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The Effect of Fear Appeal HIV/AIDS Social Marketing on Behaviour: Evaluating the Importance of Market Segmentation

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Abstract. *The increase in various social problems has caused practitioners to review fear appeals in order to influence behaviour. The Aids pandemic is a major concern and some advertising campaigns do not seem to be producing the expected results. This study used structural equation modelling to investigate whether the use of fear increases the likelihood of adopting appropriate behaviour pertaining to HIV/Aids prevention. Fear, attitude towards the advertisements, severity, susceptibility and efficacy were examined to ascertain the influence of fear appeals on a specific market segment. The findings of this paper indicate a relationship among susceptibility, fear, attitude and behavioural intent.*

Keywords: social marketing; HIV/AIDS; fear appeals; segmentation.

JEL Code: M31.
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1. Introduction

Social marketing programmes address various pandemics and anti-social behaviour, where citizens are not acting in-line with accepted social conduct and regulations, to bring about social change. The proliferation of several social problems has caused a revisit to the effectiveness of fear appeals. Given the increase in social-issue related communication in South Africa, and a population characterised by a wide variety of different cultural groups, advertising in South Africa is often targeted at a heterogeneous audience with a standardised message. The HIV/AIDS pandemic in South Africa is a major concern and the main advertising campaign loveLife, based on informational appeals, does not seem to be producing the expected results.

A number of previous fear appeal study models (Arthur, Quester, 2004, Witte, 1992, 1994) aimed to clarify the role of fear in establishing the effectiveness of advertising when using fear appeals, and also examined the moderating role of coping appraisal in determining consumers' response to fear appeals. Fear, attitude towards the advertisements, severity, susceptibility and efficacy were examined to ascertain the influence of fear appeals. This study used structural equation modelling to investigate whether the use of fear increases the likelihood of adopting appropriate behaviour pertaining to HIV/AIDS marketing communication within a specific target segment. A model to measure fear appeal effectiveness within a specific target segment are discussed, and findings provide encouraging evidence for the persuasive power of fear appeals. Fear appeals can be a strong motivator if accompanied by high efficacy messages, to improve knowledge and to influence attitudes about HIV/AIDS. Susceptibility to the disease among adolescents also influences behaviour.

2. Theoretical background

Fear appeal literature denote that fear can be described by mood adjectives, including feeling frightened, anxious, or nauseous, and also via ratings of concern or worry (LaTour, Tanner, 2003, LaTour, Rotfeld, 1997, Henthorne, LaTour, Nataraajan, 1993, Rogers, 1983). Fear thus motivates actions aimed at reducing these unpleasant emotions (LaTour, Zahra, 1989, Tanner, Hunt, Eppright, 1991), it also relates to risk-taking behaviour which is now often addressed by social marketing efforts (Tudor, 2003). A number of approaches are used for advertising campaigns and promotional efforts to influence or change behaviour. These appeals range from humor to self-idealisation to the use of fear (Belch, Belch, 2004).

The use of fear as an advertising appeal raises the question on the appropriate severity of the threat. As a result many marketing researchers, believing that it is too difficult to implement properly, have questioned the use of fear appeal advertising messages (Rotfeld, 2000). However, the increase in various social problems and behaviours has forced many practitioners to reconsider the use of fear appeals in social advertising, because it seems that other types of advertising appeals are not having the intended behavioural effect. Different models to improve the effectiveness of fear appeal have been proposed. Tay, Ozanne and Santiono (2000) recommend the utilization of fear appeals should be segment specific as fear appeals have been found to influence various population segments differently (Quinn et al., 1992, Burnett, Wilkes, 1980, Burnett, Oliver, 1979 cited in Tay et al, 2000). Segmentation may be based on a variety of variables including age, sex and their involvement in the behaviour under investigation (such as smoking, drunk-driving or unprotected sexual contact).

Individuals need to be encouraged, reinforced, and supported to change their high-risk behaviour into healthy behaviour in order to prevent the spread of HIV/Aids (Fishbein, 2000, Lee, Green, 1991). Three variables in particular, namely attitude, norms and self-efficacy, are the function of underlying determinants. These determinants include beliefs about the outcome of behaviour, social and normative prescriptions within that population, and specific barriers to these actions. External influences should be included when evaluating these beliefs: cultural background, perceived vulnerability to infection and personality traits may have a mediating influence on attitudes, norms and self-efficacy beliefs (Fishbein, 2000). Culturally sensitive interventions have been found to more effectively create behaviour changes in high-risk populations such as adolescents. This finding implies that interventions which are based on sound theoretical knowledge of behaviour change (e.g. social learning theory, the health belief model, and self-efficacy theory) and which also take into account cultural beliefs and attitudes are more likely to succeed (Levinson, Sadigursky, Erchak, 2004).

Based on Leventhal's danger control/fear control framework, the Extended Parallel Process Model (EPPM) is an expansion of previous fear appeal theoretical approaches (Janis, 1967, Leventhal, 1971, Rogers, 1975, Rogers, 1983, Witte, 1992). According to the EPPM threat motivates action, and perceived efficacy determines whether the action taken controls the danger (protective behaviour) or controls the fear (inhibits protective behaviour). Individuals typically weigh their risk of actually experiencing the threat against actions they can take that would minimize or prevent the threat (Witte, 1992, Witte, 1994, Witte, 1998). Efficacy is an environmental or message signal that

may lead to perceived efficacy, which relates to an individual's cognitions about efficacy. Messages that portray efficacy focus on the effectiveness of the suggested response (i.e., response efficacy), and on the target audience's ability to carry out the suggested response (i.e., self-efficacy) (Rogers, 1983). Similarly, perceived response efficacy refers to an individual's beliefs that a response effectively prevents the threat (i.e." I believe condoms prevent HIV contraction"), and perceived self-efficacy refers to an individual's belief in his or her ability to perform a recommended response (i.e. "I think that I can use condoms to prevent HIV contraction") (Rogers, 1983).

If results indicated high threat and low efficacy, theory indicates that the intervention was failing, because it was promoting fear control responses. Conversely, if the results of a survey indicated high threat and high efficacy, then the intervention was producing the desired actions (Witte, Allen, 2000). Individual differences however influence the assessment of threat and efficacy. Individuals evaluate the components of a message relative to their prior experiences, culture, and personality characteristics. Differing perceptions in different individuals influence consequent outcomes (Witte, 1992). Marketing communication has to take into account the cultural and economic fabric of society, with different types of people from different races (Lane, King, Russell, 2005). Research on race and marketing communication interventions suggest that race groups differ in responses to communication, advertising effectiveness and attitudes towards messages (Dines, Humez, 1995).

A study by Arthur and Quester (2004) aimed to clarify the role of fear in establishing the effectiveness of advertising when using fear appeals. They also examined the moderating role of coping appraisal in determining consumers' response to fear appeals and whether these processes apply equally to different segments or individual differences of consumers. Witte's (1992) Extended Parallel Process Model assessed perceptions of severity, susceptibility, response efficacy (the degree to which the recommended response effectively inhibits the threat from occurring), and self-efficacy (the degree to which the audience perceive their ability to perform the recommended response to prevent the threat) (Witte, 1992, Witte, 1994, Witte, 1998). Growing evidence suggests that well-designed, well-targeted, theory-based behaviour change interventions can be effective in reducing the spread of HIV/AIDS (Fishbein, 2000).

The Aids pandemic in South Africa is a major concern. According to Avert (2008) research shows that about 50 percent of HIV infections in South Africa are transmitted to people before the age of 20, with more than 5 million HIV positive people in a country with 48 million people. LoveLife is South Africa's major multi-million dollar HIV/AIDS prevention campaign (US$12 million/annum), launched in 1999. It follows an informational appeal approach

and is an educational campaign that emphasizes condom use and ‘‘positive sexuality’’ (Green, 2004, cited in Green and Witte, 2006). LoveLife does not seem to be producing the expected results, and became the world's first organisation to have its funding discontinued by the Global Fund to Fight Aids, Tuberculosis and Malaria, during December 2005. The cut reflects debate about the effectiveness of loveLife's HIV-prevention programme and the viability of behaviour-changing HIV/AIDS education (Peng, 2006).

3. Rationale of the study

The main objective of this research study was to measure the influence of fear-based advertising appeals pertaining to HIV/AIDS in terms of the impact on behavioural intent and whether the use of fear increases the likelihood of adopting appropriate behaviour within a specific target segment. Structural equation modelling was used to investigate fear, attitude towards the advertisements, severity, susceptibility, response efficacy, and self efficacy to ascertain the influence of fear appeals on behavioural intent.

4. Research methodology

A qualitative study was utilised to explore in-depth responses via four focus groups. Following the focus groups a quantitative experimental study was conducted.

4.1. Sampling

The sample for the qualitative (40 respondents in total) and quantitave (360 respondents in total) studies included adolescents between the ages of 18 and 24 years, from the three main racial groups within South Africa. Mid-year estimates (2008) of the South African population (48,8m) indicate that the Black African race make up the majority of the country’s population, 79%, followed by White 9.3%, Coloured 9.2 % and Indian or Asian 2.4% (Statistics South Africa, 2008). The HIV prevalence in the adolescent population, aged 15-24 years, is 7.6% amongst males and 27.8 % amongst females (Avert, 2008), thus a group representative of those affected strongly by HIV/AIDS.

Respondents drawn represented educated, middle to upper income groups. The focus on this specific population group can be explained based on their similarity to South Africa’s major HIV/AIDS advertising campaign loveLife’s target audience, as well as that this group is sexually active. They have income levels of R 6 880 to R 19 974 per month that enable them to

acquire media like television and magazines, they are also educated and literate with a matric (completed high school) or higher education, which enables them to understand advertising messages aimed at them (Saarf, 2007).

4.2. Methodology

Nine print advertisements and ten television commercials, tested for face validity by marketing research and advertising specialist, were used as experimental stimuli to be pre-tested in the focus groups. Each advertisement was rated according to the level of fear appeal perceived by means of a questionnaire based on a 5-point Likert scale (LaTour, Tanner, 2003, Witte, 1998). Three advertisements including low, medium and high fear appeals for print and television were selected based on the ratings from the qualitative research. A pre-test post-test, 3 X 2 between subjects, experimental design was used to collect data from 360 respondents. A convenient quota sampling method was employed. The presentation of various fear appeal advertisements was the experimental intervention while the likelihood of changing behaviour based on fear, attitude, susceptibility and efficacy was measured as the outcome. Respondents were given a self-completion questionnaire with questions based on a risk behaviour diagnosis Likert scale (Witte, 1998) prior to any intervention and the same behaviour scale post-intervention. Fear arousal was measured post-intervention by having respondents rate mood adjectives. Attitude towards the various fear appeal advertisements were also measured post-intervention by using summed scales (LaTour, Tanner, 2003, LaTour, Rotfeld, 1997). Efficacy measurements included response efficacy (effectiveness of suggested response, i.e. “Using condoms is effective in preventing HIV infection”) and self efficacy (ability to carry out the suggested response, i.e. “I am able to use condoms to prevent getting HIV infection”).

Based on the results from the experimental study as well as evidence from the literature, a proposed model to measure the impact of fear appeal on behavioural intent was constructed. The new proposed model in this study focuses on the equivalence of the Proposed Revised Protection Motivation Model (Arthur, Quester, 2004) and the Extended Parallel Process Model (Witte, 1992). It proposes that if a threatening stimulus (fear appeal) maximizes fear experienced by individuals, and the coping response will be effective in eliminating the fear, whilst individuals is capable of undertaking it, the stimulus will be effective in changing their attitude towards the stimulus and behavioural intent. The threat-appraisal variables, susceptibility and severity, will therefore indirectly influence behavioural change through the mediating variable fear, whilst the coping appraisal variables, response efficacy and self-efficacy will have a moderating influence in determining individuals’ response to fear appeals.

5. Data analysis and major findings

Structural Equation Modeling (SEM), a technique that measures a set of dependent relationships simultaneously, was used for the proposed model to measure the behavioural effect of fear appeals in this study (Malhotra, Birks, 2007, Hair, Black, Babin, Anderson, Tatham, 2006). Structural equation modeling (SEM) and a path diagram were used to depict the relationships among the constructs of the proposed model. Multiple regression analysis was used to analyse the relationships between the dependent (behavioural intent) and the various independent variables (Hair et al., 2006, p. 176). Structural Equation Modeling was done in LISREL to estimate the dependence relationships in the model. The combined model used data of all experimental groups to determine goodness-of-fit indices.

An estimated covariance matrix was calculated to assess the degree of fit to the observed covariance matrix. Goodness-of-fit was indicated as the degree to which the actual correlations (or the covariance matrix used as input) were predicted by the model. In this instance the model produced an estimated covariance matrix that was within sampling variation of the observed covariance matrix and therefore illustrates a good model that fitted well (Malhotra, Birks, 2007, Hair et al., 2006). Table 1 illustrates the goodness-of-fit indices for the model.

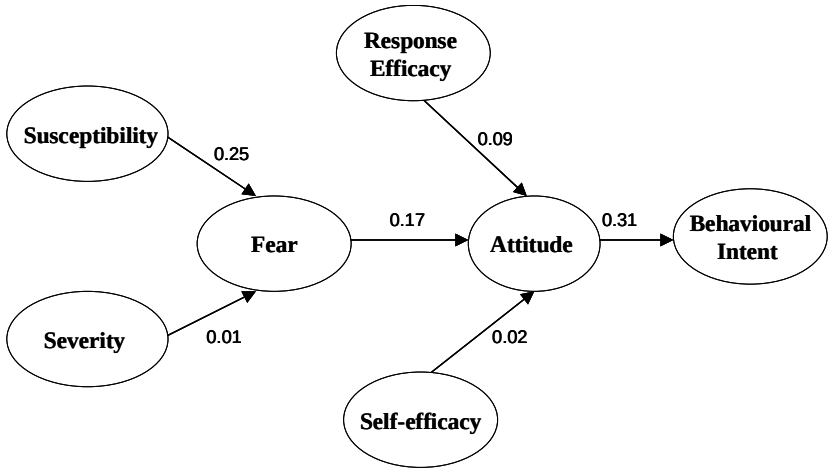
The *p*-values for the Normal Theory Weighted Least Squares Chi-Square and the test of close fit of the RMSEA resulted in no statistically significant ($p < 0.01$) differences indicating that the fit is good. The Root Mean Square Error of Approximation (RMSEA) was 0.057 which indicated good fit compared to the acceptable 0.05 to 0.08 range (Hair et al., 2006). The Normed Fit Index (NFI) and the Comparative Fit Index (CFI) is above the 0.9 level and indicate a good goodness-of-fit. The Goodness of Fit Index (GFI) and the Adjusted Goodness of Fit Index (AGFI) also resulted in values greater than the acceptable 0.9 level (Hair et al., 2006).

Table 1

Goodness-of-fit indices for model

Goodness-of-fit indices	Values
Normal Theory Weighted Least Squares Chi-Square	19.31 (P = 0.023)
Root Mean Square Error of Approximation (RMSEA)	0.057
P-Value for Test of Close Fit (RMSEA < 0.05)	0.33
Normed Fit Index (NFI)	0.93
Comparative Fit Index (CFI)	0.96
Goodness of Fit Index (GFI)	0.98
Adjusted Goodness of Fit Index (AGFI)	0.95

Figure 1 illustrates the results obtained from SEM analysis. Based on the SEM analysis interpretations were made of each relationship in the model. The probability that estimates were significant (i.e. not equal to zero) were used to make estimates of the values of constructs in the model (Malhotra, Birks, 2007, Hair et al., 2006).



Chi-Square=19.31; Df=9, P-Value=0.2265; RMSEA=0.057

Figure 1. *Structural equation model of fear appeal and behavioural intent*

The estimated coefficients of the first two relationships, namely susceptibility (0.25) and severity (0.01), illustrated that susceptibility had the greatest impact on fear, and severity was insignificant. This was in-line with the findings of Arthur and Quester's (2004) study, which also reported a causal relationship between susceptibility and fear, but not between severity and fear. They conclude that fear is an emotional response to a stimulus and many of the antecedents may be more affective than cognitive. This finding partially supports Witte's (1992, 1998) explanation that an individual evaluates the perceived threat of the danger, and if the appraisal of threat results in moderate to high perceived threat, then fear is caused. However, the findings of this study only indicate that the susceptibility construct of threat influences the relationship with fear and not the severity construct.

Both response efficacy and self efficacy indicated insignificant relationships with attitude. The study by Arthur and Quester (2004) illustrates similar results stating that response efficacy and self efficacy do not necessarily act as moderating variables in the fear-behavioural-intent relationship. They also confirm fear as the primary driver for change in behavioural intent.

Witte (1998), on the contrary, states that an individual that experiences a threat is motivated to begin a second appraisal, which is an assessment of the efficacy of the suggested response. Thus, when perceived threat and perceived efficacy are high it stimulates adaptive actions such as attitude, intention, or behaviour changes that control the danger, however no support for this was found in this study.

Other positive causal relationships included fear to attitude (0.17) and attitude to behavioural intent (0.31). This is in-line with theory indicating that the higher a fear appeal the more effectively it influences attitude and finally behaviour (LaTour, Tanner, 2003, Snipes, LaTour, Bliss, 1999, Donovan, Jalleh, Henley, 1999, LaTour, Rotfeld, 1997, LaTour, Snipes, Bliss, 1996, Henthorne, LaTour, Nataraajan, 1993). Arthur, Quester (2004) confirm this finding stating that susceptibility influences behavioural intent indirectly through the mediating variable fear.

6. Conclusions

Fear appeals can be a strong motivator if accompanied by high efficacy messages, to improve knowledge and to influence attitudes about HIV/AIDS. Susceptibility to the disease among adolescents also influences behaviour.

The results of the SEM model confirmed a causal relationship between susceptibility and fear, showing that susceptibility had the greatest impact on fear. On the contrary, severity was insignificant and had no effect as an antecedent to fear. This implies that respondents feel susceptible to the threat of contracting HIV/AIDS and this influences their fear experienced, but although the disease is severe this aspect does not influence their fear experienced or ultimately their behaviour. Adolescents thus evaluate the perceived threat of the danger of HIV/AIDS, and if this appraisal of their susceptibility results in moderate to high perceived threat, then fear is caused.

Response efficacy and self efficacy indicated insignificant relationships with attitude and it can be concluded that these constructs do not stimulate adaptive action such as attitude or behaviour change and do not necessarily act as moderating variables in the fear-behavioural-intent relationship.

Fear is the primary driver for change in attitude and behavioural intent, as per the classical fear appeal theory where outcomes relate to acceptance of a message's recommendations. When individuals are confronted with a threatening stimuli and experience fear, they try to eliminate the unpleasant feeling by intending to perform a certain coping response to reduce the threat. From this it seems that the higher a fear appeal the more effectively it

influences attitude and finally behaviour, whilst susceptibility influences behavioural intent indirectly through the mediating variable fear.

From this study it is evident that fear appeals in HIV/AIDS communication are effective to change behaviour, and that HIV/AIDS marketing communication programmes are of central importance in slowing down the spread of the disease among a specific target segment, namely South African adolescents. In the development of future HIV/AIDS advertising campaigns targeted at adolescents, social marketing communication practitioners must consider to communicate the target audiences' susceptibility to the disease. This will ensure that adolescents experience a relevant fear that will drive them to change the way they think about HIV/AIDS and ultimately influence them to modify their sexual behaviour to safe sexual behaviour.

Limitations of this study include that SEM generally requires a larger sample relative to other multivariate approaches, since larger samples generally produce more stable solutions (Hair et al., 2007). Furthermore, processing and responses to advertising appeals do not always occur immediately after exposure to an advertisement intervention, referred to as the "delayed effect." This study was conducted in an experimental laboratory setting and therefore did measure this effect over time. Areas for future research include replication studies based on the proposed model to measure fear appeal effectiveness on other samples in different settings.

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