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# **SOCIAL and MANAGEMENT RESEARCH JOURNAL**

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Governance Mechanisms and Firm Performance in Family-owned Companies in Malaysia  
**Azmi Abd. Hamid, Rozainun Abdul Aziz, Asyifa Laila Hosni**

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Musramaini Mustapha**

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- 1. Governance Mechanisms and Firm Performance in Family-owned Companies in Malaysia** 1  
*Azmi Abd. Hamid*  
*Rozainun Abdul Aziz*  
*Asyifa Laila Hosni*
- 2. Performance of Unit Trust Funds in Malaysia: A Comparison Between Conventional and Islamic Unit Trusts** 31  
*Rosma Mohd Dom*  
*Muhammad Fandi Ibrahim*  
*Che Lynnaruhiyah Che Sulaiman*  
*Ahmad Shafiq Ahmad Sholahuddin*
- 3. Public Speaking to Enhance Oral Mandarin Proficiency** 49  
*Goh Ying Soon*  
*Lee Chai Chuen*  
*Ngo Kea Leng*

4. **Agro-Preneurial Obstacles among Students in the Faculty of Plantation and Agrotechnology, UiTM Pahang** 61  
*Ilyani Azer*  
*Siti Aishah Mohamad*  
*Nur Suraya Abdullah*  
*Musramaini Mustapha*
5. **The Impact of Corporate Governance Elements on Environmental Reporting: The Case of Public Listed Companies in Malaysia** 75  
*Mohd Rashdan Sallehuddin*
6. **Testing the effectiveness of Health Risk Messages: Threat and Efficacy Processing** 101  
*Thinavan Periyayya*  
*Vincent Wee Eng Kim*
7. **Exploring Opportunities for Government Retirees to Transfer their KSAOs for the National Development: Evidence from Malaysia** 119  
*Khulida Kirana Yahya*  
*Johanim Johari*  
*Zurina Adnan*  
*Mohd Faizal Mohd Isa*  
*Zulkiflee Daud*

# TESTING THE EFFECTIVENESS OF HEALTH RISK MESSAGES: THREAT AND EFFICACY PROCESSING

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## **ABSTRACT**

*This is a micro study of an on-going macro study of the different categories of fear appeals used in the on-going national anti-smoking campaign. A quasi-experimental design was used to study the respondents' responses to the anti-smoking print advertisement campaign. Two types of advertisements were selected, one which depicted a social threat and the other a damaging health threat. Each type of advertisement was evaluated by two separate groups of participants. The evaluation was based on the extended parallel process model's (EPPM) risk diagnosis scale. The social threat advertisement had a low fear and efficacy message while the health threat advertisement had a high fear and efficacy message. Findings showed that the social threat (low fear/efficacy) was able to make the respondents of the study take a preventive behavioural or danger control position to avoid the negative consequences. In comparison the damaging health threat (high fear/ efficacy) was found to move the participants to a fear control position or maladaptive behavioural position. The study supported the main predictions of the EPPM, and showed that the efficacy construct determined how the fear appeal was processed (danger control or fear control).*

**Keywords:** *Extended Parallel Process Model, threat, fear appeal, cognitive processing*

## **INTRODUCTION**

This study is a fore-runner to a larger study on the usage of threat communication to dissuade individuals from risky behaviours such as smoking. According to a magazine report, tobacco is a legal product that can kill half its users (Health Today July 2009). An estimated one-in-three adults smoke, and, by 2025, this will add another half million people to the existing statistic of 1.1 billion smokers. The magazine report also emphasized that young people are taking up this habit in an alarming manner. An estimated 82,000 to 99,000 young people take up smoking every day worldwide and are at risk of contracting cancer, emphysema, chronic bronchitis, coronary artery diseases and other chronic ailments.

The Malaysian statistics on tobacco usage is equally alarming. The National Health and Morbidity Survey 2006 revealed that three million Malaysians were smokers and some 450,000 were aged between 13 and 18 years old. The survey also showed that 46.4% were adult males, 1.6% adult females, 26% adolescent boys and 3% adolescent girls. According to a recent news report, Malaysian smokers smoke an average of 14 cigarettes per day. It highlighted that there was a significant increase in young women smokers. It was forecasted that, by 2025, adolescent female smokers would constitute 4% of the total number of women in the country (The Sun, July 29, 2011). According to another study of 2,900 students aged between 13 and 16 in the state of Selangor, one in 10 girls smoked and one in five students had started smoking by the age of 15 with an average age of initiation at 11.4 years old (Cruetz, Elis, Damis & Ramachandran, 2009). The New Sunday Times quoted the Health Ministry deputy-director general Datuk Dr. Ramlee Rahmat, “the number of deaths and economic losses due to tobacco use exceeds that of the combined total of most infectious diseases including influenza, dengue, malaria, tuberculosis and HIV/AIDS. About 10,000 people die in Malaysia each year due to tobacco-attributed diseases”. The news report also mentioned that smoking related health cost in 2004 amounted to 3 billion (NST, May 31, 2009).

Most of the recent studies on the impact of anti-smoking fear campaigns did not use the fear diagnosis scale of the Extended Parallel Process Model (EPPM) to evaluate the impact on the targeted audience. This scale measures the cognitive and affective effects of fear messages on recipients and has been widely tested in HIV/AIDS campaigns, meningitis prevention campaigns, hearing loss prevention campaigns and other

campaigns where fear provocation was the main strategy of the campaign. This study, therefore, will test the EPPM on the on-going Malaysian anti-smoking fear campaign. College students will be the focus of this study, because there are very few studies done to gauge the seriousness of tobacco smoking among undergraduate students. This is true not only in Malaysia but also in other parts of the world (Jie, 2008). College and undergraduate students in Malaysia form a sizable group that were influenced by tobacco marketing. In the United States, college students comprise the single largest group of young Americans legally accessible to the marketing campaigns of the tobacco industry. A considerable number of college and undergraduate students either begin to smoke in their college years or become regular smokers during the same time (O' Malley, Bachman, & Schenlenberg, 2006). Lerman, Kaufmann, Neuner and Audrain-Mc Govern (2004) proposed that college years may have an influence in nurturing long term smoking habits. Compared to teenagers and adults, young adults aged 18 - 25 were rarely considered in smoking cessation and prevention campaigns (Rigotti, Regan, Moran & Weschler, 2003).

In trying to establish new personal identities these youths tend to adopt behaviours which mark or symbolise adulthood status and smoking is the most accessible adult symbol that is adopted. According to Eadie, Hastings, Stead Mackintosh and Ann (1999), cigarettes play a vital social function for young people seeking peer endorsement and acceptance. Against this changing psyche of youths, nation-wide anti-smoking campaigns have been the main approach in most countries to curbing this risky behaviour. Malaysia is not an exception in this global effort to reduce smoking among adolescents. On February 2004, the former Prime Minister Dato' Seri Abdullah Ahmad Badawi launched the nation-wide anti-smoking media campaign with a campaign motto "Tak Nak"! Setiap sedutan membawa padah (Say No! Every Puff you take damages your body).

### **The *Tak Nak* Campaign**

The *Tak Nak* campaign was devised and implemented by the Malaysian Design Innovation Centre (MDIC), a company appointed by the Ministry of Health. *Tak Nak* is a five- year project with a total cost of approximately RM20 million, and was financed by the Malaysian Government. According to the project concessionaire's (MDIC) campaign document, the aim of the campaign were designed to galvanize the entire nation against cigarette

smoking using an identified focus to communicate the enormity of the problem. The magnitude could be gauged from a far-reaching and integrated communication approach in targeting at children, youths, women as well as all smokers and the general public. Accurate effective information concerning the health risks of smoking, disseminated through the *Tak Nak* campaign hoped to achieve the following:

1. discourage teenagers from starting to smoke,
2. discourage women from smoking,
3. discourage smokers from continuing their habit, and
4. encourage everyone to persuade their friends and loved ones from initiating or increasing their smoking habit.

The concessionaires had emphasized branding and claimed that through the use of a very simple expression and a very simple icon, the campaign could:

1. reach out to connect, especially with the young,
2. appeal to all in an endearing way,
3. create an impact that will be immediately felt nationwide,
4. capture the imagination of the whole country, and
5. educate to discourage everyone from smoking.

The campaign brand and icon - *Tak Nak* - was made widely visible to Malaysians through numerous media. The concessionaires adopted a strategic deployment of media channels to achieve an effective reach and frequency of the target prospects. Electronic and outdoor media formed the main thrust of the campaign. Print and other media were used to maximise coverage. The mass media used were television, newspapers, magazines, radio, cinema, billboards, school advertising panels, giant posters and community boards. Collaterals such as badges, car-stickers and T-shirts were also used. The high profile launch was meant to generate news and publicity for the campaign.

This campaign began with two social risk series: the ‘Audition’ and ‘The Home Coming’. These first sets of television advertising carried images of ‘bad teeth’ and messages on how smoking affects the physical appeal of young men and women. These visuals and messages were frequently aired during the initial months of the campaign. This was followed by the horror



statement series adapted from the Australian National Tobacco Campaign. Advertisements carrying messages and visuals of ‘Blood Clots’, ‘Cancer’, ‘Rotting Lungs’ and ‘Tar’ appeared in newspapers and on billboards. The following slogans were incorporated in the advertisements:

1. Cigarette smoking can cause brain damage,
2. Cigarette smoking can cause cancer,
3. Cigarette smoking damages the lungs,
4. Cigarette smoking condenses in your lungs to form tar,
5. Cigarette smoking can lead to drug addiction,
6. Cigarette smoking can cause impotency,
7. Cigarette smoking can affect children’s IQ,
8. Cigarette smoking can wrinkle your skin,
9. Cigarette smoking can cause bad teeth, and
10. Cigarette smoking kills more than 4 million people a year, 8,000 a day, 6 a minute and 1 every 8 seconds.

The *Tak Nak* anti-smoking campaign is an effort to influence behaviour by instilling fear amongst smokers and non-smokers into changing a dysfunctional attitude or behaviour. This media campaign was evaluated approximately one year after the launch by the Clearing House and Research Network for Tobacco Control, National Poison Centre of Malaysia, and University Science Malaysia. Findings indicated high levels of exposure amongst adult and adolescent smokers and non-smokers, and the majority were able to recall, particularly, the horror themes and visuals. There were also expressions of intentions to quit smoking or not likely to start it in both the adult and adolescent smoking and non-smoking groups (NPC, 2005). The evaluation study involved 2,007 adult smokers (18 years old) 1,011 adolescents (13-17 years old) irrespective of smoking status and 1,560 non-smokers (18 years and above) from four zones across Peninsular Malaysia and Sabah and Sarawak. Samples were drawn using a multi-stage cluster sampling design to ensure broad representation of the population under study.

Data was collected between January and March 2005. A Face to face interview method was used and upon consent a self-administered questionnaire was given to be filled up. The questionnaire measured campaign awareness, the likelihood of quitting smoking, attitude, knowledge of and belief in the health effects of smoking and whether they had discussed

this issue with others. Findings indicated that campaign exposure was high among both the adult (93%) and adolescent (94%) groups. Television followed by billboards, newspapers and radio were selected as the main sources of information regarding this campaign. The horror series were readily recalled and these included 'Smoking can cause Cancer', 'Can damage Lungs' and 'Clots Brains'. Generic messages such as 'Smoking endangers health' and 'Say Tak Nak' were commonly quoted in association with the campaign. The campaign had stimulated discussions among family members and friends. The survey revealed that non-smokers and adolescents were more likely to discuss smoking and its health impact with family and friends. The Majority felt the campaign was relevant. Adult smokers who found the campaign relevant were more likely to quit smoking and similarly adolescents reported lower intentions to smoke and acknowledged that the campaign made smoking less socially desirable. Two out of three adolescents perceived the campaign had encouraged their peers to quit smoking, while one in three believed it made smoking 'less cool'. About 68% of the adolescents said it made them less likely to smoke in the future.

In the context of fear, two-thirds of adult smokers felt that the campaign made them fearful of smoking. There were no significant differences in the responses for gender and geographical location. In relation to fear, 29% of adult smokers felt more likely to quit, 27% felt less likely to quit and another 27% said it did not make any difference. Overall results showed a positive association between likelihood to quit and fearfulness of smoking ( $p < 0.001$ ).

In the adolescent groups, both males and females were fearful of smoking after being exposed to the campaign. Female youths were significantly more fearful of smoking ( $p < 0.001$ ). Adolescents who did not smoke expressed more fear than those who smoked. There was a significant difference in fear expressed by non-smoking and smoking adolescents ( $p < 0.001$ ). A significantly larger percentage (69.8%) of non smoking adolescents stated the campaign had made them less likely to smoke in the future, compared to smokers (55.8%).

In general, the research results indicated that the campaign was successful in using fear to motivate thoughts of quitting or not taking up smoking (non-smokers) as well as initiating elaboration or discussions with family members and friends. In addition, it also implied that fear impacts affect and cognition, which are vital in triggering deeper thoughts, views and possible behavioural responses.

## STUDY RATIONALE

The Ministry of Health was quoted, in an editorial column, as saying that it will not only continue the current threatening health risk message but also step up to provoke greater fear of the deadly consequences of tobacco smoking (The Sun Friday July 29, 2011). It is therefore, appropriate to study the efficacy of the fear component in the threatening health risk messages of the Tak Nak campaign. Fear responses can be analysed in many approaches. One of the more popular approaches used in the current literature on fear communication is the use of the Risk Behaviour Diagnosis Scale (RBD) (Witte, Meyer & Martell, 2001). This scale can be used for pre-testing or post-testing. Pre-testing is to develop an effective health risk message and post-testing is to evaluate the impact of the risk message. This study, which is part of a larger study, proposes to measure fear arousal, based on the RBD which is part of the EPPM (Witte, 1992). The focus of this study is on evaluating how the different types of health risk or threatening messages used in the Tak Nak campaign, which induces fear, are processed. Induced fear is expected to influence the affect construct of an individual, which is expected to trigger cognitive activity influencing beliefs, values, attitude and behaviour (Perloff, 2008).

## STATEMENT OF PROBLEM

The Tak Nak campaign evaluated by the Clearinghouse & Research Network for Tobacco Control was conducted in 2005 to determine campaign awareness and to determine the receptivity of smokers and non-smokers to the anti-smoking threat messages disseminated via the mass media, as well as to understand the psychosocial and behavioural effects on the targeted audience. Detailed study of the fear message components was not the focus of the NPC survey. It would be appropriate at this juncture to study the effectiveness of the two categories of **physical** and **social** fear appeals in the Tak Nak anti smoking campaigns using established fear theories and models. The Outcome of this study will be relevant in view of the fact that the Ministry of Health is planning to continue and increase the severity and susceptibility of future fear messages. The Tak Nak campaign study by NPC did not specifically target college students; so this study will focus on this group. College students are at a critical stage of adulthood and

independence from parental control, and may find smoking a symbol of new-found emancipation. Presently there are no studies using fear appeal theories or models which specifically focus on the impact of fear appeals on college students in Malaysia.

## **THEORETICAL FRAMEWORK: FEAR APPEAL THEORIES: EXTENDED PARALLEL PROCESSING MODEL**

According to Perloff (2008), fear appeals are persuasive communication that scare people into changing their attitudes by implying negative consequences if recommendations to avert the threat are not complied with. The EPPM (Witte, 1992) is the most recent fear appeal theory that attempts to explain when and why fear is effective or ineffective (Witte, 1992, Witte, Lapinski & Nzyuko, 1998; Witte & Allen, 2000).

The EPPM model, as the name suggests, amalgamates early fear theories which focused on how the threat (emotion) was perceived, in terms of severity and susceptibility, and cognitive processing of the recommended actions to avert the dangerous health problems. The EPPM model, which is essentially a message processing model, is based on the premises that fear messages are processed at both the emotional and cognitive levels. The emotional message processing constructs of the theory namely perceived susceptibility and perceived severity come from the early drive theories such as the Fear-As-Acquired Drive Model proposed by Janis (1953, 1967). This theory explained when and why fear appeals fail (fear control process). Leventhal's (1970) Parallel Process Model introduced a cognitive dimension to fear processing. This model explained that individuals not only focused on how to cope with fear arousals, but also how to overcome the threat (danger control process). The model was criticised for being inaccurate, and not able to explain when one process dominates the other (Beck & Frankel, 1981).

Rogers (1975) Protection Motivation Theory (PMT) focused on Leventhal's (1970) cognitive aspects of the Parallel Process Model. Cognitive or thought-based reactions to fear appeals focus on danger control (when and why fear appeals work). The PMT did not clearly state how the fear processing and cognitive processing worked simultaneously. The PMT did not convincingly address critical issues such as at what point one process superseded the other, and how this impacted the final behavioural response to the overall fear appeal. The EPPM integrated insights from drive theories

(when and why fear appeals fail) and the parallel response models (when and why fear appeals work) to explain clearly how individuals process fear appeals and why people are persuaded (Boermans, 2007).

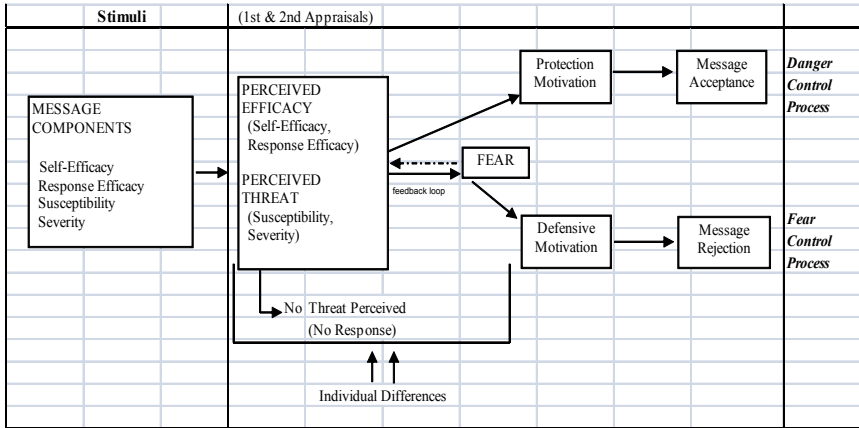


Figure 1: Extended Process Model Parallel (Witte, 1992)

The EPPM model in Fig 1, explains that an individual will appraise simultaneously the two components of a fear message that is the perceived threat and the perceived efficacy (preventive information) to avert the health danger (Witte, Meyer & Martell, 2001). Perloff (2008) described this as problem (perceived threat) and solution (perceived efficacy information). Threat appraisal comprises of two subjective perceptions known as *perceived susceptibility* and *perceived severity*. An example of perceived susceptibility is when college students after considering the Tak Nak fear appeal campaign may feel at risk of contracting the ill consequences. Perceived severity refers to one's feelings about the seriousness of the tobacco-related diseases. The other appraisal is on the message efficacy which consists of two appraisals termed *response efficacy* and *self-efficacy*. Response efficacy refers to beliefs about how effective the recommend response is in averting the ill consequences of smoking (If a college student says NO to cigarettes than he is shielded from suffering the ill consequences).

The self-efficacy appraisal introduced by Bandura (1977) is an introspective self-evaluation of one's ability to perform the recommended

behaviour to avoid the suggested ill consequences (e.g. I can say No to smoking; I can say No to friends who want me to smoke).

The EPPM model in figure 1 frames three behavioural outcomes from the threat and efficacy appraisals. The outcome is largely dependent on individual differences which moderate the two cognitive appraisals. First, a No Threat outcome is achieved when message recipients do not find the message threatening or relevant. This is a zero threat or negligible threat against a high or low efficacy messages. The second outcome is when the individual accepts the ill consequences of the threat and is motivated to take affirmative action (protection motivation). The individual is also assumed to possess high levels of efficacy. This results in danger control or adaptive behaviours. Assuming the efficacy perceptions were low and threat perceptions high a maladaptive response will be exhibited. In this case, unable to cope with the fear provocation, the individual will control the fear (fear control) to reduce the tension (defensive motivation) through denials, reactance or avoidance (Boerman, 2007; Witte 1992; Witte et.al., 2001).

The EPPM has been extensively tested on a myriad of social and health issues using experimental, quantitative and qualitative research (Gore & Bracken, 2009). Among them include college students and genital warts (Witte, Berkowitz, Cameron & Mc Keon, 1998); Coal Mining and Hearing Loss (Johnson et.al 2004); Texas farmers and Tractor Safety (Witte *et al.*, 1993); Skin Cancer and Texas Young Adults (Stephenson & Witte, 1998) and Teen Mothers and Pregnancy (Witte, 1997).

## RESEARCH HYPOTHESES

- Hypothesis 1: After Exposure to a social (low threat/efficacy) health risk message about cigarette smoking, participants will not be motivated towards danger control processes
- Hypothesis 2: After Exposure to a health (high threat/efficacy) risk message about cigarette smoking, participants will be motivated towards danger control processes.

## METHODOLOGY

This study being a small part of a larger study aimed at testing the major tenets of the EPPM model namely the danger control and fear control outcomes of two print advertisements selected from the Tak Nak campaign. The Tak Nak anti-smoking print campaign can be grouped under two categories of fear appeals namely social fear (low fear and efficacy information) and health fear (high fear with efficacy information). The categorisation was based on the visual and text content of all the print advertisements used in the first launch of the campaign. In a pre-test research exercise, twenty five college students were asked to select one advertisement that evoked low fear and one advertisement high fear. Based on their ratings the 'stained teeth' advertisement was voted as low fear and the 'brain with oozing blood' advertisement as high fear.

### Quasi - experimental Design

A quasi-experimental post-test only design was used to test the two pre-selected print advertisements. A post-test only design was used for the study. A total of 189 students who volunteered for the study were randomly assigned to three groups. Group A viewed and read the advertisement that exert low level of fear (stained teeth) while Group B viewed the high fear advertisement (brains with oozing blood). Group C was a control group, and participants in this group were given very mild fear evoking thematic advertisement which had the Tak Nak symbol (crushed cigarette) with information about the dangers of smoking. All groups were briefed on the study and were instructed to view and read the given printed advertisements. After completing their task they were told to fill-in the questionnaire. The questionnaire contained two parts, Section A contained three questions on the respondent's profile pertaining to gender, education and smoking status. Section B contained questions from Witte *et. al.*'s (1996) RBD.

### Instrument

The RBD scale developed by Witte *et. al.* (1996) was used in this study with minor modifications to tally with the advertisements that were being tested. RBD is a 12 item, 5 point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Each of the four constructs or factors of the EPPM namely perceived severity, perceived susceptibility, perceived

response efficacy and perceived self-efficacy had three statements each for the respondents to answer. For example: perceived severity: ‘Brain damage is a serious threat’, ‘Brain Damage is harmful’, and ‘Brain damage is a severe threat’. The RBD enables the researcher to gauge the respondent’s danger control and fear control cognitive processes after exposure to a health-risk message. The RBD scale was modified to fit the advertisements shown to each group. For example the group that received the ‘stained teeth’ advertisement had statements like ‘Stained teeth are a serious threat’, ‘Stained teeth are a severe threat’, and the control group had statements like ‘Smoking is a serious threat’ etc.

**FINDINGS**

Research hypotheses 1 predicted that respondents in Group A, who were exposed to the low threat/efficacy advertisement (stained teeth) would exhibit low fear, and may not be motivated to control the fear since it is not life threatening. On the contrary, the mean scores for perceived susceptibility and severity were lower than response efficacy and self efficacy: **2.6 < 3.6**. This implied that the respondents were in danger control position. Table 1 provides both the total and means score comparisons between the four constructs for Group A. The Cronbach’s alpha for the constructs were at a reliable level: **Response efficacy: 0.835; Self - efficacy: 0.629; Susceptibility: 0.796; Severity: 0.729.**

**Table 1: Group A: Descriptive Statistics**

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
R	63	2.00	5.00	220.67	3.5026	.84640
S	63	2.67	5.00	240.00	3.8095	.57021
Sus	63	1.00	5.00	161.67	2.5661	.88117
Sev	63	1.00	4.67	166.33	2.6402	.88253
Valid N (listwise)	63					

R: response efficacy; S: self-efficacy; Sus: susceptibility and Sev: severity



Group A consisted of 60.3% male and 39.7% female respondents. A total of 57.2 % were social smokers, 41.3% non-smokers and 1 smoker (1.5%). There was no significant differences in the non-smokers and social smokers processing of the threat and efficacy constructs based on a t-test ( $p > 0.05$ ). There was also no differences in gender processing of the threat and efficacy constructs except for susceptibility where there was a significant difference between male and female respondents ( $t = 5.391$ ;  $p < 0.05$ ).

Research hypotheses 2 predicted that respondents in Group B, exposed to the high threat/efficacy anti- smoking health risk advertisement (brain damage) would exhibit high fear, and participants may be motivated to control the fear since it is life threatening. On the contrary, the perceived susceptibility and severity mean scores were higher than the response efficacy and self-efficacy ( $4.4 > 3.5$ ). This meant that the respondents were in a fear control position.

Table 2 provides both the total and means score comparisons between the four constructs for Group B. The Cronbach’s alpha for the constructs were at reliable level (response efficacy: 0 .778; Self -efficacy: 0 .754; Susceptibility: 0.776; Severity: 0 .669).

**Table 2: Group B: Descriptive Statistics**

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
R	63	1.00	5.00	206.33	3.2751	.95516
S	63	1.67	5.00	237.00	3.7619	1.02028
Sus	63	2.67	5.00	264.00	4.1905	.60379
Sev	63	3.00	5.00	286.00	4.5397	.48055
Valid N (listwise)	63					

R: response efficacy; S: self efficacy; Sus: susceptibility and Sev: severity

Group B consisted of 42.9% male and 57.1 % female respondents, and out of this 38.1 % were social smokers, 52% non-smokers, 3% smokers and 3% ex-smokers. There were no significant differences between non-smokers and social smokers processing of the threat and efficacy constructs based on a t-test ( $p > 0.05$ ). There were also no significant differences in gender processing of the threat and efficacy constructs based on a t-test ( $p > 0.05$ ).

Control Group C in comparison had lower mean scores for all the components because they were exposed to the mild thematic advertisement. The mean scores for perceived susceptibility and severity were lower

than response efficacy and self efficacy:  $1.6 < 1.9$ . This implied that the respondents experienced very low threat and based on the EPPM model in Figure 1, this group was in a no-response position. This group consisted of 51% males and 49% female, and out of this 70% were non-smokers, 28% social smokers and 2% ex-smokers.

## **DISCUSSION**

Several parallels can be drawn from the findings of this experimental study with reference to the constructs of the EPPM model. The main findings from several EPPM studies is that danger control status can be achieved with high levels of threat (severity and susceptibility) and a higher level of efficacy (Witte, 1992; Witte, Berkowitz, Mc Keon, 1998). A meta-analysis of 100 research papers on fear appeals by Witte and Allen (2000) concluded that strong fear appeals and high efficacy messages can result in adaptive behavioural or danger processing response. Besides this, the contrasting mean scores of the control group indicated that fear-based advertisements were more effective in evoking fear and specific behavioural responses such as fear control and danger control. The key finding in this research is that low threat was able to move respondents to danger control status. This finding is supported by Gore and Bracken (2005) study on EPPM and meningitis health risk which showed that low-threat was adequate to motivate individuals to achieve danger control status.

Based on the perceived efficacy scores it can be inferred that respondents who were either social smokers or non- smokers perceived the 'stained teeth' (low threat) more believable and likely to affect smokers. In comparison, respondents in the high fear/efficacy message perceived the highly threatening 'brain damage' to be unrealistic. One can easily take preventive action to avoid the 'ugly stains' on the teeth, and in comparison it is harder to overcome a brain-damage threat. The perceived threat scores of this group (high threat/efficacy) were high, and this resulted in a fear control response. It can be inferred that this group were probably overcome by the enormity of the risk (brain damage) and the lack of confidence in the recommended response (efficacy message) to avert the threat. The efficacy messages used in both the high and low threat advertisements were identical. Essentially it was a brief explanation on how smoke damages the brains or lungs, and to avoid this, individuals were recommended to say NO to

smoking, “because every puff you take damages your body”. This one size fits all efficacy message may not fit the varying levels of fear appeals presented in the advertisements. High or severe health risk campaign should be complimented with stronger efficacy messages in order to trigger danger control cognitive processing (Witte, 1992).

## RESEARCH IMPLICATIONS

The findings in this study implied that campaign planners should decide on the type of fear appeals and efficacy information appropriate to the selected targeted audience. This study showed that social threat which refers to social rejection from peers seems to be more effective with college students than the health risk threat. This finding is supported by an earlier research on an anti-drug abuse campaign which concluded that the social threat messages targeted at adolescents were more persuasive in terms of attitude towards the advertisement, drug use and behavioural intention to use drugs (Schoenbachler, 1992). Social threats are more realistic, easier to take preventive action and hence prescribed solutions (efficacy messages) are perceived positively by college students. Working adults with greater commitments in life and plenty at stake may perceive serious health risk as highly threatening and strong efficacy messages perceived as possible solution. In summary it can be said that fear campaigns should be framed on tested theories like the EPPM and planned based on a thorough study of the target audience in order to synchronize the fear and efficacy messages.

This is a small scale study which is part of an ongoing study as such the findings may not be conclusive however it does demonstrate that the EPPM model is an effective model to measure fear appeal to ascertain the overall effectiveness of a fear based health campaign.

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