insights that contribute to theory development (Tharenou et al., 2007). This aligns with inductive reasoning, which involves moving from specific observations to broader knowledge (Walliman, 2006). Data was collected through semi-structured interviews with tourism stakeholders in Marrakech and the Al Haouz province. To address the question, "How have social media contributed to the resilience of the tourist destination both during and after the earthquake?", semi-structured interviews lasting between 30 and 60 minutes were conducted with stakeholders from the tourism sector in the affected regions. Data were collected from tourism businesses (hotels, travel agencies, airlines, restaurants, etc.), local elected officials, public sector (Royal Armed Forces, Security Forces, Civil Protection, Hospitals...), Moroccan citizens, foreign tourists, and associations. Interviews were conducted until data saturation was reached. Each interview was digitally recorded and transcribed. The data were then analysed using NVivo software for thematic analysis.

4. Results and Discussion

The results of the field study reveal that social media played a central role in information management, coordination, and mobilization, both during the earthquake that struck the Al Haouz region and in the days that followed the disaster. Patterns of use varied among different categories of actors—Moroccan citizens, foreign tourists, tourism businesses, associations, public authorities, and civil organizations — yet they all converged toward the same objective: strengthening

cooperation, ensuring immediate responsiveness, and expressing collective solidarity to overcome geographical and institutional constraints, thereby enhancing resilience. The analysis focused on the responses of each type of actor, distinguishing between uses during the initial shock and those observed in the following days, highlighting the content shared on social media and the role of that content in supporting the resilience of the tourist destination. In the first moments of the earthquake, Moroccan citizens turned to WhatsApp and Facebook to check on the safety of their relatives, exchange prevention guidelines in case of aftershocks, and follow live updates on Facebook, Instagram, and Twitter shared by influencers and local organizations. As the situation progressively stabilized, the use of these platforms shifted toward social mobilization: announcements of fundraising campaigns, blood donation drives, and photos of aid convoys. As one citizen explained: "I shared videos of blood donation campaigns, photos of convoys, and information about reliable associations." Many influencers emphasized their responsibility by declaring: "We are the soldiers of the web; our content must be credible, have a positive impact, and serve crisis management.". Community resilience refers to the personal and collective adaptive abilities of community members and institutions (Berkes and Ross, People are the key decisive factor in community resilience (Ruiz-Ballesteros, 2011). In the context of tourism, both the accumulation of community knowledge and the learning abilities of community members are beneficial to the recovery process (Hamzah & Hampton, 2012) According to (Filimonau & De Coteau, 2019) , strong leadership is a key factor contributing to a system's resilience. The leadership of His Majesty King Mohammed VI was exemplified in the speech he delivered directly to the Moroccan people following the natural disaster: "While every earthquake inevitably brings its share of destruction, we are driven by the firm determination to take action for reconstruction. Therefore, we emphasize the need to continue providing aid and assistance to affected families, to undertake the swift rehabilitation and reconstruction of the affected areas, and to ensure they have access to basic services. Despite the scale of the disaster, grief and sorrow have given way to comfort and pride in witnessing the sincerity and spontaneity with which Moroccans, both at home and abroad, as well as civil society actors, have demonstrated their spirit of mutual aid and solidarity towards their fellow citizens in distress in countless ways. We also salute the Royal Armed Forces, the various security forces, government departments, and the territorial administration for their sacrifices in providing aid and assistance to the populations of the affected areas. We also take this opportunity to thank once again the brotherly and friendly countries that, in this difficult time, have shown solidarity and support for the Moroccan people". The Moroccan solidarity in

times of crisis can be compared to the human body's immune response: when one part is affected, the entire system mobilizes to heal and protect it. This analogy mirrors how individuals and institutions across Morocco, from Tangier to Lagouira, have united and committed to assisting the affected areas. All, driven by a strong sense of duty, have contributed either by sending aid or by going directly to the field to provide hands-on assistance. This national mobilization reflects the deep-rooted unity and solidarity of the Moroccan people. The Moroccan diaspora, especially celebrities abroad, contributed by giving the disaster international visibility in order to generate solidarity. These figures often have a broad reach and a trusted voice, which can inspire others to take action. When influencers and public figures visit disaster zones, their posts and videos go viral, reaching a broader audience. Their endorsement of these relief efforts can lend more credibility and visibility to these initiatives. For example, when a well-known celebrity shares a story of a specific community or highlights the urgent needs of victims, their followers are more likely to contribute, either financially or by volunteering Tourism businesses (hotels, cafés, travel agencies, airlines) used social media to communicate the status of their facilities, reassure families, announce the list of tourists present, and provide shelter for those affected. As a hotel owner stated, "We offered free rooms to those who were affected." A café manager added: "We provided free meals for volunteers and rescuers." National telecommunications companies have pledged to provide free internet access, ensuring seamless communication and coordination during this critical time. Airlines and travel agencies used Facebook, WhatsApp, and email to manage cancellations and changes free of charge, before shifting — once the situation had stabilized — toward promoting solidarity tourism. Public authorities (the Ministry of the Interior, the Ministry of Health, Civil Protection, and the Royal Armed Forces) also mobilized social media: publishing daily updates to counter rumors, coordinating hospitals and ambulances via WhatsApp, disseminating health guidelines, organizing digital blood donation campaigns, and communicating in real time about interventions, emergency numbers, and priority routes. Knowledge co production is centered around knowledge sharing. "Through social media, Moroccan citizens share the contacts of people requesting help to facilitate the intervention and to provide rapid aid to affected areas that have not yet been identified". Social media has facilitated real-time information sharing across various challenges, enabling quick reactions and the adoption of solutions. "The active forces of the web share request, expressed needs, and problems to be solved. Moreover, as the information spreads, we see posts indicating that the information has been received and the issue has been resolved...". Government departments at all levels have

actively responded to the severe impact of the earthquake, demonstrating the agility and strength of the national system in the face of disasters. Immediately after the first wave, questions arise: "How did you feel it in your city?" Comments and surveillance camera videos are shared, allowing the authorities to gather information on the intensity of the disaster and the emotional state of the citizens. This helps them take necessary actions and implement appropriate strategies. In a preventive approach, rescue guides are widely shared in preparation for a potential second wave. Implementing an internal warehouse management system ensures that stock and supplies are organized effectively, facilitating the rapid and orderly distribution of aid. Effective coordination is essential for the efficient collection and distribution of aid. By ensuring that resources reach those in need quickly, communities can recover more rapidly from disasters. Local elected officials shared updated maps of open and closed roads and communicated on rehabilitation programs. Charitable associations relied on these channels to collect donations and deliver aid to affected villages. Some associations focused exclusively on managing the waste generated by the aid convoys. Foreign tourists, for their part, used WhatsApp to reassure their families and Instagram to gauge the magnitude of the earthquake in real time. Some even participated in donation campaigns and shared human experiences: "Thanks to the blood donation campaigns on social media, we took part as well..." while others published positive content showing the gradual return of life: "I posted a video of myself drinking coffee in Jamaa El Fna square to show my friends in the Emirates that everything was fine. The use of social media followed a clear temporal pattern: during the earthquake, securing and relaying real-time information; in the following days, organizing solidarity and coordinating relief efforts. This dynamic demonstrates that social media has evolved from traditional communication tools into strategic instruments for disaster management and tourism recovery, while also remaining a double-edged sword: when used responsibly, it strengthens resilience; when misused, it risks exacerbating the crisis and generating new ones. Social media can significantly intensify the impact of events, both positively and negatively. It can have a snowball effect that is either positive or negative. Tweeting about positive emotions strengthens community resilience and creates a supportive environment, and vice versa. Developing tactics that increase resilience requires an understanding of the fundamental forces behind such group action. "Even before crises arose, the resilience of the national social system was reinforced by patriotism and the outstanding World Cup performances of the Moroccan team, which enhanced the sense of community and shared trust. Communities create the groundwork for a quicker and more robust recovery when they have faith in one another and in their institutions. In this sense, social media

was essential in promoting this feeling of solidarity. Table 1 illustrates how social media was used by various actors to support tourism destination resilience during the Al Haouz earthquake.

Table 1: Social Media Uses by Actors and their Contribution to Tourism Destination Resilience during the Al Haouz Earthquake

Actors	Social Media Uses	Contribution to Resilience
Citizens	Safety checks, prevention tips, donation campaigns, convoy coordination	Social resilience (solidarity, emotional support)
King & Leadership	Inspirational speeches shared online	Reinforced national unity and institutional legitimacy
Influencers & Diaspora	Amplified credible info, gave international visibility, sometimes misused images	Expanded solidarity; raised ethical issues (right to image, exploitation)
Tourism Businesses	Facility updates, free rooms/meals, solidarity tourism promotion	Economic resilience and trust recovery
Public Authorities	Official updates, rumor control, health guidelines, rescue coordination	Institutional resilience and governance
Associations	Organized donations, aid delivery, waste management	Strengthened adaptive local capacity
Foreign Tourists	Reassured families, shared positive content,	Restored destination image and solidarity

	joined donation drives	
Public at 2 years	Used social media to monitor reconstruction and policies after recent tremor	Accountability and policy follow-up

Two years after the Al Haouz earthquake, and following the recent tremor of September 3, 2025, social media established itself not only as a channel for rapid information sharing but also as a tool for monitoring and controlling rehabilitation policies. By documenting reconstruction efforts and denouncing delays, these platforms strengthened digital accountability. However, this dynamic also revealed ethical challenges: during the Al Haouz crisis, some influencers were accused of violating image rights by filming victims without their consent, while the dissemination of misleading content raised concerns about human trafficking and exploitation. This dual role highlights that social media, while essential for transparency and resilience, requires ethical regulation in order to protect vulnerable populations.

5. Conclusion

The Al Haouz earthquake revealed the crucial role of social media in the resilience of tourist destinations during crises. These digital tools were used as strategic mechanisms for disaster management, stakeholder management and recovery. More than just communicating simply, they fostered unity, made it simpler for credible information to get around fast, and restored the credibility that would allow tourism to restart. Also, in the face of epic adversity, King Mohammed VI's wellspring of an inspirational morale-boost speech was pivotal as it lent morale to a uniting and conducive spirit and action for a proud and solid country. Besides communication-supporting, they augmented solidarity, prompted rapid spread of trustworthy information, and helped parent trust for tourism restarting. Furthermore, the inspiring speech of King Mohammed VI has also greatly contributed in strengthening national resilience by being not only a compass for action but also a cement that will congeal a proud and solidary nation. Theoretically, this article contributes both to the research on the resilience of tourism destinations and on tourism resilience in which it is shown that collaborative as well as adaptive uses of digital technologies can enhance the ability of tourism systems to absorb shocks, adapt, and transform themselves. The analogy of post-disaster community resilience supported by social media to the integrative functioning of the nervous and circulatory systems in the human body helps to illustrate

the synergy. Just as the nervous system detects affected areas and instantly transmits signals to trigger an adaptive response, social media disseminates critical information in real time, enabling rapid and effective coordination of actions. Similarly, as blood flows through the veins to nourish and repair damaged tissues, the information streams shared across these platforms feed all stakeholders supporting targeted interventions and better resource allocation. These dynamic fosters the social, economic, and tourism regeneration of affected areas, strengthening collective solidarity, enabling the co-construction of solutions, and accelerating the return to a functional and sustainable state. In the context of post-disaster resilience, social media also catalyses internal and external communication, as described in neuro-linguistic programming (NLP), directly shaping collective emotions and actions. This dynamic mirrors internal cognitive processes, where positive communication reframes adversity as a challenge to be overcome, reinforcing adaptive behaviors that accelerate recovery and a return to normalcy. Thus, social media goes beyond merely transmitting information; it activates collective emotional and behavioral responses that are vital for restoring social, economic, and psychological balance in the aftermath of a disaster. These results highlight the importance, for public decision-makers and stakeholders in the tourism sector, of designing integrated digital strategies within crisis management plans. Ultimately, the Al Haouz earthquake teaches us that, in the digital age, the resilience of tourist destinations no longer depends solely on the strength of their infrastructures, but also on their ability to leverage digital tools in real time to unite communities, co-create solutions, and transform adversity into a driver of innovation and lasting solidarity.

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