Effectiveness of Visual Communication of Smoking Ban on Cigarette Packaging in Thailand and Indonesia on the Decline of Smoking Prelevance : Krong Thip and Sampoerna Case Study

[1] Hadi Baku Pangestu , [2] Ferry Darmawan
[1,2] Faculty of Communication Sciences, Universitas Islam Bandung, Indonesia
Email : hadi_thepapper@ymail.com ferry@unisba.ac.id

Abstract. Indonesia and Thailand, both Southeast Asian countries with high levels of cigarette consumption, have implemented health warning images on cigarette packs as a strategy to reduce smoking prevalence. This study aims to analyze and compare the effectiveness of these warning images in creating a deterrent and fear effect on smokers in both countries. Using Roland Barthes' semiotic method, this study focuses on visual elements such as image, size, and text message. The findings show that in Indonesia, images of lung cancer victims with scary textual warnings are pasted on the packaging, whereas in Thailand, the images used are more varied and larger in size, creating a stronger visual impact. Data from the Indonesian Ministry of Health and Thailand's Global Action to End Smoking revealed that there will be 70 million smokers in Indonesia by 2024 and 11.5 million in Thailand by 2022. The comparative results suggest that the larger and more varied health warnings in Thailand may be more effective in attracting attention and triggering emotional responses compared to the more homogenous approach in Indonesia. In conclusion, the results of this study suggest that effective visual warnings can influence smokers' awareness and behavior, providing important insights for the development of more dynamic public health policies tailored to each country's cultural context in tobacco control efforts.

Keywords: Cigarette Packaging, Comparison, Effectiveness, Health Warning , Visual Communication

1. INTRODUCTION

Cigarettes have been an integral part of Southeast Asian culture for centuries. In Indonesia and Thailand, cigarette consumption levels remain a major challenge, despite efforts to control consumption. According to data from the Indonesian Ministry of Health, by 2024 the number of smokers in Indonesia will reach around 70 million people (MOH, 2024), making it one of the countries with the largest number of smokers in the world (Tarmizi, 2024). In Thailand, the number of smokers in 2022 reached 11.5 million people, according to the *Global Action to End Smoking Thailand* report (Tobacco and Health Around the World, 2024). This high number is driven by various factors, including easy access to cigarettes, affordable prices, and a lack of public awareness about the dangers of smoking

This reality has been going on for a long time. Since the Dutch colonial era, Southeast Asia has been known as a fertile region for the cultivation of various spices, including plants that cannot be easily found in the West (geographic, 2023). Among the leading commodities that thrived in the region were tobacco and cloves, which later became the main ingredients in cigarette production. The cigarette industry in Southeast Asia has grown rapidly over time and contributed significantly to the growing number of smokers in the region (Rabani et al., 2022). The industry continues to thrive today,

attracting people of all ages, from teenagers to adults, to become consumers of tobacco products.

Today, the market offers a wide range of tobacco products, from cigarettes, cigars,*chewing* tobacco, vapes, vape*liquids*, *nicotine patches*, nicotine*gum*, dried tobacco, cigarette papers, cups, to devices such as *hookah* or *shisha*. Among these products, cigarettes remain the most popular (CISDI, 2024). Factors supporting its popularity include its convenient and easy-to-carry form, the variety of flavors available, the relatively affordable price, and the diversity of brands that can meet consumer preferences. With its wide availability and affordable price, cigarettes are the most widely consumed tobacco product, hence its popularity in Southeast Asia.

However, the high level of cigarette consumption is now a serious concern for the anti-smoking community. This community is concerned about the health effects caused by cigarettes and seeks to reduce the number of smokers. One of the efforts that has been proposed is to limit cigarette advertising time only at midnight (Putri et al., 2021). However, unfortunately this step has not been effective enough to reduce the number of smokers.

Thus, concerns about the health effects caused by cigarettes have encouraged the government, in addition to the anti-smoking community, to find effective ways to reduce the consumption of these products. One of the strategies implemented is the use of visual warnings in the form of images illustrating the adverse effects of smoking, which are placed on cigarette packaging (Andriani et al., 2023). Research shows that such images can have psychological effects, such as fear and reluctance, on cigarette consumers, which is expected to reduce smoking *prevalence* (Hardani & Kurniawan, 2024).

Visual strategies on cigarette packaging not only serve as a communication tool, but also reflect the social and cultural context in which they are implemented. In Indonesia, a culture that is highly segmented by social and economic class makes cigarettes a symbol for different groups. For the lower class, cigarettes are often seen as part of routine and social life, while for the middle and upper class, cigarette consumption is more often associated with lifestyle (Syahputri & Jupriani, 2021). Therefore, the visual strategy applied in Indonesia's smoking ban campaign tends to focus on extreme health impacts to create universal fear across all levels of society.

In contrast, in Thailand, the government's approach seems more coordinated with integrated public policies. Thailand is known as one of the countries in Southeast Asia with the strictest tobacco control regulations, including a complete ban on cigarette

advertising and high tobacco taxes (Tanti, 2018). In this context, cigarette packaging serves not only as a warning tool but also as part of the anti-smoking policy ecosystem. The images on Thai cigarette packs are often more explicit and diverse, such as showing the bodily damage caused by smoking or illustrating the impact on families, especially children. This approach attempts to link the impact of smoking to cultural and social values, such as the importance of family and collective health.

These two approaches reflect the different cultures and visual communication strategies implemented in each country (Putra et al., 2024). Based on this, this study aims to compare the effectiveness of visual strategies on cigarette packaging in Indonesia and Thailand in reducing smoking *prevalence*. Using a qualitative approach based on Roland Barthes semiotics, this research seeks to analyze how visual elements, such as images, size, and text messages, are designed to create a deterrent effect on consumers. This approach allows researchers to unravel the hidden meanings behind these visual elements, which are then contextualized with each country's culture.

The results of this study have the potential to provide strategic recommendations for policymakers and anti-smoking organizations. In the Indonesian context, the findings can be used to evaluate the effectiveness of current visual elements and identify areas that require improvement. For example, adding variety in images or increasing the size of visual elements on cigarette packs could be strategic steps that contribute to increasing the impact of visual communication.

With a holistic approach, this study not only answers questions about the effectiveness of visual strategies in two countries, but also opens up opportunities for further exploration of how cultural, social and economic elements influence the success of anti-smoking campaigns. The findings are expected to make a significant contribution to the development of more innovative and data-driven policies.

2. LITERATURE REVIEW

Efforts to control cigarette consumption through pictorial health warnings on packaging have been the focus of research in various countries, including Indonesia and Thailand. One study in Indonesia assessed the implementation of pictorial health warnings on cigarette packaging and found that although the industry compliance rate reached 99.91%, smoking prevalence continued to increase, suggesting the need for further evaluation of the effectiveness of this policy (Ekawati & Darmawan, 2019).

The study by Andriani et al. (2023) examined the effect of health warning images on cigarette packaging on fear and intensity of smoking cessation among Tanjungpura University students. This study involved 107 respondents and used univariate and bivariate analysis with the Spearman correlation test. The results showed that there was a significant relationship between health warning images with fear (correlation coefficient 0.698) and smoking cessation intensity (correlation coefficient 0.569), indicating the effectiveness of pictorial warnings in motivating individuals to quit smoking.

Another study by Ishak (2023) evaluated the relationship of perceptions of pictorial warning labels on cigarette packaging to adolescent smoking behavior at SMPN 1 Bulango Timur. The study involved 78 student smokers and used an analytic survey approach with a cross-sectional design. The results showed that perceptions of attractive, informative, motivating, and threatening images had a significant relationship with adolescent smoking behavior, with p-values of 0.040; 0.000; 0.000; and 0.000, respectively. These findings emphasize the importance of effective pictorial warning designs in influencing smoking behavior among adolescents.

In addition, the *Global Adult Tobacco Survey* (GATS) Indonesia 2021 report released by the Ministry of Health and WHO in August 2024 provides comprehensive data on tobacco product use in Indonesia. This report shows that 34.5% of adults, or approximately 70.2 million people, use tobacco, with the percentage of use in men reaching 65.5% and in women 3.3% (WHO, 2024). While this report does not specifically examine the effectiveness of pictorial warnings, the data provides important context regarding the prevalence of smoking in Indonesia and the need for effective tobacco control strategies.

Overall, the current literature suggests that pictorial health warnings on cigarette packs have the potential to influence smoking behavior, primarily through increasing fear and awareness of the dangers of smoking. However, their effectiveness may be influenced by demographic factors such as age and gender, as well as the design and visual content of the warnings. These findings provide a basis for further research on the differences in effectiveness of visual smoking ban strategies on cigarette packs in Thailand and Indonesia, particularly in the Krong Thip and Sampoerna case studies.

3. METHODS

This study uses a qualitative method with a Roland Barthes semiotic approach to analyze the visual elements on Krong Thip cigarette packs from Thailand and Sampoerna

from Indonesia. This approach was chosen as it allows in-depth exploration of the denotative and connotative meanings of the health warning images used on both packs (Putra et al., 2024). The research began with a data collection phase, which included visual documentation of cigarette packaging as well as a literature review related to health warning regulations in both countries. The visual data was then analyzed using a semiotic framework to identify key elements such as size, color, composition, and text messages accompanying the images. The data sources used include primary data and secondary data. Primary data is in the form of JPEG or JPG images of Krong Thip and Sampoerna cigarette packaging, obtained through Google searches and selected based on their relevance to the visual elements under study, such as image, text, color, and size. Secondary data was obtained from journals, books and other relevant publications to provide theoretical context and support for the analysis. Data collection techniques were conducted through documentation, by collecting and reviewing images of cigarette packaging, and observation, which focused on identifying prominent visual elements in the packaging. The justification for using this method is that visual strategies on cigarette packaging have complex symbolic aspects and require an interpretive approach to reveal how these elements influence consumer emotions and decisions (Syahputri & Jupriani, 2021). This approach provides insights that are not only descriptive but also critical of the effectiveness of visual communication strategies in the cultural context of each country.

4. RESULTS

Pictorial health warnings on cigarette packs have been a widely used tool to reduce smoking prevalence in various countries. Globally, the *World* Health Organization (WHO) recommends that large, clear pictorial warnings can help raise awareness of the dangers of smoking and encourage quitting behavior (WHO, 2023). In Southeast Asia, particularly in Indonesia and Thailand, this strategy has been adapted to reflect each country's social, cultural and policy characteristics. With a significant smoking population, Indonesia recorded 70 million active smokers in 2024, while Thailand reported 11.5 million active smokers in 2022 (WHO, 2024). These different approaches in the design and implementation of pictorial warnings create an opportunity to evaluate their effectiveness in influencing cigarette consumer behavior.

In this study, primary data sources of Krong Thip (Thailand) and Sampoerna (Indonesia) cigarette packaging images were collected directly from online searches via

Google in JPEG or JPG format. These images were then analyzed in detail with a focus on relevant visual elements, such as size, color, image type and accompanying warning text. Secondary data sources used include journals, books and other publications that provide theoretical and supporting context to the visual analysis. Roland Barthes' semiotic approach was used to analyze this data, highlighting the denotative (literal meaning) and connotative (implied meaning) aspects of the visual elements on each pack, as follows:

Tabel 1. Krong Thip cigarettes packaging (Thailand)

Signifier	Signified
Krong Thip cigarettes (Thailand)	Picture of Krong Thip cigarette packet
Denotasi An image of a red Krong Thip cigarette packet with an additional image of a corpse with lung disease that has been *autopsied*.	**Konotasi** Image of a red Krong Thip cigarette packet
Mitos This image shows a red Krong Thip cigarette pack with an additional image in the form of a photo of a corpse of a lung disease patient who has been autopsied, this image aims to warn consumers of the dangers of lung disease due to smoking.	

The results of the analysis show that Krong Thip cigarette packaging uses an image of an autopsied corpse of a lung disease patient with a large size and a dominant red color. This visual element creates a strong visual and emotional impact. This element is interpreted to have an intimidating connotative meaning, serving as an explicit reminder of the health dangers of smoking.

In contrast, Sampoerna cigarette packaging uses an image of an oral cancer patient with a smaller size and moss green color. This image, while effective in conveying the message, is considered less striking and provides a weaker visual impact than Krong Thip, which can be seen below:

Tabel 2. Sampoerna clove cigarette packaging (Indonesia)

Signifier	Signified
 Sampoerna sigaret kretek (Indonesia)	Picture of Sampoerna cigarette pack
Denotasi An image of a Sampoerna cigarette packet accompanied by a warning image "cigarettes cause oral cancer" complete with a photo of a patient with oral cancer.	**Konotasi** Picture of a moss green Sampoerna cigarette packet
Mitos This image shows a moss green Sampoerna cigarette pack with an additional image in the form of a photo of a patient with oral cancer, this image aims to warn consumers of the dangers of oral cancer due to smoking.	

From the analysis of the secondary data, it was found that the size and color of the images greatly influenced the level of consumer attention to the health warnings. Images with larger size and striking colors, such as in Krong Thip, tend to be more effective in attracting attention compared to smaller images and unobtrusive colors, such as in Sampoerna. Secondary research also supports that explicit visual elements can elicit a stronger emotional response, theoretically driving behavior change.

So with the data at hand, the overall result of this study is an interpretation that the warning images on cigarette packs, particularly on the brands Krong Thip from Thailand and Sampoerna from Indonesia, display a stark contrast between visual appeal and dire health messages. Both brands use highly graphic warning images, with Krong Thip displaying a clear *autopsy* image of the lung organs of a lung disease victim, while Sampoerna displays an image of a mouth badly damaged by cancer. These images are not only large, surpassing other design elements on the pack, but are also meant to trigger a strong emotional response from consumers who see them, while trying to discourage them from purchasing the product.

Historically, cigarette packs have evolved from a branding medium to a public health communication tool (unairnews, 2022). In the past, cigarette warning images were not as graphic or clear as they are today, signaling a change in the strategies of governments and health organizations to address high rates of smoking. Indonesia and Thailand, two countries with high cigarette consumption rates, have adopted this approach in similar attempts to reduce smoking rates (Wijaya Mulya et al., 2024).

The denotation of the cigarette pack design also plays an important role. Krong Thip's predominantly red and white packs were chosen to attract consumers by highlighting attributes such as courage and strength, while the green color of Sampoerna cigarettes was chosen to associate the product with nature and outdoor activities, perhaps in an attempt to attract consumers with an adventurous spirit. However, the connotations of the gruesome warning images and their dominant placement on the pack aim to send a strong message about the dangers of smoking (Suryani et al., 2021).

These mythical elements in the pack design suggest an internal conflict on the one hand, the bright colors and attractive branding aim to attract buyers, while on the other hand, the sadistic warning images seek to repel them (Baiquni, 2016). This creates a unique dynamic in which consumers are confronted with two very different messages: the pull of attractive branding and the repulsion of horrific health realities.

In addition, the element of color in wrap design plays a strong psychological role. The color red has been shown to increase feelings of dominance and victory in various studies, including in sports, while the color black, used in the framing of warning images on Sampoerna cigarettes, is often associated with death and other negative aspects (Madden et al., 2020). This reflects how visual design can be used to influence buyer perception and behavior.

While most results support the hypothesis that striking visual designs are more effective, there are findings that suggest that overly explicit visuals, such as on Krong Thip, may make some consumers feel uncomfortable or even ignore them. This emphasizes the importance of striking a balance between visual appeal and cultural relevance in cigarette pack design.

Therefore, the results of this analysis show how visual design strategies on cigarette packs, including color selection and placement of warning images, can greatly influence consumer responses. The use of repulsive graphic images aims to reduce the appeal of cigarettes, while other design elements try to attract consumers aesthetically. This dynamic relationship between attractive and repulsive elements in a pack of

cigarettes provides valuable insights into the effectiveness of visual health warnings in tobacco control efforts.

Overall, these findings confirm that well-designed visual strategies, particularly those that consider size and color intensity, play an important role in improving the effectiveness of pictorial health warnings. However, the limitations of this study, such as the focus on only two cigarette brands and limited data sources, point to the need for further studies to understand the influence of these visual elements across a wider range of cultural and social contexts.

5. DISCUSSION

Worldwide, tobacco use has been identified as one of the leading causes of preventable health problems. The World Health Organization (WHO) estimates that cigarettes kill more than 8 million people each year, with more than 7 million of these deaths caused directly by smoking and another approximately 1.2 million being the result of exposure to second-hand smoke. In Southeast Asia, smoking prevalence continues to show alarming rates, especially in Indonesia and Thailand, which have long struggled with high levels of cigarette consumption. According to the *Global Adult Tobacco Survey* (GATS) report released by the Indonesian Ministry of Health in 2024, approximately 34.5% of adults in Indonesia are smokers, reflecting an urgent public health problem that requires strategic intervention (WHO, 2024). In this context, the use of pictorial health warnings on cigarette packs is emerging as one of the key strategies to reduce smoking prevalence by providing a strong visual impact intended to trigger risk awareness and motivate smokers to quit. This discussion aims to evaluate the effectiveness of visual strategies of pictorial health warnings on cigarette packs in Indonesia and Thailand, focusing on Sampoerna and Krong Thip brands, in order to reduce smoking prevalence (Joseph Himawan Asiku, 2022).

This study has an important contribution as it compares two different cultural and social contexts, providing insight into how visual elements can influence smoking perceptions and behavior. Previous research suggests that visual strategies play an important role in influencing smoking behavior, particularly through raising awareness of the dangers of smoking and creating fear of its effects. For example, *Global Adult Tobacco Survey* (GATS) data shows that Indonesia and Thailand have significant levels of cigarette consumption, with 70 million and 11.5 million active smokers, respectively (WHO, 2024). These high rates indicate the urgency to develop more effective strategies

to reduce cigarette consumption (Thrasher et al., 2016). One approach is the implementation of pictorial health warnings on cigarette packaging, which in some countries has been shown to increase public awareness of the health risks posed by smoking.

In the Indonesian context, the challenges are more complex as smoking has become an integral part of the culture and social life of the people, thus a more visual approach is needed to appeal to consumers from all walks of life. In contrast, in Thailand, more integrated policies and strict regulations have provided a strong foundation for the implementation of more aggressive visual strategies, such as the use of images of smoking-damaged bodies or organs, supported by a complete ban on cigarette advertising and the implementation of high tobacco taxes. Studies by Andriani et al., (2023) and Ishak (2023) support that visual elements such as image size, color, and intensity have a significant relationship with risk perception and intention to quit smoking, highlighting the importance of effective design.

In Roland Barthes' semiotic analysis applied to this study, it was found that elements such as the image of the corpse of a lung disease patient on Krong Thip were more effective than the image of an oral cancer patient on Sampoerna, which was relatively smaller and less conspicuous (Baldan, 2023). These results provide an empirical basis for developing more contextualized visual strategies, taking into account cultural and social differences in the two countries. However, this study also reveals the limitations of overly explicit visual design, which in some cases may elicit negative responses or neglect. As such, these findings not only reinforce previous literature but also offer strategic recommendations for more holistic policies and designs, which can be tailored to the needs and characteristics of the target population in each country.

The findings of this study highlight the urgency to improve the effectiveness of visual strategies on cigarette packaging, especially in high smoking consumption regions such as Southeast Asia. The high prevalence of smoking in Indonesia and Thailand, despite the presence of pictorial health warnings, suggests that the current visual elements still have limitations in creating a lasting impact on smoking behavior. The proposed solution is to redesign the visual elements on the packaging by considering the social, cultural and psychological context of each country.

A more evidence-based approach can be taken by integrating the results of studies on the effects of color, size, and type of image on public perception (Ginting & Hartati, 2023). For example, based on this research, the use of striking colors such as red on Krong

Thip has proven to be effective, but needs to be combined with other visual elements, such as more interactive and specific warning texts to touch on emotional aspects relevant to consumers in each country (Sekarlaranti & Junaedi, 2013). Meanwhile, Sampoerna's packaging needs to be improved by increasing the size of the image and using more contrasting colors to attract greater attention.

In addition to visual changes, governments in both countries can also develop policies that support these visual strategies. For example, Thailand has demonstrated the effectiveness of integrated policies with strict regulations on cigarette advertising. Indonesia can learn from this approach by introducing mandatory standards for the size and type of visual warnings on all tobacco products, as well as tightening monitoring of the tobacco industry's compliance with these regulations.

To increase social impact, the government and anti-smoking communities can utilize community-based education campaigns. These campaigns can explain the meaning behind the warning images on cigarette packs, thus reinforcing the message. This will help create a deeper emotional connection between health warnings and consumer smoking behavior.

Another solution that can be adopted is the application of digital-based technology. The government can develop apps or online platforms that provide additional information when users scan the warning images on cigarette packs. This approach not only reinforces the health message but also attracts the attention of the younger generation who are more connected to technology.

By combining more effective visual elements, stronger policies, and educational and technological approaches, a holistic solution can be designed to reduce smoking rates in both countries. This research provides an important basis for the development of future policies and strategies that can be adopted in Southeast Asia and other regions facing similar challenges.

The findings of this study confirm that pictorial health warnings on cigarette packs have significant potential to influence smoking, particularly through raising awareness and fear of the dangers of smoking. By integrating these findings into public health policy, governments and health organizations can more effectively design and implement strategies that target changes in smoking behavior. These findings are in line with results from studies conducted by Andriani et al. (2023) and Ishak et al. (2023), which showed a strong association between prominent visual warnings and increased risk awareness and motivation to quit smoking. This consistency confirms the importance of design elements

in pictorial health warnings, such as size, color, and image intensity in influencing smoking perceptions and behavior (Smith & Jones, 2021).

Furthermore, effective use of pictorial health warnings not only has the potential to reduce smoking prevalence but also offers wider public health benefits. By reducing the number of smokers, the health burden associated with tobacco use can be significantly reduced, reducing health care costs and improving the overall quality of life. The implications of these findings also reflect the need for a holistic and integrated approach to tobacco control policy, combining visual strategies with other interventions such as health education, restricting access to tobacco products, and support for smoking cessation.

This study also highlights the importance of considering cultural and social context in the design of pictorial health warnings, as a way to improve the relevance and effectiveness of health messages. The limitations of the findings, which indicate that some overly explicit designs may be ineffective or even counterproductive in some contexts, point to the need for further research. Future research could therefore focus on testing different designs of warnings across different demographic groups to further understand how factors such as age, gender and socio-economic background affect the response to such warnings. By understanding these aspects, policymakers can better tailor anti-smoking campaigns to achieve maximum effectiveness.

As such, the results from this study not only provide evidence supporting the effectiveness of pictorial health warnings but also offer strategic insights that can be used to improve future tobacco control policies and practices. This suggests that a well-calibrated and culturally context-sensitive approach can enhance the success of public health initiatives in addressing the global smoking epidemic.

6. CONCLUSION

In the global effort to combat the smoking epidemic, various strategies have been implemented to curb this harmful habit, with one of the most prominent approaches being the use of health warning images on cigarette packaging. This study examines the effectiveness of visual smoking warnings on cigarette packaging in Indonesia and Thailand, highlighting how graphic images can influence consumer behavior. Cigarette packaging with graphic and prominent warning images proved effective in raising awareness of the dangers of smoking and motivating smokers to quit. Moreover, the effective design of these warnings, which includes visual elements such as image size and

color, significantly influences smoking behavior, as evidenced by studies showing an association between image-induced fear and quit intensity. However, this study has limitations, including a sample limited to only two cigarette brands and an analysis focused on visual aspects without including broader demographic variables, which might affect the generalizability of the results. Therefore, a suggestion for future research is to conduct a more comprehensive analysis involving a wider range of brands and cultural contexts to further explore how social and cultural factors influence the effectiveness of pictorial health warnings. This is important so that policies and strategies developed are more sensitive to local nuances and can be more effective in reducing smoking prevalence in various communities.

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