Interplay of Direct Anti-Smoking Public Service Advertisements and Anti-Smoking Messages Placement Disclosures in Movies with Attitude to Quit Smoking

Syed Hassan Raza[*] Anjum Zia[†] Moneeba Iftikhar[‡]

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Abstract   *Recently, the Ministry of Health Pakistan decreed that disclosures of anti-smoking messages placement in the movies should be used whereby fear based cognitive anti-smoking message is shown. Consistent with the Elaboration Likelihood Model (ELM) assumption that persuasion messages likely influence the attitude of the relatively unmotivated individuals. This study is the first which tests and compare the ability of anti-smoking persuasion messages presented in the Direct Anti-smoking public service Advertisements (DAA) and Anti-smoking messages Placement Disclosures in movies (APD) in determining viewer's Attitude to Quit Smoking (AQS). Hence, this attempt overcomes deficient understanding about the effects of disclosing anti-smoking advertisement placement. In a between-subject experiment (N = 120), we measure the smokers' attitudes in the result of the direct anti-smoking advertisements along with the APDs in movies. Results of the experiment show that attitude to quit smoking becomes stronger when a direct anti-smoking advertisement and anti-smoking disclosure is shown. However, analyses based on Partial Least Squares Path Modeling (PLS-PM) on Advanced Analysis for Composites (ADANCO) 2.0.1 (a new software for variance-based SEM) attitude to quit smoking is significantly higher when the anti-smoking message disclosure is shown during the movie scenes. These results have significant implications for persuasion theories and public policy about anti-smoking campaigns.*

Introduction

Recently governments and NGO's have started using several means of

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[*] Lecture, Department of Communication Studies, Bahauddin Zakariya University, Multan, Punjab, Pakistan. Email: hassansherazi@bzu.edu.pk

[†] Associate Professor, Department of Mass Communication, Lahore College for Women University, Lahore, Punjab, Pakistan.

[‡] Lecturer, Department of Mass Communication, Lahore College for Women University, Lahore, Punjab, Pakistan.

communication, such as anti-smoking advertisements in developing the attitude to quit smoking. Vividly, the sales of the cigarettes in Pakistan have increased besides, the capitalizing on the public service advertising messages. This disappearance of the anti-smoking advertisements effects is consistent with the problem of argument framing in the persuasive message stressed in the elaboration likelihood model (ELM) assumptions (Oh & Sundar, 2015; R. E. Petty & Cacioppo, 1986) For instance, Lazard and Atkinson, (2015) noted that studies based on the elaboration likelihood model (ELM) underline the argument framing as the significant factor which directly interacts to influence attitude change. This argument framing in the persuasive message may directly improve the involvement of the individuals which possibly results in desired attitude change (Morris, Woo, & Singh, 2005). As Friestad and Wright, (1994) also suggested to outline research on the persuasion model as it assumes that only when persons recognize a persuasion effort can their persuasion knowledge be initiated.

One of the recent developments in spreading the persuasion knowledge to decrease the smoking rate in Pakistan is relying on the other electronic media contents along with direct anti-smoking public service advertisements (DAA). This includes the anti-smoking message placement in the movies, where anti-smoking messages are purposefully integrated into the movies. Anti-smoking message placement with the disclosure of the source (i.e. ministry of health) is also used. This disclosure of the source may serve as the cues acknowledged by the individual under the peripheral route (Boerman, Van Reijmersdal, & Neijens, 2015; van Reijmersdal, Boerman, Buijzen, & Rozendaal, 2017). This may increase the individuals' motivation to think by providing the credibility to the message which may result in a likelihood of elaboration. Perhaps the use of such persuasive message placement with informational and fear appeal by an identified source may facilitate the motivation to think. Wojdynski and Evans, (2016) also noted that the amount of the thinking is the most crucial factor in changing one's attitude. Thus, using the anti-smoking persuasive messages serve as the source of the motivation to think. This motivation to think is considered as a step forward towards the likelihood of elaboration. Applying MacDonald, Milfont, and Gavin, (2016) and (Zhou, 2012) suggestions as for the central line of research, this study taps the effects of the persuasive messages and determines the effects in the context of attitude to quit smoking.

Further, it is also unknown that whether argument framing in the advertisements or disclosure of these messages placed in movies is more effective (Gupta & Lord, 1998; Van Reijmersdal, 2016). Advancing an attitude change study on this line of research may provide empirical evidence to support the application of the elaboration likelihood model (ELM) as suggested by the Xu et al. (2015). Most importantly, a gap of research that whether the anti-smoking direct advertising or anti-smoking message placement disclosure improves the individuals' attitude to quit smoking. Similarly, little is known about the

effectiveness of the anti-smoking messages placement disclosures in movies (Manyiwa & Brennan, 2012a). There is no direct past study measuring the ability of the argument framed in this form of a persuasive message in the context of the anti-smoking campaign.

Thus, this study has selected two different media contents to compare the differences in effects of the framed arguments. One study has selected persuasive framed message in form of the anti-smoking public service advertising. Second direct anti-smoking public service advertisements which are new media content. In this way, the current study will offer insights into (1) smokers' evaluation of anti-smoking advertisements, (2) smokers' evaluation of anti-smoking messages placement disclosure in movies, (3) effects of anti-smoking advertisements on smokers' attitude to quit smoking, (4) effects of anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking, and (5) the comparison of the effects of anti-smoking advertisements and anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking by answering five questions. These questions are critical for considerate the influence of disclosure of anti-smoking messages and anti-smoking advertising in developing the attitude to quit smoking.

Review of Literature

Theoretical Foundation

Quite a few studies have studied anti-smoking messages placement disclosures in movies and television programs (e,g., Allott, Turner, Chinnery, Killackey, & Nuechterlein, 2013; Campbell, Mohr, & Verlegh, 2013)**.** Only a few studies demonstrating that audiences are comparatively positive about messages placement disclosures in movies. However, these studies have different theoretical perspective (e.g., Matthes & Naderer, 2016; Van Reijmersdal, Tutaj, & Boerman, 2013) mostly conducted in a marketing perspective. Therefore, health communication context in general not been adopted in the past investigated. Some studies such as Brennan, Rosenberger, and Hementera, (2004) use this ethical context of the product placement and noted that ethically stimulating products (e.g., cigarettes) have affective responses. Hence, the focus of the past studies on the viewer's evaluations of product disclosure.

Likewise, drawing research on the ELM only some studies deliberated the audience responses about health-related advertisements do have positive attitude effect (Chiang & Jackson, 2013; Cortese & Lustria, 2012). As Petty, Barden, and Wheeler (2009) also suggested using the Elaboration Likelihood Model (ELM). Therefore, it is also interesting to use Elaboration Likelihood Model (ELM) as the framework for a study to interpret and predict the impacts of the possible variables. This study uses the direct anti-smoking advertising and anti-smoking messages

placement disclosures in movies to understand that how health communication persuasive messages subsequent the favorable attitudes. Based on the (ELM) model propositions that positive attitude can be shaped as the consequence of different kinds of persuasive messages. This experimental study gives the answers to the following research questions;

R1: Is there any significant effect of the anti-smoking advertisements and anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking?

Governments and advocacy organizations have concerns in developing the positive attitude to quit the smoking. For that reason, many efforts have been made by these organizations to understand that what is the effective way to give health literacy. Therefore, this study applies the (ELM) argument framing assumption in the context of the persuasion messages produced in recent times in the Pakistan to produce the anti-smoking related attitude. To understand this effect of the argument framing the study proposes (ELM) based conceptual model presented in Figure 1. This may help in determining that which persuasive message (i.e. Advertising or message during the movies) is a more effective way to develop a more favorable attitude to quit smoking. However, for this designing an experimental study (2 X 2) full factorial design is crucial to first understand the following research question:

R2: Is there any significant difference in the effect of the anti-smoking advertisements and anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking?
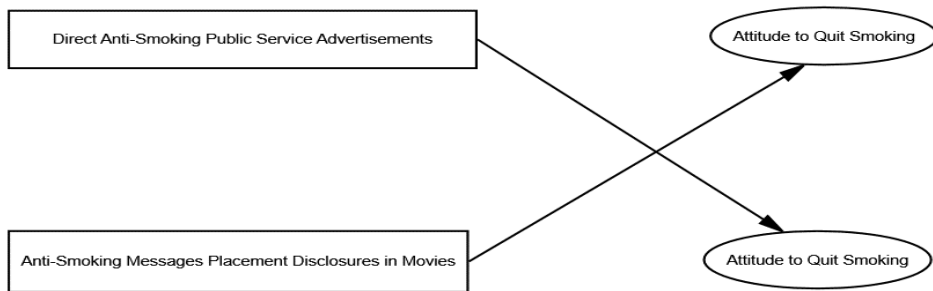

Figure 1. Conceptual proposed Elaboration Likelihood Model (ELM) Effect of Persuasive Message Argument Framing (DAA) Versus (APD) on Attitude to Quit Smoking.

Effect of the Direct Anti-Smoking Public Service Advertisements and Attitude to Quit Smoking

Several studies for analyzing anti-smoking attitudes have diverse findings (Huver, Engels, & De Vries, 2006; Pacheco, 2011). Anti-smoking advertisements have an inconsistent effect on the audience due to weak efforts; concluding this result the study was conducted analyzing the four major ads for anti-smoking. The attitudes and behaviors of the smokers as measured by the study of Rhodes, Roskos-Ewoldsen, Edison, and Bradford, (2008) reported that the smokers were not persuaded by the no-smoking messages. Non-smokers response and convincing approach are different from smokers. No substantial difference observed in reducing cigarette smoking habit. The resistance towards prompting anti-smoking attitude is evident from the smokers' norms as they gave a sideline to the messages and processing of ads (Otten, Engels, & Eijnden, 2008). Hindrance in altering the attitudes with the advertisements and unsuccessful efforts call for regard.

Studying anti-smoking attitude of the adults Albers, Siegel, Cheng, Biener, and Rigotti, (2007) considered the smoking regulations for their impact. The examination of the relationship of social smoking perceptions and the anti-smoking attitude the research got a response from 351 towns of Massachusetts. The study set for the restaurant's regulations for no smoking consists of the interviews of 1712 adults. The strong parameters at the restaurants made the smokers quitting the habit. Finding smoking socially unacceptable makes the adult smokers reinforcing the norms of the society and quit it (Albers, et. al., 2007).

An analysis of television 399 advertisements on anti-smoking by Cohen, Shumate, and Gold, (2007) established that the messages were humorous and informational. The content of the anti-smoking television advertisements studied to check whether they contained enough core health communication for preventing smoking (Manyiwa & Brennan, 2012b). The evaluation of advertisements infers that the messages emphasized more on the smoking ramifications than the worth of individual's health. Rather than using fear or emotional appeal, the advertisements were based on information and humor (Raza, Bakar, & Mohamad, 2018). Some advertisements also addressed the advantages of no-smoking (Cohen, Shumate & Gold, 2007).

Taiwan school students also find smoking as not acceptable for the society as Chang found it conducting the study on the schools of Taiwan. Anti-smoking campaigns and advertisements analysis revealed that messages about strongly held beliefs are less effective than those featuring weakly held beliefs. Students perceived smoking negatively and accepted that it has health consequences (Chang, 2006). Advertisements with anti-smoking messages can form perceptions about anti-smoking.

Anti-smoking parenting practices for smoking cognitions found significant (Shen, 2010). The communication about the health risks due to cigarette smoking was successful for the cognition effects resulting in less smoking rather than rewards, anti-smoking messages frequency, discussing the price of cigarettes and communication about friends smoking (Sutfin, Szykman, & Moore, 2008;

Wakefield, Flay, Nichter, & Giovino, 2003a). The study was conducted among the Dutch schools and students and parents of them for analyzing the parents and adolescents influence each other for preventing smoking (Huver et al., 2006). House rules and parenting can be studied for better to promote anti-smoking attitude.

A statewide anti-smoking media campaign of Massachusetts baseline in 1993 reduced succession in ongoing smoking habits of the young adolescents as found by a longitudinal study of 4 years. The examination of the campaign concluded that television campaign for anti-smoking only helped 12-13 years old in the reduction of smoking habit, but the campaign did no effect on 14-15 years old. Exposure to outdoor and radio anti-smoking had no effect (Siegel & Beiner, 2000). Television anti-smoking campaigns can be helpful for the anti-smoking effects and prevent the habit.

Children judge smoking messages and advertisements through media self-serving (Hrubá & Zaloudíková, 2012). A survey with two studies checking the smoking and anti-smoking ads' third-person effect on children checked the impact of cigarette advertisements and anti-smoking ads. Children of seventh grade had third-person perception towards cigarette ads in first. The second study on 4, 6 and 8th standard portrayed that children believed anti-smoking ads are more influential for them rather than their friends (Henriksen & Flora, 1999). Children do not perceive the smoking and anti-smoking ads uniformly and they have a superiority bias for them.

During late 1960's, frequent messages for anti-smoking on television by health organizations were taken into noticed by the millions for stop practicing this habit (Pacheco, 2011). Emotions evolved can be helpful for quitting smoking habits as the experimental research found evaluating messages. An emotional tape recording of the women mocked for getting news of lung cancer showed great response among the audience. It brought considerable changes in the attitude of the smokers. The controlled emotional messages disseminated as recorded by the said lung cancer patients arouse fear among the smokers and reported a change in their habit in two weeks. The experimental situation worked for the control group (Janis & Mann, 1965). The messages designed with an emotional appeal for the smokers can modify the smoking attitude and can be influential in preventing smoking. Based on the above literature it is hypothesized:

H₁: A favorable Attitude to quit smoking develops in response to direct anti-smoking public service advertisements.

Effect of the Anti-Smoking Messages Placement Disclosures in Movies on Attitude to Quit Smoking

For designing anti-smoking advertisements and campaigns emotional appeal has a worth as emotions evolved can be helpful for quitting smoking habits. Messages

and quotations by those getting lungs cancer due to smoking and communicating with their family and life bring considerable changes in the attitude of the smokers. The messages designed with an emotional appeal for the smokers can modify the smoking attitude and can be influential in preventing smoking (Janis & Mann, 1965). Anti-smoking advertising campaigns are found effective by many researchers around the world as attitude towards advertising may get effects from appealing advertisements (Raza, Bakar, & Mohamad, 2017).

The messages of anti-smoking advertisements are designed in a way telling that what smoking does to your health and why should you kick the habit. Television advertisements are more effective in this regard rather than using any of the other media like radio, outdoor or print advertising. Listening to the messages frequently by the health organization persuades smokers for thinking and quitting it (Biener, Ji, Gilpin, & Albers, 2004).

Viewers hold their efforts in preventing smoking after listening to the stories of the individuals and personalized effects (Albers et al., 2007). Smokers relate to the individuals and their emotions provoke. Anti-smoking advertisements that communicate about the risk of smoking are not very effective as people already know about the health risks and they do not bother but involving them into an emotional situation can be (Rhodes et al., 2008; Siegel & Beiner, 2000). If designed well; an anti-smoking advertising campaign can be the motive for change in the smokers' habit.

It is the also supportive for reminding people about their efforts for quit smoking and convincing them to stop cigarette smoking each time they get exposure to the anti-smoking ads (Hong, Soh, Khan, Abdullah, & Teh, 2013). Deterring people from smoking with the discussion over terrible effects of smoking is especially working for the young smokers and students. Adolescents and teenagers get affected by the facts more than the adults as they develop strongly held beliefs about smoking. Specifically, the smokers who just have started cigarette smoking can be convinced for petering out the smoking before it becomes habit or addiction. Media projection and anti-smoking messages can prompt that smoking are not cool (Wakefield, Flay, Nichter, & Giovino, 2003b). The health campaign needs serious deliberation that how to develop an anti-smoking attitude. For that reason, many new means of communication has been utilized recently such as placing the anti-smoking messages in an embedded package during the movies. However, it is unknown that how much effective way it is in promoting the anti-smoking attitude. Thus, this study draws hypothesis to address this research gap;

H₂: A favorable attitude to quit smoking develops in the response to the anti-smoking Messages Placement Disclosures in Movies.

H₃: A more favorable attitude to quit smoking develops in the response of the direct anti-smoking public service advertisements than anti-smoking messages placement disclosures in Movies.

Methods

Participants and Design

A total of 120 smokers from the Lahore city participated in this experimental research. These participants were informed about the purpose of this study. The average age was 26 (SD = 3.79) and ranged from 18 to 40. The design of the study was (2 x 2) experiment full factorial between the subject with post-test only (Two exposure conditions: anti-smoking Ads vs message disclosure in movies) to measure the attitude to quit smoking (Two levels). This design is appropriate to verify the notion of the (ELM) that which persuasive knowledge shows more significant and strong effects (Yilmaz, Eser Telci, Bodur, & Iscioglu, 2011). For that reason, following procedure and materials were used.

Materials and Procedure

The participants (smokers) were randomly assigned to two conditions (Two exposure conditions: anti-smoking Ads vs message disclosure in movies). Half of the participants (N=60) were exposed to a clip of the movie, which lasted 4 minutes and 30 seconds. During the movie clip, a fragment shows the fear appeal based cognitive anti-smoking message is being shown which lasted 45 seconds. The response of the participants was collected on the questions relating to disclosures of anti-smoking messages placement disclosures in movies (APD) (independent variable), followed by questions about the dependent variable individual's attitude to quit smoking (AQS).

In the second experimental condition, half (N=60), participants were exposed to the pre-selected anti-smoking advertising containing the persuasive knowledge. The response of the participants was collected on the questions relating to direct anti-smoking public service advertisements (DAA), followed by questions about the dependent variable individual's attitude to quit smoking (AQS). Finally, participants were requested for their demographics which are also controlled variables of this study.

Prior to the main experiment, these materials for both experimental conditions (Two exposure conditions: anti-smoking Ads vs message disclosure in movies) the same fragments were shown to (N=20) student sample in a pre-test to verify the communicative levels of the selected materials (ad and movie clip). The findings of the pre-test study verified that findings.

Measures

Independent Variable; Direct Anti-Smoking Public Service Advertisements (DAA): Direct anti-smoking public service advertisements (DAA) was measured by asking five-items based on Boerman, van Reijmersdal, and Neijens, (2012) to evaluate the persuasive knowledge provided in anti-smoking advertising. These questions were measured on a seven-point Likert scale ranging from "1 (strongly disagree) to 7 (strongly agree)". Direct anti-smoking public service advertisements (DAA) scale items revealed as a reliable measure (Cronbach's Alpha = .84, M = 4.73, SD = .87).

Independent Variable; Anti-Smoking Messages Placement Disclosures in Movies (APD): Anti-smoking messages placement disclosures in movies (APD) was measured by asking four-items based on Gupta, Balasubramanian, and Klassen, (2000) to evaluate that whether disclosure was: necessary, useful, relevant, and irritating. These questions were measured on a seven-point Likert scale ranging from "1 (strongly disagree) to 7 (strongly agree)". Anti-smoking messages placement disclosures in movies (APD) scale items revealed as a reliable measure (Cronbach's Alpha = .78, M = 4.34, SD = .94).

Dependent Variable; Individual's Attitude to Quit Smoking (AQS): Individual's attitude to quit smoking (AQS) was measured by asking four-items based on Ohanian, (1990). These questions were measured on a seven-point Likert scale ranging from "1 (strongly disagree) to 7 (strongly agree)". Individual's attitude to quit smoking (AQS) scale items revealed as a reliable measure (Cronbach's Alpha = .88, M = 4.19, SD = 1.07).

Control Variables: All demographic variables e.g. age, income, and ethnicity were treated as the control variable in this study.

Findings and Analysis

Descriptive and Normality Statistics

Bivariate correlational analysis showed that the direct anti-smoking public service advertisements (DAA), anti-smoking messages placement disclosures in movies (APD) and individual's attitude to quit smoking (AQS) constructs are associated with each other. Descriptive and data normality statistics (e.g. Mean, Standard deviation, skewness etc.) details obtained from the output of the SPSS 22.0 is presented in Table 1.

Table 1. Descriptive and Normality Statistics

Construct	Mean	SD	SK	Kur	DAA	APD	AQS
DAA	4.73	.87	.732	.621	1		
APD	4.34	.94	.852	.566	.16*	1	
AQS	4.19	1.07	.816	.672	52*	.34*	1

SD = Standard Deviation, SK = Skewness, Kur =Kurtosis, DAA= Direct anti-smoking public service advertisements, APD = Anti-smoking messages placement disclosures in movies, and AQS = Individual's attitude to quit smoking.

Testing Research Questions: Manipulations Check

To answer the first research question that is there any significant effect of the anti-smoking advertisements and anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking. T-tests offered in MANOVA independent sample test that scores were expressively different from the scales middle point ($t = 4.39$, df = 24, $p < .001$) for direct anti-smoking public service advertisements (DAA) and ($t = 4.78$, df = 35, $p < .001$) for anti-smoking messages placement disclosures in movies (APD).

To further explore the answer the second research question that is there any significant difference in the effect of the anti-smoking advertisements and anti-smoking messages placement disclosure in movies on smokers' attitude to quit smoking. MANOVA results showed that there was significant effect of direct anti-smoking public service advertisements (DAA) on attitude to quit smoking, F (14.24, df= 24), $p = .001$, with moderate effect size ($eta^2 = .23$) if interpreting results guidelines provided by Sawilowsky, (2009) for experimental research effect size. Similarly, MANOVA results showed that there was a significant effect of anti-smoking messages placement disclosures in movies (APD) on attitude to quit smoking, F (10.67, df= 35), $p = .001$, with moderate effect size ($eta^2 = .18$).

This can be concluded as that there is a significant difference in the effect of the direct anti-smoking public service advertisements (DAA) and anti-smoking messages placement disclosures in movies (APD) on attitude to quit smoking. However, these findings cannot provide evidence related to the directions of these effects whether these are positive or negative as required for the hypotheses of the study. Thus, we use partial least squares path modeling (PLS-PM) on ADANCO 2.0.1 (a new software for variance-based SEM) for hypothesis testing.

Structural Equation Modeling for the Model Fitness

Structural equation modeling (SEM) is statistical techniques that have developed as a most reliable technique in social sciences. Its capability to model latent

variables, to consider numerous procedures of measurement error, and to exam complete predictive models makes it a better approach than using simple regression (Hair, Hult, Ringle, & Sarstedt, 2014). We used the variance-based (VB-SEM) in this study as this method is suitable if the assumed model comprises composites (Henseler, Dijkstra, et al., 2014; Henseler, Hubona, & Ray, 2016). Amongst the VB- SEM methods, partial least squares path modeling (PLS-PM) is regarded as a preferred statistical tool (Henseler, 2017).

Henseler and Sarstedt (2013) suggested that the estimates of PLS path modeling parameters occur in four steps: firstly, determining the composite score of the construct; secondly, reduction of the items needed for the model fitness; thirdly, parameter such as validity and reliability estimation; and lastly, bootstrapping for hypothesis testing. These steps are followed and detailed in further sections.

Thus, to determine the model fitness by using the partial least squares path modeling (PLS-PM) based measurement model comprises of the (DAA), (APD) and (AQS) constructs we ran on the ADANCO 2.0.1 which revealed the acceptable SRMR $=.199$ with H95 $=.180$, $d_{ULS} = 2.63$ and $d_G = 1.87$ indicated that the goodness of measurement model comprises of the (DAA), (APD) and (AQS) constructs was achieved. One item from the (DAA) construct was deleted to attain the measurement model fitness.

Advance Reliability Tests and Parameter Estimations

The ADANCO 2.0.1 parameter estimations revealed that all the (DAA), (APD) and (AQS) constructs are ranging within the required reliability range. For this we use three measures of the reliability Dijkstra-Henseler's rho (ρA), Jöreskog's rho (ρc) and Cronbach's alpha(α) details are presented in table 2.

Table 2. Reliability Estimates

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha(α)
PSA	0.871	0.856	0.840
Disclosure	0.767	0.738	0.784
Attitude to quit Smoking	0.803	0.866	0.884

Further, the indicator estimations of the (DAA), (APD) and (AQS) constructs multicollinearity was measured and indicated satisfactory variance inflation factor (VIF) value. The ADANCO 2.0.1 indicator (item-wise) based variance inflation factor (VIF) is presented in Table 3.

Table 3. Indicator Multicollinearity: Variance Inflation Factors (VIF)

Indicator	DAA	AQS	APD
AQ1		1.2619	
AQ2		1.2776	
AQ3		1.0261	
DA1	1.6325		
DA2	1.9384		
DA3	1.3530		
DA4	1.3432		
APA			1.1490
AP2			1.5326
AP3			1.3051
AP4			1.5053

Convergent Validity, Fornell-Larcker Criterion-Based Discriminant Validity and Heterotrait-Monotrait Ratio of Correlations (HTMT)

The ADANCO 2.0.1 parameter estimations (e.g. AVE average Variance Extracted) revealed that all the constructs are ranging in the acceptable convergent validity range as presented in table 4 (also see item loadings in Table 5).

Table 4. Convergent Validity

Construct	Average variance extracted (AVE)
DAA	0.6521
AQS	0.5984
APD	0.5480

Table 5. Loadings

Indicator	DAA	AQS	APD
AQ1		0.7690	
AQ2		0.6759	
AQ3		0.7230	
DA1	0.8049		
DA2	0.8001		
DA3	0.8174		
DA4	0.6501		
APA			0.6450
AP2			0.9577
AP3			0.7108
AP4			0.6874

The (HTMT) measures factors' discriminant validity as noted by Henseler, Ringle, and Sarstedt, (2014). We use it with 95% of the bootstrapping quantile HTMT testified discriminant validity by ADANCO 2.0.1 revealed that the HTMT values below 0.9 (see Table 6).

Table 6. Discriminant Validity: Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	DAA	AQS	APD
DAA			
AQS	0.2232		
APD	0.4133	0.5704	

Whereas the Fornell-Larcker criterion-based discriminant validity analysis also revealed the satisfactory level of the discriminant validity as presented in table 7.

Table 7. Discriminant Validity: Fornell-Larcker Criterion

Construct	Construct	Construct	Construct
DAA	0.6521		
AQS	0.0242	0.5984	
APD	0.0876	0.1506	0.5480

Squared correlations; AVE in the diagonal.

Hypotheses Testing

Analysis based on the partial least squares path modeling (PLS-PM) on that we ran on the ADANCO 2.0.1 revealed that Hypothesis 1 is accepted. As Hypothesis the researchers posited that (DAA) would result in favorable attitude to quit smoking, and analysis revealed that (DAA) effect positively on (AQS) as (β = .546) also see Table 7 and figure 2. Likewise, Hypothesis 2 is also accepted. As Hypothesis 2 posited that a favorable (AQS) would be developed in the response of the anti-smoking messages placement disclosures in movies and analysis revealed that (APD) effect positively on (AQS) as (β = .283).

Table 8. Direct Effect and Standardized Regression Weights

Effect	Coefficient (Beta)	Standard Bootstrap Results		
		S. E	t-value	p-value
DAA -> AQS	0.546	0.518	3.75	0.01
APD -> AQS	0.283	0.293	2.01	0.04

Coefficient of determination (R^2)	Adjusted R^2
0.368	0.495

While Hypothesis 3 is also accepted. As Hypothesis 3 posited that a more favorable (AQS) would be developed in the response of the direct anti-smoking public service advertisements than anti-smoking messages placement disclosures in movies and analysis revealed that (DAA) effect more positively on (AQS) as explained in figure 2.
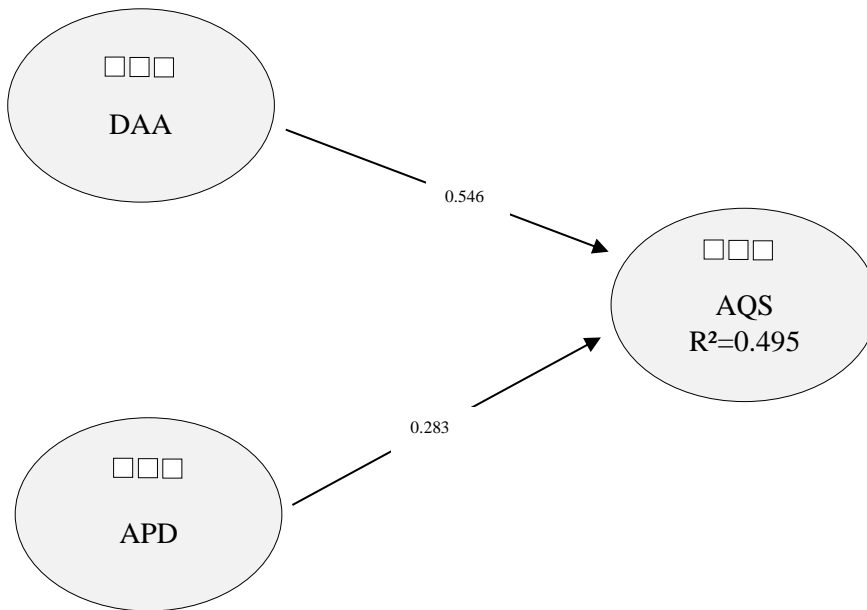

Figure 2. Effect (DAA) versus (APD) on Attitude to Quit Smoking (ADANCO 2.0.1 output).

Discussion

Theoretical Implications

As anticipated by MacDonald, Milfont, and Gavin, (2016), the consideration of the health-related instruments and concepts are crucial**.** Thus, there is need to conduct elaboration likelihood model (ELM) based studies examining the notion of health awareness with innovative instruments. Applying elaboration likelihood model

(ELM), we further develop a conceptual model by considering concepts such as advertising and anti-smoking messages placement disclosures in movies this study provides useful deliberation to validate the elaboration likelihood model (ELM) assumptions in numerous ways. For instance, this study measures the individual level of effect of health-related messages (argumentatively framed and fear appeal) in two media contents.

In this way, the peripheral route process and central route process are compared, and our results have validated those notions in the context of health-related campaigns. As noted by Lazard, and Atkinson, (2015) that in elaboration likelihood model (ELM) those messages that comprise nominal cognitive exertion and, in its place, rely on artificial cues as the principal base for attitude change. For validating this, we consider the anti-smoking messages placement disclosures in movies and give direct exposure while measuring its effect. In answering the relevant research question and hypothesis that fear appeal based anti-smoking messages placement disclosures effects the attitude change. Findings of this study clearly disclose that the anti-smoking messages placement disclosures in movies is a useful mean of health communication and shows a significant effect. These results are also consistent with the Manyiwa, and Brennan, (2012) that fear appeal in the anti-smoking messages have a significant effect on the attitude to quit smoking.

Consistent with the elaboration likelihood model (ELM) assumption that those messages that include deliberation based cognitive elaboration such as advertisement relies more on watchful scrutiny of issue-related information. Hence, individuals' own perceptive and cognitive replies are of central factors for the attitude change (Morris, et. al., 2005). The line of research by Petty, Barden, and Wheeler, (2009) also calls for extending the elaboration likelihood model (ELM) application in health communication. For extending this, we consider the direct anti-smoking public service advertisements (DAA) and proposed the hypothesis that direct anti-smoking advertisements affect the smokers' attitude change. Findings disclose that the direct anti-smoking public service advertisements (DAA) have a significant positive influence on attitude to quit smoking. These results are also consistent with the Sutfin, Szykman, and Moore (2008) that anti-smoking advertising can significantly affect the attitude to quit smoking.

Managerial implications and limitations

Past Studies on the anti-smoking advertisements have shown inconsistent results and effect on the audience remains a problematic issue. Due to weak efforts (Rhodes, Roskos-Ewoldsen, Edison & Bradford, 2008). However, these inconsistent results hinder to provide a clear guideline to design the anti-smoking health campaign. It is a known fact that television advertisements on anti-smoking

usually contain informational messages addressing about the core health issues due to smoking that is essential for making people conscious about their health and motivating them for reduce or stop smoking. But it is not enough as some recent studies also stressed to use disclosure of anti-smoking messages by utilizing other means of communications.

Moreover, smoking is considered as the unhealthy habit, therefore, the governments and NGP's need clear godliness to use effective and relevant anti-smoking messages to reduce the smoking trends in society. Therefore, this study presents a comparison between effects of the two communications tools one anti-smoking advertisement and other anti-smoking messages placement disclosures in movies. The findings recommend that with anti-smoking advertising can be working for making perceptions about smoking as the offensive norm. However, these results have some limitations as future studies may collect a larger sample to replicate or verify the results of this study. Survey-based exploration of anti-smoking messages in future studies may provide more generalized results.

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