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Predicting Gen Z Mangrove Conservation Awareness on Instagram: A Community Account Study of Campaign Exposure and Ambassador Credibility in Indonesia

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ABSTRACT

This study measures the role of Instagram as an environmental communication space for Generation Z in Indonesia. Grounded in the frameworks of Environmental Communication and Social Influence Theory, this study positions the variables of community-based digital campaign exposure ("One Man One Mangrove") and youth environmental ambassador credibility as predictors of environmental awareness. A quantitative survey was administered to 96 followers of the Instagram account @mangrovejakarta.id, and the data were analyzed using multiple linear regression. The results show that both exposure to campaign content and perceived ambassador credibility significantly predict environmental awareness ($p < 0.05$), with ambassadors exerting the strongest standardized relationship ($\beta = 0.704$). The two predictors explain 65.4% of the variance in awareness ($R^2 = 0.654$), indicating that digitally mediated communication can contribute to the formation of awareness regarding mangrove conservation within this specific follower community. These findings suggest that social media can serve as a potential environmental communication channel for engaging youth audiences in ecosystem-specific issues and may support ongoing efforts to enhance environmental literacy in coastal conservation contexts.

1. Introduction

Mangroves are coastal ecosystems that store high amounts of carbon and protect shorelines from erosion and climate impacts, making their preservation a critical environmental issue (Arifanti et al., 2025). Indonesia holds a significant portion of the world's mangroves, and the degradation of these ecosystems has serious consequences not only for the country but also globally (Murdiyarso et al., 2015; Sasmito et al., 2023; Utami et al., 2024). Recent studies indicate that the loss of mangroves is primarily driven by land-use change and conversion, weakening their coastal protection function and the ecosystem services they provide (Nasution et al., 2025; Richards & Friess, 2016). On a biophysical level, degradation leads to reduced carbon stocks in the soil and rising sea levels, which increase

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vulnerability to flooding and erosion (Das et al., 2026). Therefore, restoration policies must combine ecological benefits with cost considerations to set intervention priorities in a clear and accountable manner (Malik et al., 2025). Success in mangrove restoration also heavily depends on community participation, as community-based management often determines the long-term sustainability of conservation efforts (Arifanti et al., 2022). However, bridging the gap between passive digital awareness and active environmental stewardship remains a significant challenge. In many urban coastal contexts, active participation from Generation Z in mangrove conservation remains low. Basic knowledge regarding specific mangrove ecosystem services is often limited, and direct physical involvement in restoration activities is scarce.

Environmental communication literature highlights the critical role of social media in shaping public attention and orchestrating collective action by expanding message reach and facilitating interactive discourse (Efendi et al., 2024; Lestari et al., 2025; Roczen et al., 2014; Saini & Rana, 2025; Shetty & Nayak, 2024). Furthermore, viewed through the lens of social influence, exposure to user-generated content and credible digital figures significantly shapes Generation Z's pro-environmental attitudes and subjective norms (Confetto et al., 2023; Liao, 2025). In these persuasive communication mechanisms, the influence of these figures is driven by multifaceted attributes, specifically their perceived credibility (expertise and honesty), attractiveness (appeal), proximity (relevance to the audience), and role modeling capacity, which determine whether a message is considered authoritative or merely entertaining (Chan et al., 2025). Other studies show that exposure to environmental information on social media can enhance participation intentions in pro-environmental behavior through awareness formation, evaluation, and value consideration (Meng et al., 2023). Furthermore, the visual narratives constructed by activists or environmental influencers can challenge mainstream media agendas and offer a more digestible framework for internalizing ecological issues in daily practices (San Cornelio et al., 2024).

The existing body of literature demonstrates two well-established relationships: first, that structured digital campaigns can increase environmental knowledge and engagement (Meng et al., 2023; Peiró-Signes et al., 2025); and second, that credible digital figures, particularly those perceived as authentic and proximate to their audience can strengthen pro-environmental attitudes among Generation Z (Chan et al., 2025; Confetto et al., 2023). However, a critical empirical gap remains. Most studies examine either campaigns or influencers as standalone predictors of awareness, without simultaneously quantifying the comparative predictive weight of both within the same digital communication ecosystem. Furthermore, while general environmental campaign research is growing, very few studies situate their analysis in community-led, ecosystem-specific conservation accounts in Southeast Asia, where a structured digital campaign and an ambassador program operate simultaneously within a single Instagram account. This study addresses that gap by testing both predictors together within the specific context of @mangrovejakarta.id, a community-driven Indonesian mangrove conservation account, thereby providing evidence on how these two communication strategies relate to awareness within a real, localized digital conservation community (Damanik, 2025; Pinem, 2025).

Conceptually, this study positions itself within the Environmental Communication domain, viewing community-driven digital campaigns as a strategic process to build grassroots relationships, legitimacy, and public support for sustainability agendas (Zhong & Wang, 2023). In the context of digital activism, Generation Z is known to evaluate and respond to pro-environmental initiatives based on the information they encounter in digital spaces, meaning that community messages need to be designed to be credible and aligned with audience values (Sethuraman et al., 2023). As a generation highly connected, their behavior in sharing information on social media can reinforce social norms and green perceptions, which in turn correlates with attitudes and decisions aligned with environmental sustainability (Shah et al., 2021). Social media also serves as a co-creation space, where user interactions transform sustainability messages from mere information to shared experiences that trigger identification and engagement (Nazir & Wani, 2024). In the realm of Instagram, research shows that characteristics of influential figures, such as appeal and expertise can shape perceptions of

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usability and ease, which then correlates with audience behavior intentions (Khurana et al., 2025). Based on this framework, the aims of this study are: (1) to assess how exposure to the 'One Man One Mangrove' campaign predicts environmental awareness specifically among Generation Z followers of the @mangrovejakarta.id account; (2) to evaluate how the perceived credibility of Indonesia's Mangrove Ambassadors predicts this same awareness; and (3) to determine the combined predictive strength of both communication strategies on the followers' mangrove conservation awareness.

This study integrates two complementary theoretical frameworks to explain how digital campaigns and ambassador figures shape environmental awareness. The first is Social Influence Theory (Kelman, 1961), which posits that individuals change their attitudes and behaviors through three processes: compliance (responding to external social pressure), identification (adopting attitudes from admired or respected others), and internalization (genuinely integrating values because they align with one's own belief system). In digital environmental communication, credible ambassadors are hypothesized to operate primarily through identification and internalization: their perceived expertise, authenticity, and relational proximity lead Generation Z followers to adopt pro-environmental stances not as surface-level compliance, but as a reflection of who they aspire to be (Chan et al., 2025; Confetto et al., 2023; Khurana et al., 2025). This mechanism specifically grounds the ambassador variable (X_2) as a credibility-driven social influence channel whose predictive effect on awareness is expected to be driven by perceived source trustworthiness, expertise, and relational proximity.

The second framework, Environmental Communication, frames strategic messaging as a structured process of meaning-making designed to shift public knowledge, concern, and behavioral intention regarding ecological issues (Roczen et al., 2014). Within this framework, digital campaigns like 'One Man One Mangrove' function as organized information environments that provide cognitive anchors for understanding mangrove threats, emotional triggers for concern, and behavioral scripts for participation (Liao, 2025; Meng et al., 2023; Saini & Rana, 2025). Environmental communication scholarship consistently shows that message exposure, repetition, and participatory calls to action operate along a cognitive-affective-conative pathway: audiences first gain knowledge (cognitive), develop concern (affective), and then form willingness to act (conative) (Roczen et al., 2014). This grounds the campaign variable (X_1) as a structured communication stimulus expected to predict awareness through this same three-stage pathway.

Together, these frameworks generate the core testable model of this study: campaign exposure (X_1) and ambassador credibility (X_2) are predicted to jointly explain variability in the multidimensional environmental awareness (Y) of Generation Z followers of @mangrovejakarta.id. Based on Social Influence Theory, ambassadors are hypothesized to exert a stronger effect than the campaign alone, because the identification and internalization mechanisms they activate operate beyond the cognitive information-processing pathway that campaign exposure primarily targets (Kelman, 1961). This differential prediction is tested empirically in the sections that follow.

The One Man One Mangrove campaign can be understood as a strategic communication campaign based on social media, designed to change the knowledge, attitudes, and behaviors of the audience through planned, segmented, repetitive messages that are systematically evaluated, distinguishing it from mere transient 'posts' that lack a measurable goal or success indicators (Shetty & Nayak, 2024). In the context of sustainability communication, effective digital campaigns typically combine elements of evidence-based education (such as information on ecosystem benefits), concrete participation calls (e.g., donating seedlings, volunteering for planting), and feedback mechanisms (comments, shares, or derivative content) to foster social learning, normative formation, and ownership of the issues being campaigned for (Bünzli & Eppler, 2025; San Cornelio et al., 2024). Its relevance to Generation Z becomes evident, as empirical evidence shows that exposure to pro-environmental campaigns on social media, especially when coupled with active involvement such as liking, commenting, and sharing can increase commitment to sustainable actions through the reinforcement of care, self-efficacy, and collective orientation (Peiró-Signes et al., 2025; Tass & Malik, 2025). In particular, the use of visual and video formats in digital science communication has been shown to increase message accessibility and retention (Finkler & León-Anguiano, 2019), while

narrative and storytelling approaches can deepen engagement by providing audiences with identity-resonant frameworks for understanding complex environmental issues (Brady et al., 2017; Fløttum & Gjerstad, 2017; Jorge et al., 2024). Therefore, the operational definition of the One Man One Mangrove campaign in this study emphasizes the combination of message planning, exposure intensity, and participation calls conveyed through Instagram's features (feed, story, reels, and live) to the Generation Z follower segment, aiming to shift the state from simply 'knowing' to 'caring' and 'engaging' in tangible mangrove conservation actions.

The concept of Indonesia's Mangrove Ambassadors can be positioned as a role model/advocate figure for environmental issues who plays a crucial role in bridging ecological information into relevant meanings for the younger audience through a combination of source credibility, narrative proximity, and behavioral exemplification, thus influencing attitudes and choices regarding sustainable actions (Nazir & Wani, 2024; Rajput & Gandhi, 2025). Theoretically, ambassadors can also be understood as endorsers who help build social legitimacy for the organization or movement, as audiences distinguish between categories of endorsers (celebrity vs. influencer) based on their status, reputation, and everyday closeness, which in turn shapes their evaluation of whether a message is worth following or merely seen as a publicity stunt (Simon & Cambefort, 2025). In environmental communication, there is always a risk that perceived insincerity or lack of transparency may trigger greenwashing skepticism, which undermines the ambassador's persuasive effect and makes credibility a prerequisite rather than a bonus (Persakis et al., 2025). The role of ambassadors becomes more significant when they function as greenfluencers combining education, values, and lifestyle, as this practice can strengthen environmental norms through easily replicable content, providing audience members with a reference point for identity and increasing the likelihood of engagement through two-way social interaction (Conte et al., 2025; Opelík et al., 2025). At the communication process level, ethical awareness among Generation Z does not automatically translate into behavior; the connecting mechanism is often the quality of communication, message comprehension, and the establishment of trust, so ambassadors need to articulate issues clearly, respond to doubts, and help audiences assess whether conservation actions align with their personal values (Papadopoulos et al., 2025). Therefore, the operational definition of ambassadors in this study emphasizes their capacity to be spokespersons, role models, and mobilizers of mangrove conservation participation, delivering messages in a convincing, appealing, and easily internalized manner for Generation Z.

Generation Z's awareness regarding mangrove conservation in this study is understood as a multidimensional construct, including knowledge (cognitive) about the functions, ecosystem services, and threats to mangroves, concern or empathy (affective) towards the degradation of coastal environments, and the tendency to act or get involved (conative) in response to the issue, such as through support, participation, or advocacy based on community initiatives (Roczen et al., 2014; Saini & Rana, 2025). This multidimensional understanding aligns with the literature on environmental awareness measurement, which emphasizes that awareness is not simply about 'knowing' facts, but is a combination of cognitive, affective, and conative dimensions that reflect an individual's readiness to act and capacity to link ecological issues with everyday social-economic consequences (Baltodano-Nontol et al., 2024; Nitsche et al., 2025). Research modeling cognitive-normative-affective factors shows that awareness interacts with moral judgments, emotions, and a sense of duty to act in driving pro-environmental responses (Joo et al., 2024). In everyday decision-making, awareness is also manifested as attention to ecological consequences and willingness to choose more sustainable options, so relevant indicators include concern, evaluation of environmental risks, and decision-making aligned with sustainability values (Bedard & Tolmie, 2018; Xie et al., 2024). Additionally, educational pathways both formal and informal through media often strengthen awareness and environmental cognition, which then influences pro-environmental behavior; in the context of Instagram campaigns, awareness indicators can capture increased understanding of mangroves, increased concern for coastal damage, and readiness to get involved after being exposed to content and interactions (Zhao et al., 2024).

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2. Method

This study employed a quantitative, cross-sectional survey design to examine how Instagram-based environmental communication functions among Generation Z in Indonesia. The design was chosen because the main aim was to test the predictive relationships between two independent variables exposure to and engagement with a digital mangrove campaign (X_1) and perceived credibility of youth environmental ambassadors (X_2) and a dependent variable, environmental awareness of mangrove conservation (Y). The cross-sectional approach captures participants' self-reported perceptions and awareness at a single point in time, reflecting their ongoing engagement with the Instagram account @mangrovejakarta.id and its associated campaign and youth ambassadors.

The empirical context of the study is a community-driven Instagram initiative focusing on mangrove conservation in Indonesia. The account @mangrovejakarta.id regularly posts content related to the ecological importance of mangroves, restoration activities, and opportunities for youth involvement, and features the activities of Indonesia's Mangrove Ambassadors. Followers of this account represent a youth audience that encounters mangrove-related messages as part of their everyday social media use, making them a relevant population for investigating environmental communication in digital spaces.

Participants were recruited from followers of @mangrovejakarta.id who met the following inclusion criteria: (a) aged 15–25 years and self-identifying as part of Generation Z; (b) having followed the Instagram account for at least one month; and (c) reporting that they had seen content related to the 'One Man One Mangrove' campaign and/or Indonesia's Mangrove Ambassador. A purposive sampling strategy was used to target those followers most likely to have been exposed to the campaign and ambassador content. A total of 96 respondents completed the online questionnaire and were included in the analysis. The sample was dominated by late adolescents and young adults, with the majority being senior high school, vocational high school, and undergraduate students. Importantly, because the sample was drawn purposively from existing followers of a specific environmental account, these participants likely possess a pre-existing interest in conservation. Therefore, this sample represents a highly selective, pre-engaged digital community. The findings reflect communication dynamics within this specific follower base and cannot be broadly generalized to the wider Indonesian Generation Z population without further research.

Data were collected using a self-administered online questionnaire consisting of three multi-item scales and several demographic items. All substantive items used a five-point Likert-type response format ranging from 1 ('strongly disagree') to 5 ('strongly agree'). Higher scores indicate more positive perceptions of the campaign and ambassadors, and higher levels of environmental awareness.

The first scale measured perceived effectiveness of the 'One Man One Mangrove' campaign (X_1), consisting of 8 items. Items tapped into participants' perceptions of how informative, engaging, and motivating the Instagram campaign is in relation to mangrove conservation. Representative items included: 'The One Man One Mangrove campaign content has deepened my understanding of mangrove ecosystem functions' and 'After seeing campaign posts on @mangrovejakarta.id, I feel motivated to support mangrove conservation efforts.'

The second scale measured perceptions of Indonesia's Mangrove Ambassador (X_2) as youth environmental ambassadors, consisting of 7 items. Items reflected dimensions such as perceived credibility, attractiveness, proximity, and role modeling, capturing the extent to which participants view the ambassadors as trustworthy, knowledgeable, and inspiring in relation to mangrove conservation. Representative items included: 'Indonesia's Mangrove Ambassadors present information about mangroves in a credible and trustworthy way' and 'I look up to Indonesia's Mangrove Ambassadors as role models for environmental action.' Rather than testing each dimension as a separate hypothesis, the scores from these items were aggregated to form a single composite variable (X_2) representing overall perceived ambassador influence.

The third scale measured environmental awareness of mangrove conservation (Y), consisting of 10 items. Items assessed participants' self-reported awareness of mangrove functions and threats

(cognitive), their recognition of the importance of conserving mangroves and emotional concern for coastal degradation (affective), and their perceived willingness to participate in conservation activities or encourage others (conative). Representative items included: 'I understand the role mangroves play in protecting coastlines from erosion' (cognitive) and 'I am willing to recommend mangrove conservation to people in my social network' (conative).

All items were initially drafted in Indonesian and reviewed by two academics with expertise in environmental communication and education. A small-scale pilot with a subset of Gen Z respondents was conducted to check clarity and comprehensibility; minor wording adjustments were made based on their feedback.

Data were exported to SPSS for cleaning and analysis. Prior to hypothesis testing, preliminary analyses were conducted to assess the psychometric properties of the three scales. Item–total correlations were computed for each item; all items showed significant and sufficiently high correlations with their respective total scores (Pearson r = 0.414–0.841, all exceeding the critical r-value), indicating acceptable item-level validity. Internal consistency reliability was assessed using Cronbach's alpha; all three scales met conventional thresholds for good reliability, with alpha values above 0.80 for the campaign and ambassador scales and above 0.90 for the awareness scale.

Assumption checks for multiple regression were performed. Normality of residuals was evaluated using the Kolmogorov–Smirnov test and inspection of residual plots, which indicated no serious deviations from normality. Multicollinearity was assessed using tolerance and variance inflation factors (VIF) values; both predictors had tolerance values well above 0.10 and VIF values substantially below 10. Linearity and homoscedasticity were examined using scatterplots of standardised residuals versus predicted values, which did not reveal problematic patterns.

To address the research questions, Pearson correlation analyses and a multiple linear regression analysis were conducted. Model fit was evaluated using the F-statistic and explanatory power assessed using the coefficient of determination (R^2). The significance and strength of individual predictors were interpreted based on unstandardized (B) and standardized (Beta) regression coefficients, t-values, and p-values. All tests used $\alpha = 0.05$ (two-tailed).

The study adhered to basic ethical principles for research involving human participants. All participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw without penalty. Informed consent was obtained digitally before the questionnaire began. No identifying personal information was collected, and responses were stored anonymously in password-protected files accessible only to the researcher.

3. Results and Discussion

3.1. Combined Predictive Model: Campaign and Ambassador Effects on Awareness

The multiple linear regression model was statistically significant overall ($F(2, 93) = 87.87$, $p < 0.001$), indicating that the two predictors together reliably explain variability in Generation Z's mangrove conservation awareness. The model's $R^2 = 0.654$ (Adjusted $R^2 = 0.646$), meaning that 65.4% of the variance in awareness is accounted for by campaign exposure and ambassador credibility jointly (Table 3). Both predictors contributed significantly at the individual level, with the ambassador variable (B = 0.557, Beta = 0.704, t = 9.597, $p < 0.001$) emerging as the dominant predictor, and the campaign variable contributing a smaller but statistically significant independent effect (B = 0.160, Beta = 0.166, t = 2.269, p = 0.026) (Table 1). Among the 96 respondents, the majority showed elevated knowledge of mangroves—particularly their role in protecting coastlines and sequestering carbon—as well as positive attitudes toward campaign content, though direct participation in offline activities remained limited.

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Table 1. Table 1. Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	4.321	0.741		5.830	0.000
	One Man One Mangrove campaign (X1)	0.160	0.070	0.166	2.269	0.026
	Indonesia's Mangrove Ambassadors (X2)	0.557	0.058	0.704	9.597	0.000

a. Dependent Variable: Awareness of Gen Z (Y)

3.2. The Dominance of Ambassador Credibility: A Social Influence Interpretation

The substantially larger standardized coefficient of the ambassador variable (Beta = 0.704) compared to the campaign (Beta = 0.166) warrants theoretical explanation. From a Social Influence Theory perspective (Kelman, 1961), this pattern is consistent with the expectation that identification and internalization processes activated by a trusted proximate human figure which produces stronger attitude change than exposure to impersonal campaign messages alone. Followers who perceive the ambassadors as credible, authentic, and relationally close are likely to adopt mangrove-related awareness not as externally imposed information, but as an expression of shared values and identity (Chan et al., 2025; Confetto et al., 2023).

A second mechanism likely explains why the campaign's independent contribution appears modest when evaluated alongside the ambassador in the joint model: message overlap. On @mangrovejakarta.id, campaign content and ambassador content are not independent stimuli, the ambassador frequently serves as the visual and relational 'face' of the campaign, narrating its content and calling followers to action. Consequently, followers may process campaign messages primarily through the lens of the ambassador's credibility, making the human figure the dominant driver of awareness variance. This interpretation is supported by prior research showing that source attribution significantly modulates message processing: the same information is evaluated differently when delivered by a trusted figure versus an anonymous organizational post (Simon & Cambefort, 2025).

The simple linear regression model (Table 2) further confirms the ambassador's standalone strength. When analyzed without controlling for the campaign, the ambassador variable yielded B = 0.630 (Beta = 0.797, t = 12.781, $p < 0.001$), indicating that a one-unit increase in perceived ambassador credibility is associated with a 0.630-unit increase in awareness scores. This finding aligns with prior environmental communication scholarship demonstrating that greenfluencers and environmental role models can strengthen ecological norms by providing audiences with easily replicable behavioral scripts and identity reference points (Conte et al., 2025; Rajput & Gandhi, 2025).

Table 2. Simple Linear Regression Analysis (Ambassador Only)

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	5.039	0.685		7.359	0.000
	Indonesia's Mangrove Ambassadors (X2)	0.630	0.049	0.797	12.781	0.000

a. Dependent Variable: Awareness of Gen Z (Y)

Table 3. Model Summary – Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.809	0.654	0.646	1.349

a. Predictors: (Constant), Indonesia's Mangrove Ambassadors (X2), One Man One Mangrove campaign (X1)

3.3. Campaign Exposure as an Environmental Communication Mechanism

Although the campaign's standardized coefficient is modest in the joint model (Beta = 0.166), its positive and significant effect (p = 0.026) confirms that structured digital campaign exposure makes an independent contribution to awareness formation, consistent with Environmental Communication theory's emphasis on repeated, planned messaging as a driver of cognitive change (Liao, 2025; Meng et al., 2023). Respondents who reported higher engagement with campaign content, including content about mangrove functions, ecosystem threats, and participation calls demonstrated correspondingly higher awareness scores, even after controlling for ambassador credibility. This suggests that the informational and normative content of the campaign functions as an independent cognitive-affective stimulus operating alongside, but not reducible to, the ambassador's relational influence.

However, the data also shows that while awareness scores are elevated, direct offline participation in conservation activities remains limited among the sampled followers. This awareness-action gap is a well-documented phenomenon in environmental communication research (Xie et al., 2024; Zhao et al., 2024): digital exposure can effectively shift knowledge and concern, but translating these internal states into behavior requires additional enablers—physical access to restoration sites, perceived self-efficacy, and embedded community support structures. For the 'One Man One Mangrove' campaign, this finding suggests that future iterations should more explicitly integrate offline participation pathways and feedback loops to bridge the gap between digital awareness and tangible conservation action.

3.4. Theoretical Contribution and Contextual Significance

The study's findings advanced the Environmental Communication and Social Influence Theory literature in three ways. First, the results empirically confirm that ambassador credibility and campaign exposure operate as distinct predictors of awareness within the same digital ecosystem, rather than being interchangeable communication strategies. This distinction has direct implications for campaign design: investing in ambassador quality and authenticity likely yields greater awareness gains per resource unit than scaling up campaign content volume alone. Second, the dominance of the ambassador effect consistent with Kelman's (1961) identification mechanism suggests that Social Influence Theory provides a robust explanatory lens for understanding digital environmental communication in community-led conservation accounts. Third, by demonstrating these patterns in a localized Indonesian mangrove context, the study extends prior work on greenfluencers which has largely focused on consumer goods and lifestyle sustainability (Conte et al., 2025; Nazir & Wani, 2024) into the domain of ecosystem-specific, community-driven conservation communication.

Studies by Peiró-Signes et al. (2025) have shown that social media campaigns yield stronger outcomes when supported by credible figures who bridge the gap between ecological information and audience engagement. The present study provides a quantified comparison of these two elements campaign and ambassador within a single regression model, thereby producing more precise evidence on their relative predictive weights. This contribution is particularly relevant for resource-limited NGOs and conservation organizations deciding how to allocate communication budgets between content production and ambassador development.

3.5. Communication Implications and Future Research Directions

For environmental educators, NGOs, and conservation practitioners seeking to mobilize Generation Z in coastal conservation efforts, the findings offer several actionable directions. Campaign designers should prioritize authentic, visually engaging content while investing in ambassador development programs that strengthen communication skills, ecological knowledge, and digital engagement capacities. For educational institutions, social media-based conservation initiatives can serve as complementary environments supporting environmental literacy and place-based sustainability awareness. In coastal settings, such interventions may function as early pathways into community restoration programs or sustainable entrepreneurship linked to mangrove ecosystems.

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Future research should investigate how to convert the awareness associated with digital campaign and ambassador exposure into long-term behavioral participation. Longitudinal or experimental designs would be particularly valuable, as the cross-sectional nature of this study precludes causal inference. Future studies could expand the sample beyond the followers of a single account to explore whether these findings hold across other social media platforms (TikTok, YouTube) or broader demographic groups. The role of gamification, incentive structures, and peer-to-peer challenges in deepening sustained engagement also warrants investigation, as Generation Z's digital culture may be particularly responsive to participatory content formats (Opelík et al., 2025).

4. Conclusion

This study examined how a community-based Instagram campaign, 'One Man One Mangrove,' and the perceived role of Indonesia's Mangrove Ambassador jointly predict Gen Z awareness regarding mangrove conservation, within the specific digital community of @mangrovejakarta.id followers in Indonesia. Using survey data from 96 purposively sampled, digitally engaged youth and multiple regression analysis, the findings revealed that both the campaign ($B = 0.160$, $p = 0.026$) and the ambassador ($B = 0.557$, $p < 0.001$) significantly predict mangrove-related awareness, with the ambassador emerging as the strongest individual predictor (Beta = 0.704). Together, the two predictors explain 65.4% of the variance in awareness ($R^2 = 0.654$). These results suggest that environmental communication strategies integrating informative digital content with credible human communicators are associated with higher ecosystem-specific awareness levels within this follower community.

Theoretically, this study contributes to the Environmental Communication and Social Influence Theory literature by demonstrating that youth awareness of coastal ecosystem conservation is shaped not only by campaign message design but also strongly by the perceived credibility and relational proximity of environmental ambassadors. The dominance of ambassador credibility in predicting awareness is consistent with Kelman's (1961) identification and internalization mechanisms: followers in this community appear to integrate mangrove-related values most strongly when they come from figures, they perceive as trustworthy, knowledgeable, and relationally close. This interpretation is tentative and context-specific; comparative research involving different platforms, cultural settings, or community sizes would be needed to determine the extent to which these mechanisms generalize beyond this Indonesian conservation account.

Practically, the findings offer actionable insights for environmental educators, NGOs, and conservation practitioners seeking to mobilize Generation Z in coastal conservation efforts. Campaign designers should prioritize authentic, scientifically grounded, and visually engaging content while also investing in ambassador development programs that strengthen communication skills, ecological knowledge, and digital engagement capacities. For educational institutions, social media-based conservation initiatives can serve as complementary learning environments that support environmental literacy, climate citizenship, and place-based sustainability awareness. In coastal settings, such interventions may also function as early pathways into community restoration programs.

Several limitations should be acknowledged. The sample consisted of self-selected followers of a specific environmental Instagram account, limiting generalizability to the broader Indonesian Generation Z population. The cross-sectional design restricts causal inference, and the outcome variable focuses on self-reported awareness rather than behavioral participation. Future research could use longitudinal, experimental, or mixed-method designs to examine behavioral outcomes, integrate digital trace data, or expand sampling beyond existing followers to explore cross-platform and cross-cultural dynamics.

Despite these limitations, the study provides empirical support for the argument that digital campaigns and youth ambassadors are pivotal in shaping youth environmental awareness within the era of climate crisis and ecosystem degradation. As coastal regions face intensifying challenges, leveraging youth culture, digital platforms, and community-based leadership may be a crucial strategy

for connecting environmental communication with the foundational stages of awareness and readiness to participate in conservation.

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