THE IMPACT OF INTEGRATED MARKETING COMMUNICATIONS ON VISITOR ENGAGEMENT AND CONSERVATION BEHAVIOR IN PROTECTED AREAS

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Abstract

Purpose – This paper examines IMC activities, visitor engagement, and conservation behaviour at Biokovo Nature Park, Croatia, identifying which channels and methods are most effective in raising environmental awareness and driving conservation-oriented behaviour among protected area visitors.
Methodology/Design/Approach – A quantitative research design was employed, based on primary data collected through an online survey administered to 201 visitors between April and May 2024. The instrument comprised 17 closed-ended questions across five thematic categories, using a five-point Likert scale. Data were analysed using
descriptive statistics, Cronbach's alpha reliability testing, and Pearson correlation analysis.
Findings – Information quality emerged as the strongest construct across all measured outcomes, with the highest correlation for overall satisfaction with park macro attributes (r = 0.728), visitor engagement (r = 0.700), and IMC impact on environmental awareness (r = 0.678). Social media was rated the most effective IMC channel, while word of mouth dominated pre-visit information behaviour (81.1%). Conservation participation intentions remained moderate despite positive awareness outcomes, indicating a persistent awareness-behaviour gap.
Originality of the research – This study provides empirical evidence from a Croatian protected area linking IMC channel effectiveness and information quality to visitor conservation outcomes, demonstrating that content quality is a stronger driver of conservation behaviour than channel reach or diversity.
Keywords Integrated Marketing Communication, protected areas, visitor engagement, conservation behaviour, visitor segmentation, Nature Park tourism

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INTRODUCTION

Despite the central role of communication in shaping visitor behavior, the application of Integrated Marketing Communication (IMC) to protected area management remains theoretically underdeveloped and empirically sparse. Protected areas, encompassing national parks, nature parks, and other formally designated conservation zones, represent both ecological heritage and strategic communication challenges, and IMC has emerged as a pivotal framework for meeting them, aligning diverse marketing channels and tools toward two interdependent outcomes: heightened visitor engagement and increased environmental awareness.

The efficacy of IMC within protected areas relies on the strategic synchronization of messaging across all communication platforms. Such alignment ensures that a unified narrative is maintained regardless of the medium. For the visitor, this consistency reduces cognitive dissonance and fosters a coherent perception of the park's intrinsic value and aesthetic appeal. Consequently, this integrated signaling not only clarifies the park's identity but also acts as a primary catalyst for visitation and engagement with conservation initiatives. Beyond message alignment, IMC facilitates the strategic tailoring of campaigns to specific target segments. Protected areas function as critical assets within a nation's tourism portfolio, leveraging ecological diversity to attract visitors to unique natural environments.

The economic implications of this marketing approach are substantial. As Rahmoun and Baeshen (2021) and Ali (2021) demonstrate, tourism marketing is instrumental in revenue generation and employment growth within protected area destinations. Furthermore, these authors argue that the benefits extend beyond broad macroeconomic gains, with effective tourism marketing serving as a driver for regional development and providing tangible socio-economic advantages to local communities surrounding protected areas.

Understanding how IMC operates within this context requires situating it within the broader trajectory of nature-based tourism research. Research into the application of green tourism principles within the framework of sustainable development emerged approximately two decades ago. Wearing and Neil (1999) conceptualised ecotourism as a multidimensional phenomenon encompassing three interconnected dimensions: a form of alternative tourism positioned in contrast to mass tourism, a distinct philosophical orientation toward the natural environment, and a strategic approach to sustainable development. Tourist activities in protected areas require careful planning, management, and monitoring to ensure long-term sustainability (WTO, 2005; Cerveny, 2022). While protected areas worldwide attract visitors owing to their rich natural heritage, they simultaneously face the imperative of preserving wildlife species and ecosystems (Hasana et al., 2022). Although tourism can generate adverse environmental impacts, it also holds considerable potential for stimulating economic development and

creating employment opportunities for local communities (WTO, 2005). Marketing efforts directed at tourist attractions focus on promoting the defining characteristics of a destination in order to attract prospective visitors and ensure that their experiences align with prior expectations (Gasic et al., 2014). Sustainable tourism necessitates a transitional process involving a shift from one developmental state to another (Hall, 2008; Salerno et al., 2013), while simultaneously maintaining high standards of visitor satisfaction, delivering meaningful experiences, and fostering both an understanding of sustainability principles and active participation in sustainable tourism initiatives (Radjenovic et al., 2022). The tension between tourism activities that drive economic growth and the preservation of natural heritage represents one of the central challenges in protected area management. In this respect, sustainable tourism can be understood not merely as a process but as an embedded culture that demands active visitor engagement, sound governance, and marketing strategies that effectively communicate the defining values of a protected area.

The application of IMC within protected areas serves as an essential instrument for natural resource conservation and for cultivating broader environmental awareness among visitors. Through concise communication, protected areas are able to articulate their conservation values and objectives in ways that resonate with diverse visitor profiles. Integrated marketing campaigns directed at park audiences can educate visitors about local ecosystems, endangered species, and protective measures, thereby encouraging responsible behaviour and deepening environmental consciousness. The effectiveness of such campaigns has been demonstrated empirically. Vallverdu-Gordi and Marine-Roig (2023) found that graphic design semiotics in an integrated environmental awareness campaign for a regional park significantly influenced public environmental awareness and intentions toward destination preservation, confirming significant links between campaign design elements and conservation-oriented responses among target audiences. Beyond education, IMC provides a strategic vehicle for promoting sustainable tourism within protected areas. Marketing strategies that foreground the importance of conservation and advocate for low impact activities have the potential to attract visitors who share these values, creating a self-reinforcing relationship between communication, visitor selection, and conservation outcomes. Abrams et al. (2023) provide field evidence for this: their park-based social marketing campaign on responsible wildlife viewing achieved over 90% compliance, far exceeding standard signage.

Digital communication has become central to how protected areas manage their public presence and engage with potential visitors. Rather than serving merely as an information channel, digital marketing now functions as a brand-building instrument, enabling protected areas to establish distinctive identities rooted in their natural and heritage values (Chaikovska et al., 2022). This shift carries strategic significance. Destinations that successfully position themselves as sites of natural or world heritage importance generate stronger appeal for nature-based and cultural tourism markets. The broader context driving this transformation is well documented. Benckendorff et al. (2019) argue that converging social, economic, technological, and environmental pressures have fundamentally reshaped both visitor expectations and destination promotion practices, making digital marketing not merely an option but an operational necessity for contemporary tourism destinations including protected areas. Digital content distributed across online platforms extends well beyond its informational function. Within the broader communication ecosystem of tourism destinations, digital marketing occupies a central position at the intersection of ecological, economic, and social forces, mediating the relationship between organisations and their audiences in ways that shape visitor understanding, preferences, and behaviour (Aman & Papp-Váry, 2022). Their systematic review of 83 articles shows that digital platforms do more than promote destinations. They help spread environmental information, raise traveller awareness, and shape sustainable tourism products, making digital marketing a core management function tied to both visitor engagement and conservation.

Moving from the supply side of communication to the demand side of visitor behaviour, effective IMC strategy requires a deep understanding of who visitors are and what drives their conduct. The concept of personas, tracing its origins to the late twentieth century and originally developed by Cooper (1999) as a method for representing target customer groups through fictional characters, provides one such framework for deepening understanding of audience attitudes and values (Hsu et al., 2024). Adopted across marketing disciplines and increasingly applied to tourism destination management, persona-based thinking underpins the segmentation approaches that allow protected area managers to move from generic messaging to targeted, behaviour-oriented communication. Research consistently demonstrates that visitors to protected areas differ substantially in their pro-environmental orientations and conservation behaviours. In terms of regulatory compliance, Le Corre et al. (2024) found that visitor segments in coastal and marine protected areas differed significantly in adherence to rules governing wildlife disturbance and resource use, with conservation-motivated segments showing markedly higher compliance than recreation-focused ones. Zhang et al. (2023) further established that activity type serves as a meaningful proxy for environmental values, with hikers demonstrating consistently lower-impact behaviours than general tourists in national park settings. Beyond compliance, voluntary conservation engagement varies equally across visitor profiles. Weaver (2013) identified segments ranging from active conservation participants to non-contributors, with higher engagement linked to stronger environmental values and place attachment. This pattern extends to broader conservation behaviours including donations, citizen science participation, and environmental advocacy, where value-based segmentation reveals substantial differences in voluntary action (Winkler-Schor et al., 2020). Silva et al. (2024) additionally found that participatory governance structures offering clear opportunities for meaningful involvement can further enhance conservation engagement among receptive visitor segments.

These differences in conservation behaviour across visitor segments carry direct implications for how protected areas design and deliver their IMC strategies. Rather than applying uniform messaging to all visitors, segmentation enables managers to tailor communications to the specific values, motivations, and attitudes of distinct audience groups. Winkler-Schor et al. (2020) recommend that conservation messaging for nature-oriented segments emphasise collective environmental meaning and

connection to place, while communications directed at recreation-focused segments may need to first establish basic conservation rationales before requesting behavioural change. This principle of staged, audience-specific messaging is supported by evidence from coastal and marine protected areas, where segmentation-informed communication was shown to improve both compliance and stewardship by aligning messages with visitor perceptions (Le Corre et al., 2024). Lai et al. (2009) further demonstrated this approach at a national seashore, where highly engaged visitor segments received active participation invitations while less environmentally aware segments were first exposed to educational content designed to shift attitudes progressively toward conservation support.

Existing empirical work has examined how IMC operates in tourism and protected-area settings. Wang et al. (2009), in their survey of heritage destination visitation, showed that IMC effectiveness depends on the combination of distinct method categories: public relations, advertising, and direct sale and promotion. Each category operates through different media and produces different effects on destination image and visitation intention. Wantara and Prasetyo (2023) applied this multi-method approach to natural tourist destinations, treating advertising, sales promotion, public relations, personal selling, and direct marketing as separable communication activities and finding that visitor satisfaction mediates the relationship between IMC and revisit intention. Chen et al. (2025) reframed IMC effectiveness for the digital context, showing that social media usage intensity and information quality function as distinct channels shaping park visitation intention through both cognitive and affective pathways. Their study identified information quality as a predictor of perceived attractiveness and crowding risk in park settings. Bordian et al. (2022) developed the content side of IMC. Their model of IMC for sustainability positions substantive informational content as a precondition for ecological knowledge and value co-creation, with both mediating the link between communication and guest satisfaction. The value co-creation construct reframes visitors as active participants in communication rather than passive recipients. Chen et al. (2023) evaluated thirteen IMC tools through media richness theory and found that only a small subset reaches all consumer segments. More environmentally committed segments prefer interactive, information-rich communication, indicating that creative tool selection matters more than channel proliferation for engagement outcomes. Ching and Mohd Yusoff (2010), within the protected-area satisfaction literature, argue that high satisfaction with park attributes is necessary if protected-area tourism is to remain economically viable without compromising conservation. Collectively, these studies show that effective IMC in tourism and protected-area contexts operates through interrelated dimensions of method mix, channel effectiveness, information quality, creative engagement, and visitor satisfaction.

Despite this growing body of work, the empirical application of IMC frameworks to visitor engagement and conservation behaviour in protected areas remains underdeveloped. While individual communication channels and tools have been examined in isolation, the literature offers limited empirical evidence on which IMC dimensions: channel mix, method suitability and content quality most strongly relate to visitor engagement and conservation outcomes when assessed jointly within the same setting. The geographic concentration of existing IMC and protected-area studies in North American, Mediterranean, and Asian contexts leaves the Central and Southeastern European protected area landscape, including Croatia's network of nature parks, comparatively under-represented despite its ecological and tourism significance. Lastly, the literature treats the awareness–behaviour gap largely descriptively, with limited quantification of the relative strength of association between communication inputs and conservation intentions within a single empirical model.

This study addresses these gaps as an exploratory empirical investigation oriented toward both theoretical refinement and managerial application. This paper does not resolve foundational questions of IMC theory, rather, it offers preliminary empirical evidence informing both the theoretical understanding of which IMC dimensions matter most for conservation outcomes and the practical decisions facing protected area communication managers. Three research questions guide the study:

> **RQ1:** Which IMC channels and creative methods do visitors perceive as most effective for raising awareness of a protected area?
> **RQ2:** How are IMC constructs: channel effectiveness, method suitability, information quality, and visitor engagement with creative tools associated with overall visitor satisfaction and self-reported IMC impact on environmental awareness?
> **RQ3:** To what extent are positive awareness outcomes reflected in visitor intentions to participate in conservation-oriented behaviours?

To address these questions, a quantitative cross-sectional survey was conducted with 201 visitors of Biokovo Nature Park, Croatia, between April and May 2024, using a purpose-built instrument. Five composite scales were constructed and tested for internal consistency, and Pearson correlation analysis was used to examine the relationships among constructs. The findings contribute to the literature by identifying information quality as the dominant correlate of conservation-relevant outcomes in this context, by foregrounding the underappreciated role of word of mouth in pre-visit communication, and by quantifying the awareness–behaviour gap in a previously under-studied European protected area setting. The findings further support a set of structured recommendations for protected area communication managers.

1. METHODOLOGY

This study employs a quantitative research design based on primary data collected through an online survey examining visitor perceptions and attitudes toward the IMC activities of Biokovo Nature Park. The survey instrument was developed using Alchemer survey software and comprised 17 closed-ended questions organised across five thematic categories: demographics, awareness of Biokovo Nature Park, evaluation of marketing communication activities, attitudes and perceptions toward marketing communication activities, and visitor conservation engagement and motivation. Respondents indicated their answers either by selecting from predefined response options or by expressing their degree of agreement with given statements using a five-point Likert scale. The questionnaire was developed originally for this study, with items constructed by the authors based on the theoretical framework established in the literature review rather than adapted from existing validated instruments.

The five composite constructs operationalised in the instrument: IMC method suitability, IMC channel effectiveness, information quality and availability, visitor engagement with creative marketing tools, and overall satisfaction with park macro attributes correspond to the dimensions of IMC effectiveness identified in the preceding literature review. This exploratory orientation is consistent with the preliminary nature of the present study and is reflected in the limitations and future-research discussion below.

An important methodological scope condition concerns the operationalisation of "integration" in IMC. While the theoretical literature emphasises that the defining feature of IMC is the strategic synchronisation of consistent messaging across channels, the present study operationalises IMC through its constituent dimensions rather than through a direct perceived-integration construct that would measure visitors' assessments of message consistency across channels. This is a deliberate choice that prioritises the actionable communication levers available to protected area managers, but it represents a clearly bounded methodological position. The analysis does not test whether visitors perceive the Park's communication channels as delivering a unified and mutually reinforcing message. The information quality and availability scale partially addresses this dimension by capturing whether communication channels collectively provide adequate and accessible information (items var41 and var43 in particular).

Prior to main data collection, the instrument underwent review by the postgraduate thesis supervisor of the second author and was subjected to expert review by five colleagues with relevant subject expertise to verify item clarity, logical flow, and response option adequacy. Revisions were made accordingly before the instrument was finalised.

A convenience sampling strategy was employed, drawing on two complementary digital distribution channels. The first channel targeted visitors present at Biokovo Nature Park during the data collection period: two tour operators partnering with the park distributed printed flyers containing a QR code linking to the online survey, which visitors could complete on their personal devices. The second channel comprised previous visitors reached via email through the client databases of the same two tour operators, who had been guided by them on earlier visits to the park. All responses were therefore collected digitally through a single online survey instrument, regardless of channel. A total of 300 survey entries were recorded across both channels, of which 8 were disqualified during data screening and 91 were classified as partial responses, yielding 201 complete and valid responses for analysis. This corresponds to a completion rate of 67.0% (201 of 300 entries) and a valid response rate of 68.8% when disqualified entries are excluded from the denominator (201 of 292).

The primary advantages of this combined approach lie in the accessibility of respondents and their willingness to participate during a peak visitation window. However, as a non-probability sampling method, convenience sampling introduces the possibility of selection bias, and the resulting sample may not be fully representative of the entire visitor population across different time periods and seasons. Furthermore, recruitment through tour operator channels may have skewed the sample toward visitors engaged with guided tourism services, potentially underrepresenting independent visitors. Accordingly, the findings of this study are not intended for generalisation to all visitors of Biokovo Nature Park. Nevertheless, the approach yields valuable insights into visitor attitudes and perceptions during the survey period, with practical relevance for short-term and targeted marketing strategy development.

Data analysis proceeded in three stages. In the first stage, descriptive statistics were applied to characterise the demographic profile of respondents and summarise responses across the five questionnaire categories. In the second stage, the internal consistency of all dimensions was assessed using Cronbach's alpha coefficient, with a threshold of 0.80 (Hair et al., 2014) adopted as the criterion for acceptable reliability. Five composite scales were constructed from items demonstrating sufficient internal consistency: IMC method suitability, IMC channel effectiveness, information quality and availability, visitor engagement with creative marketing tools, and overall satisfaction with park macro attributes. In the third stage, the correlation analysis was conducted and Pearson correlation coefficient was used to examine the relationships between the composite IMC scales, overall satisfaction with park macro attributes, and two key outcome variables, namely visitor engagement with creative marketing tools and self-reported IMC impact on environmental awareness, in order to assess the strength and direction of associations between communication inputs and visitor behaviour outcomes. All analyses were conducted using JASP statistical program.

2. RESULTS

The sample was predominantly female (66.7%), with the largest age cohort falling in the 45 to 54 year range (25.9%), followed by visitors aged 35 to 44 (21.9%). The vast majority of respondents were domestic Croatian visitors (91.0%), with foreign visitors accounting for 9.0% of the sample. In terms of visitor purpose, Families with children represented the largest segment (39.8%), followed by Recreationalists (31.8%), Tourist groups (13.4%), Nature photographers (10.4%), and Eco-enthusiasts (4.5%). First-time visitors constituted 58.7% of the sample, with 41.3% having visited the park previously. Notably, the majority of respondents reported low familiarity with the park's attractions and activities, with 55.2% describing themselves as either not at all or only slightly familiar, suggesting considerable potential for awareness-building through targeted IMC activity.

Table 1: **Demographic profile of respondents (n = 201)**

Characteristic		Frequency (N)	Relative share %
Gender	Female	134	66.7
	Male	67	33.3
Age group	Under 18	16	8.0
	18–24	28	13.9
	25–34	29	14.4
	35–44	44	21.9
	45–54	52	25.9
	55–64	30	14.9
	65 and over	2	1.0
Country of origin	Domestic (Croatia)	183	91.0
	Foreign	18	9.0
Visitor purpose	Families with children	80	39.8
	Recreationalists	64	31.8
	Tourist groups	27	13.4
	Nature photographers	21	10.4
	Eco-enthusiasts	9	4.5
Visit history	First visit	118	58.7
	Repeat visit	83	41.3

Source: Authors' calculations

Prior to their visit, word of mouth from family, friends, and acquaintances was by far the most widely used information source, cited by 81.1% of respondents. Digital channels followed at a considerable distance, with the park website (51.7%), online recommendations including TripAdvisor and tourist board platforms (50.7%), and park social media (43.3%). Promotional materials including brochures, television, radio, and newspapers were used by 35.3%, tourist guides by 23.4%, and email by 15.9%. The dominance of word of mouth over all formal IMC channels highlights a significant gap between organic interpersonal communication and the park's managed communication activities.

Table 2: **Information sources used before visiting Biokovo Nature Park (n = 201)**

Information source	Frequency (N)	Relative share %
Word of mouth (family, friends, acquaintances)	163	81.1
Park website	104	51.7
Online recommendations (TripAdvisor, tourist boards)	102	50.7
Park social media	87	43.3
Promotional materials (brochures, TV, radio, newspapers)	71	35.3
Tourist guide	47	23.4
Email	32	15.9

Note: Multiple responses permitted. Source: Authors' calculations.

Regarding the suitability of IMC methods for raising conservation awareness and increasing visitor engagement, respondents rated useful and attractive content on the park website and social media profiles highest (M = 3.50, SD 1.00), followed closely by user-generated content published by park visitors (M = 3.49, SD 0.90). Advertising (M = 3.34, SD 0.91) and public relations (M = 3.33, SD 0.97) were rated slightly lower. The IMC suitability mean was 3.42 (SD 0.81), indicating moderate overall perceived suitability. In terms of specific channel effectiveness for raising awareness of protected areas, social media platforms

including Facebook, Instagram, and X received the highest rating (M = 3.77, SD 0.95), followed by the Park website (M = 3.58, SD 0.87), video platforms including YouTube (M = 3.53, SD 0.90), paid advertising (M = 3.48, SD 0.85), and blogs and online articles (M = 3.43, SD 0.93). Email newsletters and promotional messages received the lowest effectiveness rating (M = 3.01, SD 1.03), the only channel to approach the scale midpoint. The composite channel effectiveness score was 3.47 (SD 0.69). Visitor perceptions of information quality and availability across Biokovo Nature Park's communication channels were moderate. The park website was rated as the most useful and informative channel (M = 3.64, SD 0.87), followed by perceptions that information is easily accessible (M = 3.58, SD 0.95) and that communication channels effectively provide necessary information (M = 3.50, SD 0.95). Respondents expressed lower agreement with the statement that the quality of information is high (M = 3.50, SD 0.93), while the lowest-rated item was the sense of feeling informed about park events and activities (M = 3.43, SD 1.00). The composite information quality score was 3.53 (SD 0.81).

In terms of visitor engagement with creative marketing tools, visual materials including graphics, photographs, and video content received the highest effectiveness rating (M = 3.60, SD 0.92), followed closely by experiential events such as guided tours, workshops, and live events (M = 3.58, SD 0.92), and interactive content including games, virtual and augmented reality, and mobile applications (M = 3.45, SD 0.92). The composite engagement score was 3.54 (SD 0.80). Regarding the direct relationship between IMC and conservation outcomes, respondents rated the importance of IMC activities for informing and promoting protected areas at a M = of 3.76 (SD 0.83), while agreement with the statement that IMC information from Biokovo Nature Park positively influenced their attitude toward nature and raised their environmental awareness yielded a M = of 3.60 (SD 0.89). The gap between perceived importance and reported personal impact suggests that while visitors broadly recognise the value of IMC in protected area management, its effect on individual environmental attitudes remains incompletely realised. Overall satisfaction with Biokovo Nature Park's macro attributes produced the highest composite score in the study (M = 3.82, SD = 0.85). Built attractions such as the sky walk and visitor centre received the highest individual rating (M = 4.00, SD = 1.08), while prices were rated the lowest (M = 3.58, SD = 1.01).

With respect to conservation behaviour, respondents were asked to indicate which conservation actions they had already undertaken, planned to undertake, or did not plan to undertake as a result of the park's marketing activities. Visiting special conservation events was the most widely planned action, with 55.7% of respondents indicating they had done so or planned to do so, followed by donations to conservation programmes (52.2%), promoting the park on their own social media profiles (45.8%), participation in educational programmes (39.8%), and volunteering in park promotion and conservation activities (37.3%). Actions requiring greater personal commitment, namely volunteering and educational participation, attracted the highest rates of non-intention, at 57.2% and 55.7% respectively. Among the 151 respondents who completed the section on future conservation participation likelihood, ratings were moderate across all five activities. Donating to conservation programmes and visiting conservation-focused events were rated most likely (both M = 3.11), while participating in educational programmes received the lowest likelihood rating (M = 2.83). The composite future participation score was 3.01 (SD 0.79), indicating that current IMC activities are generating awareness but have not yet fully translated into strong conservation behavioural intentions.

Reliability analysis confirmed strong internal consistency across all five composite scales, with Cronbach's alpha values ranging from 0.840 for visitor engagement with creative marketing tools to 0.923 for overall satisfaction with park macro attributes. Information quality achieved an alpha of 0.916, IMC method suitability 0.883, and IMC channel effectiveness 0.842, all exceeding the 0.80 threshold required for acceptable reliability.

Table 3: **Composite scales, constituent items, descriptive statistics, and reliability coefficients (n = 201)**

Composite / Item	Survey item label	M	SD	Cronbach's α
1. IMC Method Suitability: Rate the suitability of each marketing method for raising conservation awareness and increasing visitor engagement				
IMC Method Suitability	**Composite**	**3.42**	**0.81**	**0.883**
var22	Advertising	3.34	0.91	
var23	Public relations	3.33	0.97	
var24	Useful and attractive content on website and social media	3.50	1.00	
var25	User-generated content published by park visitors	3.49	0.90	
2. IMC Channel Effectiveness: Rate how effective each communication channel would be for raising awareness of protected areas				
IMC Channel Effectiveness	**Composite**	**3.47**	**0.69**	**0.842**
var29	Park website	3.58	0.87	
var30	Blogs and online articles about protected areas	3.43	0.93	
var31	Social media (Facebook, Instagram, X)	3.77	0.95	
var32	Paid advertising (Google Ads, Facebook Ads)	3.48	0.85	

Composite / Item	Survey item label	M	SD	Cronbach's α
var33	Video platforms (YouTube)	3.53	0.90	
var34	Email newsletters and promotional messages	3.01	1.03	
3. Information Quality and Availability: Rate agreement with statements about the availability and quality of information through Biokovo Nature Park's communication channels				
Information Quality and Availability	**Composite**	**3.53**	**0.81**	**0.916**
var39	Information about Biokovo Nature Park is easily accessible	3.58	0.95	
var40	The quality of information about Biokovo Nature Park is high	3.50	0.93	
var41	Communication channels effectively provide necessary information	3.50	0.95	
var42	I feel informed about events and activities at Biokovo Nature Park	3.43	1.00	
var43	The Biokovo Nature Park website is useful and informative	3.64	0.87	
4. Visitor Engagement with Creative Marketing Tools: Rate how effective each creative tool would be in encouraging your engagement with park promotion and conservation				
Visitor Engagement with Creative Tools	**Composite**	**3.54**	**0.80**	**0.840**
var47	Visual materials (graphics, photos, videos)	3.60	0.92	
var48	Interactive content (games, virtual and augmented reality, mobile apps)	3.45	0.92	
var49	Experiential events (guided tours, workshops, live events)	3.58	0.92	
5. Overall Satisfaction with Park Macro Attributes: Rate your satisfaction with each attribute of Biokovo Nature Park				
Overall Satisfaction with Park Macro Attributes	**Composite**	**3.82**	**0.85**	**0.923**
var55	Natural landscape	3.87	1.06	
var56	Built attractions (sky walk, visitor centre)	4.00	1.08	
var57	Infrastructure (parking, sanitary facilities, catering)	3.81	1.08	
var58	Activities and events	3.69	0.99	
var59	Prices	3.58	1.01	
var60	Staff and guide interaction with visitors	3.81	0.99	
var61	Overall impression	3.99	1.00	

Source: Authors' calculations.

The correlation analysis revealed consistently positive and statistically significant relationships between IMC-related constructs, visitor satisfaction, visitor engagement, and conservation awareness outcomes, with all correlations significant at $p < 0.001$. Information quality and availability emerged as the construct most strongly associated with other variables across the board, demonstrating the strongest relationship with overall satisfaction with park macro attributes ($r = 0.728$), visitor engagement with creative marketing tools ($r = 0.700$), and the IMC environmental awareness impact item ($r = 0.678$), confirming that the quality of park communication is a central driver of visitor experience across multiple dimensions. Overall satisfaction with park macro attributes was itself strongly associated with the IMC environmental awareness impact item ($r = 0.640$), suggesting that visitors who rate their overall park experience more positively also report stronger IMC-driven environmental awareness, a relationship that may reflect the role of high-quality communication in shaping both experiential and attitudinal outcomes.

IMC channel effectiveness demonstrated strong associations with visitor engagement with creative marketing tools ($r = 0.638$) and moderate associations with the IMC environmental awareness impact item ($r = 0.585$), indicating that visitors who perceive communication channels as effective for raising awareness also tend to report higher engagement with creative marketing tools and stronger conservation attitude change. IMC method suitability showed moderate associations with visitor engagement with creative marketing tools ($r = 0.578$). Visitor engagement with creative marketing tools was itself moderately correlated with the IMC environmental awareness impact item ($r = 0.568$), suggesting that tools perceived as effective for engagement also

tend to be associated with conservation attitude change. Perceived IMC importance and IMC environmental awareness impact showed moderate correlations with visitor engagement with creative marketing tools (r = 0.500) and IMC channel effectiveness (r = 0.483) respectively, while information quality and availability demonstrated the weakest association with perceived IMC importance (r = 0.470) among all tested relationships. Across all tested relationships, information quality and availability consistently emerged as the strongest correlate of both visitor engagement and conservation outcomes, a finding with strongest implications for communication investment decisions in protected area management.

Table 4: **The correlation between IMC constructs, visitor satisfaction, and conservation outcome variables (n = 201)**

Relationship	r	Interpretation
Information Quality vs Satisfaction with park macro attributes	0.728	Strong
Information Quality vs visitor engagement	0.700	Strong
Information Quality vs IMC environmental awareness impact	0.678	Strong
Satisfaction with park macro attributes vs IMC environmental awareness impact	0.640	Strong
IMC channel effectiveness vs visitor engagement	0.638	Strong
IMC channel effectiveness vs IMC environmental awareness impact	0.585	Moderate
IMC method suitability vs visitor engagement	0.578	Moderate
Visitor engagement vs IMC environmental awareness impact	0.568	Moderate
Visitor engagement vs perceived IMC importance	0.500	Moderate
IMC channel effectiveness vs perceived IMC importance	0.483	Moderate
Information Quality vs perceived IMC importance	0.470	Moderate

Note: All correlations significant at $p < 0.001$. Source: Authors' calculations.

CONCLUSION

This study addressed three research questions concerning the relationship between integrated marketing communication activities, visitor engagement, and conservation behaviour at Biokovo Nature Park, Croatia. The findings point to two main results for research and practice in protected-area communication. First, content quality, rather than channel diversity or reach, is the central correlate of conservation-relevant visitor outcomes. Second, managed IMC activities are outperformed in pre-visit reach by word-of-mouth communication that current strategies do not yet effectively harness. Together, these findings reposition information quality as the primary IMC dimension for conservation outcomes and offer a practical orientation for protected-area communication budgets and programme design, developed in the implications section below.

The most consequential finding of the study is that information quality emerged as the construct most strongly associated with all other measured variables, demonstrating its strongest relationship with overall satisfaction with park macro attributes (r = 0.728), followed by visitor engagement (r = 0.700) and self-reported IMC impact on environmental awareness (r = 0.678). This pattern confirms that the quality of park communication functions not only as a driver of conservation outcomes but as a central determinant of the overall visitor experience, outperforming channel reach and channel effectiveness across all tested relationships. This finding directly supports the argument advanced by Vallverdu-Gordi and Marine-Roig (2023) that the design and content of integrated communication campaigns matter more than their medium, and aligns with Aman and Papp-Váry's (2022) systematic review finding that digital platforms function most effectively as conservation instruments when they prioritise substantive environmental content over promotional messaging. For protected area managers, this implies that investment in content quality, including accuracy, accessibility, emotional resonance, and conservation relevance, will yield greater returns in visitor engagement, satisfaction, and environmental awareness than simply expanding channel presence.

Among formal IMC channels, social media platforms were rated most effective for raising awareness of protected areas (M = 3.77), followed by the park website (M = 3.58) and video platforms (M = 3.53), while email newsletters performed substantially below all other channels (M = 3.01). This hierarchy is consistent with Benckendorff et al. (2019) and Chaikovska et al. (2022), who identify digital marketing as an operational necessity for contemporary nature-based tourism destinations, and with the broader literature positioning social media as a central node in the protected area communication ecosystem. The comparatively poor performance of email suggests that this channel, while resource-efficient, may not be well suited to the awareness-building and engagement objectives that characterise IMC in the protected area context.

Perhaps the most theoretically significant finding concerns the dominance of word of mouth as the pre-visit information source, cited by 81.1% of respondents, a proportion that far exceeds all formal managed IMC channels combined. This finding extends rather than simply confirms the existing literature, which has focused predominantly on the effectiveness of formal communication instruments while giving limited attention to interpersonal channels in the protected area context. The scale of this gap between organic and managed communication suggests that current IMC activities at Biokovo Nature Park have not yet achieved the reach and memorability required to displace word of mouth as the primary driver of visitor decision-making. From an IMC perspective, this represents both a challenge and an opportunity. Structured word-of-mouth amplification through

user-generated content and social sharing, which received moderate suitability ratings (M = 3.49), may offer a strategic bridge between the park's formal communication activities and the interpersonal channels that visitors demonstrably trust most. This is particularly relevant given the visitor profile identified in the results, where families with children constitute the largest segment (39.8%), followed by recreationalists (31.8%), suggesting that experiential and peer-sharing oriented communication approaches may be especially effective for these dominant groups.

The study further finds that while visitors broadly recognise the importance of IMC for protected area promotion (M = 3.76) and report moderate positive impact of park communications on their environmental attitudes (M = 3.60), future conservation participation intentions remain only moderate across all five measured activities (composite M = 3.01). This pattern replicates and extends the findings of Le Corre et al. (2024), Winkler-Schor et al. (2020), and Lai et al. (2009), all of whom identify a persistent gap between conservation awareness and behavioural commitment among protected area visitors. The present study adds empirical specificity to this observation in the Croatian protected area context, demonstrating that the awareness-behaviour gap is present even in a setting where overall visitor satisfaction is high (composite M = 3.82) and where IMC activities are broadly perceived as important. This suggests that raising awareness through IMC is a necessary but insufficient condition for conservation behaviour change, and that more targeted, segment-specific communication strategies of the kind advocated by Winkler-Schor et al. (2020) and Lai et al. (2009) are needed to convert positive attitudes into concrete conservation action. In practical terms, eco-enthusiasts and nature photographers, though representing smaller visitor segments, may warrant dedicated communication approaches that emphasise active conservation participation, while families with children and recreationalists may respond more effectively to accessible, experience-based messaging that builds environmental awareness progressively.

Theoretical contribution

This study makes three principal contributions to the literature. First, it provides empirical evidence from a Croatian protected area context in which the relationship between IMC activities and visitor conservation behaviour has not previously been examined, extending the geographic scope of protected area IMC research. Second, it demonstrates that information quality is a stronger predictor of conservation outcomes than channel effectiveness or reach, offering a theoretically grounded basis for communication investment decisions in protected area management. Third, it highlights the underappreciated role of word of mouth in shaping visitor behaviour in this context, identifying a gap in the current IMC literature that warrants further investigation, particularly with respect to how managed communication and organic interpersonal channels interact in the pre-visit decision phase.

Managerial implications

The findings translate into five concrete recommendations for protected-area communication managers, each accompanied by an implementation pathway suited to the resource constraints typical of nature-park marketing teams.

Recommendation 1: Reallocate communication investment from channel expansion to content quality. The strongest single result of this study that information quality correlates most strongly with every measured outcome implies that further investment in adding channels or expanding paid distribution will yield diminishing returns relative to investment in the substantive quality of communicated content. Protected area managers should audit existing communication assets against four content-quality dimensions identified by visitors in this study (accuracy, accessibility, usefulness, adequacy of event and activity information).

Recommendation 2: Build a structured user-generated-content programme to systematically amplify word of mouth. With 81.1% of respondents citing word of mouth as their pre-visit information source, the operational priority is to harness rather than compete with organic peer communication. Example of such programmer would be to launch a simple branded visitor-content campaign with a memorable hashtag, on-site QR-coded sharing prompts, monthly featured-visitor recognition, and clear consent and permissions language. The initial investment is low but the strategic payoff is the conversion of every satisfied visitor into a content node feeding the dominant pre-visit information channel.

Recommendation 3: De-prioritise email newsletters for awareness-building objectives. As the lowest-rated channel in the study (M = 3.01), email's role within IMC for protected areas appears limited to transactional functions such as booking confirmations, post-visit follow-up, and event reminders for already engaged supporters.

Recommendation 4: Develop segment-specific content tracks aligned with the dominant visitor profile. Families with children (39.8%) and recreationalists (31.8%) together account for over 70% of the sample, while eco-enthusiasts (4.5%) and nature photographers (10.4%) represent smaller but more conservation-receptive segments. Distinct content tracks should be developed. Accessible, experience-led messaging for families and recreationalists that builds conservation awareness through positive park experiences, and content for eco-enthusiasts and photographers emphasising active conservation participation, specialist ecological information, and behind the scenes insight.

Recommendation 5: Close the awareness–behaviour gap with low-friction conservation participation entry points. The persistent gap between positive awareness (M = 3.60) and moderate participation intentions (M = 3.01) suggests that adding further awareness messaging will not by itself convert attitudes into action. Introduction of minimum-friction participation opportunities like on-site QR donation codes, single-action "micro-volunteer" slots of 30 minutes or less could result in positive attitudinal alignment.

These five recommendations are sequenced from the most resource-efficient to those requiring fresh operational design. Together they offer a redesigned communication strategy for protected-area managers seeking measurable returns on limited IMC budgets, grounded in the empirical patterns identified in this study.

Limitations and future research

Several limitations should be acknowledged. First, the convenience sampling approach means that findings cannot be generalised beyond the survey period or to the full visitor population of Biokovo Nature Park across different seasons. Relatedly, the sample is unbalanced by gender, comprising 66.7% female and 33.3% male respondents, which may affect the generalisability of findings related to communication preferences and conservation intentions. Second, the study is cross-sectional and therefore cannot establish causal relationships between IMC activities and conservation behaviour. Third, the visitor purpose categories employed in the survey reflect a classification scheme developed for this specific study context and may not align with established visitor typologies in the broader protected-area literature, which further constrains cross-study comparability. Fourth, as discussed in the methodology, the study operationalises IMC through its constituent dimensions rather than through a direct measure of perceived cross-channel message integration. Future studies should incorporate dedicated items assessing whether visitors experience the Park's communication channels as delivering a unified and mutually reinforcing message, which would directly address the "integration" dimension central to IMC. Subsequent research should also employ longitudinal designs, probability sampling, and experimental or quasi-experimental methods to test the causal mechanisms suggested by the correlational patterns identified in this study. Comparative studies across multiple protected areas, using standardised visitor typology frameworks, would further allow for more robust generalisations about the role of IMC in nature-based tourism management across different ecological, institutional, and cultural contexts.

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DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the authors used Claude (Anthropic) to support the writing process, including translating source material, adapting thesis content to conference paper standards, structuring and refining the academic text, and conducting data analysis checks. SciSpace was used to deepen the literature review, identify the research gap, and accurately extract bibliographic references. After using these tools and services, the authors reviewed and edited all content as needed and take full responsibility for the final content of the publication.

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