Effectiveness of the national love fruits campaign program on Indonesia consumption fruits

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Abstract. The level of fruit consumption in Indonesia per capita is strived to be improved with various programs. In addition to increasing production, the national love fruits campaign (NLFC) program is also carried out. This study aims to measure the effectiveness of the program in various regions. Survey locations throughout Indonesia spread over 63 cities/regencies. Survey subjects are those who have accessed the Indonesian Citrus and Subtropical Fruits Research Institute (ICSFRI). The number of respondents taken in this study was 237. Sampling was obtained by filling out the questionnaire by the voluntary sampling method. Based on the results of the logistic regression analysis, it can be concluded that the NLFC program has not had a large impact on the community because there are still many people who do not yet know of the campaign program. The logistic regression analysis results explained that the most influential variables to determine whether someone regarding the NLFC program were the P10 variable (paying attention to the distribution and value chain of fruits) and P12 (knowing most of the fruit circulating in Indonesia). The results of this study provided input for further program improvements.

Key words: Consumption, Fruits Campaign, Indonesia

1. Introduction

Campaigns through mass media and social media can encourage, persuade, inform, and motivate people to increase fruit intake [3]. The promotional message will be effective if repeated on a massive scale, carried out in a planned manner, and sustainable funding [1]. Mass media campaigns can positively change or prevent negative changes in health-related behavior across large populations [10, 12].

The World Health Organization (WHO) generally recommends consuming vegetables and fruits for a healthy life of 400 grams per person per day, consisting of 250 grams of vegetables and 150 grams of fruit. Consumption of 150 grams of fruit is equivalent to 3 medium-sized Ambon bananas or one medium-sized piece of papaya, or three medium-sized citruses [7].

A food campaign that is progressive and considered quite successful is the campaign conducted by WHO on Five Keys to Safer Food. The guides are simple and easy to understand and have been translated into 50 languages. The concept of a core message (what), specific instructions (how), and benefits to consumers (why) allow everyone to understand the reasons behind each recommendation [4, 5, 9]. For
campaigns to be more effective, targets for skills-based education and gender interventions are needed to increase fruit intake [6]. Social media and retail promotion stores to reach target audiences as part of an integrated marketing communication strategy are considered effective in promoting fruit and vegetables [2, 11].

Based on the results of the National Socio-Economic Survey (SUSENAS) September 2019, the average per capita consumption per day for fruits is only 41.95 Kcal or around 67 grams/capita/day. This figure is far below the WHO nutritional adequacy rate of 150 grams/capita/day [8]. To increase the love and consumption of local fruit, the government has been actively campaigning for the love of Indonesian fruit for a decade. The campaign is carried out by organizing a national fruit festival (in collaboration with universities and local governments). What is then done is to recommend government agencies to only serve local fruits in events, seminars, and participate in social activities such as car free days held in various big cities. This study aims to measure the effectiveness of the NLFC program in various regions in Indonesia.

2. Materials and Methods

The research was conducted online to reach a wider range of respondents, throughout Indonesia. By spread the online survey link to 10,000 prospective respondents, 360 respondents filled out the survey and after validation, there were 237 respondents whose data was valid with locations of 63 cities / regencies. Survey subjects are those who have accessed the Indonesian Citrus and Subtropical Fruits Research Institute (ICSFRI). Most of the respondents came from Java Island (70%). Meanwhile, apart from Java Island, respondents came from Sumatra Island, Kalimantan Island, Bali Island, Lombok Island, Sulawesi Island, Nort Maluku, and Papua. Survey filling is done voluntarily using Google Forms. The survey was conducted in August - September 2018.

In the Logistic regression analysis of this research, we use the relevant questions as variables. The variables used are:

P1 In your opinion, where do you get the best quality fruit?
P2 Where do you usually buy fruits?
P3 Where did you get information about the availability of fruit in the market/shop?
P4 What is the reason you buy the fruit?
P5 Why do you buy fruit?
P6 What are the advantages of traditional markets over modern markets in buying fruit?
P7 How much do you think about the fruits that you are willing to buy?
P8 What is your assessment of the safety level of local fruit produced by Indonesian farmers?
P9 Do you think that supermarkets (modern markets) will replace traditional markets/street vendors?
P10 Do you look at the distribution and value chain of fruits?
P11 Do you know the imported fruits around you?
P12 Do you know the majority of the fruit circulating in Indonesia?
P13 Do you know the various varieties (types) of fruits in Indonesia?
P14 Do you know the National Love Fruits Campaign program?
P15 In your opinion, was the campaign program effective?
P16 Fruit that is popular (preferred) in the community?
P17 Residence
P18 Tribe/ethnicity

The response variable has a binary data type, where "0" indicates that the respondent does not know the NLFC program. In contrast, "1" indicates that the respondent knows the NLFC program.
3. Results and Discussion

The majority of the respondents were female, as many as 147 people, while 90 were male. Also, both men and women were not aware of the NLFC program. Based on the results in Table 1, it is known that most respondents are at the age interval of 21-30 years, as many as 112 respondents. Also, respondents with an age interval of 11-50 years tended to be unaware of the NLFC program.

| Age/years old | Frequency | Valid Percent | Cumulative Percent |
|---------------|-----------|---------------|--------------------|
| > 50          | 18        | 7.6           | 7.6                |
| 11 - 20       | 10        | 4.2           | 11.8               |
| 21 - 30       | 112       | 47.3          | 59.1               |
| 31 - 40       | 75        | 31.6          | 90.7               |
| 41 - 50       | 22        | 9.3           | 100.0              |
| Valid Total   | 237       | 100.0         |                    |

Distribution of the profession respondent, the full employees/civil servants are 90, followed by various professional professions 44 and entrepreneurs 34 (Table 2). Interestingly, respondents who have studied at universities tend to pay attention to nutrition from food or drink consumed from their educational background. However, those whose income is below 1 million rupiah tend to consume fruits less frequently in one month.

| Occupation                          | Frequency | Valid Percent | Cumulative Percent |
|-------------------------------------|-----------|---------------|--------------------|
| Housewife                           | 25        | 10.5          | 10.5               |
| Full employees/Civil servant        | 90        | 38.0          | 48.5               |
| Part-time worker                    | 10        | 4.2           | 52.7               |
| Student                             | 27        | 11.4          | 64.1               |
| Retired                             | 2         | .8            | 65.0               |
| Profession (doctor, architect, artist, Etc.) | 44 | 18.6 | 83.5 |
| Unemployment                        | 5         | 2.1           | 85.7               |
| Entrepreneur                        | 34        | 14.3          | 100.0              |
| Valid                               | 237       | 100.0         |                    |

Independent variables / independent variables also have a binary data type. In addition, the table (Table 3) also shows the frequency of the respondent's answers to each of the questions represented by the variables P10 and P12. Exploratively, it is known that the response frequency is "no" more than twice as many "yes" answers. This results in an imbalanced target or class frequency imbalance. Then, the independent variable is selected using the Forward Wald method, and the independent variables that have influence are P10 and P12.
Table 3. Categorical Variables Coding

| Parameter coding | Frequency | (1) |
|------------------|-----------|-----|
| P12 No           | 106       | .000|
| Yes              | 131       | 1.000|
| P10 No           | 186       | .000|
| Yes              | 51        | 1.000|

Test of Significance Parameters (Simultaneous)

Hypothesis:
H₀: β₀ = β₁ = β₂ = 0
H₁: There is at least one βᵢ where βᵢ ≠ 0 for i = 0,1,2

Test statistics:

| Step          | Chi-square | df | Sig. |
|---------------|------------|----|------|
| Step 1        | 41.363     | 5  | .000 |
| Block         | 41.363     | 5  | .000 |
| Model         | 41.363     | 5  | .000 |

Based on the output Table 4, it is known that the sig value <0.05 then "rejecs H₀", so it can be concluded that the independent variables simultaneously affect the model.

Table 5. Variables in the Equation

| B   | S.E.  | Wald   | df | Sig. | Exp(B) |
|-----|-------|--------|----|------|--------|
| Step 1 a | 1.283 | .347   | 13.682 | 1 | .000 | 3.608 |
| P10(1) | .962  | .314   | 9.367 | 1 | .002 | 2.616 |
| P12(1) | -1.543 | .252   | 37.422 | 1 | .000 | .214 |

a. Variable(s) entered on step 1: P10, P12

Based on the output Table 5, it can be concluded that only the variables P10 and P12 have a significant effect on the model. This can be seen clearly through the sig value. Wald test <0.05 so that "reject H₀" or which means that people who pay attention to the distribution and value chain of fruit and know the majority of fruit circulating in Indonesia will determine whether someone knows or not about the NLFC program.

The variable P10 with an OR of 3,608 means that people who pay attention to the distribution and value chain of fruits are 3,608 times more likely to know about the NLFC program than people who do not pay attention it. The P12 variable with an OR of 2,616 means that people who know that most fruits circulating in Indonesia are 2,616 times more likely to know the NLFC program than people who do not know it.
Logistic Regression Equation

\[
\ln \left( \frac{\pi(x)}{1 - \pi(x)} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \\
\ln \left( \frac{\pi(x)}{1 - \pi(x)} \right) = -1.543 + 1.283P_{10} + 0.962P_{12} \\
\pi(X) = \frac{e^{-1.543 + 1.283P_{10} + 0.962P_{12}}}{1 + e^{-1.543 + 1.283P_{10} + 0.962P_{12}}}
\]

The influence of residence on the effectiveness of the NLFC Program

Hypothesis:

H_0: There is no relationship between residence and the effectiveness of the campaign program

H_1: There is a relationship between residence and the effectiveness of the campaign program

Test statistics:

| Table 6. Chi-Square Tests | Value  | df  | Asymp. Sig. (2-sided) |
|---------------------------|--------|-----|-----------------------|
| Pearson Chi-Square        | 149.099\(^a\) | 138 | .245                  |
| Likelihood Ratio          | 137.398 | 138 | .498                  |
| N of Valid Cases          | 237    |     |                       |

One hundred seventy-nine cells (95.2%) have an expected count of less than 5. The minimum expected count is 12.

From the analysis results obtained (Table 6), the Asymp value. Sig> 0.05 so that "accept H_0". It can be concluded that the residence has nothing to do with the effectiveness of the campaign program. From the analysis, the NLFC campaign program has not had a big impact on the Indonesian community because there are still many citizens who do not know about the campaign program. The results of the logistic regression analysis explained that the most influential variables to determine whether someone was related to the NLFC program were the variables P10 (paying attention to the distribution and value chain of fruit) and P12 (knowing most of the fruit circulating in Indonesia). If we look in more detail, there are still many respondents in Java island who do not know about the program. Even those who live in big cities like Bogor, Bandung, Serang, Yogyakarta, Surabaya and Malang.

The campaign activities for the NLFC program were considered less massive and were carried out only in limited circles. There are no mass activities that have been carried out by the central to regional governments. Even these slogans and suggestions are not found massively in national television and newspapers, and billboards on the streets or in public places such as modern and traditional markets. Apart from carrying out campaigns using conventional methods, the use of social media is a very effective alternative to reach various groups in all locations in Indonesia. The NLFC campaign program will be increasingly welcomed if the central government to the regions apply strict rules for organizing official events by the government always raising the issue of this program, and must serve local fruit, the fruit of Indonesian farmers.

4. Conclusion

Based on the analysis results, it can be concluded that the NFLC program has not had a major impact on society because there are still many people who do not know about the campaign program. Therefore, it is
necessary to improve the program to increase the knowledge of the Indonesian citizens about the diversity of Indonesian fruits. This campaign's success will be evident in the increased consumption of local domestic fruit and reduced imports. Farmers will be increasingly interested in better cultivating local fruit.

The logistic regression analysis results explained that the most influential variables to determine whether someone knew or not about the NFLC program were the variables P10 (paying attention to the distribution and value chain of fruit) and P12 (knowing the majority of fruits circulating in Indonesia). This program's focus is to educate the public regarding the distribution and value chain of fruit and introduce the diversity of local fruit varieties. That way, this program can have a quite real impact/effect on the community.

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