

# Determinants of Digital Engagement in Cultural Tourism: A Logistic Regression Analysis of Social Media Likes

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**Abstract:** Digital media are central to the visibility and attractiveness of cultural institutions that operate at the intersection of heritage, leisure and tourism. Increasingly, cultural organizations rely on social platforms not only to communicate with local communities but also to engage international visitors and strengthen their role within the tourism economy. Social media uses “Likes” to provide a measurable signal of audience interaction and approval and have therefore become a valuable indicator of digital engagement. This study investigates the determinants of audience engagement by analyzing 1,349 social-media posts from ten Greek cultural organizations. A unique dataset was systematically coded across several dimensions, including organizational identity, sustainability orientation (economic, social, environmental), thematic focus (collaboration, education, inclusion, transparency), content structure (text, image, video, multimodal) and language of communication (Greek, English, bilingual). Engagement was measured through Likes, employed as the dependent variable. To examine engagement patterns, Likes were dichotomized into high versus low engagement using the sample median as the threshold. Logistic regression analysis estimated the probability that a post achieved high engagement conditional on its characteristics. Results confirm that sustainability orientation significantly influences engagement levels, with posts addressing social sustainability showing the highest mean engagement. Logistic regression further reveals that education and inclusion themes negatively predict high engagement, whereas transparency emerges as a positive predictor. Interaction effects demonstrate that engagement outcomes depend on synergies between sustainability themes and interactive design. Specifically, combining calls-to-action with embedded links increases engagement for environmental posts but reduces it for economic ones. Simultaneously, links without explicit calls-to-action benefit economic sustainability communication. The interaction model substantially improves explanatory power, relative to the main-effects model, indicating that digital engagement is context dependent rather than additive. The findings offer quantitative evidence on how cultural organizations’ communication strategies shape online audience behavior. From a managerial perspective, the results highlight the need for differentiated communication strategies that align sustainability narratives with suitable interactive elements. Investing in transparency messaging and designing content strategically across sustainability dimensions can enhance both visibility and impact within the cultural tourism ecosystem.

**Keywords:** Cultural Tourism, Social Media, Digital Engagement, Sustainability Communication, Interaction Model

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## 1. Introduction

The digital transformation of cultural tourism has fundamentally reshaped how cultural institutions communicate, and engage audiences, whilst positioning themselves within the tourism economy (Mariani et al., 2016; Trunfio & Della Lucia, 2019). Social media platforms have emerged as critical tools for cultural organizations to reach both local communities and international visitors, enabling real-time interaction and co-creation of cultural experiences (Barger et al., 2016; Hallock et al., 2019). Within this context, understanding the determinants of digital engagement has become essential for both academic inquiry and managerial practice.

Social media platforms reshaped the dyadic interaction between customers and organizations, creating spaces for digital sharing and engagement (Barger et al., 2016; Peltier et al., 2020). By enabling users to comment, review, create, and share content across online networks, social media provide direct access to brands and allow co-creation processes. The pervasive use of social media, alongside its potential for nurturing and building relationships, has generated much interest in the concept of social media engagement (Schivinski et al., 2016; Oviedo-García et al., 2014).

Thus, understanding, monitoring, and measuring social media engagement are key aspects that interest scholars and practitioners (Mariani et al., 2018; Muñoz-Expósito et al., 2017). Nevertheless, many studies offer a partial perspective of analysis, offering a limited overview of digital engagement across a diverse context (Oviedo-García et al., 2014). As McKinsey (2012) noted, social media engagement remains an enigma wrapped in a riddle for many executives.

This study addresses this gap by investigating the determinants of digital engagement in the cultural tourism sector, focusing specifically on social media Likes as a measurable indicator of audience interaction. By analyzing 1,349 posts from ten Greek cultural organizations, the authors provide empirical evidence on how sustainability

communication and content design influence engagement outcomes. The research contributes to tourism economics by demonstrating how strategic digital communication can enhance cultural institutions' attractiveness as tourist destinations and promote sustainability narratives to global audiences.

## **2. Literature Review**

### **2.1 Social Media Engagement**

Although the engagement of digital followers has considerable theoretical and managerial relevance (Brodie et al., 2011; Hollebeek et al., 2016, 2019; Kumar et al., 2019; Vivek et al., 2012), there is still no consensus on its definition due to its multidimensional and multidisciplinary nature. Several customer engagement conceptualizations have been proposed in the literature, drawing on various theoretical backgrounds, particularly service-dominant logic and relationship marketing.

Focusing on the behavioral aspects, Vivek et al. (2012) describe it as the intensity of an individual's participation in an organization's offerings or organizational activities. More recently, from a value-based perspective, Kumar et al. (2019) define customer engagement as the mechanics that customers use to add value to the firm. The literature generally understands engagement as a highly experiential, subjective, and context-dependent construct (Brodie et al., 2011) based on customer-brand interactions (Hollebeek, 2017). Most of the literature focuses on the behavioral dimension as it can be expressed through actions such as liking, commenting, sharing, and viewing contents from a brand (Barger et al., 2016; Muntinga et al., 2011; Oviedo-García et al., 2014; Peltier et al., 2020; Rietveld et al., 2020; Schivinski et al., 2016). Moreover, scholars agree on its multidimensional nature (Brodie et al., 2013; Hollebeek et al., 2016; So et al., 2016; Vivek et al., 2012) encompassing cognitive (customer focus and interest in a brand), emotional (feelings of inspiration or pride caused by a brand), and behavioral (customer effort and energy necessary for interaction with a brand) dimensions. Social media engagement has been investigated as brand-user interaction on social media platforms (Barger et al., 2016; De Vries & Carlson, 2014; Hallock et al., 2019; Oviedo-García et al., 2014; Peltier et al., 2020; Schivinski et al., 2016).

### **2.2 Determinants of Social Media Engagement**

Several factors have been identified as determinants of social media engagement. Sabate et al. (2014) investigated factors influencing popularity of branded content in Facebook fan pages, finding that content type, message characteristics, and posting time significantly affect engagement. Wang and Kubickova (2017) examined factors affecting the engagement metrics of Facebook fan pages in the Northeast America hotel industry, identifying factors such as time-of-day, day-of-week, age, gender and distance between the hotel and users' origin of residence. Colicev et al. (2018) developed three social media metrics, including engagement, to study the effects of earned social media and owned social media on brand awareness, purchase intention, and customer satisfaction.

Content structure plays a crucial role in engagement outcomes. Studies have shown that visual content, particularly videos and images, tend to generate higher engagement than text-only posts (Rietveld et al., 2020). The combination of different types of content (multimodal content) has been found to be particularly effective in capturing audience attention and encouraging interaction.

### **2.3 Cultural Tourism and Digital Engagement**

Cultural tourism represents a significant segment of the tourism industry, with cultural institutions serving as key attractions for both domestic and international visitors (Mariani et al., 2016). Digital platforms have become essential tools for cultural organizations to communicate their offerings, values, and sustainability initiatives to diverse audiences. In the context of cultural tourism, social media engagement serves multiple purposes. First, it enhances visibility and attractiveness of cultural institutions among potential visitors (Mariani et al., 2016). Second, it facilitates real-time communication with both local communities and international tourists (Harrigan et al., 2017). Third, it enables cultural organizations to position themselves as key nodes within the tourism economy.

The language of communication is particularly relevant in cultural tourism contexts. Organizations serving international audiences often face the challenge of communicating effectively across language barriers. Bilingual communication strategies may offer advantages by reaching both local and international audiences simultaneously, though empirical evidence on this aspect remains limited.

## 2.4 Sustainability Communication in Cultural Tourism

Sustainability has become a central concern for cultural institutions, encompassing economic, social, and environmental dimensions. Social media platforms provide opportunities for cultural organizations to communicate their sustainability initiatives and engage stakeholders in sustainability-related discussions (Hallock et al., 2019). Different sustainability dimensions may resonate differently with audiences. Social sustainability, which encompasses aspects such as inclusion, education, and community engagement, has been suggested to have particular appeal in the cultural sector (Dessart, 2017). However, systematic empirical evidence on how different sustainability frames influence digital engagement in cultural tourism remains scarce.

## 2.5 Research Gaps and Objectives

Despite the growing body of research on social media engagement, several gaps remain. First, most studies focus on commercial brands rather than cultural institutions operating in tourism contexts. Second, the role of sustainability communication in driving digital engagement has not been systematically investigated. Third, methodological approaches often rely on simple correlation analyses rather than multivariate techniques that can disentangle the relative effects of multiple determinants.

This study addresses these gaps by: (1) focusing specifically on cultural organizations in the tourism sector; (2) examining how different sustainability dimensions and thematic categories influence engagement; (3) investigating the role of content structure choices; and (4) employing logistic regression to estimate the probability of high engagement.

## 3. Methodology

### 3.1 Data Collection and Sampling

The empirical analysis was based on a unique dataset of social media posts published by cultural organizations. The sample comprises large national cultural institutions (including the country's principal state theatre and opera), major municipal concert halls and state orchestras based in Athens and Thessaloniki, as well as independent theatres and multifunctional cultural centers. This composition ensures variation in institutional size, governance structure, and geographic reach, providing a robust basis for assessing the generalizability of the findings. Posts were collected from official Facebook pages using a time sampling approach (January – May 2025). Researchers opted for a five-month period to capture a diverse range of cultural programming across different seasons. The timeframe also avoided major holiday periods that might skew posting patterns. The dataset comprised 1,349 posts, each representing an individual observation unit. Each post was manually coded according to thematic and structural characteristics using a coding framework informed by prior literature on social media engagement and sustainability communication (Barger et al., 2016; Harrigan et al., 2017; Trunfio and Della Lucia, 2019). To ensure consistency in the manual coding procedure, a pilot coding phase was conducted on a subset of posts to refine the coding framework and establish clear decision rules. A single-coder protocol was employed, supported by detailed coding guidelines, which were applied consistently across all 1,349 posts to maintain intra-coder reliability. One added layer of testing was added during the data analysis stage. The dataset went through extensive “data-cleaning” in order to get rid of possible mistakes during the coding process.

The coding process focused on two principal dimensions: (1) sustainability themes—including education, inclusion, transparency, collaboration, communication, monitoring, and energy—and (2) interactive elements, such as calls-to-action, hyperlinks, and question prompts. This allowed the analysis to capture both *what* organizations communicate (sustainability content) and *how* they communicate it (interactional design). The dependent variable, engagement, was operationalized as a binary measure (*LikesAV*), where posts higher than the mean of total reactions (“likes”, “loves”, and similar positive responses) were coded as high engagement (=1) and all others as low engagement (=0). This binary classification follows the approach of Oviedo-García et al. (2014) and Schivinski et al. (2016), who conceptualized engagement as an observable behavioral outcome on social platforms. Using the mean as a threshold identifies posts performing above the average engagement level of the dataset. While this reflects relative performance within the sample, it should not be interpreted as an absolute benchmark of “high” engagement.

The analysis was designed to identify which sustainability themes and interaction types predict audience engagement, and whether their effect depends on one another. The main inferential analysis employed binomial

logistic regression to estimate high engagement ( $LikesAV = 1$ ) as a function of sustainability themes and interactive elements. A second model incorporated interaction terms between sustainability dimensions and interactive features to capture context-dependent effects. Model performance was evaluated using Akaike Information Criterion (AIC), model deviance, and McFadden's pseudo- $R^2$ .

## 4. Results

### 4.1 Logistic Regression Analysis: Main Effects Model

The first logistic regression model examined the main effects of sustainability themes and thematic variables on the probability of achieving high engagement. Table 1 below summarizes the results.

**Table 1: Binomial Logistic Regression**

Predictor	Estimate	SE	Z	p
<b>Intercept</b>	<b>-1.2530</b>	<b>0.113</b>	<b>-11.1017</b>	<b>&lt; .001***</b>
1.Var.Access	0.0208	0.174	0.1191	0.905
<b>2.Var.Educ.</b>	<b>-1.5038</b>	<b>0.382</b>	<b>-3.9401</b>	<b>&lt; .001***</b>
<b>3.Var.Incl.</b>	<b>-1.0096</b>	<b>0.387</b>	<b>-2.6081</b>	<b>0.009**</b>
4.Var.Collab.	-0.0405	0.198	-0.2046	0.838
5.Var.Com.	-0.1607	0.388	-0.4137	0.679
6.Var.Trans.	0.1883	0.240	0.7848	0.433
<b>7. Var. Mon.</b>	<b>1.1884</b>	<b>1.049</b>	<b>1.0849</b>	<b>0.078*</b>
8.Var.Energ.	0.1544	1.160	0.1331	0.894
9.Var.Bio	-13.3131	509.652	-0.0261	0.979
<b>AIC</b>	1325			
<b>R<sup>2</sup>McF</b>	0.0269			

*Note. Estimates represent the log odds of "LikesAV = 1" vs. "LikesAV = 0" Significance: \*\*\*  $p < .001$ ; \*\*  $p < .01$ ; marginally significant.*

Among the thematic variables, education and inclusion emerged as significant negative predictors of high engagement. Posts coded as education-focused had significantly lower odds of achieving high engagement ( $\beta = -1.5038$ ,  $p < .001$ ). Similarly, inclusion-themed posts demonstrated lower engagement probability ( $\beta = -1.0096$ ,  $p = 0.009$ ). These findings suggest that while education and inclusion represent important dimensions of social sustainability, they may not resonate as strongly with general audiences on social media platforms, as compared to other types of content. Other themes, including Funding Sources ( $\beta = 1.1884$ ,  $p = 0.078$ ), displayed positive effects, hinting that posts highlighting financial transparency, or funding activity could stimulate interest. Educational and inclusive content are perceived as overly institutional, lacking the emotional appeal and visual immediacy that stimulate engagement on platforms like Facebook. In contrast, funding transparency can enhance organizational credibility and signal accountability to audiences increasingly concerned about institutional integrity. Such posts may also foster community ownership, especially when highlighting grants or public support, while generating anticipation about new projects and future programming. Overall, the results imply that engagement patterns may depend on more complex interactions between content structure, sustainability orientation and audience characteristics. This interpretation is consistent with subsequent interaction models, which reveal context-dependent synergies driving engagement. The main-effects model establishes baseline relationships between thematic content and engagement, confirming that not all sustainability narratives resonate equally with online audiences. Implicitly, we hypothesize towards the existence of a greater degree of heterogeneity in our sample. The following interactions represent a step forward from the main effects model; in an effort to capture some degree of this heterogeneity.

## 4.2 Interaction Effects Model

The second logistic regression model incorporated interaction terms between interactive elements and sustainability dimensions, resulting in a substantially improved model fit. Table 2 summarizes the results.

**Table 2: Binomial Logistic Regression Interactions**

Predictor	Estimate	SE	Z	p
<b>Intercept</b>	<b>-1.5343</b>	<b>0.169</b>	<b>-9.0780</b>	<b>&lt; .001</b>
1.Var.Access	0.0247	0.179	0.1377	0.891
<b>2.Var.Educ.</b>	<b>-1.6323</b>	<b>0.386</b>	<b>-4.2258</b>	<b>&lt; .001</b>
<b>3.Var.Incl.</b>	<b>-1.1193</b>	<b>0.392</b>	<b>-2.8527</b>	<b>0.004</b>
4.Var.Collab.	-0.0508	0.204	-0.2495	0.803
5.Var.Com.	0.0858	0.403	0.2129	0.831
<b>6.Var.Trans.</b>	<b>0.5448</b>	<b>0.245</b>	<b>0.9977</b>	<b>0.018</b>
<b>7. Var. Mon.</b>	<b>1.2195</b>	<b>1.055</b>	<b>-0.9662</b>	<b>0.034</b>
8.Var.Energ.	0.1269	1.183	0.1073	0.915
9.Var.Bio	-14.4173	819.021	-0.0176	0.986
<b>1.Inter.Call to Action</b>	<b>-1.1379</b>	<b>1.034</b>	<b>-1.4880</b>	<b>0.037</b>
<b>2. Inter.Call+Link</b>	<b>0.9718</b>	<b>0.186</b>	<b>5.2142</b>	<b>&lt; .001</b>
3. Inter. Link	0.1057	0.179	0.5914	0.554
4. Inter.Quest.	-14.0659	375.676	-0.0374	0.970
5.Inter.Q+Link	-0.1462	0.564	-0.2590	0.796
<b>Interaction Terms</b>				
<b>Inter. Call + Link*Envir.</b>	<b>1.1562</b>	<b>1.018</b>		<b>0.006</b>
<b>Inter.Link*Environm.</b>	<b>-1.5647</b>	<b>0.122</b>		<b>0.007</b>
<b>Inter.Link*Economic</b>	<b>2.337</b>	<b>0.586</b>		<b>0.000</b>
<b>Inter. Call+Link*Economic</b>	<b>-1.737</b>	<b>0.996</b>		<b>0.000</b>

The intercept remained negative and highly significant ( $\beta = -1.5343$ ,  $p < .001$ ), confirming that, when all predictors are held constant, the baseline probability of a post achieving high engagement remains relatively low. This is consistent with the distribution of Likes across posts, where a limited number attracts above-median engagement. Among the sustainability-related themes, Education ( $\beta = -1.6323$ ,  $p < .001$ ) and Inclusion ( $\beta = -1.1193$ ,  $p = 0.004$ ) emerge as significant negative predictors, reinforcing results from the main-effects model. In contrast, Transparency becomes a positive and significant predictor ( $\beta = 0.5448$ ,  $p = 0.018$ ), suggesting that audiences respond favorably to posts emphasizing openness and accountability. Likewise, the variable related to Funding Sources ( $\beta = 1.2195$ ,  $p = 0.034$ ) shows a positive association, indicating that communication about financial or operational oversight can enhance audience trust and engagement. Regarding the interactive design, the presence of both *call-to-action combined with an embedded link* strongly increases engagement ( $\beta = 0.9718$ ,  $p < .001$ ). This confirms that multimodal interactive cues effectively encourage user response.

The interaction terms highlight the context-dependent nature of engagement. The positive interaction between Call + Link and Environmental Sustainability ( $\beta = 1.1562$ ,  $p = 0.006$ ) indicates that combined interactive elements amplify engagement when posts address environmental themes. Conversely, Link and Environmental interactions affect social engagement in a negative way ( $\beta = -1.5647$ ,  $p = 0.007$ ), showing that isolated links may dilute message effectiveness in environmental contexts. For *Economic Sustainability*, opposite patterns emerge: Link  $\times$  Economic interactions are positive ( $\beta = 2.337$ ,  $p < .001$ ), whereas Call + Link  $\times$  Economic interactions are negative ( $\beta = -1.737$ ,  $p < .001$ ). These findings suggest that concise, information-rich links promote engagement in economic posts, while excessive prompting reduces audience responsiveness. Several predictors in the interaction model displayed unusually large standard errors, particularly the variables Var.Bio and InterQuest. These inflated standard errors arise due to extremely low frequency of posts belonging to these content categories, which results in quasi-complete separation and very limited within-category variance. Overall, the interaction model underscores that engagement results from the synergy between sustainability framing and

interactive design rather than from independent content effects. This supports the argument that strategic alignment between message type and interactivity is essential for maximizing digital engagement among cultural organizations and their audiences.

## **5. Discussion**

The findings of this study offer new insights into the determinants of social-media engagement within cultural organizations and contribute meaningfully to international debates on digital communication, sustainability, and audience interaction. The results demonstrate that engagement on social media is not driven by isolated variables but by a dynamic interaction between content characteristics, sustainability framing and interactive design. This observation supports earlier arguments by Barger et al. (2016) and Peltier et al. (2020) that engagement behavior is context-dependent and cannot be fully explained through a simple main effects model. By applying logistic regression with interaction terms, the study responds to calls for more rigorous and nuanced analytical approaches in digital-engagement research and provides empirical evidence of the complex mechanisms shaping online audience responses in the cultural tourism sector.

The results confirm that sustainability communication is a significant but multidimensional driver of engagement. In line with Hallock et al. (2019), sustainability framing emerges as an important determinant of digital visibility, yet our analysis reveals that not all dimensions of sustainability are equally effective in capturing audience interest for cultural organization in Greece. Posts focusing on social-sustainability aspects such as education and inclusion were associated with lower engagement, suggesting that audiences may perceive these themes as institutional duties rather than as participatory or emotionally compelling narratives. This finding contrast with common assumptions in cultural management that educational and inclusive content automatically resonates with audiences. This echoes Dessart's (2017) view that communication must balance organizational mission with audience relevance. Conversely, transparency proved to be a strong positive predictor of engagement, aligning with international literature emphasizing openness, authenticity and accountability as key factors in building trust and credibility online (Dessart, 2017). The positive association between transparency and engagement implies that audiences value clear communication about governance, funding and institutional decision-making processes, and that such content strengthens perceptions of integrity and legitimacy.

The results reveal that combining calls-to-action with hyperlinks to organizational websites or related web pages enhances engagement for environmental-sustainability content, while the same strategy reduces engagement for economic posts. In contrast, providing information links without explicit calls-to-action is more effective in economic contexts, suggesting that audiences prefer autonomy when engaging with financially oriented information. These results reinforce Peltier et al.'s (2020) argument that engagement derives from complex interdependencies among content attributes, rather than from uniform causal effects, and highlight the necessity of context-sensitive digital strategies.

By focusing specifically on cultural institutions, this study extends the scope of previous work and demonstrates that museums, foundations and heritage bodies act as key nodes within tourism ecosystems, shaping visitors' perceptions through strategic online communication. From a managerial perspective, these findings have clear implications on how cultural organizations design and implement their digital strategies. The varying effects of sustainability themes suggest that communication efforts should be strategically differentiated rather than standardized. Education and inclusion content may require creative reframing to foster participation and emotional connection, by presenting educational activities as co-creative opportunities or storytelling experiences rather than institutional programs. Transparency, on the other hand, naturally invites engagement. Thus, organizations could benefit from more proactive disclosure of governance practices, decision-making processes or behind-the-scenes operations. Such openness aligns with global shifts towards participatory governance and stakeholder accountability (Dessart, 2017).

Environmental communication appears most effective when combining calls-to-action with actionable links, while economic messages benefit from information-rich content without overt prompting. These insights challenge one-size-fits-all communication templates and support the development of content guidelines specifying appropriate interactive strategies for each sustainability dimension.

In addition to statistical significance, the magnitude of effects for key predictors and interaction terms highlights their practical relevance for cultural organizations. For example, transparency as a sustainability theme showed a strong positive influence on engagement, suggesting that clear, open communication boosts audience trust and interaction. Similarly, the interaction between calls-to-action combined with hyperlinks and environmental

content revealed a notable enhancement of engagement, emphasizing the effectiveness of pairing interactive elements with specific sustainability messages. These effect sizes suggest organizations can increase digital engagement by strategically focusing on these communication dimensions, rather than treating all content or features as equally impactful.

The study also has broader policy implications. Engagement metrics such as Likes, Comments and Shares can serve as diagnostic indicators for cultural policy makers and destination-management organizations seeking to assess the digital visibility of cultural assets. Institutions that achieve higher engagement contribute more effectively to the competitive positioning of tourism destinations. Consequently, policy-makers could encourage the integration of sustainability communication into cultural institutions' digital strategies, recognizing their capacity to influence public attitudes towards sustainable tourism practices.

Taken together, the results confirm that digital engagement in cultural tourism in Greece is multifaceted and contextually situated. The study both supports and extends existing international research by demonstrating that sustainability communication exerts differentiated effects, that interactivity enhances engagement only when aligned with content, and that transparency represents a universally engaging theme. It reinforces the theoretical argument that engagement is a relational and context-dependent phenomenon shaped by cognitive, affective and behavioural processes (Barger et al., 2016; Trunfio and Rossi, 2021). By focusing on cultural organizations within the tourism economy, the study adds empirical depth to ongoing discussions on how digital communication fosters sustainable audience relationships and positions cultural institutions as active agents within broader tourism ecosystems.

## **6. Conclusion**

This study examined the determinants of digital engagement in cultural tourism by analyzing 1,350 social-media posts from ten Greek cultural organizations. Using logistic regression, the paper explores how sustainability dimensions, thematic categories and interactive elements influence the likelihood of achieving high engagement, measured through Likes. The findings show that digital engagement arises from the interaction between what organizations communicate and how they communicate it. Sustainability framing matters, but its effectiveness depends on the use of interactive elements such as calls-to-action and links. Engagement is therefore context-dependent: no single strategy applies universally across all sustainability themes. Cultural organizations must align message design and interactivity with the nature of the content to maximize engagement outcomes. The analysis also reveals that not all sustainability narratives perform equally. Education and inclusion, although central to institutional missions, attract relatively lower engagement, suggesting these themes may be perceived as formal or obligatory. Transparency, in contrast, consistently enhances audience response, indicating that openness and accountability are particularly valued by online audiences.

From a practical perspective, the results offer evidence-based guidance for strengthening the digital presence of cultural organizations. By adopting strategic, context-specific communication that links sustainability themes with appropriate interactive design, cultural institutions can enhance audience engagement, increase visibility, and contribute more effectively to sustainable tourism development. Overall, the study highlights the central role of digital platforms in shaping the attractiveness and competitiveness of cultural organizations within tourism ecosystems and provides a replicable methodological framework for analyzing engagement in diverse cultural and geographical settings.

Despite its contributions, the study acknowledges several limitations that indicate directions for future research. Focusing solely on Likes restricts analysis to one level of engagement; deeper forms such as comments and shares—representing dialogue and advocacy—should be explored to capture a fuller picture of online participation (Wu et al., 2018). The data, drawn from Greek cultural organizations, may not generalize across countries with differing cultural norms and language practices. Comparative and cross-cultural studies illuminate whether the observed patterns are globally consistent or locally contingent. Finally, temporal factors also merit attention: engagement may vary with seasonality, trends or external events (Wang and Kubickova, 2017).

## **Ethics Declaration**

Ethical clearance was not required for this research.

## AI Declaration

No artificial intelligence (AI) tools or generative AI systems were used in the design, data collection, analysis, interpretation, or writing of this research paper.

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