Digital marketing and sustainable tourism:

a resiliency proposal

Luzia Arantes [1]

[1] Polytechnic Institute of Cávado and Ave, Barcelos, Portugal, lamorim@ipca.pt & University of Aveiro, Aveiro, Portugal, lamorim@ua.pt

Abstract

Social media and digital marketing are increasingly used in order to shape the behavior of individuals. With their far-reaching influence, they have emerged as powerful tools for promoting sustainable behaviors. Consequently, it has become imperative to develop a meticulous strategic plan that integrates both digital marketing and social media, thus building a lasting communication network that inspires tourists to adopt sustainable practices during their travels. This approach can contribute to the promotion of sustainable tourism and, at the same time, positively contribute to environmental conservation efforts on a global scale. 422 individuals participated, 149 (35.2%) male, 273 (64.5%) female and 1 (0.2%) participant of another sex, aged between 18 and 73 years, with an average age of 42.74 years (SD = 15.94%). Using structural equation modeling, the relationships between sustainable destination measures, social networks, tourists' predisposition to sustainability, and tourists' sustainable behaviors were analyzed. The results of this research suggest that the sustainable measures implemented by the tourist destination have an impact on the adoption of sustainable behaviors among tourists, when mediated using social networks by the destination or by the prior predisposition of tourists to adopt these behaviors. However, the sustainable measures of the tourist destination alone are not sufficient for tourists to adopt sustainable behaviors. The application of the model makes it possible to identify the advantages of digital marketing and social networks in sustainable tourism and thus promote a resilient environment for the tourist market in Portugal.

Keywords: Digital marketing, Social networks, Sustainable tourism, Sustainability, sustainable development, Structural Equation Modeling (SEM)

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1. Introduction

The tourism sector has undergone significant changes in recent years due to the rapid advancement of technology, as well as the impacts of the SARS-CoV-2 pandemic. To keep up with these changes, tourist destinations must adapt to new marketing strategies that use digital platforms.

In addition, it is also essential that tourism be sustainable to guarantee the long-term viability of destinations and their economies. Research (e.g., Putra et al., 2021) demonstrated that sustainable tourism is not only a matter of a company committed to social responsibility, but also involves three dimensions: economic, environmental and social.

The collaboration of these three dimensions gives rise to innovations in the tourism sector that can increase the resilience and competitiveness of destinations. Therefore, it is important to propose digital marketing strategies that give priority to sustainability to create resilience in the tourism sector. The proposal of digital marketing strategies requires the incorporation of sustainable principles in tourism planning and practices to create a win-win situation between industry and natural resources. In this sense, this study aims to contribute to the understanding of the role that digital marketing can play of sustainable tourism destinations, as well as contribute to the construction of their resilience.

However, the construct of resilience, understood, in tourism, as the "persistence of systems and their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables" (Holling, 1973, p. 14) is not present in the structural model, since the focus is to test the proposed structural model and that this, subsequently, contributes to resilience in the sector. To this end, the study will focus on the analysis of the current literature on digital marketing and sustainable tourism to identify the main themes and trends, as well as test the proposed structural model.

Research hypotheses were stipulated with the objective of defining the possible relationships between the constructs present in the study, and measures were also defined that seek to assess the sustainable measures implemented by tourist destinations, the use of social networks by tourists, the predisposition of tourists to adopt sustainable behaviors and the effective adoption of sustainable behaviors by tourists in tourist destinations.

For the development of this study, questionnaire surveys were used, where it was possible to obtain 422 participants during the three-month period, between January 2022 and April 2022. The results obtained allowed us to test the structural model and carry out a path analysis that allowed us to confirm the hypotheses under study, as well as to prove the suitability of the data to the model.

This article is comprised of six main sections. After this introduction, the second section is dedicated to the literature review, which summarizes contributions on digital marketing, social networks, measures implemented for sustainable tourism, predisposition and behaviors adopted by tourists. Subsequently, the third section presents the methodology of this study, the fourth section consists of the analyses performed and the fifth section presents the results obtained, as well as their discussion. The article ends with the conclusion, the main limitations, and suggestions for future research.

2. Literature Review

2.1. Digital Marketing and Social Networks

In the current digital era, in which traditional marketing methods have taken a back seat and companies are increasingly resorting to online advertising, social networks play a fundamental role in the success of digital marketing campaigns (Housley et al., 2018). Social networks such as TikTok, Facebook, Twitter, Instagram and LinkedIn offer companies an economic platform to promote their products or services through digital marketing.

The use of emojis is also a common practice on social networks, especially in digital marketing. Previous research (e.g., Huang et al., 2021; Wang et al., 2023) shows an influence of emojis on social networks on the involvement of the media and on the intention of cooperation in environmental campaigns. In addition, social networks also facilitate two-way communication between companies and customers, allowing for a personalized experience that is crucial for experimental marketing campaigns. These campaigns have the potential to influence consumers' social norms, attitudes, and buying behaviors, regardless of the regulations themselves.

In the tourism sector, social networks have emerged as a powerful tool for digital marketing campaigns. By harnessing the potential of social networks, tourism companies are reaching a wider audience and creating new experiences (Ndekwa & Katunzi, 2016). Tourism companies can build a digital identity and establish a financial infrastructure that promotes sustainable development, as part of the digital transformation in tourism (e.g., Dabeedooal et al., 2019; Wang et al., 2022). In addition, social media campaigns have become a strategy for transmitting messages related to sustainability to society.

2.2. Measures for Sustainable Tourism, Predisposition and Behaviors Adopted by Tourists

Sustainable tourism has become increasingly important in the modern world, as individuals are increasingly aware of the impact that tourism can have on the environment and local communities (e.g., Parmawati et al., 2020; Wang et al., 2023). Sustainable tourism is a broad concept, with different interpretations, however, to guarantee sustainable tourism development, the authors

agree that it is essential to apply measures that address the economic, environmental and social aspects of tourism (e.g., Niavis et al., 2019; Nurjaya, 2022).

One way to achieve sustainable tourism development is through the adoption and implementation of sustainable measures in the tourist destination. These measures include actions such as reducing the environmental impact of tourist activities, supporting local communities through the use of their resources and knowledge, the promotion of cultural heritage and traditions, the improvement of the quality of life of local residents, the protection and respect for the environment by reducing pollution, recycling, the use of renewable energies and the conservation of natural areas (e.g., Francis et al., 2019; Horn & Proksch, 2022; Niavis et al., 2019; Parmawati et al., 2020; Zhao & Li, 2018). As more and more tourists travel responsibly, the sustainability of a tourist destination can have a significant impact on your choice of destination. Tourists tend to prefer destinations that have adopted sustainable measures to preserve the environment and promote responsible tourism practices.

According to Flagestad and Hope (2001), the application of strategic management theories developed for companies can be applied to manage a tourist destination in a sustainable way. This includes focusing on long-term sustainability objectives, incorporating sustainable practices into all aspects of the operation, involving stakeholders and the local community in decision-making processes, and continuously monitoring and evaluating the impacts of tourism on the destination. Having said that, we formulate the following hypothesis:

Hypothesis 1: It is estimated that the adoption and implementation of sustainable measures in the tourist destination is directly related to the use of social networks by tourists.

In addition, tourists themselves can adopt responsible behaviors to contribute to sustainable tourism. This includes activities such as reducing water and energy consumption, turning off all equipment or air conditioning when leaving a room, avoiding single-use plastic products, supporting businesses and local communities, respecting cultural norms and values, reusing towels and sheets in the chosen accommodation, traveling on foot, by bicycle or public transport, and recycling (e.g., Dolnicar, 2023; Hu et al., 2021; Singh & Ogbeide, 2018). In this sense, he will formulate the following hypothesis:

Hypothesis 1.1: It is estimated that the adoption and implementation of sustainable measures in tourist destinations is indirectly related to the behaviors adopted by tourists in tourist destinations through the use of social networks by tourists.

Culture influences tourists' attitudes and behaviors regarding sustainability in their favorite destinations (Aydın & Alvarez, 2020). Thus, it is important that managers not only implement sustainable measures, but also educate tourists about their role in the preservation of the environment and encourage them to adopt sustainable behaviors during their trips. The behavior of tourists plays a fundamental role in promoting the development of sustainable tourism. Destination marketing and communication tools are effective in influencing tourists' decision-making processes to adopt sustainable behaviors (Shen et al., 2020). The following hypothesis was defined:

Hypothesis 2: It is estimated that the adoption and implementation of sustainable measures in the tourist destination is directly related to the behaviors adopted by tourists.

The predisposition of tourists to adopt sustainable behaviors has increased in recent years (Aydın & Alvarez, 2020). This leads to a shift in the tourism industry towards promoting sustainability as an important factor to consider when choosing a travel destination (Almeida-Santana & Moreno-Gil, 2019). In fact, tourists may be predisposed to adopt sustainable measures in destinations. To this end, this predisposition may be reflected in the choice of the destination through the sustainable practices adopted by them, payment of additional amounts for services called sustainable, and loyalty to destinations for practicing sustainable tourism (e.g., Aydın & Alvarez, 2020; Marchi et al., 2021; Solis-Radilla et al., 2019). Thus, the following hypotheses were defined:

Hypothesis 3: It is estimated that the adoption and implementation of sustainable measures in tourist destinations is directly related to the predisposition of tourists to adopt sustainable behaviors in tourist destinations.

Hypothesis 3.1: It is estimated that the adoption and implementation of sustainable measures in tourist destinations is indirectly related to the behaviors adopted by tourists in tourist destinations through the predisposition of tourists to adopt sustainable behaviors in tourist destinations.

Figure 1 shows the causal relationships between the previously presented research hypotheses.
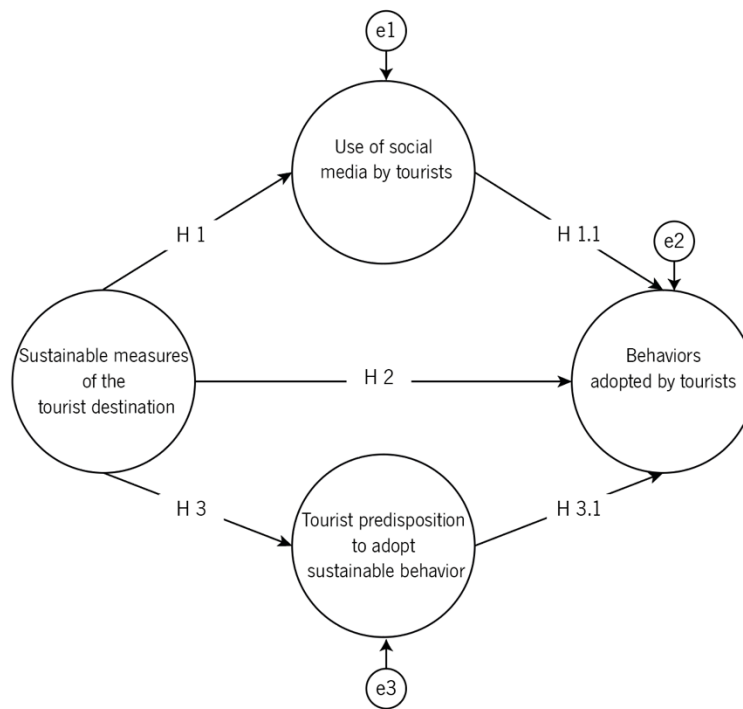

Figure 1 – Proposed Structural Model

Source: Own elaboration

3. Method

The investigation was conducted using a non-probabilistic convenience sample. Questionnaire surveys were accessible online for the three-month period from January to April 2022 and were no longer available after this period for data collection purposes. It is important to take these limitations into account when interpreting the results and drawing conclusions from this study.

Initially, the participants received a request for informed consent that described various aspects of the research project, such as its purpose and confidentiality measures. Subsequently, they were presented with a set of questionnaires related to different facets of digital marketing and sustainable tourism. These included issues related to the use of social networks by tourists, the measures implemented by destinations for sustainable tourism, the predisposition and behaviors adopted by tourists when visiting destinations. Finally, the participants filled out a sociodemographic questionnaire with personal information. Overall, this comprehensive approach aimed to gather valuable information about contemporary trends in digital marketing practices, as well as their impact on environmental sustainability efforts.

3.1. Characterization of the Participants

The sample has 422 participants, 148 (35.1%) men, 273 (64.7%) women and 1 (0.2%) participant from another gender. The age of the participants is between 18 and 73 years, with an average age of 42.77 years (SD= 15.94%), of which 420 (99.5%) are of Portuguese nationality, 2 (0.5%) are of Brazilian nationality.

Table 1 shows the geographical distribution of the participants in Mainland Portugal, the majority from the North region, 174 (41.2%). Regarding marital status, 175 (41.5%) are married, 163 (38.6%) are single, 36 (8.5%) are divorced, 36 (8.5%) are in a consensual union, 4 (0.9%) are separated, and 4 (0.9%) are widowed, and 4 (0.9%) are at another level of civil commitment. Regarding education, 165 (39.1%) have doctorates, 100 (23.7%) have degrees, 86 (20.4%) have master's degrees, 38 (9%) have post-doctorates, 31 (7.3%) have secondary education, 1 (0.2%) have specialization and, finally, 1 (0.2%) have a bachelor's degree.

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Table 1 – Distribution of participants per region

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Mainland Portugal Region	Number of participants	Percentage of participants
North	174	41,20%
Center	114	27,00%
Lisbon Metropolitan Area	80	19,00%
Alentejo	20	4,70%
Algarve	15	3,60%
Azores Autonomous Region	8	1,90%
Madeira Autonomous Region	5	1,20%

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Source: Own elaboration

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3.2. Instruments

To measure the variables under study, we structured measures based on the literature review conducted. To assess the adoption and implementation of sustainable measures in the tourist destination, a scale was constructed consisting of eight items (e.g., item one "The destination respects and protects the environment."), answered on a Likert-type response scale, between 1 (very low) and 5 (very high), which for the present study sample showed a good internal consistency index, according to Cronbach's Alpha (α=.95) presented by Gliem and Gliem (2003). To assess the use of social networks by tourists, a scale consisting of six items was constructed (e.g., item three "The information I find on social networks influences the choice of a tourist destination or the purchase of a product."), answered on a Likert-type response scale, between 1 (I totally disagree) to 5 (I totally agree), which for the present study sample, presented a good internal consistency index (α=.83). To assess the behaviors adopted by tourists, a scale consisting of seven items was constructed (e.g., item six "I reused the towels and sheets in my accommodation."), answered on a Likert-type response scale, between 1 (always) and 5 (never), which for the present study sample, presented an acceptable internal consistency index (α=.78). To assess tourists' predisposition to adopt sustainable behaviors in tourist destinations, a scale was constructed consisting of four items (e.g., item one "I would visit a destination due to the sustainable practices that are adopted there."), answered on a Likert-type response scale, between 1 (I totally disagree) to 5 (I totally agree), which for the present study sample, presented a good internal consistency index (α=.81).

4. Analyses

Statistical analyses were performed using the Statistical Package for the Social Science (IBM SPSS), version 28.0 for Mac and the Analysis of Moment Structures (AMOS), version 28.0 for Windows.

Table 2 shows the correlations between the variables under study, the internal consistency indices of the structural model variables, for the total sample (n=422), the average values and the standard deviations. The magnitude of the relations indicates the presence of moderate relations (.30 < r < .50) and of strong relationships (r> .50) (Cohen, 1988) between the variables, without the existence of multicollinearity. Furthermore, the correlations are statistically significant (p < .001), thus fulfilling the linearity assumption.

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Table 2 – Correlations between study variables, mean values, standard deviations, and internal consistency indices (N=422)

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	Adoption and implementation of sustainable measures in the tourist destination	Use of social networks by tourists	Behaviors adopted by tourists	M	DP	α
Adoption and implementation of sustainable measures in the tourist destination	.	.	.	31.33	6.56	.95
Use of social networks by tourists	. 15**	.	.	22,61	4.44	.83
Behaviors adopted by tourists	.18**	. 11**	.	28.53	3.17	.78
Tourists' predisposition to adopt sustainable behaviors	.50**	.13**	.30**	15.28	2.70	.81

*Note: ** p < .01*

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Source: Own elaboration

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The statistical assumptions inherent to structural equation models were verified, namely: (1) lack of multicollinearity (Cohen, 1988); (2) the principle of linearity of relations (statistically significant correlations between variables, Marôco, 2010); (3) minimum sample size between 100 and 200 participants (Schumacker & Lomax, 2010).

However, a violation of the (4) multivariate normality was found when sk=ku=0, (Mardia coefficient ~3), so the bootstrapping method was used with 500 samples and a 95% confidence interval (e.g., Marôco, 2010; Gilson et al., 2013) and the absence of extreme outliers (Mahalanobis Distance < .001), and in the case of the presence of outliers, the analyses were performed without them.

Subsequently, path analysis was performed to assess whether the structural model was well adjusted to the data and whether the hypotheses defined later are verified, thus confirming the existence, or not, of the proposed relationships between the constructs.

The structural model, without outliers, showed a very good CFI value ($\geq$.95; for the present sample .98), a very good GFI value ($\geq$.95; for the present sample .99), a good RMSEA value (.05>RMSEA<.10; for the present sample .08) and an AIC value of 67.23.

5. Discussion

Figure 2 shows the standardized estimates between the constructs of the final structural model. These estimates were analyzed and normalized to provide an academically rigorous representation of the relationships between these key components.
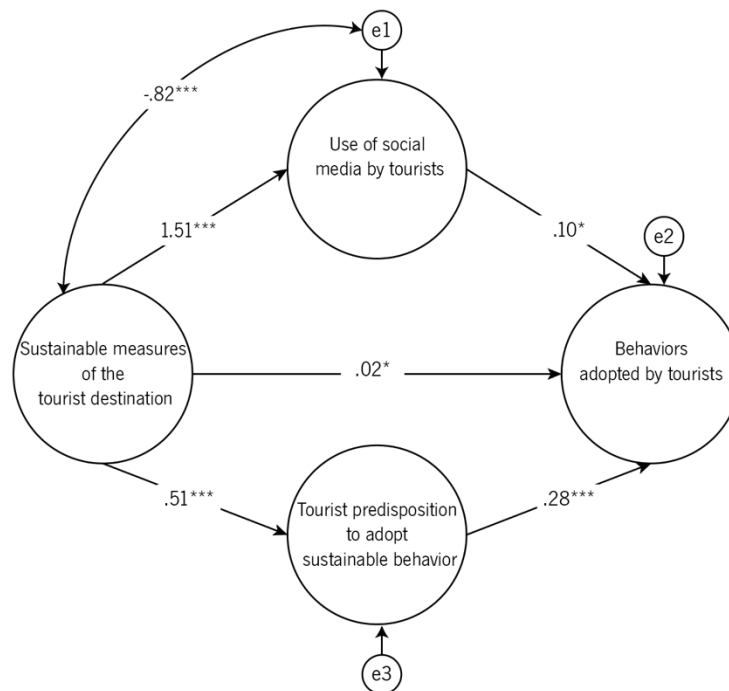
Note: *** p < .001; * p < .05

Figure 2 – Final Structural Model

Source: Own elaboration

The results point to statistically significant relationships between the constructs, and it is possible to verify that there is a direct relationship between the adoption and implementation of sustainable measures in the tourist destination and the use of social networks by tourists (β=1.51); there is a direct relationship between the adoption and implementation of sustainable measures in the tourist destination and the behaviors adopted by tourists when visiting destinations (β=.02) and there is also a direct relationship between the adoption and implementation of measures sustainable in tourist destinations with the predisposition of tourists to adopt sustainable behaviors (β=.51). With regard to the indirect effects, it is possible to verify that the adoption and implementation of sustainable measures in the tourist destination are indirectly related to the behaviors adopted by tourists in tourist destinations through the use of social networks by tourists (β=.15*) and it appears that the adoption and implementation of sustainable measures in the tourist destination is indirectly related to the behaviors adopted by tourists in tourist destinations through the predisposition of tourists to adopt sustainable behaviors in tourist destinations (β=.14*)

In view of these results, it is possible to confirm all the hypotheses initially formulated.

The results indicate that social media campaigns emerged as an effective tool for communicating messages related to sustainability to society, as already presented by previous research (e.g., Dabeedooal et al., 2019; Wang et al., 2022). This disruptive digital modification has particularly affected the tourism industry, leading to a shift in how destinations are marketed and promoted (Arasli et al., 2021). The advent of social media has revolutionized tourism communication and provided destination marketing tools to promote sustainability initiatives (Arasli et al., 2021). By leveraging the vast reach and influence of these platforms on consumer decisions, sustainable destination marketers can effectively promote their ecological practices, while educating tourists about responsible travel behaviors - thus contributing positively to achieving sustainable development goals on a large scale.

We can infer, through the results, that tourists play an important role in promoting sustainable tourism, with the adoption of responsible behaviors that contribute to the preservation of the environment and local communities. To do this, they can engage in various activities, such as reducing water and energy consumption levels, making sure that all equipment or air conditioning is turned off when they leave the room, always avoiding single-use plastic products, supporting companies and local communities through ethical spending practices, respecting the cultural norms and values of the host countries visited during their trips.

In addition, tourists can also make conscious efforts to promote sustainable tourism by reusing the towels and sheets provided at the accommodation facilities instead of ordering new towels every day. Moving responsibly on foot or by bicycle while exploring destinations, whenever possible, not only reduces carbon emissions, but also provides opportunities for physical exercise while enjoying the beautiful landscape that surrounds them. In addition, participation in recycling programs created at tourist sites promotes environmental awareness among fellow travelers, while contributing positively to the reduction of waste production (e.g., Dolnicar, 2023; Hu et al., 2021; Singh & Ogbeide, 2018).

The predisposition of tourists and the effective adoption of sustainable behaviors by tourists when traveling to destinations has increased significantly in recent times, according to research by Aydın and Alvarez (2020). The results obtained corroborate this trend of change, which is significant in the tourism industry, where the promotion of sustainability has become an essential aspect to consider when choosing a travel destination (Almeida-Santana & Moreno-Gil, 2019). In fact, tourists have shown an inclination to adopt ecological measures during their trips. This is manifested in various ways, such as the choice of destinations that practice sustainability or offer sustainable services. In addition, they also do not hesitate to pay more for these offers and tend to show loyalty to places that follow ecological practices - all indicators of tourists' growing appreciation for environmentally conscious choices (e.g., Marchi et al., 2021; Solis-Radilla et al., 2019).

One important aspect of sustainable tourism is the ability to adapt and be resilient in the face of challenges. Resilience in the tourism industry, defined as "the ability of systems to adapt to and recover from disturbances while maintaining their essential functions" (Holling, 1973, p. 14), is crucial because with the increasing impacts of climate change, it is imperative that destinations address their environmental footprints and adopt sustainable initiatives. Governments around the world recognize this need for resilience and are actively seeking ways to promote long-term sustainability in tourism. One approach is through digitalization and innovation, leveraging technology's potential to transform operations within the industry. By embracing digitization and adopting new technologies, businesses can enhance competitiveness on a global scale during these challenging times. Furthermore, information technology plays a pivotal role in promoting products and marketing strategies that support good governance principles. Implementing effective promotion campaigns utilizing digital platforms will expedite recovery efforts not only for the tourism sector but also small- and medium-sized enterprises involved.

Digital marketing plays a crucial role in promoting sustainability in the tourism industry and increasing its resiliency (Corte et al., 2021; Luo et al., 2022). Digital marketing can improve destinations' image and showcase their commitment to sustainability. By utilizing social media platforms, destinations can communicate their initiatives and efforts towards sustainability to a wide audience. Through social media, destinations can share information about conservation initiatives, eco-friendly accommodations and activities, and community involvement in sustainable practices.

6. Conclusions

In conclusion, sustainable tourism has become increasingly important in the sector due to global concerns such as climate change and social responsibility. The adoption of sustainable tourism requires collaboration between tourists, service providers and host communities and thus contributing to the resilience of the sector in the face of times of crisis.

The adoption of ecological behaviors by tourists increases their positive impact on the environment, while promoting local economic development. Marketing strategies that promote sustainable tourism formats can also bring about an effective change in behavior, which is beneficial for both service providers and travelers. Thus, to recover sustainably from uncertain pandemic circumstances, it is vital to adopt research models related to Tourist Co-Creation Behavior. The future of the tourism industry depends on a conscientious approach.

The findings of the study underline the importance of tourist destinations to create a robust digital identity and develop a solid financial infrastructure that promotes sustainable growth, thus boosting the digital transformation in tourism. Notably, the investigations of Dabeedooal and colleagues (2019) and Wang and colleagues (2022) provide evidence that supports this notion.

The study presents as suggestions for future research the need to investigate or other factors that are associated with the error

between the construct of adoption and implementation of sustainable measures in the tourist destination and the construct of the use of social networks by tourists, to understand what other factors can explain this relationship. Furthermore, as a limitation, the sample is non-probabilistic by convenience, which does not allow generalizing the results. In this sense, as a future perspective, it would be relevant to conduct further research in this area with structured data collection that would allow the generalization of the results.

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