

# How to Control and Reduce Smoking Hazards: A Case Study in Indonesia

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## ABSTRACT

### Background

The number of smokers in Indonesia in the last ten years has continued to increase, currently estimated at 70 million smokers. The risks posed by smoking are very serious, some of the diseases caused include: bronchitis, lung cancer, oral cancer, pancreatic cancer, asthma, stroke, hypertension, and reproductive problems. If there are no effective efforts to reduce the dangers of smoking, the young generation that is expected to be the golden generation to build the nation will be in vain; because their health is impaired; or even they will become a burden for Indonesia in the future.

### Method

This study aims to determine effective strategies to reduce risk-based smoking hazards. Data was collected through interviews and focus group discussions, involving experts from academia, public health activists, researchers, policy makers and active and non-active smokers. Data were analyzed using qualitative analysis with the support of MACQDA software.

### Results

The results of study showed that effective communication, government commitment, and public education are the keys to reducing risk-based smoking hazards. Policies to ban and limit advertisements need to be implemented, and the airtime of cigarette advertisements on TV should be shifted to a later time, so that school-age children are not exposed to advertisements. To support effective communication, the use of social media is needed because almost all smokers use this social media.

**Keywords:** Smoking hazards, risk based reduction, risk-based communication, government commitment and policy.

## BACKGROUND

Indonesia is the country with the largest number of smokers after China and the United States. The number of smokers in Indonesia is 70 million people with 7.4% of them being smokers aged 10-18 years (SKI, 2023), and this number has the potential to continue to increase from year to year. Based on the results of expert studies, smoking causes several diseases such as cancer, heart disease, cholesterol, diabetes complications, yellowing teeth, miscarriage, eye disorders, and others. This will make Indonesia's younger generation experience health problems, so that the demographic bonus expected from population growth will actually become a demographic burden in the future.

Tobacco consumption control has been carried out by the Indonesian government, through various policies in the health and fiscal sectors. One of them is the health warning of the dangers of smoking on every pack of

cigarettes, as well as the prohibition of smoking in various places through informational campaigns. Meanwhile, in the fiscal sector, every cigarette and tobacco product is subject to excise tariffs as excisable goods. However, these various policies have not shown significant results in terms of reducing smoking prevalence. Currently there are an estimated 70 million smokers in Indonesia and increase 7.5 % from 2023 to 2024, from this number it is estimated that health costs of Rp. 27 trillion are borne by the government.

Quitting smoking completely (cold turkey) is not an easy thing for smokers. According to Hayes et al. (2017), Director of the Nicotine Dependence Center Mayo Clinic said that out of 100 people who apply cold turkey, only about three to five people will succeed for more than six months, that means a maximum of only 5% are successful and 95% others fail. Given that the cold turkey method has a very small success rate, efforts to reduce the prevalence and number of smokers need other alternatives. One alternative is to intervene through the availability of alternative products with a lower risk profile. This effort focuses on tobacco control based on reducing the risk of conventional tobacco product consumption in active smokers.

The results of research conducted by Kholil, et.al. (2022) show that demographic, economic and cultural variables do not directly affect the reduction of smoking hazards, but after going through intermediate variables, namely communication strategies, the effect becomes very significant. In order, the variables of health, government political will and economy have the greatest contribution to the reduction of smoking hazards with their respective roles in the model 42% for health; 41% for communication strategies, and 20% for government political will and economy.

One of the failure factors of tobacco consumption control efforts is that the narrative used is general and there is no segmentation to the target objects (active smokers, alternative tobacco users and non-smokers). Whereas demographically there are differences in the characteristics of smokers in terms of age, work background, and culture. So it is necessary to make a study to design a risk-based control strategy : tobacco control strategies based on risk level: conventional cigarettes (burned cigarettes), which pose a high risk, should be strictly controlled through high taxes, distribution restrictions, and advertising bans. Conversely, low-risk tobacco products such as NRT—nicotine replacement therapy: patches, gum, lozenges—should be regulated according to their specific conditions. So that the narrative and policies carried out are effective according to the background of the group (smokers, alternative tobacco, and non-smokers).

There are two objectives of this study: first, to develop a risk-based control strategy to educate smokers to reduce the harm of smoking; second, to identify the factors that drive the power of effective and beneficial smoking reduction

## LITERATURE REVIEW

One of the risk factors associated with smoking is hypertension, because the chemicals contained in tobacco can damage the inner layer of the artery wall resulting in plaque buildup (atherosclerosis), (Health et al. 2015; Singh and Kathiresan 2015). This is mainly due to nicotine which is the main ingredient in cigarettes and thousands of other chemicals that are harmful to our body (Singh and Kathiresan 2015; Vineis 2008), then induces the release of ketocolamine from the adrenal glands and through this mechanism cigarettes alter the function of the cardiovascular system by increasing heart rate; cardiac contractility; constricting central, peripheral, and coronary blood vessels; vascular resistance; volume of the bud; blood pressure; cardiac output; myocardial contraction; and can cause endothelial dysfunction. One of the most harmful effects of smoking is lung cancer. Keep in mind, smoking is like saving toxins in the body that can gradually accumulate (Singh and Kathiresan 2015), while it can also cause yellow teeth, impaired heart function, and increased blood pressure (Raghu et al. 2015a; Vineis 2008). Many smokers already know that health impact of smoking is very dangerous, but quitting is not easy. The success rate of a person to quit smoking without assistance is only 3-6% (Patel, Patel, and Patel 2016; Raghu et al. 2015b), therefore special assistance is needed (Burza 2021).

To stop the dangers of smoking, several policies have been carried out, even on every pack of cigarettes the dangers of smoking have also been written; including smoking bans in various places through informational campaigns, but this has not been effective, the number of smokers continues to increase. Research results (Drovandi 2019) from James Cook University in Queensland, Australia on 2000 active smokers showed that health messages through scary pictures on cigarette packs were initially quite effective when introduced.

However, the message became commonplace after many years. Meanwhile, (Notanubun, 2016) stated that cigarette warnings on cigarette packs are very important, but the message is not effective because there is no change in behavior people who read it (Purwasito 2017). One of the factors causing failure is that the message is delivered in general, for all ages with different backgrounds (Kholil et al. 2021; Purwasito 2017).

The demographic, psychographic and cultural characteristics of the target audience will largely determine the mode of communication that should be used. Visual communication that is tailored to the level of understanding and sensitivity of the target audience (e.g. children vs adults) has proven to be more impactful in raising awareness and desire to quit smoking. Therefore segmentation based on age and smoking status (active smokers, passive smokers, potential smokers) is also influencing in reducing the dangers of smoking. For this reason, segmentation in communication increases the effectiveness of health messages, including in anti-smoking campaigns (Wakefield, M.A., Loken, B., & Hornik, R.C. 2010); Noar, S.M., Francis, D.B., et al. (2016); and Dunlop, S.M., Perez, D., & Cotter, T. (2014). While Evans, W.D. (2008) states that segmented communication, especially through digital and social media, is very effective for young audiences. A deep understanding of the audience helps select the most resonant communication channels and messages.

According to (Denning 2001; Kerber, Donnelly, and dela Cruz 2020; Notanubun 2016) one of the failures in reducing the dangers of smoking is because in practice the process of reducing the dangers of smoking is often done by scaring or threatening smokers about the dangers of disease that will be experienced. It should be through a process of dialog and empathy (respect) to build awareness.

This is where the right communication strategy is needed, so that the message conveyed is understood and implemented by the recipient of the message (smoker). Communication strategy according to (Conrad 2011; Frandsen and Johansen 2017a, 2017b) is a way of delivering messages to a person or audience appropriately according to their background conditions. This means that what message should be conveyed must be adjusted to the recipient of the message.

Risk-based effective communication views message convergence as the primary goal. Message convergence is different from Congruence, Mutual Exclusivity, and Dominance. This deepening analysis of communication messages compares Convergence versus Congruence, Convenience versus Mutual Exclusivity, Convergence versus Dominance, and Convergence and Multiple Sources. Some of these elements are used for risk communication that focuses on communication messages, (Sellnow, Ulmer, Seeger, and Littlefield; 2009)

The dialogic and empathetic communication style with respect stated earlier requires the collaboration of at least three key stakeholders, namely the government, experts, and the public as shown in the following Strategic Communication model.

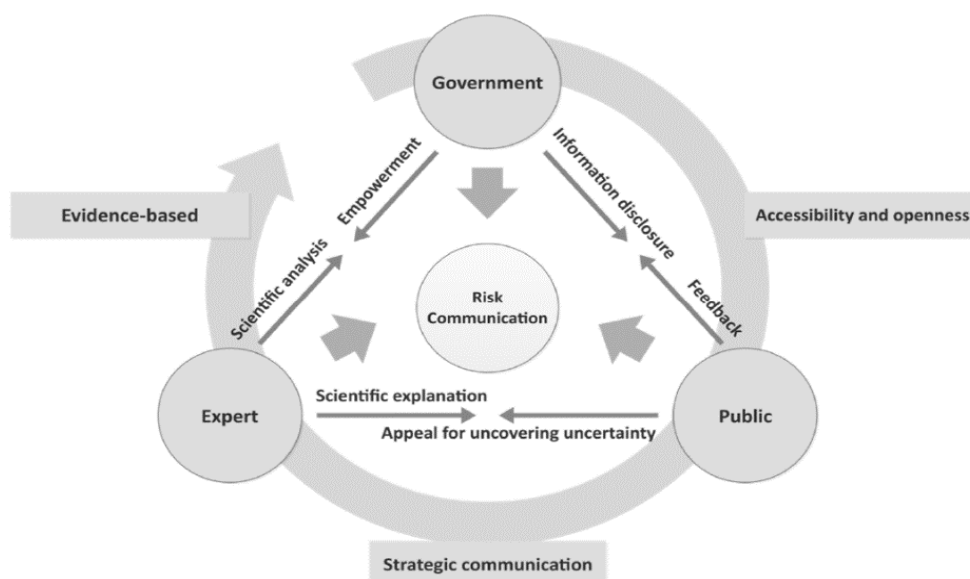


Figure 1. Government-Expert-Public Risk Communication Model

The government reinforces with conducive regulations and policy communication, while experts provide scientific analysis and explanations, and the public provides input and seeks to escape situations of uncertainty or risk.

In this digital era, communication strategies will become more effective by utilizing digital technology. In the Covid 19 pandemic era, digital communication has been widely utilized in various aspects of life (Chrisnatalia 2020). Therefore, to reach a wider target of smokers, the use of digital technology in educating the public is needed. There are several advantages of using digital technology in delivering messages (Abudabbous 2022; Chrisnatalia 2020), namely that it can be done synchronously or asynchronously, can reach a wider audience, and is more effective. In addition, effective and persuasive communication is also key in reducing the dangers of smoking. Demographic, economic and cultural aspects are related to communication patterns, therefore communication must also be segmented to build awareness of smokers of the dangers of tobacco (Abadiah and H.P.Purba (2022); Kholil et al (2024), and Eriyanto & Zarkasi (2017).

There are several reasons why effective and persuasive communication is important in reducing the dangers of smoking (Eriyanto & Zarkasi, 2017; Abadiah and H.P.Purba (2022), because: (1) changing perceptions and attitudes smoking is often considered normal, even cool among teenagers. Persuasive communication can touch emotional and logical aspects and present facts + visuals (e.g. pictorial warnings on cigarette packs). (2) build the perception that smoking is dangerous, uncool and harmful. Influence Behavior and Intention Communication designed with psychological approaches such as fear appeals or gain-framing have been shown to influence quit intentions and help-seeking behavior (e.g. smoking cessation clinics). (3) Driving Policy and Support Strong social messages can build public opinion, pressure policy makers to act (e.g. restrictions on tobacco advertising, smoke-free zones) and inspire communities to support smoke-free lifestyles. Efforts to build smokers' awareness to quit smoking based on the results of the study (Kholil et al. 2021; Kurniasih 2021) must be segmented. This is because the background of smokers is very 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 quit smoking or reduce the dangers of smoking. Hovland et al. (1953) , Abdilah & Purba (2022) stated persuasive communication aimed to influence another person's attitudes, beliefs, or behaviors through reasoning, credibility, and emotional appeal, rather than force or coercion.

Most smokers actually realize that cigarette expenditure can increase the burden of family expenses, especially for those who earn less than IDR 5 million / month (Kholil et al. 2021). Health factors, especially to protect themselves and their families, are the main consideration for smokers to quit smoking (Kurniasih 2021; Mohammadnezhad and Kengganpanich 2021). In certain groups of society, smoking is not good behavior. So that many smokers isolate themselves if they want to smoke. This means that socio-cultural norms also affect smoking habits, as stated by (Rochayati et al. 2015a).

Efforts to reduce the dangers of smoking will not be successful without the commitment and support of government policy. The government has the authority and power to force or prohibit the distribution of cigarettes. According to (Baraja 2014), the government must be consistent and implement a reward and punishment system in supporting the reduction of smoking hazards. A reward and punishment system needs to be put in place for those who violate or comply with regulations. The government must also consistently control cigarette advertising both directly and indirectly (Achadi 2008; Mancini et al. 2008; Sandford 2003a).

## Method

This study uses a qualitative approach, data collection using interviews with 6 informants or expert resource persons; representing communication experts, health experts, public policy experts, policy makers (government), academics and smokers. Data analysis uses the Cresswell (2000) approach with the help of MaxQDA toll soft ware with three stages: (1) input of interview transcripts through the input menu; (2) coding; and (3) analysis based on the word cloud using a single case model.

## RESULTS

Data analysis using MaxQDA, showing the Words cloud based on the results of interviews with six expert speakers about their views on reducing the dangers of smoking as shown below



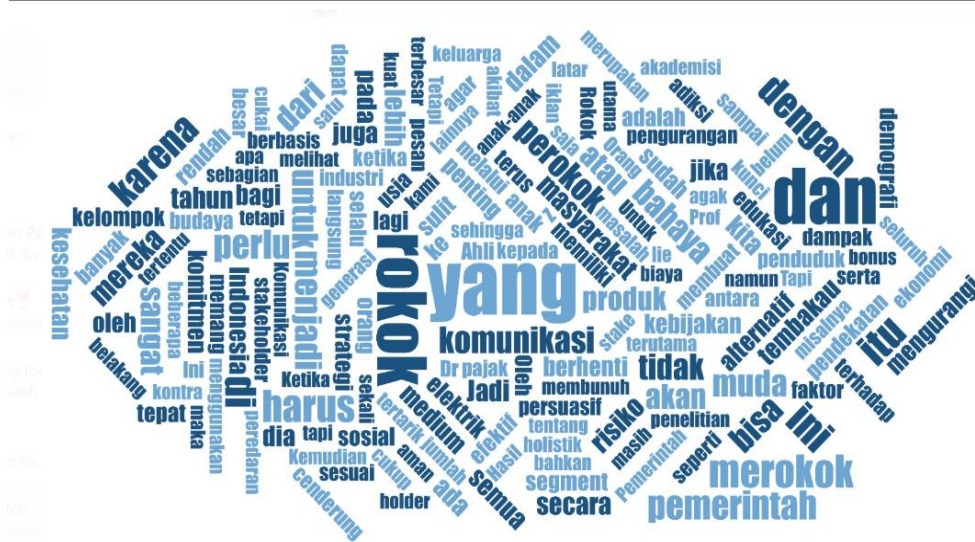


Figure 2. Words cloud based on experts interview

Figure 2 above shows that, some of the words that become central issues in overcoming the dangers of smoking according to experts include: (a) the negative impact of smoking; (b) persuasive communication; (c) government commitment; (d) public education; and (e) alternative smoking. Negative impacts are the consequences for smokers including: (1) health effects such as respiratory disease, heart disease, cancer and decreased immunity. (2) mental illness such as addiction; (3) appearance such as yellow teeth and wrinkled skin.

Persuasive communication is needed, because reducing the dangers of smoking is essentially changing behavior and perceptions related to psychological and cultural aspects that require a rational and emotional approach. Therefore, communication approach is needed to influence the attitudes, opinions, beliefs, or behaviors of smokers. In addition, government commitment is a key factor, because it is related to promotion and advertising policies, taxes, smoke-free areas, education and campaigns and other policies.

Quitting smoking is a difficult change, so the option is to switch, to low-risk cigarettes. Alternative cigarettes are other tobacco products that have nicotine, designed as non-combustion cigarettes (heated tobacco products) with lower risks. According to Amalia (2023) although these alternative cigarettes still have risks, they are lower, especially for teeth and lungs, than clove cigarettes that are burned (conventional cigarettes).

To find out which sentences are most frequently revealed and have the greatest contribution according to the experts, a Single Case Model analysis was conducted as follows:

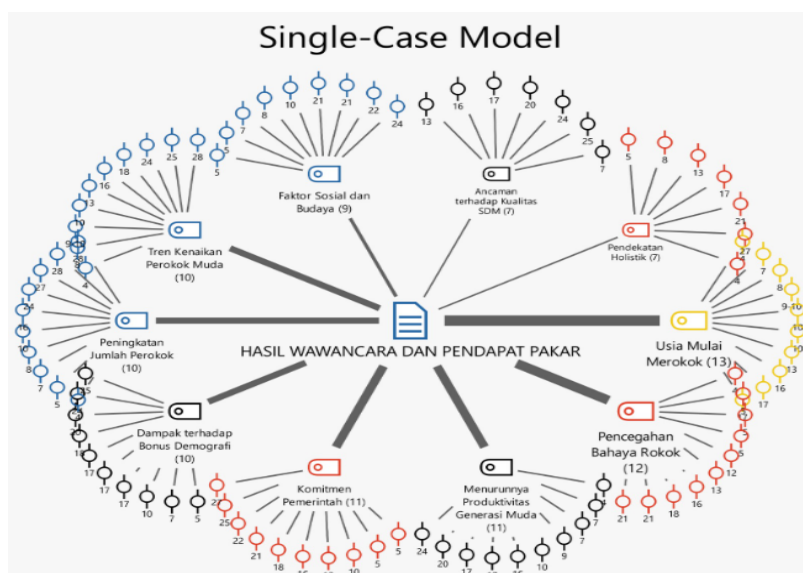


Figure 3. Single Case Model for Harm Reduction of Smoking

Figure 3 above shows that several aspects are related to the issues or problems of smoking: (1) The age at which smoking starts, the thickest line; (2) the need to prevent the dangers of smoking; (3) the decline in productivity of the younger generation, (4) government commitment, (5) the impact on the demographic bonus, (6) the increase in population and (7) the increasing trend of young smokers.

Among the seven issues related to smoking is that the age of starting smoking ranks first. This is according to the results of the Indonesian Health Survey (2023) that smokers in Indonesia reached 70 million people, the age group 15-19 years reached 56.5% followed by the age group 10-14 years as much as 18.4%. These figures provide a pessimistic picture that the demographic bonus for the Indonesian nation in 2045 could be threatened, if there is no government commitment in efforts to reduce the dangers of smoking.

The hope of a Golden Indonesia in 2045 due to the demographic bonus could fail, if the risks of smoking are not controlled. Because the impact of smoking can reduce work productivity, so that the increase in productive population actually becomes a burden for the country. From these two figures it can be clarified to see the main strategic issues that need attention in relation to the problem of smoking in Indonesia, (Figure 4).

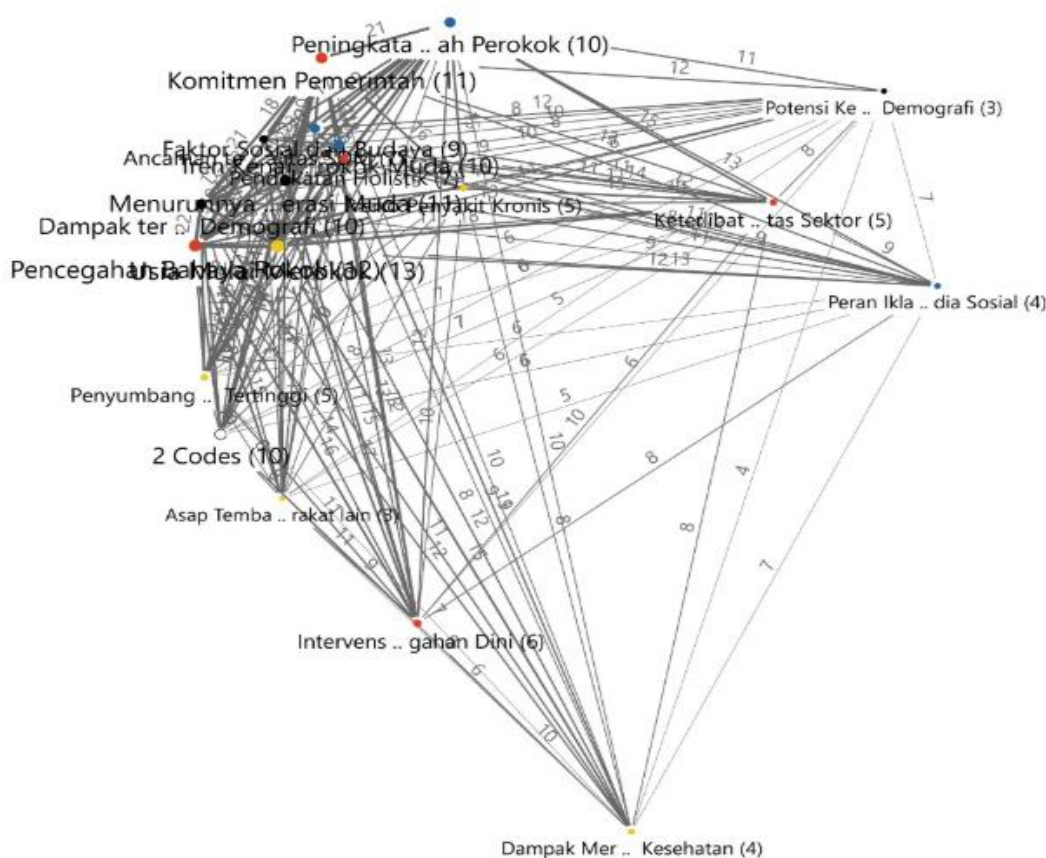


Figure 4. model prediction for smoking hazard risk reduction

Several things that must receive serious attention to reduce the dangers of smoking based on Figure 4 are: (1) Prevention of the dangers of smoking; (2) Government commitment and policy ; (3) Switch to low risk alternative cigarette . Prevention of the dangers of smoking must be done by building awareness of smokers and the tobacco industry through appropriate communication. Government commitment as a policy maker is key to the success of smoking prevention. Through affirmative policies, the government can develop alternative products that have lower risks to reduce the dangers of smoking. This is important because eliminating the dangers of smoking altogether will be difficult, as smokers find it difficult to quit completely, hence the need to transition through alternative products.

The involvement of the government, business actors, academics, NGO and media is needed to ensure that efforts to reduce the dangers of smoking can run effectively. Their respective roles can be seen as a helical hexa picture as follows:

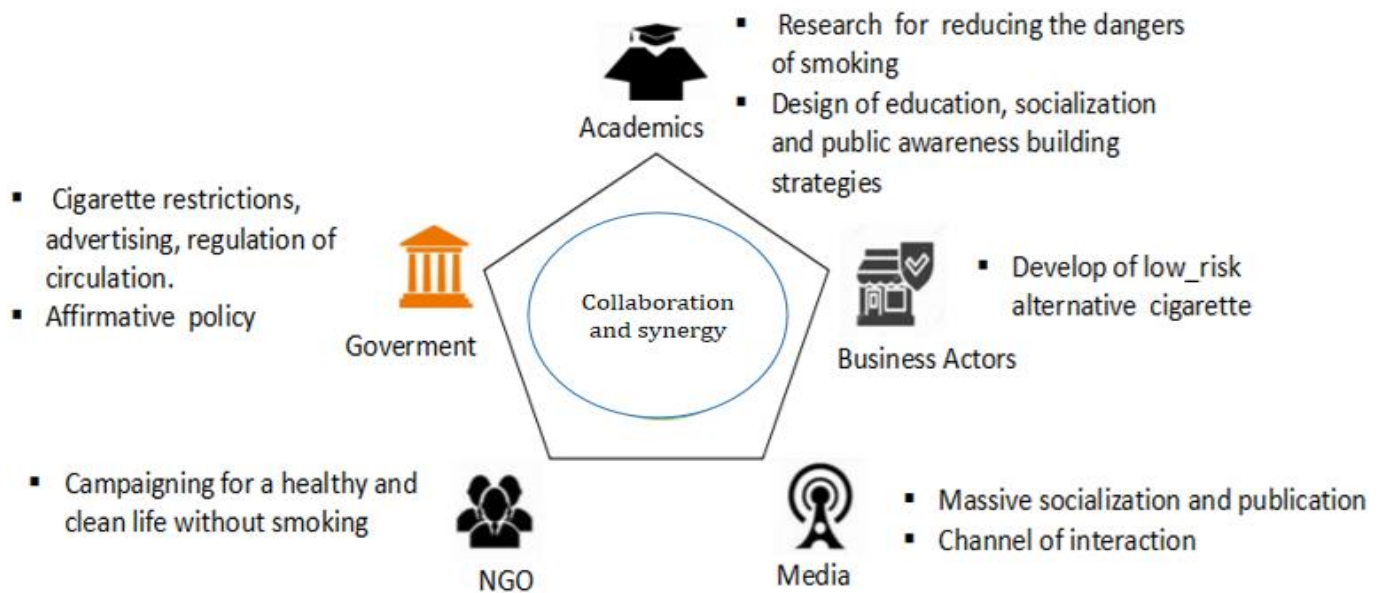


Figure 5. Hexa helix collaboration

## CONCLUSION

There are several central issues related to the problem of smoking in Indonesia: (1) the increase in the number of smokers in the young group; (2) the golden age challenge to build a Golden Indonesia 2045; (3) the need for government commitment in reducing the dangers of smoking; (4) persuasive communication to build awareness of smokers is needed; and (e) public education by utilizing social media.

## RECOMMENDATION

To ensure the success of reducing the risk of smoking hazards, hexa-helic cooperation between the government, business actors, academics, media and NGOs is needed. In addition, persuasive communication is an important factor that must be considered.

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