

Tobacco Harm Reduction: Communication Strategy to Build Awareness of Smokers—A Case Study in Indonesia

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Abstract

The number of smokers in Indonesia currently reached 66 million (25.09%) of the total number of smokers population reaching 264 million. The government has issued various rules to reduce the number of smokers, but the results are still not effective. This study aims to determine the influence of demographics, economy, health, the role of government (political will), and communication strategy on the awareness of smokers in reducing the dangers of cigarettes. Data collection was carried out through a questionnaire distributed to 920 randomly selected respondents, data analysis using Sstructural Equation Model. There are six independent variables that will be assessed in this study: Demographics (X1), Economic (X2), Socio-cultural (X3), Health (X4), Government political will (X5) and Communication strategy (X6); while awareness of smokers to reduce the danger of smoking (Y) as a dependent variable. The results of the analysis show that economic and socio-cultural factors do not directly affect to the awareness of reducing the dangers of cigarettes. But indirectly its influence becomes significant through intervening variable of communication strategies. Meanwhile, health factors and the government's role have a very significant influence both directly and indirectly on reducing the dangers of cigarettes. The Structural Equation Model of awareness smokers is $Y = 0.040 \cdot X2 - 0.11 \cdot X3 + 0.42 \cdot X4 + 0.41 \cdot X6 - 0.055 \cdot X1 + 0.20 \cdot X5$, $R^2 = 0.74$. Thus, the strongest factor that contribute to the awareness of the need to reduce the impacts of smoking are heath (42%), communication strategy (41%), and government's political will (20%).

Keywords: Harm Reduction, Awareness, Communication Strategy, SEM

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1. Introduction

The number of smokers in Indonesia continues trending up each year, reaching approximately 66 million active smokers. Smoking is a common habit in Indonesian society which has become a lifestyle among urban and rural community as a form of social intimacy and as a part of traditional ceremonies in some regions. Religious experts share different views on the religious law on smoking. Some Islamic scholars allows smoking, while some others are against it. Seen from a different perspective, smoking in several community is a tradition and culture that is passed down from generation to generation. Smoking in some communities also serves as a bridge for interaction among the people. Of the 66 million smokers, only 10% or 6.6 million people develop health problem from it and need medical attention. If the average medical treatment cost for every person is Rp 10 million, there will be around Rp 66 trillion fund spent on this issue. This large amount of fund is a big expense of BPJS spending that Indonesia should bear.

The latest data released by Kompas.com in 2022 showed the growth in cigarette production ranged between 5% to 7.4% per year. In 2015, the Ministry of Industry predicted that cigarette production would reach 398.6 billion sticks and was expected to increase by 5.7% in 2016 to 421.1 billion sticks. In 2020, there would be 524.2 billion sticks of cigarettes produced (Kontan.com 2021). Meanwhile, (Baraja 2014) predicted annual cigarette production in Indonesia of around 340,000,000,000 sticks a year. Approximately, 298.4 billion cigarette sticks would be produced every day in 2020. If each pack of cigarettes contains 16 sticks, there will be 18,650,000,000 cigarette packs discarded during 2020. The cigarette production until July 2021 showed an uptrend of 2.8 percent on an annual basis (year on-year/yoy). By June 2022, the cigarette production reached 177.66 billion sticks that was higher than 172.92 billion cigarette sticks produced in the previous year (Kompas.Com 2022).

Stop smoking campaign has been applied by Indonesian government, including strict tobacco control policy, smoking danger campaign on the pack, smoking prohibition in some areas and so on. Unfortunately, those attempts have not yet shown effective results. As the smoking rate increases, the prevalence of smoking-related diseases will also continue to increase. This condition raises a big question on why the anti-smoking campaigns do not work. Kurniasih (2021), Mohammadnezhad and Kengganpanich (2021), Rochayati et al. (2015) pointed out some factors that motivate a person to smoke, including encouragement of friends, stress relieving effect, the comforting feeling and family-related factors. (Rochayati et al. 2015) included self-perception of smoking into the list. According to (Achadi 2008; Kholil, Alifahmi, and Bimo 2021; Mohammadnezhad and Kengganpanich 2021; Putri and Hamdan 2015; Rochayati et al. 2015), health, age, economy, and family background are attributed to smoking habit. Therefore, raising the awareness of the harmful effects of smoking requires effective strategy which includes communication strategy, the content of the messages, and the media used for the dissemination (Frandsen and Johansen 2017).

The effectiveness of communication through images and narratives is determined by the culture, education and customs. In general, Indonesian society have inadequate reading habit and they are rather obedient toward the speeches or direct oral discussion delivered by public figures and the presentation of stories of those who are affected by the negative impacts of smoking. Drovandi (2019) and Notanubun (2016) found the cigarette warnings on the package are irrelevant to the real condition. Interestingly, in general, all smokers agree that smoking can cause serious health problems. Regarding these considerations, a strategy should

be specifically designed to build smokers' awareness on the dangers of smoking by taking into account the age, education, socio-cultural background. This study identified and analyzed the dominant factors that influence ones' awareness to reduce the harm of smoking. The results were then analyzed to propose the design of effective communication strategy in order to reduce the harm of smoking.

2. Literature Review

Smoking habit has been linked to hypertension as the chemicals, particularly the nicotine contained in tobacco can damage the inner lining of the artery walls, resulting in plaque buildup (atherosclerosis), (Health et al. 2015; Singh and Kathiresan 2015). Singh and Kathiresan (2015) and Vineis (2008) explained that these chemicals then induce the release of catecholamines from the adrenal glands, thereby intervening the cardiovascular system by increasing heart rate; cardiac contractility; narrows the central, peripheral, and coronary arteries; vascular resistance; stroke volume; blood pressure; cardiac output; myocardial contractions; which then leads to endothelial dysfunction. One of the most dangerous side effects of smoking is lung cancer. Smoking is accumulating toxins in the body (Singh and Kathiresan 2015). The effects of smoking can also appear in the forms of yellow teeth, impaired heart function, and increased blood pressure (Raghu et al. 2015a; Vineis 2008). Many smokers are quite aware about these impacts of smoking, yet they find quitting smoking challenging. The success rate for someone to quit smoking without assistance is only 3-6% (Patel, Patel, and Patel 2016; Raghu et al. 2015b). Hence, special assistance is necessary to smoking termination (Burza 2021).

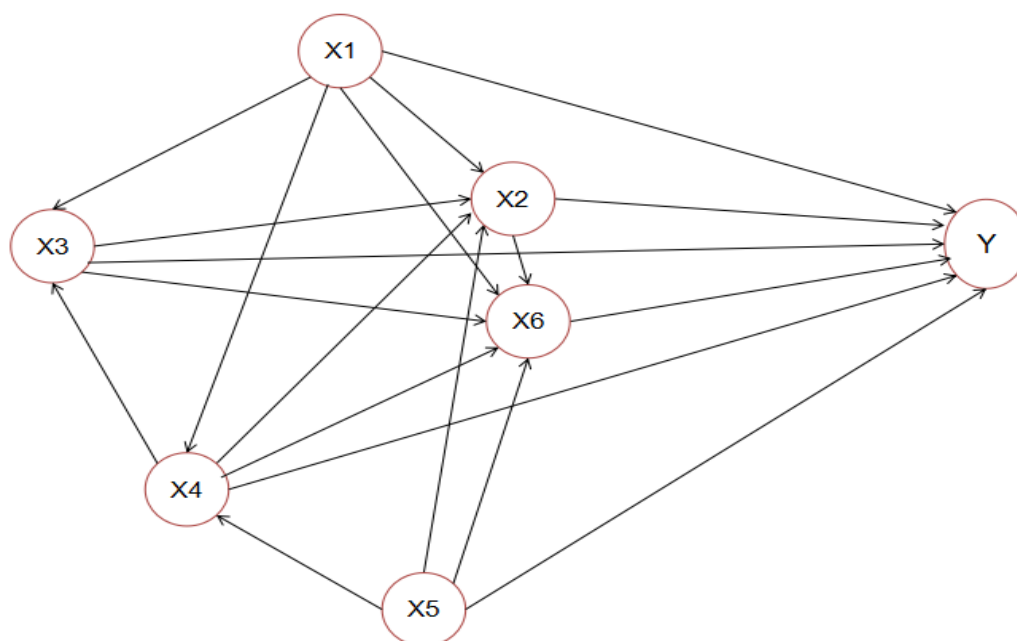
The anti-smoking campaign by applying tobacco restrictions, smoking danger labelling on the package, and prohibition of smoking have not yet shown effective results as seen from the increases in the number of smokers. Drovandi (2019) from the University of James Cook in Queensland, Australia conducted a study on 2000 active smokers found the smoking danger labels on the cigarette packaging effective at first. However, the effect has faded after years. Meanwhile, (Notanubun 2016) asserted that this labelling is quite important. The fact that the number of smokers keep increasing might be caused by personal traits of the readers (Purwasito 2017). The failure of this campaign might be due to the delivery of the message that was too general for audiences of different background (Kholil et al. 2021; Purwasito 2017).

According to (Denning 2001; Kerber, Donnelly, and dela Cruz 2020; Notanubun 2016), the fear mongering or threatening content is ineffective. There has to be a process of dialogue and empathy (respect) given to build awareness. An appropriate communication strategy should be proposed to ensure that the message conveyed is understood by smokers. Communication strategy is defined by (Conrad 2011; Frandsen and Johansen 2017) as a way of conveying messages to a person or audience appropriately by taking into the consideration of audiences' background. The content of the message should be tailored to specific audience. Communication strategies will become more effective by utilizing digital technology. Digital communication strategy has been widely used, especially since the COVID-19 pandemic (Chrisnatalia 2020). Therefore, to reach a wider target of smokers, digital technology should be integrated in to the public education attempts. Digital technology offers some advantages in the message delivery (Abudabbous 2022; Chrisnatalia 2020) through both synchronous or asynchronous ways to reach a wider audience with better effectiveness.

(Kholil et al. 2021; Kurniasih 2021) stated that the campaign should be carried out on a segmented basis because smoking history is strongly influential on smoking habits. According to (Chezhian et al. 2015; Mohammadnezhad and Kengganpanich 2021; Rochayati et al. 2015a) health, economic, family habits and socio-cultural factors have a significant influence on awareness to stop smoking. Most smokers realize that spending on cigarettes can adds to the family expense, for those who earn less than IDR 5 million/month (Kholil et al. 2021); Health factors, especially the intention to protect themselves and their families, are the essential reasons for smokers to stop smoking (Kurniasih 2021; Mohammadnezhad and Kengganpanich 2021). Some communities regard smoking a bad habit, indicating that social and cultural norms also influence smoking habits (Rochayati et al. 2015).

Efforts to minimize the dangers of smoking will not be successful without the commitment and support of government policies. The government has the authority and power to compel or prohibit the distribution of cigarettes. According to (Baraja 2014), the government must be consistent and implement a reward and punishment system to lower the number of smokers. The reward and punishment system needs to be applied and the government should also consistently control cigarette advertising through both direct and indirect approaches (Achadi 2008; Mancini et al. 2008; Sandford 2003).

Based on the literature review, the framework of this study was proposed as follows.



Description:

| | | | |
|----|--|----|-----------------------------|
| X1 | : Demographics | X4 | : Health |
| X2 | : Economics | X5 | : Government political will |
| X3 | : Socio-Cultural | X6 | : Communication strategy |
| Y | : Awareness of smokers to reduce the danger of smoking | | |

Figure 1. Framework of the Study

3. Method

This quantitative study analyzed the data that were obtained using questionnaire scaled in a five-point Likert scale. The population of this study were smokers in Greater Jakarta Area

area that included (1) active smokers, (2) inactive/quit smoking smokers, (3) HPTL users; (4) cigarette traders. The sample size was determined using Slovin's formula and 400 samples were selected purposively theory (Adam 2020; James 2001). 400 sets of questionnaires distributed, only 255 respondents gave turned around complete answers for further analysis. Data analysis included descriptive to examine respondents' responses to the research questions, while inferential analysis examined the effect of exogenous variables (independent variables) on endogenous variables (dependent variables) done using SEM (structural equation model). The SEM analysis was carried out through 2 steps: Outer Model Test that includes: (1) data normality test, (2) validity test to determine the accuracy of measurements; (3) construct reliability test and (4) construct and structural model suitability test and the Inner Model Test for hypothesis testing (Ajayi 2021). Hypothesis of this study were tested in t-test statistics (Gazali 2008; Ginting 2009), with a critical value of p value 0.05 or $t = 1.96$.

4. Result & Conclusion

The results of the descriptive analysis showed that (1) the respondents consisted of 66.3% male and 33.7% female, with 47.8% aged between 15-25 years, 35.2% between 26-45 years, and the rest were over 45 years (17%). Their average income was less than 5 million IDR (47.8%), 6-10 million IDR (24.7%), 11-15 million IDR (11.8%), 16-20 IDR (4.7%) and the rest above 20 million IDR (11%), (2) respondents were active smokers (47.8%), smoking cessation (15.3%) and the remaining 36.9% were passive smokers.

Descriptive analysis was also carried out to identify factors regarding demography (x1), economy (x2), socio-cultural (x3), health (x4), government political will (x5), communication strategy (x6) and willingness to reduce the harm of smoking (Y). This analysis was conducted to see respondents' responses to issues in each variable, by categorizing the score of the respondent's response (Gazali 2008) as follows.

$$P = \frac{X_{maks} - X_{min}}{b}$$

where:

| | |
|------------|-------------------|
| P | = Class Interval |
| X_{maks} | = Maximum score |
| X_{min} | = Minimum score |
| b | = Number of class |

Referring to the results of the class interval measurement, the categorization of the results of the measurement towards the average scores is presented in Table 1.

Table 1. Categorization of the Descriptive Statistics Measurement Outcomes

| Nilai Rata-rata Hitung | Kategori Penilaian |
|------------------------|--------------------|
| 1 – 1,80 | Very Poor |
| 1,81 – 2,60 | Poor |
| 2,61 – 3,40 | Aacptable |
| 3,41 – 4,20 | Good |
| 4,21 – 5,00 | Very Good |

The average scores of respondents' factors related to demography (x1), economy (x2), socio-cultural (x3), health (x4), government political will (x5), communication strategy (x6) and awareness to reduce the dangers of smoking (y) are presented in Table 2 as follows.

Table 2. The average scores of respondents' demographic, economic, socio-cultural, health, political will and performance factors

| No | Variable | Mean | Score |
|----|--|------|------------|
| 1 | Demographics (x1) | 3.67 | Good |
| 2 | Socio and Cultural (x2) | 3.74 | Good |
| 3 | Economy (x3) | 3.39 | Acceptable |
| 4 | Health (x4) | 4.36 | Very Good |
| 5 | Government Political will (x5) | 4.13 | Good |
| 6 | Communication strategy | 4.26 | Good |
| 7 | Awareness to reduce the dangers of smoking (y) | 4.19 | Good |

The inferential analysis using SEM started with the tests of data normality, validity, construct reliability, and model fit tests. The results show that (a) the value of the normality test results is p-value 0.00 (<0.05) that the data were considered normally distributed (Gazali 2008; Ginting 2009). The loading factor score in the validity test for all questions exceeded > 0.50, hence all items were declared valid (Sugiono 2013) (Ginting 2009). The reliability test resulted in construct validity scores for all indicators greater than 0.7, implying that indicators were declared reliable (Ajayi 2021; Gazali 2008; Sugiono 2013). For the model suitability test of 9 criteria, there were 7 goodness of fit criteria that met the cut off value, showing that the model proposed in this study was regarded feasible (Ginting 2009; Sugiono 2013).

The structural equations resulted from the PLS analysis are as follows.

$$X6 = 0.20 * X2 + 0.11 * X3 + 0.37 * X4 - 0.027 * X1 + 0.36 * X5, \text{ Errorvar.} = 0.29 \dots\dots\dots(1)$$

$$R^2 = 0.71$$

$$Y = 0.040 * X2 - 0.11 * X3 + 0.42 * X4 + 0.41 * X6 - 0.055 * X1 + 0.20 * X5, \text{ Errorvar.} = 0.26 \dots(2)$$

$$R^2 = 0.74$$

Hypothesis testing shall be conducted to measure the significance of the Structural Equation Modeling outcome. If the |t-value| greater than 1.96 or probability value < level of significance (alpha = 5% or 0.05), independent variable of this study has significant influence on the dependent variable. The measurement done in this study is illustrated as follows.

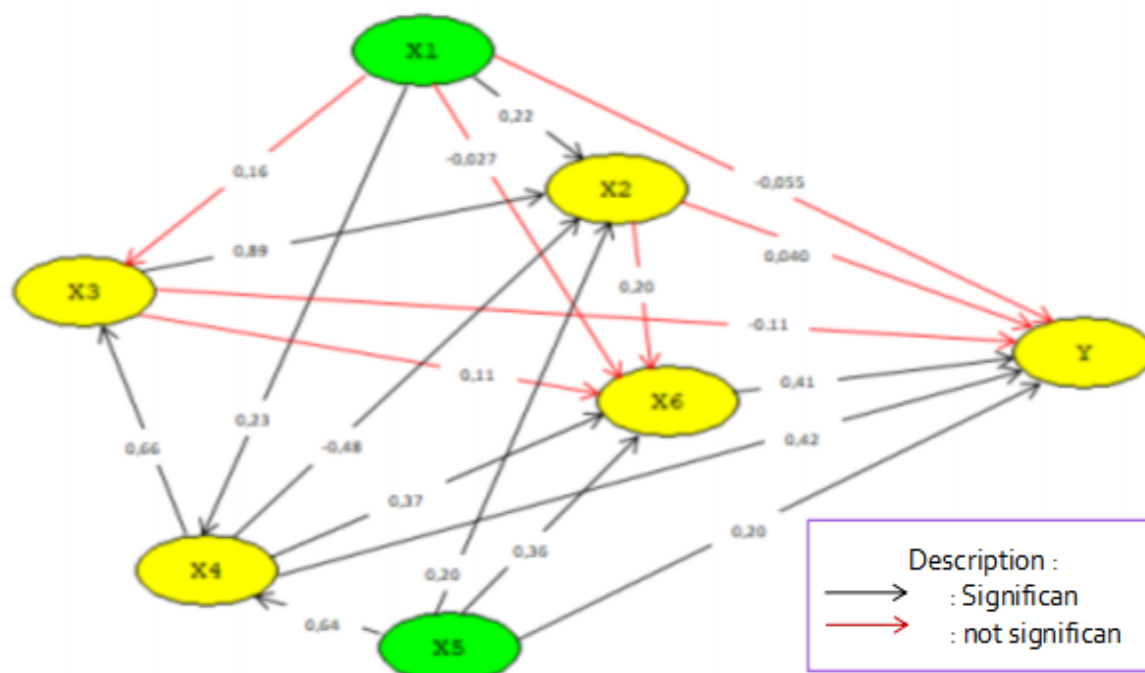


Figure 2. Structural model hypothesis testing

The demographic variable (x1) shows an average value of 3.67 (good), thereby age is a variable that affects respondents' willingness to reduce the dangers of smoking. There are several indicators in this age variable, with the highest average value (4.12) obtained by the item about the need for adjustment of the content in the campaign based on age. On the other hand, the lowest value is found in the item stating that millennial smokers are more likely to reduce the harm of smoking than older generations with an average score of 3.32 (good). This value shows that the responses toward smoking differ across generations. The socio-cultural variable (x2) shows an average value is 3.39 (Good enough), implying that respondents found social and religious factors influence the smoking habits. In certain communities, people have strong obedient to religious leaders that they would do as taught. When religious leaders prohibit them from smoking, people will simply stop smoking.

In Indonesia, smoking habit emerges from the family, and it is even commonly encouraged in traditional ceremonies or cultural events. The socio-cultural variable (X2) includes several indicators, with the highest average score of 3.94 obtained by the item stating that the interaction with peers and community influences ones' smoking habit. Meanwhile, the lowest average score of 3.78 is found in the statement "Smoking is a part of family life for generations". Therefore, interactions with peers are good at work, at school/college; and other places have a considerable impact on smoking habits.

The economic variable (x3) showed an average score of 3.74 (good), indicating that the majority of respondents take economic factors as the consideration regarding their smoking habit. This finding is confirmed by the responses in the item stating that smoking can increase expenses and the family's economic burden with an average score of 4.32. Respondents are aware that purchasing cigarettes is costly. This economic factor can be an effective approach to encourage smokers to stop smoking, especially among those who earn less than IDR 5 million/month since in this group, the money spent for cigarette makes up between 17-20% of their income (Fauzia et al. 2020; Kholil et al. 2021). Most respondents do not find smoking

affecting their work performance as shown by an average score of 3.17 for the statement "Smoking habits reduce one's performance at work" the average was 3.17 (Fair).

In the Health variable (x4), an average score of 4.36 (very good) is gained, showing strong agreement among respondents that health factor is the main consideration in relation to smoking. They also agreed with the statement "Smoking can affect the health of families and those around them" with an average score of 4.47, and also in the statement "Maintaining family health is more important than fulfilling smoking desires" with an average score of 4.4 (Good). Most of the respondents agreed that health, especially the health of their children, wife and parents, should be prioritized. They are aware of the costly health treatment that they should pay for their smoking habit as explained by (Health et al. 2015; Sandford 2003b; Singh and Kathiresan 2015).

Meanwhile, the government's political will (x5) and communication strategy (x6) obtain average scores of 4.36 (very good) and 4.13 (good) respectively, meaning that policies and the role of government are central in reducing the impacts of smoking. The government can design a policy to control the distribution and advertising of cigarettes, both directly and indirectly. For the communication strategy (x6), an average score 4.26 of shows that most respondents agree to the need for proper communication strategy to be adjusted to age, education, socio-cultural and economic background of smokers. In line with this finding, some experts also highlight the need for effective communication strategy for more effective campaign to change smokers' smoking habit (Frandsen and Johansen 2017a, 2017b). An effective communication strategy is reflected on the willingness to reduce the impacts of smoking (y). The average score of respondents' opinion on awareness of the impacts of smoking shows an average score of 4.19 (good), implying that that smokers are actually aware and willing to reduce the impacts of smoking, yet they do not know how proceed with it.

The inferential analysis using SEM in equation (1) shows the greatest contribution of health on the communication strategy (x4: 37%); government political will (x5: 36%); and economic aspects (x2 : 20%). In order to build an effective communication strategy, the narrative should contain these three factors. Conrad (2011) also found similar results. Health is a top priority because all smokers are aware that smoking can impact their health, and medical treatment for smoking-related diseases is costly (Kerber et al. 2020; Kholil et al. 2021). In equation (2), the proposed model shows that health factors (x4), government political will (x5) and communication strategies (X6) affect smokers' awareness regarding the impacts of smoking. Those three variables are the determining factors in raising smokers' awareness.

Figure 2 shows that Demographic (X1), Economic (X2) and Socio-Cultural (X3) variables do not directly affect smokers' awareness of the need to lower the impacts of smoking. However, the influence grows stronger through the intervention of communication strategy (X6). Hence, efforts to reduce the impacts of smoking will be effective if the messages conveyed are relevant to the aspects of health, and the regulations are made based on effective communication strategies to fit smokers' characteristics (age, economy and demographics). Health (X4), government's Political Will (X5) and Communication Strategy (X6) have both direct and indirect significant effect on the awareness to reduce the impacts of smoking.

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