Research Article

Implementing Environmental Communication Strategy Towards Climate Change Through Social Media in Indonesia

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ARTICLE INFO	ABSTRACT
	Indonesia is not exempt from the globally increasing environmental complexities (particularly climate change). Following Cox's (2013) environmental communication strategy, this research aimed to review environmental communication strategies by environmental non-governmental organizations (ENGOs) with the "Bye Bye Plastic Bags" campaign through social media in Bali, Indonesia. This study also examined the communal perspectives of the "Bye Bye Plastic Bags" campaign execution. An in-depth interview was performed with five ENGO respondents and two community counterparts to obtain the study aim. Resultantly, ENGOs incorporated Cox's (2013) four-phase environmental communication strategy for the campaign (assessment, planning, production, and action and reflection). The ENGOs employed digital platforms (Instagram and Facebook) during the campaign for knowledge transfer. Additionally, community respondents denoted the campaign as a good initiative in substantially reducing garbage-littering among Bali tourists. As it was claimed (by community respondents) that the campaign only emphasized younger individuals, both respondent groups implied the need to expand the target audience across all generations as environmental intricacies were a social issue.

INTRODUCTION

The global emergence of natural disasters, including floods, droughts, forest fires, earthquakes, and novel viruses, reflected extreme climate changes that drew worldwide concern as the most alarming environmental conundrum in the 21st century (Carlson et al., 2022; Masud et al., 2015; Mohamad Saleh, 2017; Wright & Nyberg, 2017; Yoseph-Paulus & Hindmarsh, 2018). Undeniably, climate change has severely affected human health and urban populations regarding freshwater resources, rainfall intensity, flood risks, and high sea levels in Asia (Azmi et al., 2015; Kovats & Akhtar, 2008).

The development of responsible societies is the central thrust of all reconstructive discourses these days. However, since business activities continue to contribute negatively to the sustainability of our ecosystem, ecological sustainability is one of the most severe concerns before the responsible community (Dash & Dash, 2019). Despite calls for extreme climate change prevention by not littering, creating greenhouses, waste, and plastic-dumping into the sea, and responsible electricity consumption (Kurniadi & Hizasalasi, 2017), public environmental protection remained lacking. For example, individuals continued utilizing plastic bags, containers, bottles, and shoes daily, notwithstanding the ecological implications (pollutions) (Otsyina et al., 2018). In this vein, plastic waste denoted the most substantial counterpart in the sea and adversely impacted marine lives and environments (Abreu & Pedrotti, 2019; Kurtela & Antolović, 2019).

Although climate change proved alarming, individuals continued disregarding the environmental concerns following ambiguous climate change effects. Notably, sceptics held scientists and green organization's accountable for vague climate change implications to obtain funding and profitability. Regardless, young activists asserted climate change viewpoints (extreme weather alterations and urgent resolutions) through digital platforms (Wahyuni, 2017).

A recent climate change in January 2020 involved the Australian forest fire (the worst in Australian history) that caused the habitat loss and death of native wildlife (kangaroos, koalas, birds, and reptiles). The predicted number of animal victims reached 480 million (including 8,000 koalas). Additionally, no estimated duration was obtainable to rehabilitate and release the wildlife into forests. The incident also led to a decrease in bird, rodent, and insect populations (Aye & Widjaya, 2006).

Melting polar ice caps was another long-term environmental effect under climate changes. For example, the Greenland ice sheet topped the ice sheet-melting record in 2022 (Lamnatou & Chemisana, 2022). Notably, a novel assessment indicated the aforementioned melting scale as "unprecedented" since 1948. In this regard, Greenland has significantly demonstrated rising sea levels over the past three decades with more ice sheets melting. Following the Grace and Grace-FO satellite data and climate models, Greenland lost 532 gigatons of ice throughout 2019 (a substantial rise compared to 2012). As such, the possible submergence of land into water caused grave public concern.

Adverse climate change effects catalyzed a dire need for public education against human activities that instigated global warming (Bentley et al., 2019). Specifically, individuals were required to develop pro-environmental attitudes to sound comprehension of serious climate change intricacies through digital information-sharing (Facebook, YouTube, Twitter, and Instagram). Undoubtedly, social media platforms significantly facilitated user discussions on and expressions of environmental perspectives, specifically climate changes (Cody et al., 2015). For example, Twitter users could discuss climate alterations for higher awareness (Jang & Hart, 2015).

Additionally, YouTube channeled much public information on climate changes and enabled perspectives exchanges in the comment section (Spartz et al., 2017). The aforementioned knowledge and activities consequently impacted public viewpoints on climate change implications (Bolsen & Shapiro, 2018). Based on the essentiality of social media in mediating climate change discussions, this study aimed to assess the "Bye Bye Plastic Bags" campaign communication strategy impact using social media in Bali, Indonesia, and examine the Balinese perspective of campaign operations.

LITERATURE REVIEW

Climate Change Campaign Through Social Media

Online campaigns implied a meticulously designed knowledge-transfer channel for a target audience that anticipated recipients' feedback (Titifanue et al., 2017). As most audiences employed mass media daily, the channel significantly influenced information and idea transfers (Schäfer, 2012). Notably, civil engagement in online social movements distinctly facilitated national development (Laestadius et al., 2014).

Regarding social media utilization (specifically in campaigns), Park et al. (2019) and Titifanue et al. (2018) categorized Facebook, Twitter, LINE, and Instagram as social media forms. Social media utilization was primarily employed by companies executing social movement activities, three of which implied environmental social movements (Dwityas et al., 2020). Social media was also employed to encourage agricultural processing, environmental products and services, and social deeds. For example, Twitter and Instagram denoted efficient social media types in executing and mobilizing specific social movements (healthcare, citizenship, and other environmental complexities).

Social media implied a novel channel with more engaging components than traditional counterparts (Anindya et al., 2021; Briandana et al., 2020). As environmental, social movement campaigns were executed to induce environmental concerns socially, and communities could conduct eco-friendly activities by engaging in campaign activities within the environmental, social movement (Cox & Depoe, 2015). In this vein, Cox and Depoe (2015) mentioned that social media presently promoted environmental, social movement campaigns. Following past literary works, Internet user and usage attributes were perceivably impacting social media

optimization (Cox & Depoe, 2015). Specifically, personal attributes involved age, gender, employment type, education, and income levels (Rebich-Hespanha & Rice, 2016). Personal internet utilization characteristics (usage motivation & social media utilization frequency) affected social media efficiency (Carter & Childs, 2018).

Campaign activities required execution to mobilize communities towards social movement activity engagement and environmental protection (Villodres et al., 2014). Consequently, social media engagement impacted campaign activities involving message frequency, response frequency, and attraction level (Moser, 2010). Furthermore, the efficiency of Instagram as one of the most renowned digital platforms among Indonesians potentially induced Instagram followers towards social movement involvement. In this vein, the environmental campaign against climate change denoted the primary study focus. Specifically, this research proposed that social media engagement in climate change campaigns possibly established public awareness of environmental protection. As such, the climate change campaign could commence as anticipated with social media influence.

"Bye Bye Plastic Bags" Campaign Through Social Media

Presently, Bali, Indonesia, is inextricably linked to the conundrum of plastic bags. The Bali Partnership study (between January 2019 and May 2019) indicated that 20% of the 4,281 tons of waste involved plastic (Alexandra et al., 2021). Notably, one of the ENGOs combating the issue was "Bye Bye Plastic Bags." The organization emphasized plastic bag waste intricacies in Bali, specifically through education. Additionally, "Bye Bye Plastic Bags" was the only organization that successfully advocated for the Bali Governor Regulation No. 97 promulgations in 2018 to restrict single-use plastic (Alexandra et al., 2021).

Indonesian climate change activist, Melati Wijsen, initiated the movement following a school assignment on environmental change. The teenager eventually began the "Bye Bye Plastic Bags" movement on Facebook with much positive feedback from all social levels. Melati Wijsen continues to manage extreme climate change complexities to date. Melati Wijsen also attempted to catalyze positive effects through online environmental activities under "Bye Bye Plastic Bags" using Facebook and Instagram to emphasis the primary audience (millennials). Presently, 35 "Bye Bye Plastic Bags" activity venues across Indonesia were involved in the campaign (Rijal & Sabila, 2022).

Consequently, plastic products in Bali have declined by 30 to 40% between early 2019 and mid-2019 (Hana, 2020). Other data also indicated decreased Denpasar by 99.60% (approximately 12,981,234 sheets) instead of past data in 2020. The initiative was facilitated by various parties, such as "Bye Bye Plastic Bags", to minimize public bag usage in Bali (Hana, 2020). Following the substantial campaign effect, this study aimed to examine how the "Bye Bye Plastic Bags" communication strategy facilitated public education in minimal plastic bag utilization. Environmental communication strategy implementations were also analyzed in the campaign through Facebook and Instagram.

Environmental Communication Strategy

Environmental communication programs must emphasize audience empowerment and active engagement (Parahita, 2017) in line with Cox (2013) and Flor's (2004) relevant perspective of the environmental communication setting. As human-environment interactions were inextricably linked, the aforementioned technique proved intricate following the development of cultural and belief-oriented elements (Ardian, 2019). No dominance or oppression was detected with equal positions in the environmental communication context (Susilowardhani, 2014).

Flor (2004) denoted the communication environment as communication approaches and principles for environmental governance and protection. Summarily, communication environment reflected reciprocated environmental knowledge towards mutual comprehension between specific parties. On another note, Cox (2013) denoted the communication environment as studying environmental communication strategies, impacts, viewpoints, self-conceptions, and the human-environment correlation. In other words, environmental communication was a practical instrument for assessing and comprehending the environment and subsequent connections (Cox & Depoe, 2015). Essentially, environmental communication encompassed two primary roles:

1. Pragmatic: to educate, alert, mobilize, and convince and

2. Constitutional: language and symbols significantly influenced observations on the authenticity and nature of environmental complexities.

Specific aspects required consideration of environmental communication implementations, such as effective media utilization for regulated social agendas (Flor, 2004). Media optimization as a social platform proved pivotal to convey public environmental messages. Every media platform must embody a specific alternative for accurate and public conveyance of environmental ideas and concepts (Agustina et al., 2020).

Symbolically, environmental communication was employed to outline environmental intricacies and varied communal feedback (Wahyuni, 2017). Environmental communication did not only encompass environmental governance, but the aspect involved public perspectives. Lie and Servaes (2015) categorized environmental communication as one of the thematic sub-disciplines in communication development and social change to acknowledge human-environment engagements (Lie & Servaes, 2015). In Cox (2013), environmental communication involved the following:

1. Rhetoric and environmental discourse: The most extensive area in environmental communications research encompassing rhetoric from environmental proponents and literature, corporate public relations campaigns, media platforms, and websites;

2. Media and environmental journalism: Emphasized how news coverage, advertisements, commercial programs, and websites outlined natural and environmental complexities. The research area also involved the media effects of individual behavior in agenda-setting and media-framing;

3. Public engagement in decision-making on environmental intricacies;

4. Public education and advocacy campaigns (social marketing): encompassed campaigns to alter individual behavior for favorable social or environmental objectives;

5. Cooperative environment and problem-solving: Assessed alternative models to avoid dissatisfaction through public involvement and problem-solving techniques. An essential study area component involved stakeholder cooperation in conflict resolution discussions without advocacy or debates.

6. Risk communication: Converting conventional communication strategy assessment on technical health-based knowledge delivery into a more advanced technique (risk comprehension implications on risk-tolerant public assessments);

7. Environmental challenge representations in popular cultures and green marketing: Explored the utilization of images, music, television programs, photography, and commercial advertisements towards individuals' environment-oriented behavior.

A communication strategy implied a methodical plan for efficient communication goal attainment (Geni et al., 2021). Typically, communication occurred to deliver the intended meaning in a message or enable individual thoughts or attitudes based on the communicator. In this regard, communication was generally employed as an instrument of persuasion (Wahyudin, 2017). For example, some typical methods involved increased smiles to generate camaraderie, various reasons as to why prospective buyers should buy the offered products, and various information denoting the prospective buyers' lifestyle for positive negotiations (Cox & Depoe, 2015). In this vein, communication strategy encompassed an extensive study area. For example, communication techniques could be classified into communication science research, such as public relations, advertising, and business communication. **Table 1** shows the stages in environmental communication strategy.

METHODS

The study methodology involved an in-depth interview with two different respondent groups ("Bye Bye Plastic Bags" campaign team members and the community members engaged in the campaign). Five respondents (including Melati Wisjan) were selected from the campaign team members to gauge environmental communication strategy perspectives through social media. Specifically, two respondents were interviewed for observations on efficient environmental communication techniques. The justification for selecting respondents is based on the results of pre-research conducted by researchers. Additionally, respondents' identities were protected with pseudonyms in data-reporting to retain anonymity and privacy.

Table 1. Stages in environmental communication strategy (Cox, 2013)

No	Stage 1 (Assessment)	Stage 2 (Planning)	Stage 3 (Production)	Stage 4 (Action & reflection)
1	Situational assessment & issue identification. Evaluate the parties/actors involved	Communication strategy development	Message design delivery. Media production & pre-test	Distribution using media & subsequent incorporation
2	Communication objective (knowledge enhancement and behavior influencer)	Social motivation & mobilization		Documentation, monitoring, & assessment processes
3	-	Media selection	-	-

Appointments were made with each respondent before the virtual interview sessions (approximately 45-minute long) following the COVID-19 outbreak. Respondents' interview consent was also digitally documented (Whitaker & Savage, 2015). Demographic profile details (age and gender) were obtained before the in-depth interviews as an ice-breaking process (Joos et al., 2016). The study questions emphasized environmental communication methods following Cox's (2013) four-phase environmental communication strategy: assessment, planning, production, and action and reflection. Community respondents were asked specific questions, such as "Do you know about the "Bye Bye Plastic Bags" campaign?" and "What do you think about the campaign?" The study data were qualitatively assessed.

Following **Table 2**, seven ENGO and community respondents participated in this study. Five out of the seven respondents were from ENGO, while the remaining two were Balinese community counterparts. Some respondents utilized English or Indonesian throughout the interview as the individuals were asked to converse in the preferred language. One respondent (ENGO) requested to be interviewed in English as the favored communication medium, while other ENGO and community counterparts preferred conversing in Indonesian. Notably, five of the respondents were women, while two were men. Most ENGO respondents had one to five years of working experience.

RESULTS

Following the study data from the "Bye Bye Plastic Bags" team, the social media campaign incorporated four different environmental communication strategy phases following Cox (2013).

Assessment

The assessment stage reflected an issue identification process to address the determined intricacies. In the study context, "Bye Bye Plastic Bags" strived to establish campaigns for younger generations to resolve the ongoing plastic waste conundrum in Bali. Youths were specifically selected in line with the current cultural phenomenon in Bali, where young adults participated in highly interactive discussions as stated below:

> Young people live longer than older people; if they do not change, there will be no improvement related to waste. Therefore, our target is indeed young people (ID: Respondent 1).

> In my opinion, young people are the nation's generation. Therefore, I hope their concern is related more to this waste problem (ID: Respondent 2).

> To improve the environment, it must start with the young generation. The hope is that this young generation will transmit it from generation to generation (ID: Respondent 3).

The secondary target audience supplemented the primary counterpart with equal importance in the "Bye Bye Plastic Bags" campaign. Specifically, the secondary "Bye Bye Plastic Bags" audience encompassed the citizens as reflected below:

> The second target in this campaign is the general public, whereby if awareness has been built within young people, we hope that the general public will be moved to combat plastic waste (ID: Respondent 4).

Table 2. Respondents participated in this study

	ENGO	Community
Numbers of interviewees	5	2
Identification codes	ID respondent 1-5	ID respondent 6-7
Language Indonesian	4	2
English	1	-
Working experience		
1-5 years	5	-
6-10 years	-	2
Gender		
Male	1	1
Female	4	1
Profession		
ENGO founder	1	-
Media trailblazer	1	-
Creative content	1	-
Strategic planner	1	-
National immigrant/Rights activist	1	
Tour guide	-	1
Businesswoman	-	1

> Our goal is to raise awareness among young people, then to the general public (ID: Respondent 5).

Planning

Campaigners in the aforementioned phase engaged in strategic and knowledge development based on the issues determined during the assessment stage. In the study setting, the individuals also identified the most relevant media form to address preconceived targets. The following step involved knowledge organization following themes and materials upon acknowledging the audience. As communication predictably impacted the audience, the information must be structured to garner the target audience's attention. One of the respondents stated, as follows:

> The strategic planning team designed a concept from media type identification to the message to convey to be effective and according to the target (ID: Respondent 1).

Regarding social media, information delivery was followed by posts through appealing visuals to garner young adults' attention and comprehensible language for optimal conveyance. The information attributes compiled by "Bye Bye Plastic Bags" included information and persuasion. In this vein, the "Bye Bye Plastic Bags" program offered knowledge and awareness of the hazards and effects of plastic bags and subsequent solutions as mentioned below:

> The message is also very persuasive to change people's behavior and mindset so that they are moved to reduce the use of plastic bags (ID: Respondent 2).

> We use social media Facebook, Instagram, and the website for this campaign as we think the media types are suitable for our target audience (ID: Respondent 1).

Production

"Bye Bye Plastic Bags" essentially employed two techniques at the production stage: redundancy and canalizing. The redundancy strategy reflected explicitly reiterated information delivery using social media while the canalizing counterpart involved initial audience identification and attributed to deliver information following the "Bye Bye Plastic Bags" goals as stated below:

> "Bye Bye Plastic Bags" uses three methods, namely, informative, persuasive, and educational. Informatively, "Bye Bye Plastic Bags" provides information to the younger generation, especially school children, by providing evidence summarized in social media. Persuasively, "Bye Bye Plastic Bags" convinces the audience to reduce the use of plastic bags. Educationally, "Bye Bye Plastic Bags" educates the public through messages conveyed to change behavior (ID: Respondent 1).

Action and Reflection

"Bye Bye Plastic Bags" assessed media usage following audience situations and conditions. For example, print and social media and events were employed by "Bye Bye Plastic Bags" as mentioned below:

> We evaluate this activity every six months. If the target is not achieved, we try to redesign information on social media (ID: Respondent 2).

> We also ask for support from local governments to help expand this program (ID: Respondent 3).

Overall, evaluation encompassed a systematic attempt to analyze different implementation elements and campaign goal attainment. In this regard, evaluation served to elevate or improve past successes and demonstrate efficient campaign implementers regarding program designing and incorporation. The evaluation was executed at the end of the campaign, but assessments were conducted during the campaign period. As such, communication program efficiency could only be identified through analysis. In the final phase, the "Bye Bye Plastic Bags" team strived to assess the degree to which the feedback reflected the campaign based on social media engagement. Consequently, specific actions were initiated to rid the streets, beaches, and public facilities of plastic waste.

Social Perspectives of "Bye Bye Plastic Bags" Campaign Execution

Following the interview with both community respondents, the campaign reflected a positive implication for Bali, Indonesia, on the hygiene of tourist attractions. One of the respondents outlined littering issues among tourists as a chaotic situation that compelled more actions resembling "Bye Bye Plastic Bags" as stated below:

> My experience is that local tourists who have visited Bali several times threw garbage on land. Trash that could be seen included food containers, such as drink bottles, plastic from snack food, and unused food scraps (ID: Respondent 7).

Notably, another respondent corresponded to respondent 7 by highlighting the severity of littering among foreign tourists in Bali, as follows:

> But other things threaten this waste too, namely, foreign tourists who come to Bali and damage the environment. It was found several times that tourists came to throw garbage, get drunk, and some even threw their motorbikes into the sea. This got viral on social media (ID: Respondent 6).

Although "Bye Bye Plastic Bags" was a successful campaign, the respondent outlined the essentiality of expanding the campaign locus beyond adolescents to generalize littering and hygiene issues in Bali, as stated below:

> My input on the "Bye Bye Plastic Bags" program is not only for teenagers, if possible, but the general public is also involved. Then it must be considered not only from the rich but also from low-income people who must be involved. Garbage is a problem for society as this garbage does not only belong to the rich or poor (ID: Respondent 6).

On another note, the respondent also anticipated the government to consider substantial actions, such as the aforementioned campaign to protect the hygiene in Bali, as stated below:

> The government should act decisively like countries in Europe or Singapore, wherein those who throw garbage are penalized or imprisoned. But unfortunately, I see the government does not care about this environmental problem (ID: Respondent 7).

DISCUSSION

Summarily, it was revealed that "Bye Bye Plastic Bags" incorporated the four communication strategies following Cox (2013) for the public awareness of plastic bag usage minimization (**Figure 1**).
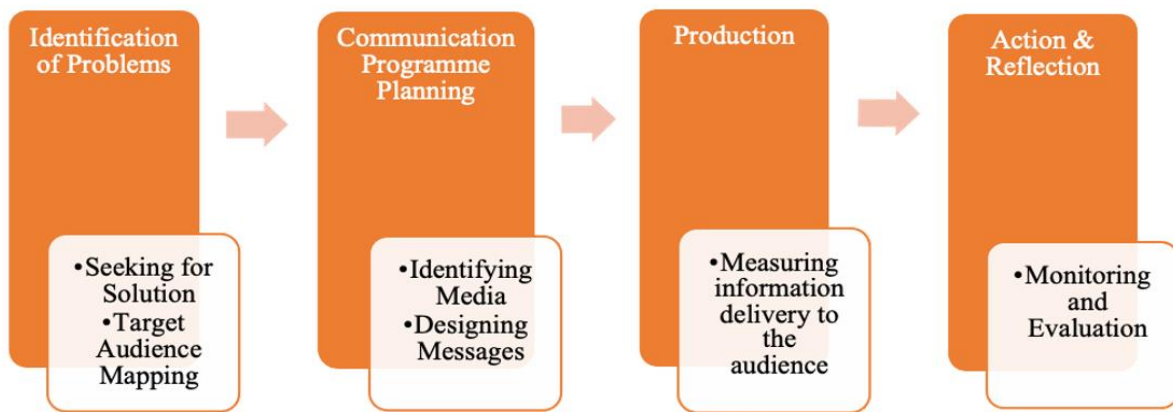
Figure 1. "Bye Bye Plastic Bags" environmental communication strategic model (created by the authors)

The aforementioned model summarily outlined the environmental communication strategy executed by "Bye Bye Plastic Bags". The study model was developed to obtainable goals following the communication strategy campaign efficiency assessment using social media. Precisely, the plastic waste movement resembled the green living counterpart that encompassed various decision-making on lifestyles and implementations for the goodness, health, and sustainability of the earth and living beings (Otsyina et al., 2018).

Generally, many public messages were employed as novel selling points in different campaigns and promotions for green lifestyles, such as plastic waste-free campaigns to overcome climate change impacts (Otsyina et al., 2018). The "green" campaign was socially adopted from the movement of people with severe environmental concerns by disregarding new technologies and consumer-based lifestyles (first addressed by hippies, protestors, and "tree huggers") (Schäfer, 2012).

Notably, similar campaigns did not distinctly involve certain groups. However, current environmental concerns from various parties catalyzed the green living campaign (plastic waste-free) for continuous expansion by various groups. Communication and information technology developments also significantly influenced the green lifestyle campaign expansion (Rebich-Hespanha & Rice, 2016). Furthermore, social media usage (with specific features) enabled knowledge-sharing, socialization, and cooperation that increased awareness and improved adoption processes for social and environmental movement advocacies (Carter & Childs, 2018).

Social media implied one of the essential green-lifestyle campaign assets (Carter & Childs, 2018). Unlike conventional instruments, social media proved efficient and accessible as users conveniently shared and exchanged knowledge and concepts through digital platforms (Sofian et al., 2018). For example, communication and information technology support, open access, convenient observation, studies, active engagement as activists, and advocacy and influences (beyond time and space) proved beneficial. In addition, a sound comprehension of the environmental circumstance, such as technological adoption and media consumption preferences of campaign targets, was deemed crucial. As a social community that actively advocated green lifestyles, "Bye Bye Plastic Bags" manipulated the possibilities of communication and information technology, specifically by utilizing social media channel (Facebook and Instagram) as the medium for campaign communication.

The primary audience (young adults) determined by "Bye Bye Plastic Bags" was regarded following the collective possibility of perpetuating sustainable green lifestyle concepts. The determination (as the primary audience group) was also identified from youth attributes with access to and reliance on communication and information technology. In this vein, younger generations were potential recipients of the target message as successors and social leaders (Villodres et al., 2014). The broad representation of green lifestyles (specifically through "Bye Bye Plastic Bags" campaigns on plastic-waste prevention) subsequently facilitated the rapid acknowledgment of pro-environmental movements and induced similar movements to become "mainstream" without political implications.

Recognizing the primary campaign target (young adults) also proved crucial for campaigners to consider introducing other social media forms apart from Facebook and Instagram. For example, campaigners could employ Twitter to attract more young adults to support, tweet, and engage in the "Bye Bye Plastic Bags" campaign. Anderson and Huntington (2017) studied the utilization of Twitter as a public medium to explain climate changes during the regional flooding occurrence in Colorado (Anderson & Huntington, 2017). Notably, the public actively demonstrated skepticism through Twitter towards political intricacies involving the flood.

This study revealed that one of the adverse "Bye Bye Plastic Bags" campaign aspects was inconsistency. The community remained incapable of converting the program into a sustainable culture. The second limitation indicated innovation. Although innovation was deemed necessary for unique and novel updates, the campaign innovativeness was relatively stagnant following reiterated information. Thirdly, governmental roles were not optimized, although national facilitation (regulations, policies, and licensing) for the campaign proved essential to avoid inefficiencies. The elaboration corresponded to (Andarsih & Mayangsari, 2018), where waste management strategy implementations required complete national support through stringent and consistent regulations.

This study also examined the communal perspectives of the "Bye Bye Plastic Bags" program. The program frequency level remained lacking despite efficiency. As such, frequent campaigning potentially benefitted the Balinese people in general. Given that youth engagement in the campaign only denoted individuals from middle and upper-economic classes, young adult participation from lower middle classes were deemed necessary. The study outcomes also implied that social media utilization (Instagram) proved effective as a campaigning method to deliver clear messages for social influence following research data on the number of adolescents engaged in the campaign. The result corresponded to Titifanue et al. (2018), where social media usage in social movement activities was more efficient with successful goal attainment using simplified narratives and appealing visuals (Titifanue et al., 2018).

Extensive knowledge of environmental conditions was also possible in the environmental, social movement campaign using social media for increased environmental awareness and necessary actions (Carter & Childs, 2018). Consequently, users preferred to trust the conveyed information and take environmental action (Rebich-Hespanha & Rice, 2016). Overall, "Bye Bye Plastic Bags" incorporated a communication technique for public education to minimize plastic bag utilization with a communication strategy model. It was also affirmed that Cox's (2013) environmental communication strategy could complement the Indonesian setting that differed from the Western counterpart. Furthermore, the model could be utilized to guide ENGOs, government agencies, and other environmental communication stakeholders to advocate for social movements and environmental protection.

CONCLUSION

Generally, the "Bye Bye Plastic Bags" communication strategy was developed to convey environmental concerns on waste and climate change. The strategy was incorporated by collecting waste, sorting organic and non-organic waste, and minimizing plastic waste usage. Additionally, the strategy served to alter individual attitudes and behaviors in Bali for a hygienic, comfortable, and waste-free city. As the method was aimed at young Balinese adults, potential campaigners could expand the target audience to include older generations for more holistic campaigns.

Although the overall communal engagement could facilitate the "Bye Bye Plastic Bags" program from a social perspective, some elements required readjustments and support from industry players and government bodies for program optimization. Demographically, Bali portrayed a different culture from Jakarta as many tourists visited Bali for various reasons, thus reflecting different motivations as tourists tended to pollute the Bali environment. In the study context, campaigns or social movements were regarded as optimal environmental waste management following the rise of environmental complexities and global warming.

Several significant research limitations were also evident. As the study only emphasized one ENGO, future research could consider analyzing more ENGO campaigns in Indonesia or other Asian nations (Singapore, Malaysia, and Thailand) for environmental communication strategy comparisons. Secondly, the study only utilized in-depth interviews as a research technique. Hence, potential studies could employ quantitative

approaches (surveys) to obtain more social feedback and explore campaign efficiency. Given those other industry players (the media) also actively engaged in conveying environmental messages (Mohamad Saleh et al., 2021) and cooperating with ENGOs under environmental communication (Mohamad Saleh & Heinrichs, 2019), future studies could examine media roles in collaboration with ENGO-oriented environmental campaigns. Additionally, following Mohamad Saleh and Heinrichs (2020), who examined environmental issues represented in Malaysian ENGO newsletters, future studies could also explore the representation of environmental or climate change issues in the Indonesian ENGO newsletters.

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