

# The Effect of Cigarette Content Marketing on Students' Smoking Behavior and Decisions: A PLS-SEM Approach

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## Abstract

**Objective:** This research aims to analyze the influence of cigarette content marketing on student behavior, and on cigarette purchasing decisions, as well as the influence of behavior on cigarette purchasing decisions. **Methods:** This research is quantitative, using a sample of 500 smoking students from twelve universities in the city of Medan, Indonesia, who were selected using a simple random sampling technique. Data collection was carried out by distributing questionnaires that had been tested for convergent validity with an Outer Loading value  $> 0.7$  and an AVE value  $> 0.5$ , and for discriminant validity with an HTMT value  $< 0.9$ . The data was analyzed using a multivariate analysis technique which combines factor analysis and regression analysis. **Results:** The research results show that the t-statistical value for the behavioral variable (BHV) is 4.128 ( $> 1.98$ ) and the p-value is 0.000 ( $< 0.05$ ), which means that the BHV variable has a significant effect on the cigarette purchasing decision variable (PD). The t-statistical value for the content marketing (CM) variable is 27.57 ( $> 1.98$ ) and the p-value is 0.000 ( $< 0.05$ ), which means that the CM variable has a significant effect on the BHV variable. The t-statistical value for the CM variable is 18,542 ( $> 1.98$ ) and the p-value is 0.000 ( $< 0.05$ ), which means that the CM variable has a significant effect on the PD variable. 93.2% of respondents admitted that they had seen cigarette marketing content on social media, many of them (43%) believed that smoking was detrimental to their health, but the most influential factor was their perception regarding the activity of smoking. **Conclusion:** Cigarette marketing content has been proven to influence students' behavior towards cigarettes, as well as directly influencing their decision to purchase cigarettes. Students' behavior towards cigarettes also influences their decisions in purchasing cigarettes.

**Keywords:** Cigarette- content marketing- smoking behavior- purchasing decision

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## Introduction

The prevalence of smoking in Indonesia is one of the highest in the world. According to data from The Tobacco Atlas in 2019, the percentage of daily smokers aged 15 years and over in Indonesia reached 33 percent of the population, which is one of the highest among world countries. Almost the same figure is shown by the 2021 Global Adults Tobacco Survey (GATS) report which shows that 34.5 percent of the adult population in Indonesia uses tobacco. These data show that the number of adult smokers in Indonesia is still high, even though it is considered to have decreased.

This smoking habit is related to exposure to advertising [1], including content on social media [2]. The results of the 2021 GATS survey have shown that 75.3 percent of adults have seen cigarette advertising and promotions, even though the government has implemented a

restrictive policy against it. Tobacco companies have found innovative ways to get around Tobacco advertising, promotion and sponsorship (TAPS) provisions [3], including by reallocating resources to new marketing strategies, such as utilizing Facebook, Instagram, YouTube, and TikTok [4], which apparently has become quite rampant [5].

Content marketing is a new strategy for marketing cigarettes in response to restrictions on cigarette advertising and promotion. It has emerged as a unique marketing discipline, strategically and tactically distinguishable from others, for example advertising and sales promotion [6]. Content marketing provides consumers with useful information to aid purchasing decisions, increase product use, and entertain them while achieving organizational goals without having to overtly promote [7]. This strategy has been widely implemented in digital media, including by utilizing influencers, as can be seen in Figure 1 and

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Figure 2.

Social media platforms—where young people spend a lot of time [8] and where cigarette marketing content is prevalent—offer many advantages for companies seeking to attract future generations of smokers. They empower various sectors to reach specific individuals and engage customers through online promotional activities such as contests, quizzes and videos, thereby encouraging them to participate and spread the content across their personal social media platforms, thereby generating significant extra exposure. Content marketing often conceals its source, allowing tobacco companies to circumvent Framework Convention on Tobacco Control (FCTC) compliant advertising restrictions [9].

Previous studies have discussed marketing strategies for cigarette companies on social media. Research by Mutmainnah et al. [3] have discussed the use of social media as a form of indirect tobacco advertising, which aims to normalize their brands into the lives of young people. Research by Liang et al. [10] has discussed various forms of tobacco promotion strategies on social media, but their research has not touched on content marketing

strategies. Several other studies show the use of social media in selling cigarettes, but do not examine its effect on adolescent smoking behavior [7, 4, 8].

The research results of Navarro et al. [11] shows that cigar brands generally use influencers to market their products on the brand’s Instagram page, which is in line with Rowell’s findings [9]. Research by Vassey et al. [12] shows that there is a highly interconnected network of e-cigarette influencers involved throughout the world who collaborated with more than 600 e-cigarette brands in 2020. The use of influencers to promote tobacco products is another strategy of promotion of cigarettes on social media. A new development in content marketing, these influencers no longer directly promote cigarette brands, nor are they linked to the brand’s social media accounts so they look very natural and easily escape scrutiny.

This research aims to analyze the influence of new cigarette marketing strategies on social media in the form of content marketing on the smoking behavior of students in North Sumatra. This objective will be explained by finding answers to three main research topics, namely (a) analyzing the influence of content marketing in forming



Figure 1. Cigarette Marketing Content on YouTube



Figure 2. Cigarette Marketing Content on Instagram

attitudes, subjective norms and perceived behavioral control of students in Medan on smoking behavior. ; (b) analyze the influence of content marketing on the decision of students in Medan to consume cigarettes, and and (c) analyze the influence of attitude, subjective norms and perceived behavioral control on the smoking decision of students in Medan .

## Materials and Methods

### Study design and setting

This research is quantitative research conducted through a survey using the PLS-SEM approach, lasting 44 days, in October and November 2023. The study was conducted in Medan City, Indonesia, on students at twelve campuses, namely UIN Sumatera Utara, Universitas Sumatera Utara, Universitas Negeri Medan, Universitas Muhammadiyah Sumatera Utara, Universitas Islam Sumatera Utara, Universitas Medan Area, Universitas Sari Mutiara Indonesia, Universitas Al Washliyah, Politeknik Negeri Medan, Universitas Pancabudi, Universitas Potensi Utama, and Universitas MTU.

### Respondent

The Respondents in this study were student smokers at twelve campuses or universities in Medan, Indonesia, with a total sample of 500 people. They were selected using simple random sampling techniques. Respondents were aged 17 to 25 years, showed smoking behavior, and had studied at university for at least 1 year. The general description of the respondents in this study can be seen in Table 1.

### Instrument

Data collection was carried out through a questionnaire prepared based on a literature review, which can be seen in Table 2. The questionnaire has been tested for convergent validity with an Outer Loading value  $> 0.7$  and AVE value  $> 0.5$ , and discriminant validity with an HTMT value  $< 0.9$ . The Composite Reliability and Cronbach's Alpha values are  $> 0.7$  so the variables are reliable. Further explanation can be seen in the results section regarding the outer model. The variables in this study were measured using a 1-5 Likert scale. Where the number 1 indicates strongly disagree, up to the number 5 indicates strongly agree.

### Data analysis

Data analysis techniques use descriptive statistics and PLS-SEM using SmartPLS 4.0 software. PLS-SEM is a modern multivariate analysis technique with a demonstrated ability to estimate theoretically defined models of cause-and-effect relationships. The data was analyzed using a multivariate analysis technique which combines factor analysis and regression analysis, with the aim of testing the relationship between variables in a model, both between indicators and their constructs and the relationship between constructs. PLS-SEM can estimate complex relationships and emphasize predictions without imposing high demands on the data or requiring relationship specifications. In particular, PLS-SEM can

Table 1. The General Description of the Respondents

Category		Frequency	Percentage
Gender	Male	322	64.4
	Female	178	35.6
Cigarette prices	IDR10k-20k	52	10.4
	IDR21k-25k	88	17.6
	IDR26k-30k	127	25.4
	IDR31k-35k	123	24.6
	IDR36k-40k	46	9.2
	IDR41k-50k	50	10.0
	IDR51k-65k	5	1.0
	IDR100k-350k	9	1.8
Cigarette consumption per month	1 pack	100	20.0
	2 packs	89	17.8
	3 packs	60	12.0
	4 packs	40	8.0
	5 packs	47	9.4
	6-10 packs	63	12.6
	11-19 packs	48	9.6
	20-25 packs	31	6.2
	26-50 packs	22	4.4
Knowledge about cigarette promotion on social media	Ever	469	93.8
	Never	31	6.2
Knowledge about cigarette marketing content	Ever	466	93.2
	Never	34	6.8

guarantee factor determination by directly evaluating latent variable scores, perform factor identification by introducing a flexible residual covariance structure, and provide good predictions in the context of small sample sizes, asymmetric distributions, and interdependent observations [13].

### Ethical Declaration

The research protocol was approved by the Ethical Clearance Section, Faculty of Medicine, North Sumatra Islamic University (UISU), Medan, Indonesia (No. 432/EC/KEPK.UISU/IX/2023).

## Results

### Outer Model

The outer model is evaluated by looking at the validity and reliability values of the measurements of the model. The PLS algorithm can be seen in Figure 3. Measurement validity consists of convergent validity and discriminant validity. Convergent validity is determined using loading factor parameters and AVE (Average Variance Extracted) values. This research has convergent validity because the loading factor value is  $> 0.7$  (can be seen in Table 3) and the AVE (Average Variance Extracted) value is  $> 0.5$  (can be seen in Table 4).

Discriminant validity is determined by looking at the Fornell Larcker Criterion or HTMT and Cross Loading of each variable and is categorized as having discriminant validity if the Fornell Larcker Criterion or HTMT and

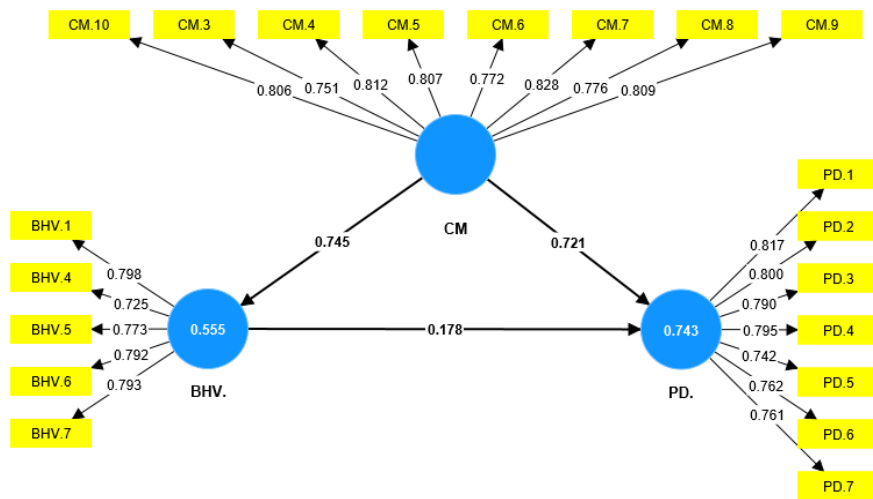


Figure 3. PLS Algorithm

Cross Loading value reaches 0.7 [14]. The HTMT value can be seen in Table 5 below, where each score is less than 0.9. The value of the Fornell Larcker Criterion in this research is that the correlation of the variable with the variable itself is not smaller than the correlation of

the variable with other variables, meaning that it has met the requirements and continues to the next stage, namely Cross Loading. The Fornell Larcker Criterion value can be seen in Table 6 below.

The Cross Loading value in the model can be seen in

Table 2. Operational Definition of Research

Variable	Indicator	Statement
Content marketing	Content Information	Content about cigarettes on social media pages is efficient for obtaining information
		Content about cigarettes on social media pages provides the latest information
		Content about cigarettes on social media pages meets my needs
	Content Entertainment	Content about cigarettes on social media pages is really fun
		Content about cigarettes on social media pages is also exciting
		The content about cigarettes on social media is quite interesting
	Social Interaction	Content about cigarettes on social media pages can be impressive for me
		Content about cigarettes on social media pages can stimulate me to engage in sharing
		Content about cigarettes on social media pages can fulfill my hope of interacting with like-minded people
	Self-Expression	Content about cigarettes on social media pages can fulfill my hopes of showing my personality
		Content about cigarettes on social media pages can make me feel more like I belong
		I feel like other people find me friendly
Behavior	Attitude toward behavior	Cigarette content shows smoking as fun
		Smoking relaxes, relieves stress, tension and nervousness
		Smoking because it doesn't harm your health
	Subjective norm	Smoking is a means of socializing
		Smoking makes me more confident
		Smoking makes a person more manly or mature
	Perceived behavioral control	I am safe when I smoke
		My family and environment do not prohibit smoking
		Cigarettes are affordable and easy to get
Decision	Problem recognition	Cigarette content provides me with information about my needs regarding cigarettes
		Cigarette content on social media answers my problems about cigarettes
	Information search	Cigarette content on social media encouraged me to look for other information
	Evaluation of alternatives	Cigarette content provides alternative information about cigarettes for me
		Cigarette content helps me to evaluate attitudes towards cigarettes
	Purchase decision	Cigarette content on social media shapes my inclination towards smoking
		Cigarette content on social media convinces me to smoke
	Postpurchase behavior	I feel satisfaction after smoking
		Cigarette content on social media gives rise to smoking satisfaction

Table 3. Outer Loading and Cross Loading

	Outer Loading	Cross Loading
BHV.1	0.798	0.798
BHV.4	0.725	0.725
BHV.5	0.773	0.773
BHV.6	0.792	0.792
BHV.7	0.793	0.793
CM.10	0.806	0.806
CM.3	0.751	0.751
CM.4	0.812	0.812
CM.5	0.807	0.807
CM.6	0.772	0.772
CM.7	0.828	0.828
CM.8	0.776	0.776
CM.9	0.809	0.809
PD.1	0.817	0.817
PD.2	0.8	0.8
PD.3	0.79	0.79
PD.4	0.795	0.795
PD.5	0.742	0.742
PD.6	0.762	0.762
PD.7	0.761	0.761

Table 4. AVE, Composite Reliability, and Cronbach's Alpha

	AVE	Composite Reliability	Cronbach's alpha
BHV	0.603	0.842	0.836
CM	0.633	0.918	0.917
PD	0.611	0.895	0.894

Table 3, where the value for the variable itself is greater than for the other variables, and exceeds the value of 0.7 [14]. If the Composite Reliability and Cronbach's Alpha values are > 0.7, then a variable can be said to meet Composite Reliability and Cronbach's Alpha. You can see the Composite Reliability value for each variable in Table 4. Reliability testing is also seen from the Cronbach's Alpha value. The following Cronbach's Alpha values obtained are presented in Table 4 which shows a value above 0.7 which proves that the measurements in this study are reliable.

*Inner Model*

To see the direct and indirect influence between variables, a structural model test or Inner Model evaluation is carried out. Starting by looking at the R-Square value, then the path coefficient, T-Statistic (bootstrapping),

Table 7. T-statistics (Bootstrapping)

	Original sample (O)	Sample average (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
BHV -> PD	0.178	0.179	0.043	4,128	0
CM -> BHV	0.745	0.746	0.027	27.57	0
CM -> PD	0.721	0.721	0.039	18,542	0

Table 5. The Heterotrait-Monotrait Ratio of Correlations (HTMT) Values

	Behavior (BHV)	Content Marketing (CM)	Purchasing Decision (PD)
BHV	0.777		
CM	0.745	0.795	
PD	0.715	0.754	0.781

Table 6. Fornell Larcker Criterion Values

	Behavior (BHV)	Content Marketing (CM)	Purchasing Decision (PD)
BHV			
CM	0.843		
PD	0.819	0.842	

predictive relevance, and model fit to evaluate the Inner Model with PLS-SEM.

How much the value shown by the independent variable influences the dependent variable is called R-Square. The research R-Square value for behavioral variables is 0.555. This means that the percentage influence of content marketing on smoking behavior is 55.5%, while the remaining 44.5% is influenced by other factors. Meanwhile, the R-Square value for the purchasing decision variable is 0.743. This means that the percentage influence of marketing content and behavior on cigarette purchasing decisions is 74.3%, while the remaining 25.7% is influenced by other factors. Based on the opinion of Chin [15] above, the R-Square value in this study is classified as strong because it is greater than 0.67, namely 0.743. Likewise, if viewed from the opinion of Hair et al. [16], it is still considered substantial. To be able to see whether the relationship is significant or not, the bootstrapping method is used in SmartPLS 4. Based on Table 6 above, it shows that the t-statistics of the relationship between behavior (BHV) and the decision to purchase cigarettes (PD) is greater than the t Table (1.98), namely 4.128, meaning it has a significant effect. The t-statistics of the relationship between content marketing (CM) and behavior (BHV) is greater than the t Table, namely 27.57, meaning it has a significant effect. The t-statistics of the relationship between content marketing (CM) and decisions (PD) is greater than the t Table, namely 18,542, meaning it has a significant effect.

Apart from that, it can also be seen from the probability number, if the probability number is <0.05, then the hypothesis is accepted. Based on Table 7 above, it shows that the probability number or P value of the relationship between behavior (BHV) and the decision to purchase cigarettes (PD) is smaller than 0.05, namely

Table 8. Model Fit

	Saturated model	Model estimates
SRMR	0.055	0.055
d_ULS	0.632	0.632
d_G	0.265	0.265
Chi-square	749,035	749,035
NFI	0.883	0.883

0.000, meaning it has a significant effect. The P value of the relationship between content marketing (CM) and behavior (BHV) is smaller than 0.05, namely 0.000, meaning it has a significant effect. The P value of the relationship between content marketing (CM) and decisions (PD) is smaller than 0.05, namely 0.000, meaning it has a significant effect. Furthermore, model fit or the accuracy of the model with the data is the degree that shows how capable the model being developed explains the data. In the fit model, the NFI or Normed Fit Index value can be seen. NFI values ranging from 0 to 1 are derived from a comparison between the hypothesized model and a certain independent model. The model has high suitability if the value is close to 1. In this study, the NFI value can be seen in Table 8. Based on Table 8 above, it shows that the NFI value in this model is 0.883. This means that this research model is 88.3% fit.

## Discussion

The results of this study show that the behavioral variable (BHV) has a significant effect on the cigarette purchasing decision variable (PD). Behavior in this research includes behavioral dimensions developed by Ajzen [17] in the Theory of Planned Behavior (TPB), including attitudes towards behavior, subjective norms and perceived behavioral control. In Ajzen's view, these three dimensions encourage a person to carry out or not carry out a behavior, in this case the decision to purchase cigarettes. Reflecting on this research, the results support Ajzen's theory that a person's behavior towards cigarettes or smoking, includes how a person evaluates the benefits they obtain through smoking, how social pressure they feel, and how they believe they have access to smoking, these dimensions influence their decision to buy cigarettes.

However, on the other hand, cultural factors can also reduce tobacco use among students [18], including campus intervention in implementing smoke-free campus policies [19]. Thus, in an effort to shape student behavior to reduce cigarette consumption, it is necessary to create an environment that does not support smoking activities, including implementing a smoke-free campus policy. In Indonesia, campuses as places for teaching and learning processes have been designated as smoking-free areas, based on Article 151 of Law Number 17 of 2023 concerning Health, but this has not been implemented strictly. Reflecting on several research results, cigarette and tobacco-free campus policies have been proven effective in several countries, such as Canada [20] and the United States [21].

Regarding attitudes towards cigarettes and smoking

behavior, the results of this study show that the average value of respondents' answers to the indicators proposed in this study is above three or neutral, which means that they generally lean towards the indicators shown. These results support the results of research by Jarvis [22] and earlier research by Ho [23] regarding the reasons and motivations for smoking. There is only one indicator proposed that has an average value below three, to be precise a value of 2.8, which means it is more likely to disagree, namely the statement that smoking does not harm health. Thus, it can be interpreted that respondents generally tend to think that smoking is detrimental to health. These results can also be seen from 26.6% of respondents strongly disagreeing and 17% disagreeing, which means that 43.6% of smokers themselves do not agree that smoking does not harm their health. These results support research results that 85.7 percent of adults believe that smoking causes serious illness. Thus, promotion of the health impacts of smoking has been quite successful in influencing the perception of the public and smokers, but has not succeeded in stopping them from smoking. The results of this study show that the highest average smoking behavior of students is the opinion that smoking makes them relax, relieves stress, tension and nervousness, followed by the opinion that smoking makes them more confident.

Continuing the results of the research above, this research examines the content marketing (CM) factor as one of the factors that might influence smoking behavior (BHV). The results of this research show that content marketing does have a significant effect on smoker behavior. Cigarette CM has mushroomed on social media, it is proven that 93.2% of respondents from 500 student smokers in the study had seen social media content showing cigarette brands or smoking activities, although not in the form of cigarette promotions. Even though it is not openly promoted by cigarette brands, the results of this research show that this method is still recognized by smokers and influences their behavior towards cigarettes and smoking activities. Related to these results, in order to stem increasingly innovative cigarette content, efforts are also needed to promote the dangerous risks of cigarettes with simple and innovative content, as well as adapting content according to various groups of society [24].

Apart from influencing smoking behavior, the results of this study further show that CM also has a significant influence on cigarette purchasing decisions (PD). However CM is created, the ultimate goal of this content is of course to increase purchasing decisions, although there are other goals included, such as normalizing smoking behavior in society. CM techniques are different from advertising and sales promotion techniques [6], but based on the results of this research, CM also influences purchasing decisions, as does the type of advertising [1], and promotion of cigarette content on social media [2]. The difference, as stated at the beginning, is that CM can be used to circumvent TAPS provisions [3] so that its distribution can be more massive through various digital channels such as Facebook, Instagram, Youtube, and TikTok [4]. CM also often obscures the point of origin of content so that it easily falls outside the reach of FTC-

compliant cross-border advertising restrictions.

Complementing the previously proposed steps to reduce consumption and purchase of cigarettes requires a more assertive role from the government to limit access to cigarette content on social media. Cigarette marketing content is indeed different from cigarette advertising, but basically restrictions on this content can still be made referring to the prohibition on cigarette trade advertising, as stated in Article 46 paragraph (3) of Law Number 32 of 2002 concerning Broadcasting, and Articles 29 and 30 Government Regulation Number 109 of 2012 concerning Safeguarding Materials Containing Addictive Substances in The Form of Tobacco Products for Health. Further research is needed regarding the cigarette industry's compliance with these regulations, as well as disclosure of other strategies by the cigarette industry to get around regulations restricting cigarette promotion.

In conclusion, attitudes towards cigarettes and smoking activities are proven to influence a person's decision to buy cigarettes. The motive that most influences smokers is not the health aspect, but the perception that is built regarding the activity of smoking which can relax, relieve stress, tension and nervousness, and can make you more confident. Content marketing, with different techniques from advertising and promotions in general, can influence these two aspects; it can influence behavior and can also influence cigarette purchasing decisions directly.

## Author Contribution Statement

Conceptualization: JN and MB, methodology: JN and AA, software: JN and MIN, validation: JN, MB, and MIN, formal analysis: JN and MIN, investigation: JN, MB, and MIN, resources: JN, MB, and MIN, data curation: JN and MIN, writing: JN and MIN, review and editing: AA and MIN, supervision: JN and MB, project administration: JN and AA.

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### General

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### Ethical Declaration

The research protocol was approved by the Ethical Clearance Section, Faculty of Medicine, North Sumatra Islamic University (UISU), Medan, Indonesia (No. 432/EC/KEPK.UISU/IX/2023).

## Data Availability

Data is available upon request to corresponding author.

## Conflict of Interest

The authors declare that they have no conflict of interest.

## References

1. Sardana M, Goel S, Gupta M, Sardana V, Singh BS. Is exposure to tobacco advertising, promotion and sponsorship associated with initiation of tobacco use among current tobacco users in youth in india? *Asian Pac J Cancer Prev.* 2015;16(15):6299-302. <https://doi.org/10.7314/apjcp.2015.16.15.6299>.
2. Donaldson SI, Dormanesh A, Perez C, Majmundar A, Allem JP. Association between exposure to tobacco content on social media and tobacco use: A systematic review and meta-analysis. *JAMA Pediatr.* 2022;176(9):878-85. <https://doi.org/10.1001/jamapediatrics.2022.2223>.
3. Mutmainnah N, Hendriyani H, Utaminingsy I. Outsmarting regulation: How tobacco websites and social media targeting young people. *Int J Commun Soc.* 2020;2:12-9. <https://doi.org/10.31763/ijcs.v2i1.108>.
4. O'Brien EK, Hoffman L, Navarro MA, Ganz O. Social media use by leading us e-cigarette, cigarette, smokeless tobacco, cigar and hookah brands. *Tob Control.* 2020;29(e1):e87-e97. <https://doi.org/10.1136/tobaccocontrol-2019-055406>.
5. Manan n. Terbatas di televisi, merajalela di kotak lima inci. Project multatuli [internet]. 2022 ; Available from: <https://projectmultatuli.Org/terbatas-di-televisi-merajalela-di-kotak-lima-inci/>.
6. Singh A, Mathur S. The insight of content marketing at social media platforms. *Adhyayan: A journal of management sciences.* 2019 dec 30;9(02):17-21.
7. Świeczak w. Use of content marketing strategy tools in the polish research institutes. *Marketing of scientific and research organizations.* 2016 dec;22(4):103-34 .
8. Truth initiative. Industry influencer: How tobacco content is infiltrating social media [internet]. Washington dc: Truth initiative; 2023. Available from: <https://truthinitiative.Org/research-resources/tobacco-pop-culture/industry-influencer-how-tobacco-content-infiltrating-social>.
9. Atlas tt. Marketing [internet]. The tobacco atlas; 2023. Available from: <https://tobaccoatlas.Org/challenges/marketing/>.
10. Liang Y, Zheng X, Zeng DD, Zhou X, Leischow SJ, Chung W. Exploring how the tobacco industry presents and promotes itself in social media. *J Med Internet Res.* 2015;17(1):e24. <https://doi.org/10.2196/jmir.3665>.
11. Navarro MA, Brien EK, Ganz O, Hoffman L. Influencer prevalence and role on cigar brand instagram pages. *Tobacco Control.* 2021;30(e1):e33. <https://doi.org/10.1136/tobaccocontrol-2020-055994>.
12. Vassey J, Valente T, Barker J, Stanton C, Li D, Laestadius L, et al. E-cigarette brands and social media influencers on instagram: A social network analysis. *Tobacco Control.* 2023;32(e2):e184. <https://doi.org/10.1136/tobaccocontrol-2021-057053>.
13. Zeng N, Liu Y, Gong P, Hertogh M, König M. Do right pls and do pls right: A critical review of the application of pls-sem in construction management research. *Front Eng Manag.* 2021;8(3):356-69. <https://doi.org/10.1007/s42524-021-0153-5>.
14. Jogiyanto H, Abdillah W. Pls (partial least square)–alternatif structural equation modeling (sem) dalam penelitian bisnis.

- Yogyakarta: Andi. 2014.
15. Fung DKC, Chan EWC, Chin ML, Chan RCY. Delineation of a bacterial starvation stress response network which can mediate antibiotic tolerance development. *Antimicrob Agents Chemother.* 2010;54(3):1082-93. <https://doi.org/doi:10.1128/aac.01218-09>.
  16. Hair J, Risher J, Sarstedt M, Ringle C. When to use and how to report the results of pls-sem. *Eur Bus Rev.* 2018;31. <https://doi.org/10.1108/EBR-11-2018-0203>.
  17. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process.* 1991;50:179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
  18. PVKS Hettiarachchi , Primal Jayasooriya , Hemantha Amarasinghe , BSMS Siriwardena , Deepashika Wijerathne , Samantha Kithalawa arachchi , et al. Knowledge and attitudes of nursing students towards smokeless tobacco and areca nut control in central province of sri lanka. *Asian Pac J Cancer Care.* 2020;5(3):133-8. <https://doi.org/10.31557/apjcc.2020.5.3.133-138>.
  19. Seo D-C, Macy JT, Torabi MR, Middlestadt SE. The effect of a smoke-free campus policy on college students' smoking behaviors and attitudes. *Prev Med.* 2011;53(4):347-52. <https://doi.org/https://doi.org/10.1016/j.ypmed.2011.07.015>.
  20. Dillio D, Fazel S, Ehsan N, Sibbald SL. The attitudes and behaviors of students, staff and faculty towards smoke-free and tobacco-free campus policies in north american universities: A narrative review. *Tob Prev Cessat.* 2020;6:47. <https://doi.org/10.18332/tpc/125080>.
  21. Gnonlonfin E, Geindreau D, Gallopel-Morvan K. What are the effects of smoke-free and tobacco-free university campus policies, and how can they be assessed? A systematic review. *J Epidemiol Popul Health.* 2024;72(2):202520. <https://doi.org/https://doi.org/10.1016/j.jep.2024.202520>.
  22. Jarvis MJ. Why people smoke. *BMJ.* 2004;328(7434):277-9. <https://doi.org/10.1136/bmj.328.7434.277>.
  23. Ho R. Why do people smoke? Motives for the maintenance of smoking behaviour and its possible cessation. *Aust Psychol.* 1989;24(3):385-400. <https://doi.org/10.1080/00050068908259577>.
  24. Wickramasinghe S SS, Romy A, Jayasinghe R. Prevalence of tobacco and areca-nut use and awareness of its harmful effects among non-academic staff at faculty of dental sciences, university of peradeniya. *Asian Pac J Cancer Care.* 2021;6(4):425-8. <https://doi.org/10.31557/apjcc.2021.6.4.425-428>.



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