

The Influence of Social Media on the Promotion of Sustainable Fisheries Management: A Case Study of Indonesian Crabs

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ABSTRACT

The swimming crab (*Portunus pelagicus*) is a leading Indonesian fishery commodity, largely exported to the United States. The Indonesian Swimming Crab Management Association (APRI) actively utilizes social media as a promotional tool for its sustainable fisheries program. This study aims to analyze the influence of APRI's social media on the interaction and effectiveness of Consumer Brand Engagement (CBE) in sustainable swimming crab fisheries programs in Indonesia. Data was collected over 14 days from 31 respondents who used social media platforms on Instagram, Facebook, LinkedIn, and YouTube using the Accidental Sampling method. Analysis was conducted using SmartPLS 3.2.9 to test the influence of four Brand Awareness factors (recall, recognition, alternatives, and keep recalling) on the interaction and effectiveness of CBE in four APRI programs (Swimming Crab Apartment, 5-Minute GTK, Swimming Crab Cultivation, and APRI Youth Innovation). The results indicate that the Swimming Crab Apartment and 5-Minute GTK programs are most familiar to respondents. Knowing and following APRI's social media significantly influences the interaction and effectiveness of CBE. Social media has proven effective as a digital marketing strategy for nonprofit organizations in promoting sustainable fisheries management programs and increasing public awareness.

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INTRODUCTION

Crab (*Portunus pelagicus*) is one of Indonesia's leading fishery commodities that has a high export value and volume, especially to the United States market. Over the past decade, crabs have consistently been included in the top five national fishery export commodities. Considering that all export needs still rely on marine catches, there are concerns about the sustainability of the natural population of crabs. The development of digital technology, especially social media, has created new opportunities in marketing strategies and sustainability campaigns.

The We Are Social report notes that around 167 million Indonesians (60.4%) actively use social media. This condition encourages various organizations, including non-profit organizations, to utilize digital platforms as a means of promotion and public education. The Indonesian Crab Management Association (APRI) as an organization that focuses on the

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sustainability of crab fisheries, utilizes Instagram, Facebook, LinkedIn, Twitter, and YouTube to promote sustainability programs. However, the effectiveness of the use of social media in the context of fisheries sustainability promotion by non-profit organizations has not been widely explored scientifically. This study aims to analyze the influence of APRI's social media on the interaction and effectiveness of Consumer Brand Engagement (CBE) in sustainable crab fisheries promotion programs in Indonesia, as well as identify which programs are best known by social media users.

According to Rosyad, the success of promotion is not only determined by the intensity of information delivery, but also by the ability of the media used in building audience engagement. Social media provides an opportunity for organizations or business actors to disseminate information quickly, interactively, and sustainably so that it can increase the effectiveness of promotions. In the context of sustainable fisheries management, the use of social media can be an effective educational tool to foster public awareness about responsible fishing practices and the importance of preserving Indonesia's crab resources.

Literature Review and Problem Statement

Social media has evolved into a digital marketing instrument that is not only relevant for business organizations, but also for non-profit organizations. According to Ogden, digital marketing is the activity of promoting and finding markets through online digital media by utilizing various tools, including social networks [9]. The advantages of digital marketing include rapid socialization, real-time measurement of results, ease of evaluation, and a wide geographic reach. For non-profit organizations, the purpose of using social media is not to increase sales, but to increase public awareness and encourage real action. Consumer Brand Engagement (CBE) is a concept that measures consumer engagement with a brand or organization through cognitive, emotional, and behavioral interactions. In the context of fisheries sustainability, CBE is measured through four dimensions of Brand Awareness: recall (ability to remember the brand), recognition (brand recognition through programs), alternatives (placing the brand as the top choice), and keep recalling (keeping the brand in mind when interacting with competitors' products) [8]. Research by Nguyen & Nguyen (2021) and Bhati & McDonnell (2020) confirms that consistent and informative social media contributes significantly to the increase in CBE in nonprofit organizations. Based on these research gaps, this study formulates the question: Does APRI social media have a significant influence on the interaction and effectiveness of CBE sustainable fisheries promotion programs in Indonesia?

METHOD

This study uses a quantitative approach with descriptive analysis methods and Partial Least Squares (PLS). A total of 31 respondents were selected using the Accidental Sampling method from social media users who actively follow APRI accounts on various platforms (Instagram, Facebook, LinkedIn, and YouTube). Data collection was conducted online through the kuesio.id platform during June 2023, using a Likert scale of 1–5 (1 = strongly disagree, 5 = strongly agree). The research variables include four dimensions of

Brand Awareness as independent variables (X1: recall, X2: recognition, X3: alternative, X4: keep recalling) and two dependent variables, namely social media interaction (Y1) and CBE effectiveness (Y2). PLS analysis using SmartPLS 3.2.9 was applied to test the relationship between variables in four APRI programs: Rajungan Apartment, GTK 5 Minutes, Crab Cultivation, and APRI Youth Innovation. An operational definition of a variable is established prior to the distribution of the questionnaire to ensure measurement consistency.

RESULTS AND DISCUSSION

Respondent Profile

The majority of respondents (74%) are millennials aged 24–39 years, while the other 26% are generation Z aged 8–23 years. All respondents (100%) knew about crabs, and 87% knew APRI through Instagram. Most respondents access social media for 1–2 hours per day (42%).

Table 1. Respondent Profiles Based on Age and Social Media Access

Category	Total	Percentage
Generation Z (8–23 years old)	8	26%
Millennials (24–39 years old)	23	74%
Getting to know Rajungan: Yes	31	100%
Get to know APRI's Instagram	27	87%
Get to know through Facebook	2	6%
Getting to know through LinkedIn	2	6%
Social media access <1 hour/day	6	19%
Social media access 1–2 hours/day	13	42%
Social media access >2 hours/day	12	39%

This respondent profile data reflects the dominance of millennials as the main segment that is affordable through APRI's social media, in line with APRI's Instagram data which shows 50.4% of followers aged 25–34 years old with a composition of 62.4% men.

Fisheries Management and the Role of Social Media

APRI uses social media to disseminate information and campaigns on the sustainability of crab fisheries. Of the five platforms used, Instagram is the platform with the largest number of followers (2,868), followed by Facebook (2,100) and LinkedIn (1,891). APRI's Instagram account has reached 35,989 impressions with 10,700 unique reaches, showing great potential as a sustainability campaign medium.

APRI's sustainability program monitored through fisheryprogress.org shows no red indicators, which means Indonesia's crab fisheries have undergone significant improvements. The Fisheries Improvement Project (FIP) that is implemented continues to be campaigned to all stakeholders through various digital platforms.

PLS Analysis — The Influence of Social Media on CBE

PLS analysis of the three APRI programs resulted in model feasibility levels of 72% (Rajungan Apartment), 88% (5-Minute GTK), and 73% (APRI Youth Innovation), which

indicates adequate to high model accuracy. Table 2 summarizes the results of PLS analysis for the entire program.

Table 2. Resume of PLS Analysis Results from APRI's Four Sustainability Programs

Programs	Significant Relationships	p-value	α (critical)
Rajungan Apartment	Recall → Recall Interactions → CBE Effectiveness	0,013	0,050
GTK 5 Minutes	Recall → Recall Interactions → CBE Effectiveness	0,049 -	0,050
APRI Youth Innovation	Keep Recalling → Interaction	0,011	0,050
Crab Cultivation	Non-significant	-	-

In the Rajungan Apartment program, respondents who had followed APRI's social media accounts showed a significant increase in interaction and CBE effectiveness. The informative content about this program succeeded in generating a sense of pride in the respondents for the implementation of sustainability principles. This confirms the effectiveness of social media in promoting even technical programs. For the GTK 5 Minute program, respondents who were familiar with APRI's social media were at the stage of being fully dedicated to implementing the program, but the effectiveness of CBE only reached the inspiration stage without full implementation. This is understandable because the GTK 5 Minute program is specifically intended for fishermen who catch crabs measuring <10 cm, while most of the respondents are not fishermen.

In APRI's Youth Innovation program, the keep recalling indicator had a significant effect on interaction, with respondents stating that APRI's content was quite interesting and beneficial for sustainability. On the other hand, the Crab Cultivation program has not shown a significant influence because this program only started in April 2023, so public awareness is still in its early stages.

These findings are consistent with the marketing funnel theory that the main goal of non-profit organizations on social media is to achieve widespread awareness, not sales conversions [11]. APRI's role in social media has proven to be effective in encouraging awareness and early engagement which is the foundation for behavior change towards sustainable fisheries practices.

CONCLUSION

This study proves that knowing and following APRI's social media has a significant effect on the interaction and effectiveness of CBE in sustainable crab fisheries promotion programs in Indonesia. The Crab Apartment and GTK 5 Minutes program are the most well-known programs, while APRI's Youth Innovation is known mainly through the open recruitment moment. Social media has proven to be an important hub for information and effective digital marketing strategies for non-profit organizations in promoting sustainable fisheries management programs. The implications of this study emphasize the importance

of content consistency, audience segmentation, and the right platform selection to maximize the impact of sustainability campaigns. Further research is recommended to involve a larger sample and include the fisher segment as the main target of the 5-Minute GTK and Crab Farming program

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