THE RELATIONSHIP BETWEEN PROTECTION MOTIVATION THEORY
VARIABLES AND INTENTION NOT TO SMOKE: A STUDY OF
UNDERGRADUATE STUDENTS OF ASSUMPTION UNIVERSITY OF THAILAND

By

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A Thesis submitted in partial fulfillment
of the requirement for the degree of

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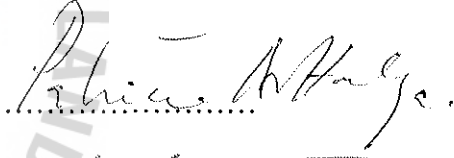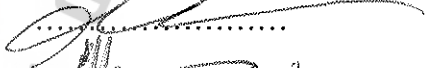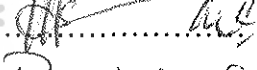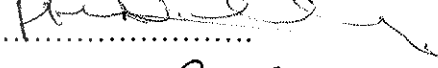
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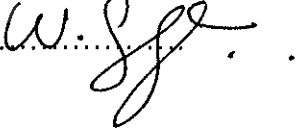
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ABSTRACT

Youth tobacco consumption has been called the single most important public health issue of our era. Non-profit organizations and government agencies are turning increasingly to social marketing to devise antismoking messages that prevent children and youth from initiating smoking. The most fundamental question that must be addressed is whether these antismoking messages dissuade adolescents from smoking.

The purpose of this research was to examine whether antismoking messages affecting Assumption University undergraduates' cognitions and demographic factors (age, gender, nationality and personal income) are related to their intention not to smoke. In this study, the researcher employed Roger's (1983) Protection Motivation Theory, a highly comprehensive theory of health communication, to formulate hypotheses regarding the likely impact of antismoking messages on the cognitions that such messages attempt to influence, namely, health and social risk severity and self-efficacy at refusing cigarette offers and resisting tobacco marketing.

Self-administrated questionnaires were distributed to 381 Assumption University undergraduates studying in both Bang Na and Hua Mak campuses. The researcher used descriptive statistics to measure the frequency and percentages for analyzing personal data of respondents. Pearson correlation coefficient was used for hypothesis testing for protection motivation theory factors, T-test and ANOVA was used to test demographic factors on intention not to smoke.

The results indicated that there is a strong positive relationship between the levels of self-efficacy at resisting tobacco marketing, severity of health risks, severity of social disapproval risks and self efficacy at refusing cigarette offers and intention not to smoke. Results of demographic factors showed that age, gender, nationality and personal income, all have relationships with intention not to smoke with regard to antismoking messages. The findings from this study will prove beneficial to health organizations and the Thai Government that are proactively refining or creating antismoking campaigns. For example, conclusions drawn from this study would help human resource professionals and practitioners in public and private sectors to plan or design more effective programs to reduce smoking among adolescents.

ACKNOWLEDGEMENT

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CHAPTER 1

GENERALITIES OF THE STUDY

1.1. Introduction

All over the world, there is considerable concern about the high prevalence of smoking among adolescents. The reasons youths smoke are undoubtedly complex. According to the World Health Organization, of the world's 1.1 billion smokers, about 43% are in the Asia-Pacific region. In most of Asian countries, more than half of adult men are addicted to tobacco (http://www.tobacco.org/news/189206.html, retrieved on February 16, 2006). In the past, Asian women shunned cigarettes. But now, all over Asia, even in countries where the smoking rate is dropping for everyone else, young urban females are taking up the habit in a trend that is proving a major worry for tobacco-control advocates. Surveys conducted by Child Watch Project/Thailand Research Fund (2006), shows that 17% of Thai teens indulge in smoking activity.

Given the high rate of smoking initiation among children and youth and the adverse health effects of smoking, discouraging young people from beginning to use tobacco is essential. There is considerable agreement that programs should be undertaken to prevent minors from smoking cigarettes (Center for Disease and Prevention [CDC], 1999).

The Protection Motivation Theory (PMT) is an expectancy-value theory of behavioral change that explicitly incorporates the roles of health-related messages. According to Pechmann, Zhao, Goldberg, and Reibling (2003), PMT posits that people's motivations or intentions to protect them from harm are enhanced by four critical cognitions or perceptions: regarding the severity of risks, vulnerability to the risks, self-efficacy at performing the advocated risk-reducing behavior, and response efficacy of the advocated behavior. These cognitive processes are divided into two sub-processes; threat appraisal (severity and vulnerability) and coping appraisal (self-efficacy and response efficacy). For instance, when both perceived threat severity and perceived self-efficacy are high, individuals will be motivated to control the danger and to adopt the recommended response. Consequently, the

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cognitions or thoughts occurring in the danger control processes elicit protection motivation, which stimulates adaptive actions such as intentions, or behavior changes that control the danger (Witte, 1995).

The prevention and cessation of cigarette smoking is one of the central issues affecting public policy makers today (Department of Health and Human Services, 1995). Non-profit organizations and government agencies are turning increasingly to social marketing to devise advertising that prevents children and youth from initiating smoking (Andreasen 1993; Pechmann and Ratneshwar 1994). Advertising research indicates that a message is more effective if the target audience experiences a feeling of involvement in it. It must also communicate new, important information, that engages the audience at a cognitive and affective level and is readily verifiable against the audience's own experience (Peto, 1994).

1.1.1. Antismoking campaign in Thailand

Thailand is a country that in many areas pays scant attention to public health (http://www.tobacco.org/news/189206.html, retrieved on February 16, 2006). Thailand has a law against direct and indirect advertisements of cigarettes through any media, but there are some indirect advertisements still found, for example brand logos on articles, clothes and cigarette lighters.

The World Health Organization and Thailand have rallied for tobacco free film and tobacco free fashion (WHO, 2003). There are committees that have collaborated with various artists, singers and actors to promote awareness against smoking and also give consultations and advice on how to quit.

Smoking on buses and in indoor public places has long been banned, joined two years ago by a ban in all air-conditioned buildings, including offices, restaurants and sport complexes. Not only tobacco taxes raised frequently, but a portion of the money goes to finance influential tobacco-control groups. The ban on promotion is so strict that cigarette trucks are not allowed to carry logos on their side, and stores that sell cigarettes cannot display them. Thailand's move to outlaw television smoking scenes is one of the main

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actions its Government has taken since the late 1980's to fight a raging epidemic. From cigarette tax increases to bans on all promotional activities for tobacco product- coming month, graphic photos that will cover half the front and back of every cigarette pack-the Government is battling a scourge that health officials say takes 42,000 lives a year in Thailand (http://www.tobacco.org/news/189206.html , retrieved on February 16, 2006).

The latest figures from the Thailand Tobacco Monopoly (TTM) show that packet cigarettes currently account for just 47.5 percent of total tobacco consumption in the country and the rest is in the form of loose-leaf tobacco, other non-tailor-made cigarettes and cigars. Thailand's 13 year old ban on tobacco advertising has served as a model for the historic Framework Convention on Tobacco Control (FCTC), which became International law this year. By strengthening the ban, health officials are closing loopholes that had been identified and exploited tobacco corporations such as Philip Morris/Altira through "point-of-sale" advertising at stores like 7-Eleven and other retail stores. The newly revised tobacco advertising ban is applicable to all 500,000 retailers in Thailand (http://www.tobacco.org/articles/country/thailand/, retrieved on March 14, 2006).

1.2. Statement of the Problem

The sponsors of antismoking advertising use diverse message themes, and though there is widespread agreement that choice of theme matters, there is considerable disagreement as to what choice to make. Evidence of the efficacy of different antismoking message themes is limited and conflicting.

There are a number of health communication theories that are useful for studies in the field of health psychology that seek to explain individual preventive behavior. The most frequently cited theories are the Protection Motivation Theory, the Health Belief Model, the Theory of Reasoned Action, and the Extended Parallel Model. These theories commonly assume that people behave as 'a rational operator', wherein knowledge and attitudes affect health behavior in a straightforward fashion. This current theory-based study is an application of the Protection Motivation Theory, introduced by Rogers in 1975 and later revised by Rogers and Moddux in 1983, strongly emphasizes on behavioral changes.

The purpose of this study was to examine whether using any of the common antismoking messages makes sense from the adolescent perspective. That is, will any of these messages dissuade youths from smoking. In this study, the researcher used protection motivation theory to formulate hypotheses regarding the likely impact of antismoking messages on the cognitions that they attempt to influence, namely health and social risk severity and self-efficacy at refusing cigarette offers and resisting tobacco marketing and demographic factors. The researcher assessed the likelihood that if a message theme affects cognition, it would also affect intentions.

1.3. Objectives of the study

The main objective of this research was to study whether antismoking messages affecting cognitions are related to intention not to smoke.

The research questions of this study were as follows:

1. Is there any relationship between self-efficacy at resisting tobacco marketing and intention not to smoke?

2. Is there any relationship between severity of health risks and intention not to smoke?

3. Is there any relationship between severity of social disapproval risks and intention not to smoke?

4. Is there any relationship between self-efficacy at refusing cigarette offers and intention not to smoke?

5. Is there any difference between demographic factors (age, gender, nationality and income) and intention not to smoke?

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1.4. Scope of the Research

The study aimed to determine the relationship between antismoking messages and adolescents' intention not to smoke, based on Protection Motivation Theory. The target population for this study was the undergraduate students of Assumption University (AU), Thailand's first international university.

To collect the data, a questionnaire was designed as a survey instrument. The population consisted of 15,919 respondents.

1.5. Limitations of the research

In conducting this study, the researcher identified the limitations of this study as follows:

1. The study focuses only on the undergraduate students of Assumption University (AU), Thailand. The samples used included only 381 out of the population of 15,919 students. Therefore this finding may not be generalized to other Thai students studying in other public/private universities in Thailand.

2. Four components of the Protection Motivation Theory: self-efficacy at resisting tobacco marketing, severity of health risks, severity of social disapproval risks and self-efficacy at refusing cigarette offers were explored and measured in finding the relationship between antismoking messages and adolescents' intention not to smoke, based on Protection Motivation Theory.

3. The data for this study was collected at this point of time (June, 2006). Students' perceptions might change over time; hence the findings cannot be generalized for future points in time.

1.6. Significance of the study

Smoking is the single largest preventable cause of disease and premature death. It is a prime factor in heart disease, stroke, and chronic lung disease. The need for tobacco control in Thailand is evident in the statistics. Among Thailand's 62 million inhabitants, fewer than 5 percent of females, but 39 percent of males do (National Statistics Office, 1996). It has been estimated that in 1999, 42,000 Thais died of tobacco-attributable disease. The findings from this study will prove beneficial to health organizations and Government that are proactively refining or creating antismoking campaigns. For example, conclusions drawn from this study would help human resource professionals and practitioners in public and private sectors to plan or design more effective programs to reduce smoking among adolescents.

1.7. Definition of terms

Adolescence: Adolescence is the span of life between childhood and adulthood. It is generally described as a transitional phase of development that begins at the onset of puberty and continues into early adulthood and it is regarded as the psychological, social, and maturational process initiated by the pubertal changes (Wong, 2001).

Consumer risk behavior: Irwin (1990) has defined adolescent risk-taking behaviors as those behaviors, undertaken volitionally, whose outcomes remain uncertain with the possibility of an identifiable negative health outcome.

Demographics: Refers to the size, distribution, and growth rate of groups of people with different characteristics. Demographic factors often include people's age, gender, occupation etc. (Bearden, Ingram and LaForge, 2004, p.26)

Intention: Intention is a summary of the cognitive and affective mechanisms through which attitude, subjective norms, and perceived behavioral control direct future behavior (Orbell, Hodgkins, and Sheeran, 1997, p.946).

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Perception: It is the process by which an individual selects, organizes, and interprets the information he or she received from the environment (Sheth, Mittal and Newman, 1999).

Perceived Risk: Perceived risk (Bauer, 1960) is being defined as a two-dimensional (that is uncertainty and negative consequences) construct: "consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant."

Protection Motivation Theory: When an individual faces a threat, the four cognitive appraisal processes mediate the choice of a coping behavior. These four processes appraise the information available about the perceived severity of threat, the perceived probability that the threat will occur, the perceived ability of a coping behavior to remove the threat (coping response efficacy), and the individual's perceived ability to carry out the coping behavior (self-efficacy). The outcome of these appraisal processes is an intermediate state called "protection motivation" (Rogers, 1983).

Security: It implies freedom from risk or danger and a person's need for safety (www.dictionary.com, 2006).

Self-efficacy: Self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997).

Self-esteem: A proper respect for oneself as a human being and regard for one's own standing or position (Kahle, 1983).

In this section, the researcher reviews some general concepts that are related to the study. The literature review has been developed to describe different theories and models leading to the development of the conceptual framework upon which the researcher study is being conducted. In the first section, the researcher describes the theories related to independent variable protection motivation theory, self-efficacy, consumer risk behavior, perceived risk, fear appeals and antismoking campaign. In the second section, the researcher presents the concept and theories related to dependent variable intention not to smoke, adolescent behavior towards smoking, advertisement and promotion of cigarette factors. In the last section, the researcher reviews the previous empirical studies.

2.1. Protection Motivation Theory

In this study, the researcher uses Protection Motivation Theory to formulate hypotheses regarding the likely impact of antismoking messages on the cognitions that they attempt to influence, namely, health and social risk severity and self-efficacy at refusing cigarette offers and resisting tobacco marketing. Rogers (1983) posits that people's motivations or intentions to protect themselves from harm are enhanced by four critical cognitions or perceptions, regarding the severity of the risks, vulnerability to the risks, self-efficacy at performing the advocated risk-reducing behavior, and the response efficacy of the advocated behavior.

When an individual faces a threat, the four cognitive appraisal processes mediate the choice of a coping behavior. These four processes appraise the information available about the perceived severity of the threat, the perceived probability that the threat will occur, the perceived ability of a coping behavior to remove the threat (coping response efficacy), and the individual's perceived ability to carry out the coping behavior (self-efficacy). The outcome of these appraisal processes is an intermediate state called "protection motivation" (Rogers, 1983). In addition, the theory posits that people's intentions to protect themselves are weakened by the perceived costs of the advocated risk-reducing behavior, and the

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perceived benefits of the opposing risk-enhancing behavior. These cognitive processes are divided into two sub processes: threat appraisal and coping appraisal.

According to the theory, people can be motivated to engage in desirable health behaviors not only to avoid health risks but also to avoid social or interpersonal risks (Rogers,1983). Of late, researchers have increasingly focused on messages that stress social risks (Dijkstra, De Vries and Roijackers 1998; Schoenbachler and Whittler 1996). Furthermore, protection motivation theory has recently been extended formally to include social risks (Ho,1998). Some researchers have argued that cognitive mediators are insufficient for explaining people's intentions to avoid risks and that fear should be included as an added affective mediator (Tanner, Hunt and Eppright 1991; Witte 1992). Rogers (1983 p.165) disagrees however, and cites his results showing that "fear arousal does not facilitate attitude change unless this arousal directly affects ... cognitive appraisal."

The Protection Motivation Theory (PMT) model is a convergence of a number of theories that have been influenced by expectancy-value theory, decision-making theory, and decision-making and field theory, purposive behaviorism, social learning theory, parallel response model, and drive-reduction model (Rogers, 1983). Rogers exclusively compared and contrasted Leventhal's parallel response model and Jains' drive-reduction model, and applied the knowledge gap between the two models to develop the PMT model. That effort in bridging the knowledge gap between the former models in developing the PMT was revolutionary; and from that point forward, the resulting PMT model has been extensively used in professional fields such as psychology and health, advertising, marketing and health communication.

The original Protection Motivation Theory introduced by Rogers (1975) was used to understand how fear of negative outcomes could influence the discrepancies of coping strategies among individuals. The original framework of the protection motivation theory is comprised of three factors: the first one is called 'components of a fear appeal', which includes magnitude of noxiousness, probability of occurrence, and efficacy of recommended response. Then, there are cognitive mediating processes that contain three components which include the appraised severity of threat, the expectancy of exposure (probability of

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occurrence or vulnerability), and the belief in the efficacy of coping responses. According to Aaro (1998), the original version of the Protection Motivation Theory constituted an attempt to specify the algebraic relationship between some of the components of the Health Belief Model. The Protection Motivation Theory postulated that motivation to protect oneself from health threats is the multiplicative function of three factors: perceived severity, perceived susceptibility, and perceived efficacy of coping. However, Roger and Mewborn (Aaro, 1998) set up a study to test the model and they found that the assumption of a multiplicative relationship between the predictors did not receive much support. The first version of the model is presented in Figure 2.3.

Figure 2.1.: Protection Motivation Theory-First Version

| Perceived severity | X | Perceived susceptibility | X | Perceived efficacy of coping | = | Protection motivation |
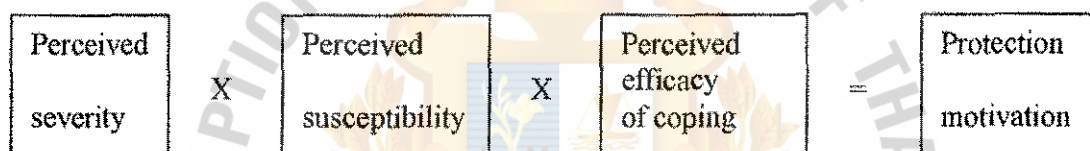
Source: Rogers, R.W., and Mewborn, C.R. (Aaro, 1998), "Fear appeals and attitudes change effects of noxiousness, probability of occurrence, and the efficacy of coping process".

The PMT was later revised by Rogers and Moddux in 1983 (as cited in Aaro, 1998). The assumption of multiplicative relationship was removed, and Bandura's concept of "self-efficacy" was added to the cognitive processes. The addition of self-efficacy was justified from the realization that belief in efficacy as a coping response per se would not be sufficient for individuals to adopt the response. Protection motivation is the function of two factors; threat appraisal of maladaptive behavior and coping appraisal of the adaptive behavior. Threat appraisal is influenced by rewards (intrinsic and extrinsic) and by fear arousal (severity of the disease and vulnerability) associated with the maladaptive behavior. The coping appraisal is the function of behavioral efficacy and the self efficacy and response costs. The revised version of the Protection Motivation Theory is presented in Figure 2.2.

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Figure 2.2. Cognitive Mediating Process of Protection Motivation Theory
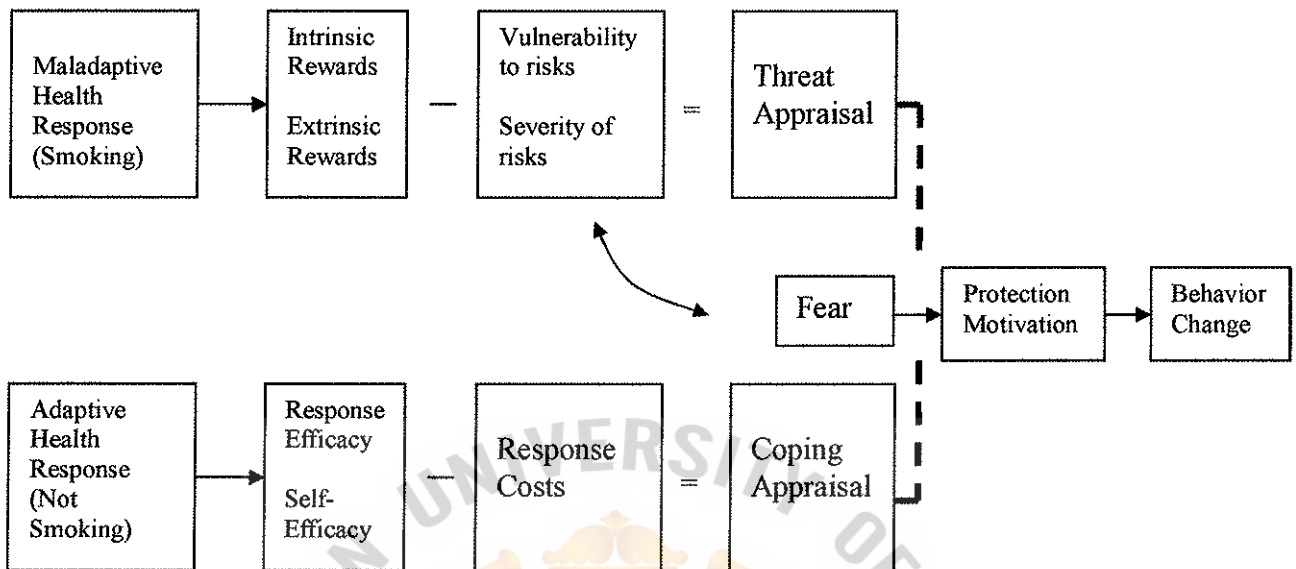
Source: Prentice-Dunn, S., Rogers, R.W. (1986), "Protection Motivation Theory and Preventive Health: Beyond the Health Belief Model".

2.2. Self-efficacy

Self-Efficacy, a central component of Bandura's social cognitive theory, has been advanced as an important personal determiner of human behavior. Self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997). Self-efficacy influenced personal behavior, and people adopt certain behavior because of two reasons e.g. efficacy beliefs and outcome expectancies. Efficacy beliefs is a judgment of one's ability to organize and execute given performances, whereas outcome expectation is a judgment of likely consequences such performances will produce (Bandura, 1997).

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Figure 2.3.: Relationship between efficacy beliefs and outcome expectancies

Person   →   Behavior   →   Outcome

Efficacy beliefs   Outcome Expectancies
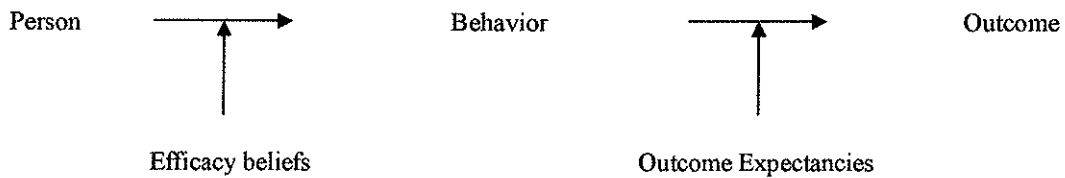
Source : Bandura, A. (1997), " Self-efficacy: The Exercise of Control".

According to Bandura's self-efficacy theory as stated above, the researcher is interested in studying the concept of self-efficacy as an internal factor that affects the personal behavior. Moreover, Bandura (1977) states that success in preventing smoking behaviors would be expected to increase self-efficacy expectations supporting the preteen's ability to resist or refuse to engage in smoking behaviors. That means adolescents with high self-efficacy could deny or avoid smoking even when persuaded by friends, whereas the adolescents with low self-efficacy could not refuse.

In previous studies, it has been found that the concept of self-efficacy has been repeatedly used in studies regarding health promotion and termination of risk behaviors. One study used self-efficacy in health promotion e.g. self-efficacy towards physical activity in youth. The study found that self-efficacy was related to the physical activity. Persons' belief in their ability increases their physical activity (Ryan and Dzewaltowski, 2002). Meta-analyses indicate that all of the protection motivation theory cognitions significantly affect youths' and adults' intentions and behaviors (Floyd, Prentice-Dunn, and Rogers 2000). Conrad, Flay, and Hill (1992) reported that self-efficacy in refusal was a strong predictor of not starting to smoke. In conclusion, self-efficacy is important in addictive behaviors including smoking refusal.

2.3. Consumer Risk Behavior

Irwin (1990) has defined adolescent risk-taking behaviors as those behaviors, undertaken volitionally, whose outcomes remain uncertain with the possibility of an identifiable negative health outcome. With risk defined as the chance of loss, risky behaviors have been characterized as those behaviors that entail the possibility of subjective loss (Furby and Beyth-Maron, 1990). Risk-taking behaviors are the most serious threats to adolescent health and well-being. In addition, once these behaviors are established during adolescence and young adulthood they often remain as major contributors to the health problems of adults (U.S. Preventive Services Task Force, 1989). Negative potential consequences of these behaviors include unwanted pregnancy, sexually transmitted diseases, severe disability, and death.

Normal adolescent development encompasses increasing independence, autonomy from the family, greater peer affiliation and importance, sexual awareness, identity formation and physiological and cognitive maturation. Risk taking behaviors serve different functions and have different meanings at various developmental stages during adolescence.

2.3.1. Biopsychosocial model of risk taking behavior

Jessor's (1977) problem behavior theory is based on the premise that problem behaviors are part of normal adolescent development and play a major role in the process of transition to adulthood. According to Jessor (1982), behaviors such as smoking, drinking, illicit substance use, risky driving, or early sexual activity should be considered "purposeful, meaningful, goal oriented and functional rather than arbitrary or perverse." As such, problem behaviors in adolescence can be instrumental in gaining peer acceptance and respect; in establishing autonomy from parents, in repudiating the norms and values of conventional authority; in coping with anxiety, frustration, and the anticipation of failure; in confirming for self and significant others certain attributes of identity; or in affirming maturity and marking a transition out of childhood and toward a more adult status (Jessor, 1991).

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Risk-taking behaviors may fulfill adolescents' evolving needs for autonomy, mastery, and intimacy (Irwin and Millstein, 1986). These changing attributes influence the trajectory of risk-taking behavior. Prevalence of sexual activity increases with increasing age; substance use and injury-related behavior peak in late adolescence and young adulthood. Behaviors such as sexual activity, tobacco and alcohol use, which are considered risky, deviant and problematic at age 12, are normative by age 18.

Risk-taking behaviors among adolescents do not occur in isolation; rather they tend to cluster in somewhat predictable ways. In addition, over time, involvement in one type of risk behavior has also been found to increase the likelihood of becoming involved in other risk behaviors (Osgood, Johnston, O'Malley, and Bachman, 1988). Hormones have been postulated to play a role in the pubertal development. Urdy, Billy, Morris, Groff, and Raj (1985), for example, found that male coital debut was related to the rise in testosterone levels during adolescence. Female initiation of coitus, on the other hand was more closely related to social controls and pubertal development. Asynchronous pubertal maturation (that is, earlier or later than peers), in turn, is hypothesized to be a factor in risk-taking behavior (Irwin and Millstein, 1986). The societal expectation of a physically mature-appearing adolescent is that he or she will engage in "adult" behaviors, perhaps including drinking, smoking and intercourse (Brooks-Gunn, 1988).

Figure 2.4.: Model based on biopsychosocial causal model of risk-taking behavior

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                      ┌─────────────────────────┐
                      │  Biological Maturation  │
                      └─────────────────────────┘
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Cognitive Scope	Self Perceptions	Social/Environmental Perceptions	Personal Values
Egocentrism	Self-Esteem	Parental/Peer Experience	Independence
Future Time-Perspective	Body Image	Parental/Peer Control	Achievements
	Identity	Parental/Peer Support	

Risk Perceptions	Peer Group Characteristics
Costs/Benefits	Peer Age
Optimistic Bias	Peer Values
Controllability	Peer Behavior

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              ┌─────────────────────────┐
              │   Risk Taking Behavior  │
              └─────────────────────────┘
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Source: Irwin, C.E., Jr., and Millstein, S.G. (1986), "Biopsychosocial correlates of risk-taking behaviors during adolescence".

Elkind's (1967) work on adolescent egocentrism posits that the adolescent has an exaggerated sense of uniqueness, creating a "personal fable" in which he/she is special and not susceptible to harm. The concept of invulnerability has been used to explain adolescent risk-taking behavior although there is little evidence to support this. By age 14 or 15, adolescents have the ability to generate and evaluate a range of alternative options (Keating, 1990). Adolescent smokers and nonsmokers have similar perceptions of their risk for long-term morbidities such as cancer. Self-esteem, depression, and locus of control have often been cited as theoretical predictors of risk-taking behavior. Depressive mood and stress are related to initiation and intensity of adolescent tobacco use (Covey and Tam, 1990).

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2.4. Advertisements and Promotion of cigarette factors

The advertising and promotion of cigarette by using various strategies depicting that cigarette smoking is fun and is an expression of one's social self. In the study Preventing Youth Use of Tobacco Products: The Role of Nursing, it was shown that advertisements that showed smoking in women made them good looking was the cause that triggered female adolescents to adopt smoking in order to reduce weight (LaSala and Ser-Janel, 2000).

In 1990, cigarette companies spent almost 4 billion dollars on advertising and promotional activities (Federal Trade Commission, 1992). Smokeless tobacco advertising and promotional expenditures have increased steadily from 80 million dollars in 1985 to over 104 million dollars in 1991 (Federal Trade commission, 1992). The tobacco industry claims that the purpose of advertising and promotional activities is to encourage brand-switching and to increase market shares of adult consumers. The evidence shows that some young people are recruited to smoking by brand advertising. This assertion is supported by data showing that adolescents consistently smoke the most heavily advertised brands of cigarettes (Baker, Homel,Flaherty, and Trebilco, 1987).

Adolescents perceive cigarette advertising as promoting benefits of smoking; these perceptions are not solely related to young people's exposure to adult smokers (Pierce et al.1993). Advertising promotes an ideal self-image by portraying attributes or benefits of smoking that young people would like to possess. For those adolescents with a lower self-image, smoking is a way to close the gap between their actual and ideal self-image; the ideal self-image may closely resemble the images of smokers in advertisements (McCarthy and Gritz, 1984). Adolescents with the greatest distance between their actual self-image and their ideal self-image are most likely to have intentions to smoke (Burton, Moinudin and Grenier, 1992). Advertising also seems to affect the accuracy of young people's perceptions of smoking prevalence among their peers and among adults; young people with the greatest overestimations appear to be those most exposed to cigarette advertising and those most likely to begin to smoke (Botvin, Goldberg, Botvin and Dusenbury, 1993).

Many young people in the United States may consider smoking a normative experience and a desirable adult behavior because of the pervasiveness of cigarette advertising (Burton et al.,1992). Over the past century, every time a tobacco company advertising campaign was acclaimed as innovative and successful, adolescent smoking increased (Pierce et al. 1994, 1996). It is estimated that approximately one billion packs of cigarettes worth more than $1 billion are consumed annually in the United States by minors less than 18 years of age (DiFranza and Tye 1990).

Cigarette advertising has recently been singled out as a major influence in generating both primary demand (product) and secondary demand (brand) for cigarettes, especially among adolescents (Hastings and Aitken 1995; Pollay et al.1997). The 1994 surgeon general's report states that most adolescent smokers become addicted to nicotine and that there are negative effects of cigarette advertising on adolescents (Elders et al.1994). Pollay (1997) reports that the vast preponderance of evidence indicates that cigarette advertising plays a meaningful role in influencing the perceptions, attitudes, and smoking behavior of youth. Adolescents aged eleven through fourteen years, who were more aware of cigarette advertising when first interviewed, indicated more positive intentions to smoke when interviewed a year later (Aitken et al.1991). These findings were in comparison with adolescents whose intentions to smoke were negative at both interviews. The researchers conclude that their findings support the view that cigarette advertising has predisposing, as well as reinforcing effects, on children's attitudes and behavior with respect to smoking.

It has been argued that adolescents have a heightened vulnerability to the kinds of appeals used in cigarette advertisements (Botvin et al. 1991). They found that students who displayed a higher cigarette and recognition were more likely to smoke cigarettes and that older junior high/middle school students identified cigarette ads more correctly than did younger junior high/middle school students. A study of the relationship between cigarette ads and adolescent experimentation with smoking found that adolescents who had experimented with cigarettes were better able to recognize advertised cigarette products than those who had not experimented; those who were able to recognize advertised cigarette brands were more likely to have experimented with cigarettes (Klitzner, Gruenewald, and Bamberger 1991). Equally important in analyzing the effects of cigarette advertising on the smoking behavior is

the impact that cigarette symbols, such as Joe Camel and the Marlboro Man, exert on adolescents. Henke (1995) found that recognition of cigarette symbols increases with age, as does overall recognition of brand advertising symbols in general.

Tobacco advertising and promotional activities appear to have an effect of influencing factors that increase the risk of smoking initiation among young people. These psychosocial risk factors-having a low self image, attributing positive meanings or benefits to smoking, and perceiving smoking as prevalent and normative-strongly predict adolescent smoking initiations and smoking onset.

2.5. Perceived Risk and Smoking

Perceived risk was introduced to the marketing literature in the 1960's by Raymond Bauer and his associates at Harvard Business School (e.g., Bauer 1960; Cox 1967). Bauer (1960, p.24) defines perceived risk as a two-dimensional (that is uncertainty and negative consequences) construct:

"Consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant."

Perceived risk, which is also referred to as susceptibility or vulnerability, to a condition or disease is well known to be essential in motivating behavior. In addition, it is one of the major concepts in many health behavior models, such as the health belief model (Becker and Leving, 1987), theory of reasoned action (Ajzen and Fishbein, 1980), and Protection Motivation Theory (Rogers, 1975). Weinstein (1982) found that beliefs about risk likelihood and risk severity and worry about the risk are independent contributors to interest in risk reduction. According to Weinstein (1982), worry is not simply a reflection of rational factors related to the expected magnitude of harm. An individual's perception of risk should be concordant with his or her actual risk. If people do not perceive or underestimate a risk, they are not likely to adopt recommend behaviors. When a perception of risk is present, the reaction is generally avoidance of the situation. One manifestation of an avoidance reaction

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following the perception of a health risk is the elimination of the activity. Behavioral change appears to follow the recognition of a health risk (Elsinger, 1972; Jefffery, 1989). The realization that one's own risk is above average is a powerful motivator for change (Barie, 1969). In contrary, unrealistic optimism will reduce the motivation to take precautions, since it acts indirectly by influencing the amount people worry about a potential problem (Weinstein, 1982).

During the past 25 years, several psychologists and public health researchers have examined various types of risk perceptions and their relation to smoking initiation and prevention. Specifically, these researchers have explored the influence of addiction, financial, health, time and social risk perceptions on cigarette consumption among adolescents and young adults. In one of the earliest and most comprehensive studies of smoking-related risk perceptions, Mettlin (1973) examined the effects of perceived health (that is "health threat"), time ("cigarette smoking as inconvenient"), and social risks (that is "making one less popular among his or her peers") on the smoking behavior of undergraduate students. Using a regression model, he found that none of these single-item risk measures was a significant predictor of young adults' smoking intensity.

In perhaps the most systematic and comprehensive assessment of the relationship between risk perceptions and cigarette smoking, Brandon and Baker (1991) develop and test a multidimensional assessment of smoking-related risk perceptions as part of their smoking consequences questionnaire (SCQ). The SCQ contains multi-item measures of the perceived addiction, health (severe and minor), and social risks of smoking. In their initial study, Brandon and Baker (1991) assess these risks using an uncertainty x consequences framework by asking a sample of undergraduate college students to rate each risk item in terms of its uncertainty (that is "likelihood") and consequence (that is "desirability"). They then multiplied subjects' uncertainty and consequence ratings for each risk item (that is addiction, health, and social) and forced the items into a composite factor they term "Negative Consequences" (Brandon and Baker 1991, p.491). They find that, though this composite measure was unrelated to smoking behavior, subjects' uncertainty ratings were related significantly to smoking behavior, in that daily smokers considered the negative consequences of smoking to be less certain than nonsmokers did.

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Most of the research studies on perceived susceptibility use comparative risk adjustments to examine how people compare their risk for a particular condition or disease to that of their peers (Becker and Levine, 1987; Harris and Guten, 1979; Weinstein, 1982). This method, however, does not assess the accuracy of an individual's risk perception. In these studies, perceived risk was assessed by evaluating the subject's self-reported risk. The accuracy of individuals' perception of risk was studied by Weinstein (1982,1987) and Avis et al (1989). In these studies perceived risk was assessed by the question: "Compared with person of your age and sex, how would you rate your risk of having the particular problem (E.g. Heart attack, Stroke, Cancer) within the next five or ten years?"

2.6. Fear Appeals in Antismoking Advertisements

Keller et al. (1996) found that fear appeals can be effective in changing attitudes and that there is an optimum level of fear arousal. They suggest that the impact and the persuasiveness of the message can be measured by the extent to which the individual is motivated to elaborate on solutions to the problem. This is akin to Yankelovich's (1991) concepts of working through and resolution, and a measure of audience involvement.

At the extreme, fear appeals appear to be ineffective. When a problem is not perceived as serious, it only evokes a low level of fear or none at all. The individual is unlikely to exert much effort elaborating a solution to an unimportant problem and the message is not persuasive. When the level of fear is too high, (for example when the harmful consequences of a proposed action are too horrendous) "one may engage in defensive denial of the message by denying either the existence of a problem or its importance" (Keller et al., 1996, p.448).

Previous studies demonstrate that experimentally induced negative emotions such as fear (e.g., Shelton and Rogers 1981) and sadness (e.g., Cialdini and Kenrick 1976) lead to positive attitudes towards helping and /or intention to help. Sometimes, extreme fear or shock campaigns can therefore have an effect opposite to that intended. Smokers have been so shaken by the images in particularly graphic anti-smoking advertisements that they have automatically had a cigarette to calm their nerves (Strecher et al., 1997). Montazeri et al. (1997) and others have shown that messages that generate dissonance and are provocative can be effective. Keller et al. (1996) provide guidance on how to ensure the appropriate

amount of provocation is delivered. Brigham (1998, p.35) explains, in order for a fear appeal to be effective, it must arouse an approximate level of anxiety to promote paying attention to the recommended solution. It must also be credible and perceived to be applicable to the target audience but not so threatening as to provoke undesirable defensive behaviors.

Block et al. (1995) found that when it less certain that the recommended course of action will produce the desired outcome (low efficacy), people will process messages in more depth, possibly trying to achieve more certainty. They conclude that in this situation, negative frames are more persuasive. When the link between the behavior and the outcome are more certain (high efficacy), positive and negative frames appear to be equally effective. Therefore, for an anti-smoking campaign to be effective, the target audience should feel confident in the linkage between the threat and the behavior-if they do not smoke, they will avoid the consequences, if they do smoke, the consequences will apply to them. This is a situation of high efficacy, so positive framing may be appropriate for the task.

2.7. Antismoking Campaigns

Romer and Jamieson (2001) indicated that anti tobacco advertisements are likely to counteract the approval and attraction process through the use of negative images of smokers and favorable images of nonsmokers. Anti tobacco programs have shown that counter advertising can reduce the positive perceptions of smoking in peer networks and overall views of cigarette advertising (cf. Siegel and Biener 2000), antismoking advertisements may negatively affect intent to smoke.

2.7.1. Antismoking campaign in United States of America

There is considerable agreement that programs should be undertaken to prevent minors from smoking cigarettes (Centers for Disease Control and Prevention [CDC] 1999). The number of U.S states that use paid antismoking advertising targeted at youths has increased from 1 in 1986 (Minnesota Department of Health 1991) to more than 21 in 2002 (Campaign for Tobacco-Free Kids, 2002). Also, the American Legacy Foundation (2002) runs antismoking television advertisements nationwide. Evidence of the efficacy of different

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antismoking message themes is limited and conflicting. A report by Teenage Research Unlimited (1999) concludes that health messages are efficacious, whereas Goldman and Glantz (1998) advocate messages attacking the tobacco industry and Worden, Flynn, and Secker-Walker (1998) recommend social norm messages. Many of these conclusions are based on focus group research, which can be unreliable (Blankenship and Breen 1993), as can uncontrolled field studies. Florida has reported that its "Truth" advertisements attacking tobacco firms are effective, on the basis of surveys showing 40% and 16% declines in smoking among middle and high school students in the state, respectively (Bauer et al.2000).

Given the high rate of smoking initiation among children and youth and the adverse health effects of smoking, discouraging young people from beginning to use tobacco is essential. Non-profit organizations and government agencies are turning increasingly to social marketing to devise advertising that prevents children and youth from initiation smoking (Andreasen 1993; Pechmann and Ratneshwar 1994). Public health officials have already determined that it is feasible to run antismoking advertisements in movie theaters (Collins 1998; Gellene 1997; Parker-Pope 1997). Recent research suggests that, though adolescents tend to classify many products as forbidden, their perceptions are malleable (Bushman and Stack 1996; Cantor, Harrison, and Nathanson 1997). In particular, seemingly minor label changes can cause youths to reclassify products from forbidden to neutral, or vice-versa. In another study, Surgeon General warning labels caused movies to be viewed as alluring forbidden fruits, whereas informational labels caused the same movie to be viewed neutrally (Bushman and Stack 1996).

Antismoking advertising may be able to recharacterize smoking as tainted. Young people view smoking as forbidden fruit because they do not understand fully the reasons underlying its prohibitions. They tend to underestimate the severity of the risks of smoking and/or their personal vulnerability to those risks (Tanner, Hunt and Eppright 1991). In particular, most adolescents underestimate the likelihood of becoming addicted to nicotine and expect to quit smoking before suffering any long term effects. However antismoking advertising increasingly describes important negative consequences that will be experienced immediately (Worden et al.1988). For example, advertisements imply that people view smokers as unwise, unattractive, and misguided (Pechmann and Ratneshwar1994; Worden et

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al.1988). This type of message could resonate with adolescents because they are at a stage of sociocognitive development at which it is important to attain acceptance and respect from others (Havighurst, 1951; Solomon 1983). Negative information is often exceptionally impactive (Mizerski 1982). Vakratsas et al. (1999) suggest that antismoking campaigns are successful in changing the target audiences' behavior.

John (2000) noted that in the United States and in many other countries, there is strong public support for using the public sector to discourage adolescents from starting to smoke. Four of the major approaches used are : the conduct of counter-advertising campaigns, increases in cigarette price through increases in state excise taxes on cigarettes, and increasing enforcement of regulations and laws forbidding merchants to sell cigarettes to minors and school programs.

The first population-based antismoking mass media campaign occurred in the late 1960s and was associated with a marked decline in the per capita consumption of cigarettes (Warner 1977). During the 1980s the Office on Smoking and Health in the United States ran a sporadic national mass media program through public service announcements (Pierce et.al.1992) and many of these productions targeted adolescent smoking. The first statewide antismoking mass media campaigns started in Australia in 1983 using health consequences messages in paid media. These were demonstrated to effectively reduce adult-smoking prevalence (Dwyer et al.1986).

Clear evidence that mass media antismoking campaigns could affect youth smoking was demonstrated with the Florida Tobacco Control Program (Bauer et al.2000). The Florida 'Truth' campaign sought to engage youth in a movement that included questioning tobacco industry public messages. This program achieved extremely high awareness among 12-17 years olds (92%). The level of committed never smokers increased from 67 to 76 percent in middle schools.

2.7.2. Antismoking Campaign in Thailand

One of the main factors which influenced smoking behavior among early adolescents was advertisement and promotion of cigarette factors. This was noted by the World Health Organization's Regional Committee for Europe (Glynn, 1993). Thailand has a law against direct and indirect advertisements of cigarettes through any media, but there are some indirect advertisements still found, for example brand logos on articles, clothes and cigarette lighters.

World Health Organization and Thailand have rallied for tobacco free film and tobacco free fashion (WHO, 2003). There are committees that collaborated with various artists, singers and actors to promote awareness against smoking and also give consultations and advice on how to quit.

Thailand's move to outlaw Television smoking scenes is one of the main actions its Government has taken since the late 1980's to fight a raging epidemic. From cigarette tax increases to bans on all promotional activities for tobacco product- coming month, graphic photos that will cover half the front and back of every cigarette pack-the Government is battling a scourge that health officials say takes 42,000 lives a year in Thailand (Sesser, 2005).

The latest figures from the Thailand Tobacco Monopoly (TTM) show that packet cigarettes currently account for just 47.5 percent of total tobacco consumption in the country and the rest is in the form of loose-leaf tobacco, other non-tailor-made cigarettes and cigars. Thailand's 13 year old ban on tobacco advertising has served as a model for the historic Framework Convention on Tobacco Control (FCTC), which became International law this year. By strengthening the ban, health officials are closing loopholes that had been identified and exploited by tobacco corporations like Philip Morris/Altira through "point-of-sale" advertising at stores like 7-Eleven and other retail stores. The newly revised tobacco advertising ban is applicable to all half million retailers in Thailand (http://www.tobacco.org/articles/country/thailand/, retrieved on January 14, 2006).

Discussion of the Dependent Variable

2.8. Intention

Orbell, Hodgkins, and Sheeran argue that "intention is a summary of the cognitive and affective mechanisms through which attitude, subjective norms, and perceived behavioral control direct future behavior." (Orbell, Hodgkins, and Sheeran, 1997,p.946).

Intention is an indication of how hard people are willing to try, and of how much effort they are planning to exert, in order to perform the behavior (Ajzen, 1991). Intention can be viewed as consisting of action, target, context, and time elements. Furthermore, intention might be influenced by the other factors.

From Ajzen's (1991) point of view, intention is an immediate antecedent to behavior. Intention plays a role as a predictor of present and future smoking. It may be related or unrelated to smoking behavior because it reflects an individual's intention about the behavior, but it is not actual behavior performance at that time. Thus, it seems that it is difficult to rely on intentions alone. In contrast, he or she might not smoke cigarettes. If an individual intends to smoke cigarettes, he or she may smoke cigarettes. Therefore, measuring intention may not provide an accurate prediction of behavior. Furthermore, confounding factors, such as past experience, past behavior, the effects of socioenvironmental factors and personal factors may all affect intention to perform the behavior. This means that intention may or may not be stable. Since intention may be destabilized by the effect of confounding factors, it cannot always affect behavior. It seems that intention should be measured as closely as possible to the time at which the behavior will be performed as a way to improve its predictive power. When intention is strong, confounding factors are less likely to impact behavior directly and intention is a strong predictor of behavior.

Intention to smoke plays an important role in determining smoking behavior in every study, even though they were conducted in different countries. Smoking behavior appears to be largely a function of intention to smoke and perceived behavioral control, or confidence related to being able to engage in smoking behavior. Intention, in turn, is predicted by both

personal and normative beliefs about smoking, and also is predicted by confidence in being able to carry out the behavior (Maher and Rickwood, 1997). In a cross sectional study, Kaplan et al.(2001) examined the effects of socioenvironmental and personal factors on two stages of the smoking continuum-onset of smoking and regular smoking among 1,411 Latina clients, ages 14-24 in Los Angeles. They found that intention to smoke was the strongest predictor of experimentation and regular smoking and adolescents are likely to benefit from smoking prevention and cessation interventions. Finally, intention to smoke was the single greatest predictor of smoking behavior.

2.9. Adolescent Behavior towards Cigarette Smoking

Adolescence is the span of life between childhood and adulthood. It is a time of developmental physical and psychological changes; adolescents have to deal with changes in almost every aspect of their lives. Adolescence is also characterized as a stormy and stressful period of life. Adolescents want to be accepted by their peers, but during this time, this can be difficult. Furthermore, family, school, and peer group also influence adolescent behavior (Peterson, 1988). All of these influences are very important and contribute to adolescent risk behaviors such as smoking, drinking, drug abuse, and engaging in unsafe sex.

Adolescence is derived from a Latin word Adolescence, meaning "to grow up" or "to come to maturity", thus adolescence refers to the period of rapid growth (including physical, emotional, cognitive and social aspects) between childhood and adulthood, that affected children (Rice, 1993) or adolescence is generally described as a transitional phase of development that begins at the onset of puberty and continues into early adulthood. In addition, adolescence is literally referred to as "to grow into maturity", and is generally regarded as the psychological, social, and maturational process initiated by the pubertal changes (Wong, 2001)

Adolescence is not easily defined according to age, physical, or psychological development, because developmental stages tend to overlap, and are not absolute. Even though developmental stages tend to overlap, it is important to recognize that differences do exist, depending on age and developmental stage. For example, younger adolescents (ages 10

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to 14) are concerned about physical changes associated with puberty. Middle adolescents (ages 15 to 17) are more interested in peer relationships, comparisons, and the opposite sex. During this stage, they typically become more independent in their decision-making and lifestyle behaviors. Older adolescents (aged 18 to 21) are often concerned with school, grades, and future career plans as they transition into young adulthood (Millstein, 1993).

Puberty involves a set of biological events that produce change throughout the body (Petersen and Taylor, 1980). These changes transform the young person physically and physiologically from a child into a reproductively mature adult. The changes are both hormonal and somatic. Increases in hormone production lead to the development of reproductive capability and a mature physical appearance. Physical changes include public hair growth, breast development, and menarche in girls, while in boys they include genital development, public hair growth, voice change, and the emergence of facial hair (Petersen and Taylor, 1980; Reiter, 1987). Pubertal development influences adolescents' satisfaction with their appearance, with the effects differing for girls and boys. For boys, physical maturation leads to improve body image, most likely because increased size and muscular development are thought to enhance their social status. For girls, physical maturation leads to greater dissatisfaction with their appearance (Dorn, Crockett and Petersen, 1988). The normal increase in weight and changes in body fat distribution (Frisch, 1983) conflict with cultural norms that emphasize the slender, and svelte look (Faust, 1983). Early-maturing girls suffer most because they begin to develop at a time when their age mates still exemplify prepubertal slimness.

This can see that body image seems to be a highly salient aspect of adolescent identity especially as adolescence is a time of dramatic bodily changes. Not only for boys' body image concerns, but also for girls, fears about gaining weight and striving towards the cultural ideal of thin body shape become increasingly important. Generally, adults often explain cigarette smoking in terms of weight control, claiming that smoking is an appetite suppressant (Lloyd and Lucas, 1998, p.105). This may induce adolescents to view smoking cigarette as a strategy for avoiding weight gain in the same way as adults do.

Between the ages 11 and 14, most youngsters become increasingly capable of thinking hypothetically, applying formal logic, and using abstract concepts (Inhelder and Piaget, 1958). Thinking becomes more relative and less absolute, as well as more self reflective (Turiel, 1989). Adolescents also become increasingly capable of considering an extended time perspective, rather than being tied to the here and now (Greene, 1986). This means that adolescents might have more awareness of smoking cigarette as a risky behavior and concern about consequences of cigarette smoking in terms of the negative health problems, when they became older adolescents.

Adolescents can conceptualize themselves in terms of abstract, psychological characteristics, compare themselves to others and to how they might be, and draw conclusions about their future prospects. At the same time, society presses adolescents to begin preparing for the adult roles they will soon enter (Havighurst, 1972). These combined influences have profound implications for a young person's understanding of self. Furthermore, as compared to younger children adolescents are more psychological in their self-descriptions, focusing on personal and interpersonal characteristics, beliefs, and emotional states. Harter (1990) noted that this emerging ability to view the self in abstract terms is a liability as well as an advantage. Being less tied to observable behaviors, abstractions are more vulnerable to distortion, resulting in misconceptions of ability. Overestimates of competence may lead to failure, while underestimates may lead to and avoidance of challenges and diminished opportunities for growth.

2.9.1. Self esteem and adolescent behavior

Throughout adolescence, self esteem appears to be affected by young people's judgments of their competence in certain valued domains (Harter, 1990). Domains identified as important include physical attractiveness, acceptance by peers, and, to a lesser extent, academic competence, athletic ability, and conduct. Physical attractiveness appears to be particularly important for girls (Tobin-Richards, Boxer, and Petersen, 1983). In addition, perceived support from parents and peers is associated with adolescent self-esteem, with peer support takeing on increasing importance during this period (Harter, 1990). According to Erikson (1968), this process of developing identity involves a selective narrowing of choices

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regarding sexual, occupational, and social roles and a progressive commitment to the choices one makes. Adolescents have the opportunity to explore a range of possible options in these domains before having to make identity commitments.

2.9.2. Decision making ability and adolescent behavior

Another important development is that decision-making ability also increases throughout adolescence (Weithorn and Campbell, 1982). Awareness of possible risks, consideration of future consequences, and the tendency to consult with independent experts show age-related increases over the junior high and high school years (Lewis, 1981). By mid-adolescence, most youngsters are able to reason as well as adults, with similar reasoning flaws (Kuhn, Amsel, and O'Loughlin, 1988). Young adolescents perceive themselves as being more independent and self-reliant than do preadolescents and are less likely to report that they rely on their parents for assistance; they also see themselves as more distinct and separate from their parents (Steinberg and Silverberg, 1986). Conformity to parental opinions decreases steadily, but the tendency to be dependent on peers actually increases before it declines, with peak conformity occurring at around age 13 to 14 (Berndt, 1979). Thus, increasing conformity to peers with increments in truly autonomous decision-making and decreasing initially counteracts conformity to parents begin only in midadolescence. Adolescents who have better decision-making will engage in fewer risk taking behaviors such as cigarette smoking behavior.

Although decision-making ability seems to improve many adolescents engage in risky health behavior such as cigarette smoking, substance use, and unprotected sexual activities (Arnett, 1992; Schulenberg, Maggs and Hurrelmann, 1997). Cognitive developmental factors might influence beliefs about perceived severity or vulnerability (Peterson, 1996; Sturges and Rogers, 1996) or ways in which these beliefs relate to behavior (Sturges and Rogers, 1996). Many of these behaviors follow a characteristic developmental course such that they are initiated in early to middle adolescence, reaching peak levels in young adulthood (ages 18-25), after which they decline (Bachman, O'Malley and Johnston, 1998; Chassin, Presson, Rose and Sherman, 2001).

Adolescents may have higher rates of negative health behaviors than do adults not because adolescents view the particular consequences of the behaviors as more or less likely, or view their risk as small compared with adults, but because adolescents and adults place different values on the outcomes of health–relevant behaviors. For example, cigarette smoking might produce both negative health consequences (e.g., lung cancer, and heart disease) and positive social consequences (e.g., projecting a certain social image to one's peers). Adolescents may place a lower value on avoiding negative health outcome and a higher value on attaining positive social outcomes (Chassin, Presson, Rose and Sherman, 2001). Fishbein and Ajzen (1975) illustrated that adolescents's decisions to smoke cigarettes would be subjectively rational based on their assessments both of the consequences of smoking and the value that they place on these consequences.

Adolescents' smoking behavior can often be predicted from their beliefs about the consequences of smoking and their values on attaining these consequences (Chassin, Presson, Rose and Sherman, 2001). Moreover, as adolescents always spend increasing time with friends, they are placed in new social contexts in which cigarette smoking may be more prevalent. Smoking among their age peers may cause them to view this behavior as less risky and as having more benefit (Bachman, Johnston, and O'Malley, 1998).

In summary, adolescence is a period marked by both continuity and fluctuation. Although adolescence is chronologically midway between childhood and adulthood, it is not just an intermediary point between the two. It is a unique stage of life that includes components of both (Montemayor, Adams and Gullotta, 1990). Cigarette smoking represents only one of the classes of behaviors involving a premature transition to adult activity (Robinson and Kiesges, 1997). Adolescents who view cigarettes as a means of appearing mature have been found to be significantly more likely to smoke (U.S.DHHS, 1994). In addition, adolescents who have ready access to cigarettes have been found to be more at risk for smoking onset and also have been lead to many illness (Robinson and Kiesges, 1997). Therefore, smoking in adolescents is of particular concern because it poses long and short-term hazards to the smoker's health (Kaplan, Napoles-Springer, Stwart, and Perez-Stable, 2001). The negative effects of smoking on health are well organized; cigarette smoking is one of the major preventable causes of death in the World (WHO, 2001).

2.10. Smoking Behavior in Thailand

A study which was conducted by the Department of Health in Thailand explored the behavior of Thai youths in 16 provinces including Bangkok, and their condition related to tobacco smoking by using systematic sampling. It investigated the typical patterns of their behavior development and attitude relating to tobacco update and disclosed significantly associated factors such as individual, family status, environment, and health warning labels towards uptake of the youths and regulation measures which prohibited children under 18 to smoke. The highlight of the study was the target group which included both in and out-of-school youth, of which 20% were out of school system and were in labor force. The study was conducted on 510 males and 1,862 females of aged 15. The study reported that 15 year old males, slightly more than one-third (35.7%) had ever tried a cigarette whereas about one-tenth (9.3%) of females did so. They had tried the first few puffs at the age of 13-14 and at the age of 15, about 22.5% of both male and female youths were smokers (regular smoker, occasional smokers, ex-smokers and experimental smokers). Among these youths, 9.3% of males and 0.7% of females had already become regular smokers (http://advisor.anamai.moph.go.th/factsheet/smoke.html, retrieved on March 16, 2006).

Annual consumption of cigarettes per adult aged 15 and above was estimated at 796 in 1970 (WHO, 2001). In 1980, it increased to 1107. In 1990 and 1995, it was 1021 and 1067 sticks respectively. In 2000, it declined to 795- about the same level as in 1970.

Table 2.1. Annual Consumption of cigarettes per adult aged 15 and above in Thailand

Year	Cigarettes Per Capita consumption (sticks)	Cigarettes Total Consumption (million sticks)
1970	796	15305
1980	1107	31023
1990	1021	38629
1995	1067	45040
2000	795	36577

Source: WHO Tobacco Control Country Report 2001 and Ministry of Finance, Thailand.2001

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In Thailand, National Statistical Office (1999) found that the causes of cigarette smoking among adolescents are as follows: 37.50% of adolescents wanted to experiment with smoking, 34.80% of adolescents were persuaded by their friends, and 7.10% of adolescents smoked in order to be accepted as members of their peer groups. Other causes of cigarette smoking were anxiety and family smoking history. Smoking initiation in adolescents involves both internal and external factors. Internal factors may include searching for identity, lack of self-confidence, curiosity or imitation of family models. External factors are factors that attract adolescents to want to experiment, such as cultural beliefs, social norms, and environment (Stead et al., 1996).

One study of interest regarding "youth risk behavior" in Thailand, focused on high school student's opinions done by the Social Research Institute at Chulalongkorn University (Guttaleeradapun, 1997). Questionnaires were given in large cities to students in the central city public high schools [Mathayom level 4 and 6 equivalent to US high school grades 10 and 12]. In Chiang Mai, the University's demonstration school was used. The questionnaires were given to one such school in each of the following regions of Thailand with the exception of Bangkok, where two public high schools were used:

a. Chiang Mai representing the North Region;
b. Ang Thong representing the Central region;
c. Song Kla representing the Southern Region;
d. Nakorn Ratchasima representing the Northeast Region; and
e. Bangkok representing the Metropolitan region.

Between August and September 1996, 520 completed questionnaires were received from students and in addition 31 teachers and home room teachers were also interviewed to determine the teacher's opinions about their students' "risk behaviors".

The questionnaire asked what students did for hobbies and in their spare time, such as hanging out at night or gambling? It also asked questions such as their feelings about or expectations of accidents, pollution, delinquency, drugs, being punished, sexual harassment, being attacked, as well as any extreme feeling they might have? Specifically the

questionnaires asked about the student's use of cigarettes, marijuana, glue sniffing, amphetamines, and heroin as well as alcohol usage.

The Chulalongkorn University researchers then reported the data from the questionnaire item response grouped into topics into tables by percentage responses. The data showed, for example, the student's "extreme fears" (in descending order from being most frequently mentioned by the respondents to the least in the following items):

1. failure in school and studies,
2. not being paid attention by parents, boyfriends or girlfriends or others considered important to them,
3. being afraid of ghosts, darkness, and invisible objects,
4. death, loss of a significant loved one, getting sick,
5. fear of insecurities in Thai society, delinquents, and thieves, and
6. "Other" fears like insects and snakes.

The researchers upon studying the data concluded that high school students participate in the following "risk behaviors" (in descending order): cigarette smoking was the most frequently reported, followed by alcohol drinking and taking drugs. Cigarette smoking was reported to have started when respondents were between 14-16 years of age. One student reported beginning at age six.

The respondents reported that they had begun "risky behaviors" in the following ways:

1. just by chance when everyone else was trying something and thus to be a part of the group, the student tried it also (student daring them or parents letting them try or persuasion of friends to try);
2. during a time when the student was feeling anxious, sad, lonely, depressed; and
3. related to a situation the student was in at that time like having to study or work very hard on something or when a significant loved one was lost.

While these researchers at Chulalongkorn University have looked at some high risk behaviors while surveying students "opinions", their study was not intended to look at this

topic from the point of view of developing a behaviorally based assessment instrument. Instead this study focused on general topics and the opinions of the students, not their behaviors.

From the study on smoking behavior of 5,598 Thai youths it was found that having a family member who smoked or encouraged smoking made the youths more susceptible to smoking. The smoking habit of the father had an influence on both the son and daughter, while the smoking habit of the mother had more influence on the daughter than on the son (Supwoung, Busai and Tontigate, 1997). Sornsri (1998) studied health risk behaviors of adolescents in Bangkok, finding that 22.40% of subjects used cigarettes, and peer influence at school influenced the onset of initiation of smoking behavior. The result of factors affecting smoking habits in junior high school students at 7th to 12th grade in both government and private schools found that friends' smoking behavior was an important factor in determining the smoking behavior of the adolescents with statistical significance (Sroythong, 1999). A study among the factors influencing drug use in 1,050 adolescents in Bangkok found that drug use among peers was positively related to drug use by these adolescents (Yooprasert, 1997). And the result of a study regarding an empowerment program to prevent smoking in high school students in Suphanburi Province found that smoking habit in friends was the most important factor in predicting the smoking behavior in the adolescents (Pensirinapa, 1995).

2.11. Previous Studies

Studies conducted in United States of America

The research of Pechmann, Zhao, Goldberg, and Reibling (2003) predicted that consumers' intentions to protect themselves from harm can be enhanced by messages which address risk severity, vulnerability, self-efficacy, response efficacy, costs, and/or benefits. According to antismoking advertising sponsors, health messages primarily seek to enhance perceptions of health risk severity; social norm messages are mainly designed to convey that smoking poses severe social disapproval risks; and tobacco marketing messages aim to bolster perceptions of self-efficacy in terms of being able to resist tobacco marketing

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influences. They sought to determine if exposure to any of the antismoking message themes (versus the control) influenced any of the Protection Motivation Theory cognitions and/or nonsmoking intentions. Three social norm themes-Smokers' Negative Life Circumstances, Refusal Skills Role Model, and Endangers Others-successfully enhanced perceptions that smoking poses severe social disapproval risks and bolstered nonsmoking intentions. Health messages increased perceptions that smoking poses severe health risks but failed to strengthen nonsmoking intentions, apparently because few adolescents felt vulnerable to health risks. In fact, among the subset of adolescents who perceived themselves as invulnerable to health risks, higher perceived healthy risk severity was associated with higher intentions to smoke, apparently due to a "forbidden fruit" effect. Finally, advertisements about tobacco marketing practices increased knowledge of such practices, but had no effect on perceived control over such tactics or non smoking intentions. Overall, the findings suggested that tobacco use prevention campaigns may want to use advertising which conveys that smoking poses several social disapproval risks.

In the study of Donna, Chris and Neville (2000), coping strategies endorsed by adolescents in a dealing with a potential threat to their health were assessed, which investigated components of protection motivation theory. Year 9 and 10 high school students were presented with information about cardiovascular disease risk and the role of exercise in maintaining cardiorespiratory fitness. Three components specified by the theory were manipulated: response efficacy (effectiveness of exercise in preventing cardiovascular disease), response costs (costs associated with taking up a regular program of exercise) and self-efficacy (belief in ability to carry out a program of exercise). It was hypothesized that such information would affect participants' perceptions of response efficacy, response costs, self-efficacy and their selection of coping strategies. Participants in the high self-efficacy condition indicated stronger intentions to exercise. Students in the low response efficacy condition demonstrated more endorsement of hopelessness and fatalism than did students in the high response efficacy condition.

Craig, Richard, Scot, Paul, Christiansen (2004) examined the relationships among social influence, prior trial behavior, and anti-tobacco advertising with adolescent intentions to smoke. Telephone interviews were conducted with more than 900 adolescents aged 12 to

18 as part of a multimillion dollar, statewide, anti tobacco advertising campaign. The interviews addressed two primary questions: 1) Do counter-advertising campaign attitudes directly affect antismoking beliefs and intent in a similar manner to those of conventional advertisements? and 2) Can advertising campaign attitudes have a stronger effect on beliefs and intent for adolescents with prior smoking behavior and for adolescents exposed to social influence (friends, siblings, or adult smoker in the home)?. The findings show that advertising campaign attitudes, prior trial behavior, and social influence all directly affect antismoking beliefs and that advertising campaign attitudes interact with prior trial behavior to strengthen antismoking beliefs. The results shows that attitudes related to the campaign, prior trial behavior, and social influence directly influence intent, and advertising campaign attitudes interact with social influence and prior trial behavior to attenuate adolescent intent to smoke.

Leilani (1972) conducted a study on adolescents' cognitive appraisals of cigarette smoking with the application of protection motivation theory. High school students (N=690) provided their cognitive appraisal of protection motivation theory factors in the context of cigarette smoking. A logistic regression analysis revealed that protection motivation theory predicted adolescent's current smoking behavior. Cognitions, including greater vulnerability to smoking related diseases, minimizing the severity of the consequences of smoking, perceiving adolescent male smokers to be popular and mature, and perceiving limited health benefits for not smoking were found to be significant predictors of current smoking behavior. Intending to quit smoking in the near future was related to smoking occasionally, as opposed to regularly, and to perceiving the long term risks of smoking to be severe.

Ahron, White and Phillips (1995) considered Protection Motivation Theory (PMT) as a possible framework for understanding and moderating higher-risk drinking. Data were collected from participants about levels of their current drinking and, after they have been alerted to the dangers of excess drinking on single occasions, their cognitions related to drinking, and their intentions for future single occasion drinking. Comparisons of higher and lower risk drinkers among the sample provided support for the applicability of PMT, revealing differences in their cognitions and in their adaptive and maladaptive coping. A supplementary path analysis revealed that health beliefs and coping strategies associated with

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PMT, together with demographics, accounted for 42% of the variance in behavioral intentions. These results suggest that PMT could be a variable tool for those working in alcohol research and education.

A factorial design was employed by Wurtele and Maddux (1987) to test the relative effectiveness of the four cognitive appraisal processes (severity, vulnerability, response efficacy, and self-efficacy) contained in the revised protection motivation theory (PMT). One hundred and sixty undergraduate women read persuasive appeals for increasing exercise which varied on these four dimensions. As predicted, both the vulnerability and self-efficacy variables enhanced intentions to exercise along with similar effects on self-reported exercising. Intentions were predictive of self-reported changes in behavior. The obtained interaction between vulnerability, self-efficacy, and response efficacy suggests that individuals employed a "precaution strategy." They intended to adopt the recommended behavior even though they held weak beliefs about its effectiveness and were not convinced of their at-risk status.

Another study found that intention was the most important predictor of smoking behavior in both the initiation stage of cigarette smoking and for future behavior. De Vries, Backbier, Kok and Dijkstra (1995) used a longitudinal study to attempt to explain adolescents' smoking behavior onset (N=401) at 6 months (T2), 12 months (T3), and 18 months (T4). They examined smoking behavior in the context of social influence, including social norms, perceived smoking behavior, and direct pressure from the subject's father, mother, brothers, sisters, friends, peers, teachers, and relatives. The social influence measures correlated significantly with intention and behavior. The multiple regression analysis for actual and future behavior showed that intention was the best predictor of both actual smoking behavior at T1 and future smoking behavior at T2, T3 and T4. The intention accounted for 53%, 44%, 39%, 32% of the variance, respectively. In agreement with the Theory of Planned Behavior model of Fishbein and Ajzen (1975), intention was the most powerful predictor in explaining present and future smoking behavior.

Studies conducted in Thailand

Tunsakul, Thongyod, Nonthasorn, and Kengkarnpani (2001) also applied the Protection Motivation Theory to study the effectiveness of health education programs to prevent high blood pressure in the elderly who lived in Det-Udom municipality. The results showed that after the program, the elderly in the experimental group had changed. The perceived severity, perceived vulnerability, believed response efficacy, and perceived self-efficacy were higher and they had a better behavior in preventing high blood pressure in the municipality than before and also better than that of the comparison group. Thus, this health education program can create motivation to prevent high blood pressure and promote activities that reduce the risk of high blood pressure consistently.

Makmaitree's quasi-experiment (1995) was designed in line with the Protection Motivation Theory (PMT) to assess the effectiveness of health education on AIDS preventive behaviors among Air Technical Training students. The results of this study revealed that health education program applying PMT in the study yielded several positive changes of AIDS preventive behaviors among the respondents. The results showed that after the experiment, the experimental group participating in the planned health education program gained significantly higher threat appraisal, perceived severity and susceptibility, and coping appraisal, self-efficacy and response efficacy, and AIDS preventive behavior than prior to experiment, and significantly higher then the control group. However, in preventive behavior, the experimental group did not gain significantly more perception of severity than prior to the experiment than the control group.

Congsuvivatwong (1996) also used a quasi-experiment to document the effectiveness of health education program to improve essential hypertension among patients in Songklanagarind Hospital in line with the Protection Motivation Theory. The results showed that after participating in health education program, the experimental group had more significant changes in noxiousness, perceived probability, response efficacy, self-efficacy, intention to act, and preventive behavior against complication of essential hypertension than prior to the experimentation than the control group. Moreover, it was also found that self-

efficacy, intention to act, and income were significantly correlated with prevention behavior against complication of essential hypertension.

2.11.1. Summary of previous studies

Author	Topic	Objective	Result
Pechmann, Zhao, Goldberg, and Reibling (2003)	What to convey in Antismoking Advertisements to Adolescents: The Use of Protection Motivation Theory to Identify Effective Message Themes.	To find if exposure to any of the antismoking message themes influenced any of the Protection Motivation Theory cognitions and/ or nonsmoking intentions.	Three social norm themes-smokers' negative life circumstances, refusal skills model, and endangers others- successfully enhanced perceptions that smoking poses severe social disapproval risks and bolstered non smoking intentions. Health messages increased perceptions that smoking poses severe health risks.
Donna, Chris and Neville (2000)	Protection Motivation Theory and adolescents' perception of exercise	Assessing coping strategies endorsed by adolescents in dealing with a potential threat to their health, which investigated components of protection motivation theory.	Participants in the high self-efficacy condition indicated stronger intentions to exercise. Students in the low response efficacy condition demonstrated more endorsement of hopelessness and fatalism than did students in the high response efficacy condition.
Craig, Richard, Scot, Paul, and Ann (2004)	Understanding Adolescent Intentions to Smoke: An examination of	To examine whether counter advertising campaign attitudes directly affect antismoking beliefs	The results showed that attitudes related to the campaign, prior trial behavior, and social influence

	Relationships Among Social Influence, Prior Trial Behavior, and Anti tobacco Campaign Advertising.	and intent in a manner similar to those of conventional advertisements and whether advertising campaign attitudes have a stronger effect on beliefs and intent for adolescents with prior smoking behavior and for adolescents exposed to social influence.	directly influence intent, and advertising campaign attitudes interact with social influence and prior trial behavior to attenuate adolescent intent to smoke.
Leilani (1972)	Adolescents' Cognitive Appraisals of Cigarette Smoking: An application of the Protection Motivation Theory	Research on cognitive appraisals about both the maladaptive and adaptive health responses in the context of adolescent smoking	Cognitions including greater personal vulnerability to smoking-related diseases, minimizing the severity of the consequences of smoking, perceiving adolescent male smokers to be popular and mature, and perceiving limited health benefits for not smoking were found to be significant predictors of current smoking behavior.

Wurtele and Maddux (1995)	Relative contributions of Protection Motivation Theory components in predicting exercise intentions and behavior	To test the relative effectiveness of the four cognitive appraisal processes (severity, vulnerability, response efficacy, and self-efficacy) contained in the revised protection motivation theory (PMT). One hundred and sixty undergraduate women read persuasive appeals for increasing exercise which varied on these four dimensions.	Both the vulnerability and self-efficacy variables enhanced intentions to exercise along with similar effects on self-reported exercising. Intentions were predictive of self-reported changes in behavior. The obtained interaction between vulnerability, self-efficacy, and response efficacy suggests that individuals employed a "precaution strategy:" They intended to adopt the recommended behavior even though they held weak beliefs about its effectiveness and were not convinced of their at-risk status.
De Vries, Backbier, Kok and Dijkstra (1995).	The impact of social influence in the context of attitude, self-efficacy, intention, and previous behavior as predictors of smoking onset.	A longitudinal study to attempt to explain adolescents' smoking behavior onset (N=401) at 6 months (T2), 12 months (T3), and 18 months (T4). They examined smoking behavior in the context of social influence, including social norms, perceived smoking behavior, and direct	The social influence measures correlated significantly with intention and behavior. The multiple regression analysis for actual and future behavior showed that intention was the best predictor of both actual smoking behavior at T1 and future smoking behavior at T2, T3

		pressure from the subject's father, mother, brothers, sisters, friends, peers, teachers, and relatives.	and T4. The intention accounted for 53%, 44%, 39%, 32% of the variance, respectively. In agreement with the Theory of Planned Behavior model of Fishbein and Ajzen (1975), intention was the most powerful predictor in explaining present and future smoking behavior.
Tunsakul, Thongyod, Nonthasorn, and Kengkarnpani (2001)	The effectiveness of the application of protection motivation theory to the health education program on high blood pressure preventing among elderly people in Det-Udom Muncipality of Ubon-Rachchathani	To study the effectiveness of health education program to prevent high blood pressure in the elderly who lived in Det-Udom Muncipality	The results showed that after the program, the elderly in the experimental group had changed. Perceived severity, perceived vulnerability, believed response efficacy and perceived self-efficacy were higher and they had a better behavior in preventing high blood pressure in the municipality than before and also better than that of the comparison group.
Makmaitree (1995)	An application of the protection motivation theory for developing AIDS preventive behavior among air technical training students	To assess the effectiveness of health education on AIDS preventive behaviors among the respondents	The group participating in the planned health education program gained significantly higher threat appraisal, perceived severity and susceptibility, and coping appraisal, self-efficacy and

			response efficacy, and AIDS preventive behavior than prior to the experiment and significantly higher than the control group.
Congsuvivatwong (1996)	An application of the Protection Motivation Theory in preventive behavior against complication of essential hypertension patient in Songkhanagarind Hospital.	A quasi-experiment to document the effectiveness of health education program to improve essential hypertension among patients in Songklanagarind Hospital in line with the Protection Motivation Theory.	The results showed that after participating in health education program, the experimental group had more significant changes in noxiousness, perceived probability, response efficacy, self-efficacy, intention to act, and preventive behavior against complication of essential hypertension than prior to the experimentation than the control group. Moreover, it was also found that self-efficacy, intention to act, and income were significantly correlated with prevention behavior against complication of essential hypertension.

CHAPTER III

RESEARCH FRAMEWORK

This chapter focuses on the theoretical and conceptual frameworks of the research and consists of four sections. The first section elaborates on the theoretical framework on which the present research is based. The next section covers the conceptual framework. In the third section, hypothesis statements are drawn from the conceptual framework that was tested in this research. The final section shows the operationalization of the related variables that explain all the component variables used in the study.

3.1. Theoretical Framework

A theoretical framework is a conceptual model of how one theorizes the relationship among several factors that have been identified as important to the problems. It discusses the relationship among the variables that are deemed to be integral to the dynamics of the situation being investigated (Sekaran, 1992).

The research of Pechmann, Zhao, Goldberg, and Reibling (2003) predicted that consumers' intentions to protect themselves from harm can be enhanced by messages which address risk severity, vulnerability, self-efficacy, response efficacy, costs, and/or benefits. According to antismoking advertising sponsors, health messages primarily seek to enhance perceptions of health risk severity; social norm messages are mainly designed to convey that smoking poses severe social disapproval risks; and tobacco marketing messages aim to bolster perceptions of self-efficacy in terms of being able to resist tobacco marketing influences. They sought to determine if exposure to any of the antismoking message themes (versus the control) influenced any of the Protection Motivation Theory cognitions and/or nonsmoking intentions. Three social norm themes-Smokers' Negative Life Circumstances, Refusal Skills Role Model, and Endangers Others-successfully enhanced perceptions that smoking poses severe social disapproval risks and bolstered nonsmoking intentions. Health messages increased perceptions that smoking poses severe health risks but failed to strengthen nonsmoking intentions, apparently because few adolescents felt vulnerable to

health risks. In fact, among the subset of adolescents who perceived themselves as invulnerable to health risks, higher perceived healthy risk severity was associated with higher intentions to smoke, apparently due to a "forbidden fruit" effect. Finally, advertisements about tobacco marketing practices increased knowledge of such practices, but had no effect on perceived control over such tactics or non smoking intentions. Overall, the findings suggested that tobacco use prevention campaigns may want to use advertising which conveys that smoking poses several social disapproval risks.

Figure 3.1.: Theoretical Framework
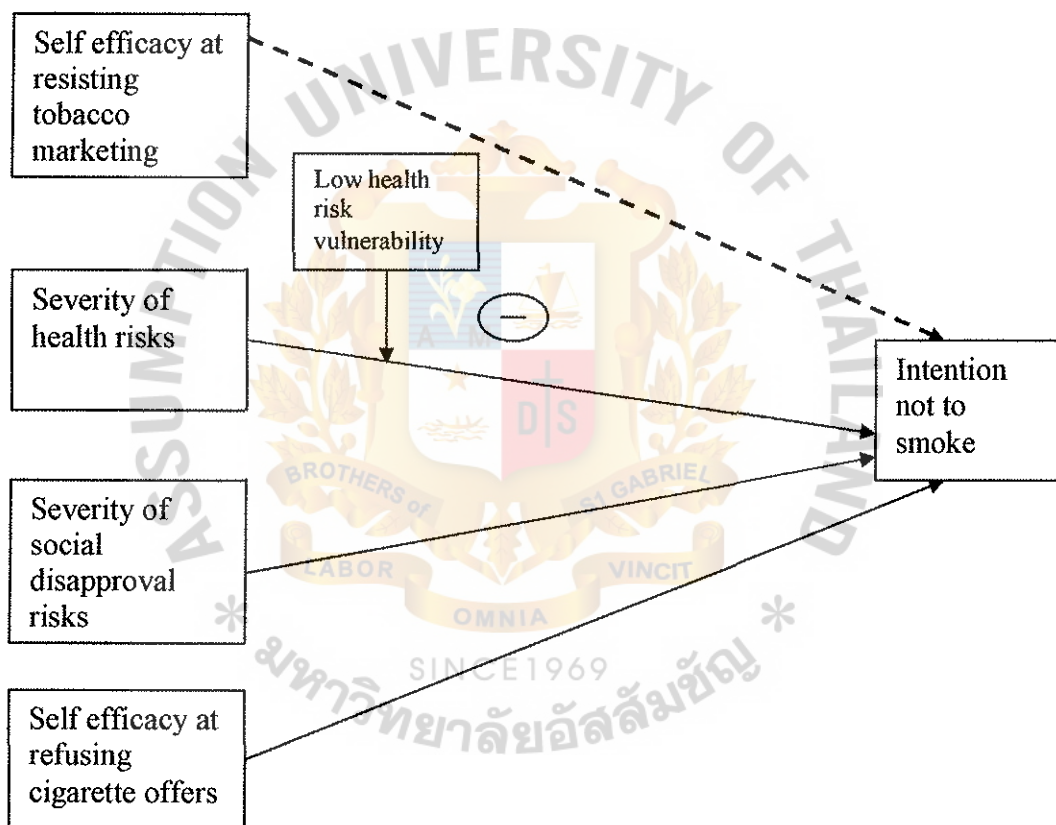
Source: Pechmann, Zhao, Goldberg and Reibling (2003), "What to convey in antismoking advertisements for adolescents: The use of protection motivation theory to identify effective message themes", Journal of Marketing.67, p: 1-18

3.2. Conceptual Framework

A concept is a generalized idea about a class of objects, an abstraction of reality that is the basic unit for theory development. Concepts are the basic building blocks of scientific investigation. A conceptual model is any high-formalized representation of a theoretical framework, usually designed through the use of symbols or other such physical analogues. The models can be examined, analyzed and tested as a theoretical system (Zikmund, 2003).

An independent variable is a presumed cause of the dependent variable, the presumed effect. The independent variable produces a change in the dependent variable. The conceptual framework for this study is represented in Figure 3.2, which is developed to determine the relationship between antismoking messages and adolescents' intention not to smoke, based on Protection Motivation Theory.

Figure 3.2. Conceptual Framework of the study

Independent Variable — Dependent Variable

- Self-efficacy at resisting tobacco marketing
- Severity of health risks
- Severity of social disapproval risks
- Self-efficacy at refusing cigarette offers
- Demographic Factors
  - Age
  - Gender
  - Nationality
  - Income

Intention not to smoke
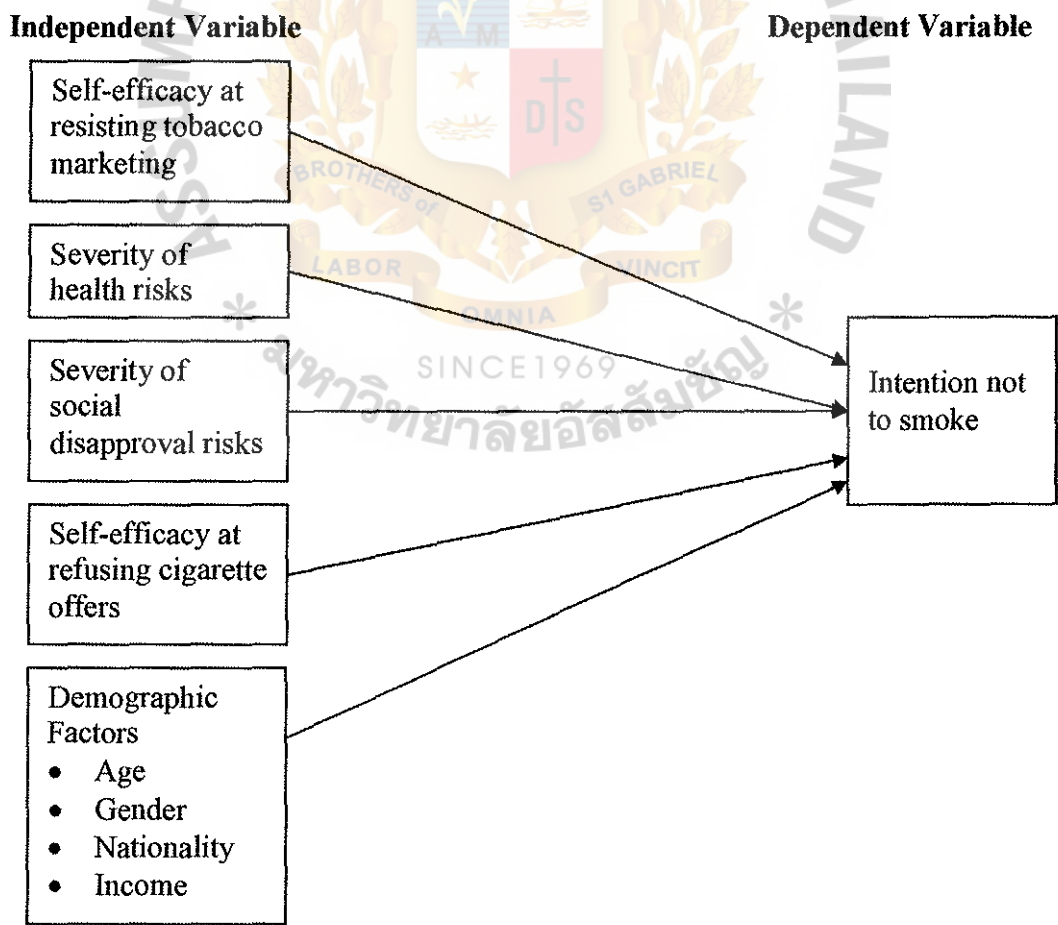
The Components of the Conceptual model

The above figure 3.2 illustrates the overall setting for this study. It indicates the four independent variables: self-efficacy at resisting tobacco marketing, severity of health risks, severity of social disapproval risks, self-efficacy at refusing cigarette offers that influence the dependent variable: intention not to smoke.

Self-efficacy at resisting tobacco marketing

Self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997). Marketing tactics antismoking advertisements attempt to increase adolescents' knowledge about cigarette marketing tactics, including the perpetrators, target audiences, effects, and ethics. This multidimensional knowledge base has been labeled "persuasion knowledge" (Friestad and Wright 1994). Ideally, such knowledge should enhance youths' perceptions of control over tobacco marketers' persuasion attempts (Campbel and Kirmani 2000). As Friestad and Wright (1994) explain, when a person understands that an agent's action is a persuasion attempt, a "change of meaning" occurs, wherein the person can exert control over the persuasion attempt. In protection motivation theory terms, Marketing Tactics advertising seeks to boost adolescents' knowledge regarding tobacco marketing tactics and ultimately, their self-efficacy at resisting such tactics. The advertising may increase knowledge, as many media literacy programs have been shown to do (Brucks, Armstrong, and Goldberg 1988).

Severity of health risks

Disease and death message themes used in antismoking advertisements discuss how smokers suffer from serious diseases, such as emphysema and lung cancer, and often die prematurely. The goal of these advertisements is to convey the "harsh medical realities of the effects of the smoking" (Parpis 1997, p.35). From the perspective of protection motivation theory (Rogers, 1983), the intent is to increase perceptions of health risk severity.

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Severity of social disapproval risks

Many cosmetic message themes are used in antismoking advertisements which stress that smokers must cope with highly unattractive and annoying side-effects that are cosmetic in nature, such as smelliness. The messages attempt to convey that "smoking has many unpleasant consequences that can lead to social disapproval, such as bad breath, yellow teeth, smelling bad" (Minnesota Department of Health 1991, p.52). From the perspective of protection motivation theory, these messages attempt to enhance perceptions that smoking poses severe social disapproval risks because of its unattractive side effects.

Self-efficacy at refusing cigarette offers

Self-efficacy refers to an individual's estimate or personal judgment of his or her own ability to succeed in reaching a specific goal, such as quitting smoking or losing weight. The refusal skill model messages used in antismoking advertisements explain why many attractive role models view smoking as unappealing and demonstrate refusals of cigarette offers (Worden et al.1988). Refusal skill Role Model advertising attempts to enhance adolescents' perceptions of self-efficacy at refusing cigarette offers (Worden at al.1988). The advertising shows role models successfully refusing cigarettes, which may teach skills and raise viewers' expectations that they too are capable of refusing (Bandura, 1997).

Demographic Factors

Age

Age is the length of time someone has lived or something has existed. Cigarette smoking causes biochemical changes in human bodies that accelerate aging. Research shows that a person who smokes 10 or more cigarettes a day for a minimum of 10 years is statically more likely to develop wrinkled, leathery skin than a non smoker. It has also been shown that people who smoke for a number of years tend to develop an unhealthy yellowish hue to their complexion. Additionally a study conducted in 2002 showed that facial wrinkling, while not yet visible, can be seen under a microscope in smokers as young as 20 (http://www.skincarephysicians.com/agingskinnet/basicfacts.html, March 26, 2006).

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Gender

Gender can be defined as the sexual classification that divides human being into male or female.

Nationality

Nationality can be defined as the status of belonging to a particular nation by birth or naturalization.

Income

The financial gain (earned) accruing over a given period of time.

Dependent Variable:

Intention not to smoke

Intention is an indication of how hard people are willing to try, and of how much effort they are planning to exert, in order to perform the behavior (Ajzen, 1991). Intention is predicted by both personal and normative beliefs about smoking, and also is predicted by confidence in being able to carry out the behavior (Maher and Rickwood, 1997).

3.3. Research Hypotheses

A hypothesis is a researcher's conjecture about the relationship of two or more variables. Davitz (1996) stated hypotheses are statements predicting results prior to conducting research. Hypothesis explains what has been observed (Hart, 2000). Zikmund (2003) stated that the hypothesis is an unproven proposition or supposition that tentatively explains certain facts or phenomena; a proposition that is empirically testable, a probable answer to a research question.

The research hypotheses for this study are:

H_{01}: There is no relationship between self-efficacy at resisting tobacco marketing, and intention not to smoke.

H_{a1}: There is a relationship between self-efficacy at resisting tobacco marketing, and intention not to smoke.

H_{02}: There is no relationship between severity of health risks, and intention not to smoke.

H_{a2}: There is a relationship between severity of health risks, and intention not to smoke.

H_{03}: There is no relationship between severity of social disapproval risks, and intention not to smoke.

H_{a3}: There is a relationship between severity of social disapproval risks, and intention not to smoke.

H_{04}: There is no relationship between self-efficacy at refusing cigarette offers, and intention not to smoke.

H_{a4}: There is a relationship between self-efficacy at refusing cigarette offers, and intention not to smoke.

H_{05}: There is no difference between respondent's age and intention not to smoke with regard to antismoking messages.

H_{a5}: There is a difference between respondent's age and intention not to smoke with regard to antismoking messages.

H_{06}: There is no difference between respondent's gender and intention not to smoke with regard to antismoking messages.

H_{a6}: There is a difference between respondent's gender and intention not to smoke with regard to antismoking messages.

H_{07}: There is no difference between respondent's nationality and intention not to smoke with regard to antismoking messages.

Ha7: There is a difference between respondent's nationality and intention not to smoke with regard to antismoking messages.

H08: There is no difference between respondent's personal income and intention not to smoke with regard to antismoking messages.

Ha8: There is a difference between respondent's personal income and intention not to smoke with regard to antismoking messages.

3.4. Concepts and Variable Operationalization

A concept is a generalized idea about a class of objects, attributes, occurrences, or process. Conceptual definition is a verbal explanation of the meaning of a concept. It defines what the concept is and what is not. Concepts must be made operational, in order to be measured. An operational definition gives meaning to a concept by specifying the activities or operations necessary to measure it. The operational definition specifies what the researcher must do to measure the concept under investigation. Operational definition assists to specify the rules for assigning numbers. The values assigned in the measuring process can be manipulated according to certain mathematical rules (Zikmund, 2003).

Table 3.1. Operational definition of variables – Independent

Item/Variable	Conceptual Definition	Operational Component	Level of measurement
Self-efficacy at resisting tobacco marketing	An individual's estimate or personal judgment of his or her own ability to succeed in reaching a specific goal	-Resist being fooled by cigarette Ads	Ordinal
		-Resist being fooled by cigarette Promotion	Ordinal
		-Resist cigarette companies encouragement	Ordinal
		-Help to make public places smoke free	Ordinal

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		-Confident to manage the situation	Ordinal
Severity of health risks	Increase perceptions of health risk severity	-Die early	Ordinal
		-Get lung disease	Ordinal
		-Get wrinkles	Ordinal
		-Addicted to nicotine	Ordinal
		-Have bad breathe	Ordinal
Severity of social disapproval risks	Unpleasant consequences that can lead to social disapproval	-Acceptable	Ordinal
		-Feeling when smoking cigars	Ordinal
		-Attractive	Ordinal
		-Fit in better	Ordinal
		-Strong approval of close friends	Ordinal
Self-efficacy at refusing cigarette offers	Belief in one's capabilities to organize and execute the courses of action required to produce given attainment	-Pressure to smoke	Ordinal
		-Locus of control	Ordinal
		-Persistence	Ordinal
		-Cope with any stressful situation	Ordinal
		-Control over the situation	Ordinal
Demographic Factors Age	Length of time someone has lived or something has existed	-Duration of life	Ordinal
Gender	Sexual classification that divide human being into male and female	-Male or Female	Nominal
Nationality	Status of belonging to a particular nation by birth or naturalization	-Status of citizenship of a particular Nation	Nominal
Income Level	The amount of money or its	-Money earned	Ordinal

Item/Variable		
	equivalent received during a period of time in exchange for labor or services		

Dependent Variable:

Item/Variable	Conceptual Definition	Operational Component	Level of measurement
Intention not to smoke	Intention not to smoke is predicted by both personal and normative beliefs about smoking, and also is predicted by confidence in being able to carry out the behavior	-Might not smoke in future -Might not try cigars for a while -Might not try if someone offer -Quitting the habit of smoking	Ordinal Ordinal Ordinal Ordinal

CHAPTER IV

RESEARCH METHODOLOGY

This chapter provides an overview of the research methodology of the study. The first section outlines the research methods used. The second section explains about the respondents and sampling procedure. The third section focuses on the research instrument, collection of data/gathering procedure and data analysis techniques. The final section identifies the appropriate statistical method used to interpret the data.

4.1. Research Method

This study used the descriptive research design. The survey is probably the most used type of technique in business research endeavors because they allow researchers to study and describe large populations fairly quickly at relatively lower cost (Davis and Cosenza, 1993). Sample survey technique is applied to this research study for which self administrated questionnaires were used in order to collect the research data. Zikmund (2003) stated that survey technique is a research technique in which information is gathered from a sample by the use of questionnaire. This technique provides a quick, inexpensive efficient and accurate means of assessing information about a population.

4.2. Respondents and Sampling Procedures

4.2.1. Target Population

The target population involved in this research were the undergraduate students of Assumption University, Thailand.

4.2.2. Sampling Element

Sampling element is the individual member of a specific population (Zikmund, 2003). In this study, the sampling element is any undergraduate student, currently studying at Assumption University.

4.2.3. Sampling Unit

Sampling unit is the place where the researcher can find the sampling element (Zikmund, 2003). In this study, the sampling unit is Assumption University campus, Bang Na and Hua Mak.

4.2.4. Sample Size

The sample size used in this research is 381, which means the researcher collected data from 381 respondents. According to the Registration office, Assumption University, 2006, the total number of undergraduate students currently studying, numbers to 15,919.

Table 4.1.: The number of undergraduate students studying in Assumption University of Thailand, 2006* ** ***

No:	Faculty	Target Population (Students)
1	Faculty of Business Administration	8,490
2	Faculty of Risk Management and Industrial Services	143
3	Faculty of Arts	3,747
4	Faculty of Nursing Science	205
5	Faculty of Science and Technology	519
6	Faculty of Engineering	414
7	Faculty of Communication Arts	1,226
8	Faculty of Law	796
9	Faculty of Biotechnology	115
10	Faculty of Architecture	264
Total		15,919

Source: The Registrar's Office, Assumption University, 2006.

*The number does not include freshmen.

** Out of this, the number of undergraduate International students numbers to 1,882.

*** The number of undergraduate students in Bangna campus = 10,040

The number of undergraduate students in Hua Mak campus = 5,879

The researcher determined the sample size as 381 samples as per the table of sample size by Anderson (1996) that is shown in Table 4.1 based on 95% confidence level (5% tolerable error).

Table 4.2. Theoretical Sample Sizes for Different Sizes of population and a 95 percent level of certainty

Population / (Sampling Frame)	Required Sample for Tolerable Error			
	5%	4%	3%	2%
100	79	85	91	96
500	217	272	340	413
1,000	277	375	516	705
5,000	356	535	897	1,622
50,000	**381**	593	1,044	2,290
100,000	382	596	1,055	2,344
25,000,000	384	600	1,067	2,400

Source: Anderson, Gary (1996), "Fundamentals of Education Research", p: 202

4.2.5. Sampling Procedure

Zikmund (2003) stated that sampling is the process of using a small number of items or parts of the whole population to make conclusions regarding the whole population. In this research, non probability procedure was used for selecting the respondents. In non probability sampling the probability of any particular member of the population being selected is unknown (Zikmund, 2003). In non-probability sampling, since elements are chosen arbitrarily, there is no way to estimate the probability of any one element being included in the sample.

For this study, the researcher collected the data from the undergraduate students studying at Assumption University of Thailand. Questionnaires were distributed to undergraduate students who studied in Assumption University only. The researcher used convenience sampling to gather the data. Convenience sampling refers to sampling by obtaining units or people who are most conveniently available. Convenience sampling method is where the units of analysis are chosen by convenience of the researcher/respondents (Davis, 1996). This method is useful to obtain a large number of completed questionnaires, quickly and economically (Zikmund, 2003). The researcher had spent around 5-10 days collecting data.

4.3. Research Instrument

The mode of communication for questionnaire in this study is a self-administered questionnaire. Self-administered questionnaire is a survey delivered to the respondent via personal (intercept) or nonpersonal (computer-delivered, mail-delivered) means that is completed by the respondent without intervention from interviewer (Cooper and Schindler, 2001). The questionnaire consisted of fixed alternative questions, where the respondents were given specific, limited alternative responses and asked to choose the one close to their view point.

The questionnaire was adapted from the research on "What to Convey in Antismoking Advertisements for Adolescents: The Use of Protection Motivation Theory to Identify Effective Message Themes" by Pechmann, Zhao, Goldberg, and Reibling in 2003. In this research, the questionnaire was divided into 4 different parts.

Part I

The first part of the questionnaire consisted of screening questions, where the respondents were asked the following questions:
-Are you an undergraduate student in Assumption University of Thailand?
-Do you smoke cigarettes?

Part II

The second part of the questionnaire consists of questions regarding the components of protection motivation theory. The researcher used the Likert five point scale ranging from 1 to 5 where 1 (Strongly Disagree), 2(Disagree), 3(Neutral), 4(Agree), 5(Strongly Agree), to measure the resident's opinion. Likert scale is a widely accepted and adopted technique. Using Likert scale, the respondents indicate the amount of agreement and disagreement with a variety of statements about some attitude or object. The scale is highly reliable when it comes to the ordering of people with regard to a particular attitude (Zikmund, 2003).

Part III

The third part consists of questions on intention not to smoke. 3 questions were adapted to measure the intention not to smoke. The response was measured using the five-point Likert scale where 1(Definitely not), 2(Probably not), 3(Not sure), 4(Probably yes), 5(Definitely yes).

Part IV

The fourth part consists of the demographic factors of the respondents.
-age
-gender
-nationality
-personal income/allowance from parents

4.3.1. Pre-testing of questionnaire

Pre-testing is an established practice for discovering errors in questions, question sequencing, instructions, skip directions (Cooper and Schindler, 2001). Pretests are trial runs with a group of respondents for the purpose of detecting problems in the questionnaire instructions or design. In a pretest the researcher looks for evidence of ambiguous questions and respondent misunderstanding, whether the questions mean the same thing to all

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respondents, the point at which respondent fatigue sets in, places in the questionnaire where a respondent is likely to terminate and other considerations.

To conduct a pilot survey, the number of respondents should be at least 25 (Vanichbuncha, 2001). Therefore, this research used 30 respondents to collect data in order to get a higher reliability. In general, reliabilities less than .60 are considered to be poor, those in the .70 range to be acceptable and those over .80 to be good. For this research, the researcher distributed randomly 30 questionnaires to undergraduate students studying at Assumption University of Thailand both at Hua Mak and Bang Na campuses during the third week of March. Cronbach's Coefficient Alpha scales in SPSS program were chosen to code and process the data from the questionnaires. This is to prevent biased communication between the researcher and respondents. The reliability value for each variable is shown in Table 4.3

Table 4.3. Reliability value of Pre-testing

Variables	Reliability Value (Alpha)
Self-efficacy at resisting tobacco marketing	0.7632
Severity of health risks	0.7099
Severity of social disapproval risks	0.6686
Self-efficacy at refusing cigarette offers	0.7123
Demographic Factors	0.7465
Intention not to smoke	0.7108

Sekaran (1992) mentioned that if the reliability value is atleast 0.6, it is considered reliable. In this research, the reliability value of all the variables is more than 0.6, which indicated that this research questionnaire is sufficient for examining the hypothesis of this research.

4.4. Collection of data and gathering procedure

The data collection procedures are the details and stages of the survey which includes the duration of doing the survey, as well as when and how to reach the respondents. In this study, the researcher gathered information from two sources, which are primary data and secondary data.

The primary data was collected using self administered questionnaires that will be distributed to the respondents at both Hua Mak and Bang Na campuses of Assumption University. Considering the fact that Bangna campus occupies most number of students, the researcher divided the questionnaires and distributed at a ratio of 65:35 for Bangna and Hua Mak campuses, respectively. The researcher distributed all the questionnaires by himself.

The secondary data was collected from textbooks, journals, magazines, newspapers, articles, and theoretical studies.

4.5. Statistical Treatment of Data

The Statistical Package for Social Science (SPSS) was used to summarize the data that researcher has collected. All data will be encoded into symbolic forms that are used in SPSS software. The SPSS results will be shown and displayed in the form of percentage and graph, which are very easy to understand. The statistical procedures that will be used in this study are explained in the following section.

4.5.1. Descriptive Analysis

Descriptive analysis refers to the transformation of the raw data into a form that will make them easy to understand, and interpret. Describing responses of observations is typically the first form of analysis. The calculation of the average, frequency distribution, and the percentage distribution is the most common form of summarizing data (Zikmund, 2003). The researcher has used descriptive statistics to describe the data meaningfully. In this

research, these statistics were used to summarize the demographic characteristics of the respondents which consisted of age, gender, nationality and income.

Independent Sample T-test

The t-test is used to compare the significant differences with variables such as gender and nationality with intention not to smoke regarding to antismoking messages. T-test can be used to determine the average difference. T-test concerns a number of procedures concerned with comparing two averages. With three or more levels for the nominal variable, we can start asking interesting questions about the differences between pairs or combinations of means.

It can be used to compare the difference in weight between two groups on a different diet, or to compare the proportion of patients suffering from complications after two different types of operations, or the number of traffic accidents on two busy junctions. You can compare 'continuous' averages, they can be above or below one, and examples are the difference in mean length or weight between two groups of people. The certainties with which these averages are measured are expressed in the standard deviation. Also, you can compare 'proportion' averages, basically a number divided by a larger number (Zikmund 1997).

Formulae:

$$t = \frac{M_1 - M_2}{S_{DM}}$$

$$S_{DM} = \sqrt{\left[\frac{(N_1 - 1)(s_1^2) - (N_2 - 1)(s_2^2)}{N_1 + N_2 - 2}\right]\left[\frac{1}{N_1} - \frac{1}{N_2}\right]}$$

$$s = \sqrt{\frac{\sum x^2}{N}}$$

$$df = N_1 + N_2 - 2$$

Where:

M = Mean

SDM = Standard error of the difference between means

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N = Number of subjects in group

s = Standard Deviation of group

df = degrees of freedom

ANOVA

The appropriate technique to measure the statistical significance of the differences between two or three means is analysis of variance, often referred to by its acronym, ANOVA (Alreck and Settle, 1995). ANOVA allows the researcher to compare differences among many sample groups. Whereas T is "for two", the F ratio can theoretically handle any number of group comparisons. It can design experiments in which the independent variable is manipulated through a whole range of values. Analysis using the T Test means that the independent variable can have only two levels, one for the experimental group and one for the control group. With ANOVA, a researcher may set up a number of experimental groups to compare with the control group (Sprinthall, 1997). The researcher use ANOVA in order to compute the mean difference between dependent (intention not to smoke) and independent (demographic factors) variables. The level of statistic significant in this research is at the alpha = 0.05 or 95% level of confidence in order to test the hypotheses.

4.5.2. Inferential Analysis

Zikmund (2003) mentioned that inferential analysis is used to make inference or judgments about a population on the basis of a sample. Thus, the researcher used the inferential statistics to test the research hypothesis.

Pearson Product Moment Correlation Coefficient

The most popular technique that indicates the relationship of one variable to another is simple correlation analysis. Correlation analysis involves measuring the closeness of the relationship between two or more variables; it considers the joint variation of two measures, neither of which is restricted by the experimenter (Churchill, 1996). It is a statistical measure of the co-variation or association between two variables (Sekaran, 1992). As the researcher is

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interested in finding the relationship between the independent variable and dependent variable, the appropriate statistical technique is Pearson Product Moment Correlation coefficient. In this research, the Pearson Product Moment Correlation Coefficient was applied for testing the relationship between protection motivation theory components and intention not to smoke.

The correlation coefficient (r) ranges from +1.0 to -1.0. If the value of r is 1.0, there is a perfect positive linear relationship or a perfect positive linear relationship is indicated. If r=0, no correlation is indicated. A correlation indicates both the magnitude of the linear relationship and the direction of the relationship (Zikmund, 2003).

The formula for calculating the correlation coefficient of two variables X and Y is:

$$r_{xy} = r_{yx} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{(x_i - \bar{x})^2 (y_i - \bar{y})^2}}$$

Where, the symbol $\bar{X}$ and $\bar{Y}$ represent the sample means of X and Y respectively.

Table 4.4.: The Statistical Test for Hypotheses

Hypotheses	Statistical Technique used
To test the relationship between self-efficacy at resisting tobacco marketing and intention not to smoke towards antismoking messages	Pearson Product Moment Correlation Coefficient
To test the relationship between severity of health risks and intention not to smoke towards antismoking messages	Pearson Product Moment Correlation Coefficient
To test the relationship between severity of social disapproval risks and intention not to smoke towards antismoking messages	Pearson Product Moment Correlation Coefficient
To test the relationship between self-efficacy at refusing cigarette offers and intention not to smoke towards antismoking messages	Pearson Product Moment Correlation Coefficient

To test the difference between demographic factors and intention not to smoke with regard to antismoking messages	ANOVA

CHAPTER V

PRESENTATION OF DATA AND CRITICAL DISCUSSION OF RESULTS

This chapter presents the results of the survey. The data analysis, interpretation and presentation of data from a sample of 381 undergraduate students of Assumption University of Thailand is discussed under two sections as follows: (1) the demographic profile of respondents and (2) Hypothesis Testing – to measure the relationship between protection motivation theory components, demographic factors and intention not to smoke in eight hypotheses using Analysis of Variance (ANOVA), Independent T-test and Pearson's Correlation coefficient.

Section 1: Descriptive Statistics

5.1: Descriptive analysis of Demographic characteristics

Descriptive analysis is the transformation process of raw data into a form that makes it easier to be understood and interpreted (Zikmund, 2003). It is used to analyze the respondents' personal data. In this research, the demographic characteristics of respondents include age, gender, nationality and personal income.

The analysis of descriptive statistics is as follows:

Table 5.1: Age of respondents

Age of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-17 years old	29	7.6	7.6	7.6
	18-21 years old	252	66.1	66.1	73.8
	22 years old and above	100	26.2	26.2	100.0
	Total	381	100.0	100.0	

Figure 5.1: Age of respondents

Age of respondents
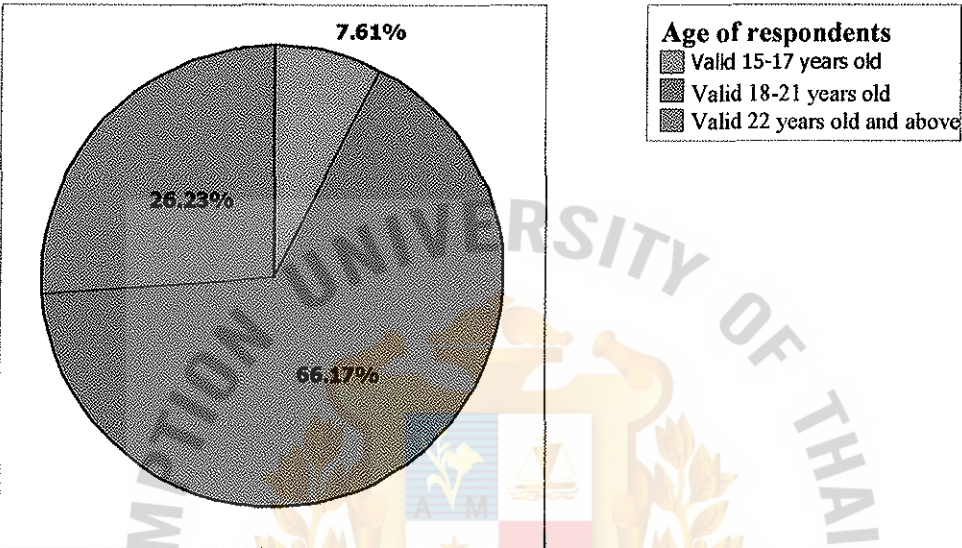
Table 5.1 and Figure 5.1 depict the classification of respondents by their age groups and frequency distribution. Among 381 respondents, 252 respondents are aged between 18-21 years, representing, 66.1% of the total respondents. The age group 22 years old and above consists of 100 respondents or 26.2%, 29 respondents are in the age group 15-17 years old, representing 7.6%. It can be seen that the highest percentage of respondents are in the age group of 18-21 years old whereas the lower percentage of the respondents are in the age group 15-17 years.

Table 5.2: Gender of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	321	84.3	84.3	84.3
	Female	60	15.7	15.7	100.0
	Total	381	100.0	100.0	

Figure 5.2. Gender of respondents

Gender
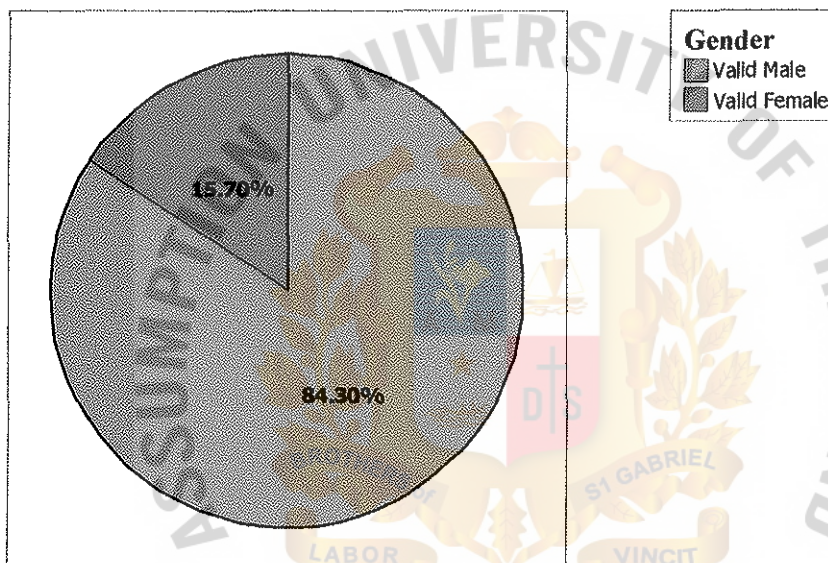
Table 5.2 and Figure 5.2 shows that among all the 381 respondents, 321 respondents are male representing 84.3% and 60 respondents are female representing 15.7%.

Table 5.3: Nationality of respondents

Nationality of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Thai	336	88.2	88.2	88.2
	Non-Thai	45	11.8	11.8	100.0
	Total	381	100.0	100.0	

Figure 5.3: Nationality of respondents

Nationality

Nationality
Valid Thai
Valid Non-Thai
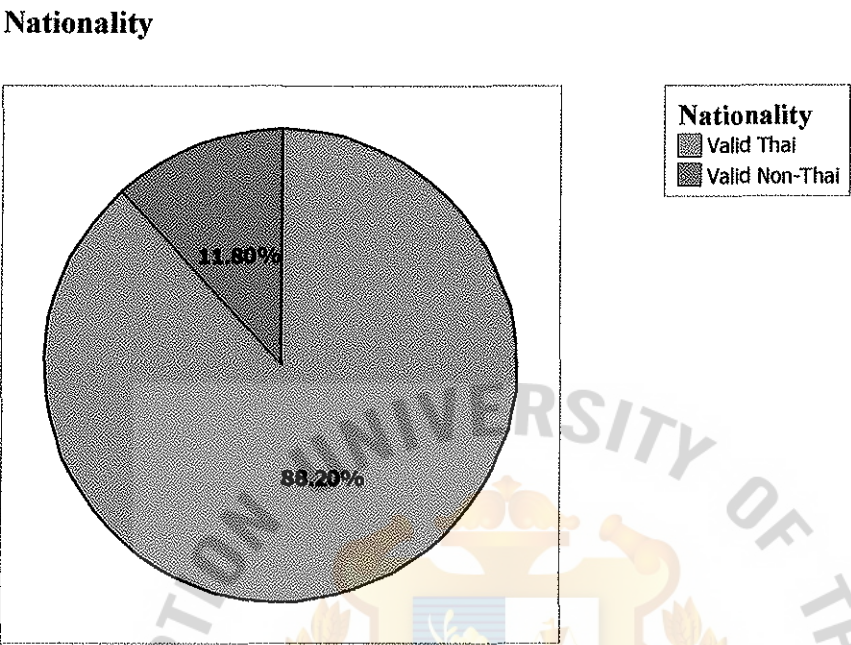
From the above Table 5.3 and Figure 5.3, the highest number of respondents are Thai nationals representing 88.20%, while Non-Thais represent 11.80%.

Table 5.4: Income of the Respondents

Income level of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	More than 30,000 baht	4	1.0	1.0	1.0
	Not working	333	87.4	87.4	88.5
	Below 20,000 baht	34	8.9	8.9	97.4
	20,000 - 30,000 baht	10	2.6	2.6	100.0
	Total	381	100.0	100.0	

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Figure 5.4: Personal Income/ Allowance from parents, of respondent

Personal Income / Allowance from Parents
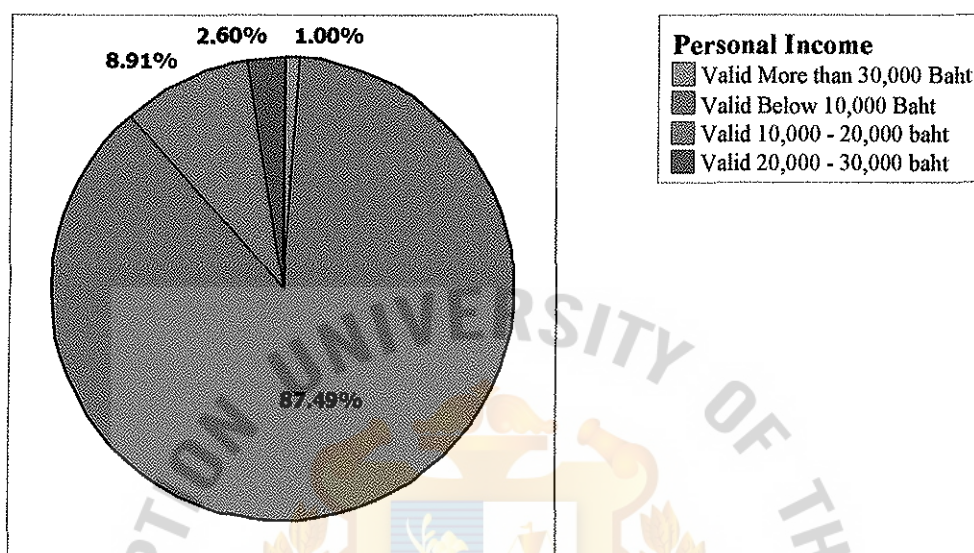
Table 5.4 and Figure 5.4 indicates that the highest number of respondents are having a personal income of below 10,000 Baht. This group consists of 333 respondents representing 87.4% of the total and 34 respondents have an average monthly income of between 10,000 - 20,000 Baht, representing 8.9%. The numbers of respondents having an average monthly income of 20,000 to 30,000 Baht are 10, representing 2.6%, whereas 1% of the student population have an average monthly income of above 30,000 Baht.

5.2. Descriptive analysis of Independent and Dependent Variables

In this research, Protection Motivation Theory components was used to measure the independent variables. It consists of self efficacy at resisting tobacco marketing, severity of health risks, social disapproval risks and self efficacy at refusing cigarette offers. These variables were measured using the Likert scale. The respondents were asked to rate each value using the scale ranging from strongly agree to strongly disagree.

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5=Strongly Agree

4=Agree

3=Neutral

2=Disagree

1=Strongly Disagree

Table 5.5: Mean score rating, minimum, maximum, and standard deviation of self efficacy at resisting tobacco marketing.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I can resist being fooled by cigarette advertisements	381	1.00	5.00	4.2283	.71660
I can resist being fooled by cigarette promotions	381	1.00	5.00	4.2126	.64027
If cigarette companies encourage me to smoke, I can say no	381	1.00	5.00	4.2835	.76328
I can help to make public places smoke-free	381	1.00	5.00	4.2677	.74107
I an confident that I can manage the situation by either avoiding or neutralizing obstacles	381	1.00	5.00	4.4383	.64031
Valid N (listwise)	381				

Table 5.5 shows that "I am confident that I can manage the situation by either avoiding or neutralizing obstacles", is rated the highest with a mean score of 4.43, followed by the high value "If cigarette companies encourage me to smoke, I can say no" at 4.28, and "I can resist being fooled by cigarette promotions", is rated the lowest, at a mean score of 4.21.

Table 5.6: Mean score rating, minimum, maximum, and standard deviation of severity of health risks

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I do not want to die early	381	1.00	5.00	4.4541	.67755
I do not want to get lung disease	381	1.00	5.00	4.4619	.76554
I do not want to get wrinkles	381	1.00	5.00	4.4252	.63891

	N	Minimum	Maximum	Mean	Std. Deviation
I do not want to become addicted to nicotine	381	1.00	5.00	4.4173	.67404
I do not want to have bad breath	381	1.00	5.00	4.2966	.73893
Valid N (listwise)	381				

Table 5.6 illustrates that the mean score of "I do not want to get lung disease" at 4.46 is rated the highest, followed by "I don not want to die early" at a mean score of 4.45. "I do not want to become addicted to nicotine" and "I do not want to have bad breath" were rated the lowest at a mean score of 4.41 and 4.29, respectively.

Table 5.7: Mean score rating, minimum, maximum, and standard deviation of Social disapproval risks

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Smoking cigarettes is acceptable to my close friends	381	1.00	5.00	3.8005	1.14114
If I smoked cigarettes, I would look attractive to others	381	1.00	5.00	3.9265	1.08086
If I smoked cigarettes, I would fit in better with kids of my age	381	1.00	5.00	3.4751	1.18878
If I smoked cigarettes, I would fit in at parties	381	1.00	5.00	3.8583	1.07403
Your close friends will strongly approve of your smoking cigarettes	381	1.00	5.00	3.6299	1.38869
Valid N (listwise)	381				

From Table 5.7, "If I smoked cigarettes, I would look attractive to others", has the highest mean score of 3.92 followed by, "If I smoked cigarettes, I would fit in at parties" at a mean score of 3.85. "If I smoked cigarettes, I would fit in better with kids of my age", was rated the lowest with a mean score of 3.47. This implies that most of the students do not agree that if they smoked cigarettes, they would fit in better with the kids of their age.

Table 5.8: Mean score rating, minimum, maximum, and standard deviation of self efficacy at refusing cigarette offers

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
If others pressure me to smoke, I can say no	381	1.00	5.00	4.1732	.61680
If others pressure me to smoke, I can walk away/leave	381	1.00	5.00	4.3727	.76274
If others pressure me to smoke, I can change the subject	381	1.00	5.00	4.3858	.68879
I can cope with any stressful situation	381	1.00	5.00	3.9318	1.22068
I am certain that I can resist to smoke even when I drink alcohol with my friends	381	1.00	5.00	3.4724	1.53979
Valid N (listwise)	381				

Table 5.8 indicates that "If others pressure me to smoke, I can change the subject" has the highest mean score of 4.38, while "If others pressure me to smoke, I can walk away/leave" obtained a mean score of 4.37. "I am certain that I can resist smoking even when I drink alcohol with my friends" was adjourned the lowest mean score of 3.47.

Table 5.9: Mean score rating, minimum, maximum, and standard deviation of intention not to smoke

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
In the future, you might smoke one puff or more of a cigarette	381	1.00	5.00	2.2546	1.63216
You might try out cigarette smoking for a while	381	1.00	5.00	3.6063	1.47518
If one of your best friends were offer you a cigarette, you would smoke it	381	1.00	5.00	3.5827	.82501
If you smoke cigarettes now, do you plan to quite soon	381	1.00	5.00	4.4593	.64199
Valid N (listwise)	381				

Table 5.9 shows that "If you smoke cigarettes now, do you plan to quit soon" has the highest mean score of 4.45, followed by "You might try out smoking for a while" which has a means score of 3.60 and "In future, you might smoke one puff or more of a cigarette" is rated the lowest with the mean score of 2.25.

5.3. Summary of hypothesis testing

5.3.1. Inferential Statistics

Inferential statistics involves the analysis and verification for hypothesis statements in the populations, which are used to make inferences about the characteristics of the population. Kinnear and Taylor (1991) said that inferential statistics is a branch of statistics that allow researcher to make judgment about the population based upon the results generated by samples. There are a total of eight hypotheses tested in this study. Pearson product moment correlation coefficient is used to test the relationship between the Protection Motivation components, demographic factors and intention not to smoke with regard to antismoking messages.

Rule of Rejection: If the significance value is greater than 0.05, the null hypothesis will be accepted, otherwise, the null hypothesis will be rejected.

Hypothesis 1:

H_{01}: There is no relationship between self-efficacy at resisting tobacco marketing, and intention not to smoke.

H_{a1}: There is a relationship between self-efficacy at resisting tobacco marketing, and intention not to smoke.

Table 5.10: Correlation for self efficacy at resisting tobacco marketing and intention not to smoke.

Correlations

		Self efficacy at resisting tobacco marketing	Intention not to smoke
Self efficacy at resisting tobacco Market	Pearson Correlation	1	.555(**)
	Sig. (2-tailed)	.	.000
	N	381	381
Intention not to smoke	Pearson Correlation	.555(**)	1
	Sig. (2-tailed)	.000	.
	N	381	381

** Correlation is significant at the 0.01 level (2-tailed).

In the first hypothesis test, the null hypothesis H_{01} stated that there is no relationship between self efficacy and intention not to smoke. The Pearson correlation coefficient analysis in Table 5.10 shows that there is a correlation between self efficacy at resisting tobacco marketing and intention not to smoke with a two tailed significance of 0.000, which is less than 0.05 (0.000 < 0.05). Accordingly, the null hypothesis is rejected, which means that there is a relationship between self efficacy and intention not to smoke. The correlation coefficient .555 means that self efficacy at resisting tobacco marketing has strong positive relationship with intention not to smoke. Therefore, as self efficacy at resisting tobacco marketing increases, the intention not to smoke will also increase as a result.

Hypothesis 2:

H_{02}: There is no relationship between severity of health risks, and intention not to smoke.

H_{a2}: There is a relationship between severity of health risks, and intention not to smoke.

Table 5.11: Correlation for severity of health risks and intention not to smoke.

Correlations

		Severity of health risks	Intention not to smoke
Severity of health risks	Pearson Correlation	1	.524(**)
	Sig. (2-tailed)	.	.000
	N	381	381

Intention not to smoke	Pearson Correlation	.524(**)	1
	Sig. (2-tailed)	.000	.
	N	381	381

** Correlation is significant at the 0.01 level (2-tailed).

In the second hypothesis test, the null hypotheses H_{02} stated that there is no relationship between severity of health risks and intention not to smoke. The Pearson correlation coefficient analysis in Table 5.11 shows that there is a correlation between severity of health risks and intention not to smoke with a two tailed significance of 0.000, which is less than 0.05 (0.000 < 0.05). Accordingly, the null hypothesis is rejected, which means that there is a relationship between severity of health risks and intention not to smoke. The correlation coefficient is equal to 0.524, which shows that severity of health risks has a strong positive relationship with intention not to smoke. Therefore as the severity of health risks increases, the intention not to smoke will also increase as a result.

Hypothesis 3:

H_{03}: There is no relationship between severity of social disapproval risks, and intention not to smoke.

H_{a3}: There is a relationship between severity of social disapproval risks, and intention not to smoke.

Table 5.12: Correlation for severity of social disapproval risks and intention not to smoke

Correlations

		Social disapproval risk	Intention not to smoke
Social disapproval risk	Pearson Correlation	1	.567(**)
	Sig. (2-tailed)	.	.000
	N	381	381
Intention not to smoke	Pearson Correlation	.567(**)	1
	Sig. (2-tailed)	.000	.
	N	381	381

** Correlation is significant at the 0.01 level (2-tailed).

In the third hypothesis test, the null hypotheses H_03 stated that there is no relationship between severity of social disapproval risks and intention not to smoke. The Pearson correlation coefficient analysis in Table 5.12 shows that there is a correlation between severity of social disapproval risks and intention not to smoke with a two tailed significance of 0.000, which is less than 0.05 (0.000 < 0.05). Accordingly, the null hypothesis is rejected, which means that there is a relationship between severity of social disapproval risks and intention not to smoke. The correlation coefficient is equal to 0.567, which shows that severity of social disapproval risks has a strong positive relationship with intention not to smoke. Therefore as the severity of health risks increases, the intention not to smoke will also increase as a result.

Hypothesis 4:

H_04: There is no relationship between self-efficacy at refusing cigarette offers, and intention not to smoke.

H_a4: There is a relationship between self-efficacy at refusing cigarette offers, and intention not to smoke.

Table 5.13: Correlation for self efficacy at refusing cigarette offers and intention not to smoke

Correlations

		Self efficacy at refusing cigarette offers	Intention not to smoke
Self efficacy at refusing cigarette offers	Pearson Correlation	1	.556(**)
	Sig. (2-tailed)	.	.000
	N	381	381
Intention not to smoke	Pearson Correlation	.556(**)	1
	Sig. (2-tailed)	.000	.
	N	381	381

** Correlation is significant at the 0.01 level (2-tailed).

In the fourth hypothesis test, the null hypotheses H_04 stated that there is no relationship between self efficacy at refusing cigarette offers and intention not to smoke. The Pearson

correlation coefficient analysis in Table 5.13 shows that there is a correlation between self efficacy at refusing cigarette offers and intention not to smoke with a two tailed significance of 0.000, which is less than 0.05 (0.000 < 0.05). Accordingly, the null hypothesis is rejected, which means that there is a relationship between self efficacy at refusing cigarette offers and intention not to smoke. The correlation coefficient is equal to 0.556, which shows that self efficacy at refusing cigarette offers has a strong positive relationship with intention not to smoke. Therefore as the self efficacy at refusing cigarette offers increases, the intention not to smoke will also increase as a result.

Hypothesis 5:

In this part, the one-way ANOVA is used to determine the relationship between groups of respondents' age in terms of intention not to smoke with regard to antismoking messages. The null hypothesis will be rejected when Sig. or p-value is less than or equal to alpha 0.05 significance level.

H_{05}: There is no difference between respondent's age and intention not to smoke with regard to antismoking messages.

Ha_5: There is a difference between respondent's age and intention not to smoke with regard to antismoking messages.

Table 5.14: ANOVA table for age level and intention not to smoke

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.233	2	7.116	12.932	.000
Within Groups	208.009	378	.550		
Total	222.241	380			

From the above table, the researcher found that p-value (0.000) is significant at 0.05 confidential levels. Therefore alternative hypothesis is accepted and it shows that there is significant difference between respondent's age and intention not to smoke with regard to

antismoking messages. The following table shows the difference of each group of respondents' age.

Table 5.15: Multiple Comparisons of age level

(I) Age of respondent	(J) Age of respondent	Mean Difference (I-J)	Std. Error	Sig.
15-17 years old	18-21 years old	.2053	.14546	.370
	22 years old and above	.6061(*)	.15646	.001
18-21 years old	15-17 years old	-.2053	.14546	.370
	22 years old and above	.4008(*)	.08767	.000
22 years old and above	15-17 years old	-.6061(*)	.15646	.001
	18-21 years old	-.4008(*)	.08767	.000

* The mean difference is significant at the .05 level.

Table 5.15 shows that respondents who are aged 22 years old and above are significantly different from the respondents who are aged between 15-17 years old and 18-21 years old by p-value equal to 0.001 and 0.000, respectively at 0.05 confidence levels. Taking the mean difference value, respondents' who are aged 15-17 years old (mean difference = 0.6061) and 18-21 years old (mean difference = 0.4008) have less intention to smoke than those respondents aged above 22 years old and above, with regard to antismoking messages.

Hypothesis 6:

In this part, Independent Sample t-test was used to determine the difference between gender and intention not to smoke with regard to antismoking messages.

H_{06}: There is no difference between respondent's gender and intention not to smoke with regard to antismoking messages.

Ha6: There is a difference between respondent's gender and intention not to smoke with regard to antismoking messages.

Table 5.16: Independent Sample T-Test for Gender with Intention not to smoke

		Levene's Test for Equality of Variances					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Intention not to smoke	Equal variances assumed	10.046	.002	5.374	379	.000	.5580
	Equal variances not assumed			4.599	73.595	.000	.5580

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Intention not to smoke	Male	321	3.5671	.70692	.03946
	Female	60	3.0092	.88860	.11472

Table 5.16 presents the results of the sample T-test. The significant value is less than 0.05 (0.000). Therefore the researcher accepts alternative hypothesis which states that there is a difference between respondent's gender and intention not to smoke with regard to antismoking messages. The mean difference is equal to 0.5580 which shows that the males (mean=3.567) has got less intention to smoke than females (mean=3.0092) with regard to antismoking messages.

Hypothesis 7:

H_{07}: There is no difference between respondent's nationality and intention not to smoke with regard to antismoking messages.

Ha7: There is a difference between respondent's nationality and intention not to smoke with regard to antismoking messages.

Table 5.17: Independent Sample T-Test for Nationality with Intention not to smoke

		Levene's Test for Equality of Variances				Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df			Lower	Upper
Intention not to smoke	Equal variances assumed	15.919	.000	6.085	379	.000	.7060	.47786	.93411
	Equal variances not assumed			4.848	50.66	.000	.7060	.41356	.99841

Group Statistics

	Nationality	N	Mean	Std. Deviation	Std. Error Mean
Intention not to smoke	Thai	336	3.5626	.69827	.03809
	Non-Thai	45	2.8567	.94295	.14057

Results from 5.17 shows that p-value (0.000) is significant at 0.05 confidence levels. Therefore alternative hypothesis is accepted which states that there is a difference between respondent's nationality and intention not to smoke with regard to antismoking messages. The mean difference is equal to 0.7060 which shows that Thai (mean = 3.5626) has got less intention to smoke than Non-Thai (mean = 2.8567) with regard to antismoking messages.

Hypothesis 8:

For testing hypothesis 8, one-way ANOVA is used to determine the relationship between groups of respondents' personal income in terms of intention not to smoke with regard to

antismoking messages. The null hypothesis will be rejected when Sig. or p-value is less than or equal to alpha 0.05 significance level.

H_{08}: There is no difference between respondent's personal income and intention not to smoke with regard to antismoking messages.

Ha8: There is a difference between respondent's personal income and intention not to smoke with regard to antismoking messages.

Table 5.18: ANOVA table for personal income level and intention not to smoke

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.041	3	5.014	9.122	.000
Within Groups	207.200	377	.550		
Total	222.241	380			

From the above table, the researcher found that p-value (0.000) is significant at 0.05 confidence levels. Therefore alternative hypothesis is accepted and it states that there is significant difference between respondent's personal income and intention not to smoke with regard to antismoking messages. The following table shows the difference of each group of respondent's personal income.

Table 5.19: Multiple Comparisons of personal income level

(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
More than 30,000 baht	Below 10,000 baht	-1.7892(*)	.37290	.000	-2.8364	-.7421
	10,000 - 20,000 baht	-1.4904(*)	.39187	.003	-2.5909	-.3900
	20,000 - 30,000 baht	-1.7125(*)	.43859	.002	-2.9441	-.4809
Below 10,000 baht	More than 30,000 baht	1.7892(*)	.37290	.000	.7421	2.8364
	10,000 - 20,000 baht	.2988	.13347	.173	-.0760	.6736
	20,000 - 30,000 baht	.0767	.23793	.991	-.5914	.7449
10,000 - 20,000 baht	More than 30,000 baht	1.4904(*)	.39187	.003	.3900	2.5909
	Below 10,000 baht	-.2988	.13347	.173	-.6736	.0760

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	20,000 - 30,000 baht	-.2221	.26669	.875	-.9710	.5269
20,000 - 30,000 baht	More than 30,000 baht	1.7125(*)	.43859	.002	.4809	2.9441
	Below 10,000 baht	-.0767	.23793	.991	-.7449	.5914
	10,000 - 20,000 baht	.2221	.26669	.875	-.5269	.9710

Table 5.19 shows that the significant value is less then 0.05, comprising of below 10,000 (p-value= 0.000), income between 10,000 - 20,000 Baht (p-value=0.003), earning between 20,000-30,000 Baht (p-value=0.002), and more than 30,000 Baht (p-value=0.000) respectively at 0.05 confidence levels. Taking the mean difference value, the results showed that the respondents who have income below 10,000 (mean difference=1.7892), have income between 10,000 - 20,000 Baht (mean difference=1.4904), and between 20,000-30,000 Baht (mean difference=1.7125), has got less intention to smoke than the respondents who have got an average monthly income of above 30,000 Baht with regard to antismoking messages.

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, conclusion and recommendations based on the results of the study and are divided in to three sections. The results of the research study have been illustrated below with the findings. The results have been presented according to the methodological approach defined in chapter 4. The first section summarizes conclusion of the demographic characteristics; followed by recommendations and suggestions for further study.

6.1. Summary of Findings

The main objective of this research was to determine the relationship between antismoking messages and Assumption University undergraduates' intention not to smoke, based on Protection Motivation Theory. The Protection Motivation Theory components include self efficacy at resisting tobacco marketing, severity of health risks, severity of social disapproval risks and self efficacy at refusing cigarette offers.

Characteristics of the respondents:

For this research, 381 questionnaires were distributed to undergraduate students studying in Assumption University of Thailand. Out of the 381 respondents, 84.3% were males and 15.7% respondents were female. The largest group of respondents or 66.1% falls into the age group of 18-21 years followed by 22 years old and above responding 26.2%. Majority of the respondents representing 87.4% are having a personal income/allowance from parents, of below 10,000 Baht. Minority of the respondents represent 1% with respondents who has an average monthly income of above 30,000 Baht. Regarding the Nationality of the respondents, Thais consisted of the maximum representing 88.2%, while non-Thais representing 11.8%.

Summary of Protection Motivation Theory components:

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Most of the respondents, rated severity of health risks as the most important component with a mean score of 4.4619. Self efficacy at resisting tobacco marketing is the second most important factor with a mean score of 4.4383 followed by self efficacy at refusing cigarette offers, social disapproval risks with the means scores of 4.3858, 3.9265 respectively.

Summary of hypothesis testing

The objectives of the research was to examine whether antismoking messages affecting cognitions are related to students' intention not to smoke. The table below (Table 6.1) given below illustrates the summary of the hypothesis testing:

Table 6.1: Summary of relationship between Independent and Dependent variable

Hypothesis	Statistical test	Significant (Two-tailed) Value	Correlation Coefficient r	Result
Hypothesis 1	Pearson Product Moment Correlation Coefficient	.000	0.555	Reject H_{01}
Hypothesis 2	Pearson Product Moment Correlation Coefficient	.000	0.524	Reject H_{02}
Hypothesis 3	Pearson Product Moment Correlation Coefficient	.000	0.567	Reject H_{03}
Hypothesis 4	Pearson Product Moment Correlation Coefficient	.000	0.556	Reject H_{04}
Hypothesis 5	ANOVA	.000		Reject H_{05}
Hypothesis 6	Sample T-test	.000		Reject H_{06}
Hypothesis 7	Sample T-test	.000		Reject H_{07}
Hypothesis 8	ANOVA	.000		Reject H_{08}

6.2. Conclusions and Implications

According to the results of hypotheses tests, all eight null hypotheses were rejected and the alternate hypotheses accepted. All the five independent variables have strong positive relationship with the dependent variable, which is intention not to smoke. Therefore, the research findings showed that the four measured protection motivation theory cognitions (Rogers, 1983) should directly influence intentions. These findings are consistent with protection motivation theory which assumes that the cognition-intention relations are relatively stable and predictable.

The first hypothesis result showed that there is a strong positive relationship between self-efficacy and intention not to smoke. Self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997). Antismoking messages attempt to increase undergraduate students' knowledge about cigarette marketing tactics, including the perpetrators, target audiences, effects, and ethics. As Friestad and Wright (1994) explain, when a person understands that an agent's action is a persuasion attempt, a "change of meaning" occurs, wherein the person can exert control over the persuasion attempt. In protection motivation theory terms, antismoking messaging seeks to boost adolescents' knowledge regarding tobacco marketing tactics and ultimately, their self-efficacy at resisting such tactics.

According to the result of second hypothesis, there is a strong positive relationship between severity of health risks and intention not to smoke. Disease and death message themes used in antismoking advertisements discuss how smokers suffer from serious diseases, such as emphysema and lung cancer, and often die prematurely. The goal of these advertisements is to convey the "harsh medical realities of the effects of the smoking" (Parpis 1997, p.35). From the perspective of protection motivation theory (Rogers, 1983), the intent is to increase perceptions of health risk severity. The results showed that if antismoking messages showed higher severity of health risks, then there would be less intention to smoke among undergraduate students.

The third hypothesis results show that there is a strong relationship between severity of social disapproval risks and intention not to smoke. Many message themes are used in antismoking advertisements which stress that smokers must cope with highly unattractive and annoying side-effects that are cosmetic in nature, such as smelliness. The messages attempt to convey that "smoking has many unpleasant consequences that can lead to social disapproval, such as bad breath, yellow teeth, smelling bad" (Minnesota Department of Health 1991, p.52). The results can be confirmed from the perspective of protection motivation theory, that these messages attempt to enhance perceptions that smoking poses severe social disapproval risks because of its unattractive side effects.

The fourth hypothesis confirms that there is a strong relationship between self-efficacy at refusing cigarette offers and intention not to smoke. Self-efficacy refers to an individual's estimate or personal judgment of his or her own ability to succeed in reaching a specific goal, such as quitting smoking or losing weight. The findings support the refusal skill model messages used in antismoking advertisements explain why many attractive role models view smoking as unappealing and demonstrate refusals of cigarette offers (Worden et al.1988). Refusal skill Role Model advertising attempts to enhance adolescents' perceptions of self-efficacy at refusing cigarette offers (Worden at al.1988). The advertising shows role models successfully refusing cigarettes, which may teach skills and raise students' expectations that they too are capable of refusing (Bandura, 1997).

As per the hypotheses test results, it can be seen that there are significant differences in demographic variables and intention not to smoke with regard to antismoking messages. The findings showed that the majority of the target group was male. The most common age group was between 18-21. Majority of the respondents were Thais with no personal income.

6.3. Recommendations

Based on the findings of the study, several recommendations can be made for human resource professionals and practitioners in public and private sectors to plan or design more effective programs among adolescents.

When policy officials and advertising agencies design antismoking campaigns for adolescents, they should seriously consider using norm-based appeals - specifically, appeals that convey that smoking poses severe social disapproval risks. This strategy would be consistent with considerable prior research that suggests a strong link between adolescents' perceptions of smoking norms and their intentions and behaviors (Pechmann and Knight 2002). Although many of the recent Philip Morris antismoking advertisements seem to contain social norm messages, they do not appear to be effective (Farrelly et al. 2002), perhaps because these messages are mixed. In the researcher's point of view, many of the Philip Morris advertisements seem to imply that both nonsmoking and smoking are socially acceptable behaviors, which do not constitute a clear antismoking message. Furthermore, the Philip Morris advertisements tend to show nonsmokers who are clean – cut and stereotypically "good" and might imply that adolescents should smoke if they want to demonstrate that they are not "goody two shoes" (Amos et al.1998).

According to the findings, there is a positive relationship between severity of health risks and intention not to smoke. Accordingly, advertisements that stress health risks vulnerability seem to work. Therefore, if policy officials want to use health based appeals, the researcher recommends that the appeals convey that adolescents are highly vulnerable to health risks from smoking. The advertisements might, for example, tell true-life stories of younger victims, stress how quickly these victims became addicted to smoking, and show how much they have suffered.

Findings suggest that tobacco marketing (anti industry) messages maybe more effective with adolescents if they elicit stronger reactance or rebellion against tobacco firms. According to reactance theory (Brehm, 1972), it should be possible to intensify reactance by, for example, showing tobacco firms using heavy-handed tactics to persuade adolescents to smoke or stressing the number and importance of the threatened freedoms (Clee and Wicklund, 1980). Alternatively, what maybe needed are advertisements that address youths' primary misconception about why they smoke. Most youths naively believe they smoke not because of tobacco marketing but because their friends look cool doing it (Pechamann and Knight, 2002). According to Pechamann and Knight's (2002) research, youths perceive that smokers "look cool" in large part because the attractive, cool models in cigarette

advertisements prime or make salient positive smoker stereotypes and bias social perceptions. Therefore, tobacco marketing messages may be needed that educate youth about this priming phenomenon.

Based on the findings, self efficacy had a strong positive relationship with intention not to smoke. The researcher recommends that the tone and framing of the antismoking message needs to be positive. It needs to focus on the benefits of remaining a nonsmoker. The message needs to be framed in terms capable of literal interpretation and to communicate a high level of efficacy such that adolescents need to feel they can avoid these consequences by continuing to resist taking up smoking. Advertising research indicates that a message is more effective if the target audience experiences a feeling of involvement in it. It must also communicate new, important information that engages the audience at a cognitive and affective level and is readily verifiable against the audience's own experience. The threat of addiction can be used as the key message in a campaign to reduce the incidence of adolescent cigarette smoking.

Findings showed that there are significant differences between demographic variables and intention not to smoke with regard to antismoking messages. Therefore the research strongly recommends to understand the differences between smokers and non smokers attitudes and beliefs and assess adolescent's ability to comprehend age-appropriate analogies to develop an effective advertising campaign that would discourage them from beginning to smoke. For example, the advertising campaign should design messages which would focus on communicating the long term health effects of smoking in a concrete way by creating analogies between the effects of smoking and things with which youth are familiar, such as insecticide and vehicle exhaust. The objective of such type of antismoking messages is to provide both potential smokers and nonsmokers with relevant and meaningful images and messages about the long term effects of smoking. Finally, antismoking messages and antismoking information aimed at females should focus more on prior beliefs about the dangers of smoking and getting into trouble and on peer pressure from friends and siblings, who appear to be more heavily influenced by such factors.

6.4. Further Studies

As this research focuses only on the relationship between protection motivation theory components and intention not to smoke towards antismoking messages, there are other factors that should be investigated in the future which are as follows:

♦ Future research may consider approaching the same problem through other health communication theories such as the Health Belief Model, Theory of Reasoned Action, or the Extended Parallel Model in finding out the relationship between antismoking messages towards adolescents' intention not to smoke. Though the Protection Motivation Theory shares some common components with those theories, other components may be useful and meaningful in finding out the relationship.

♦ This study concentrated on only four components of the Protection Motivation Theory: self efficacy at resisting tobacco marketing, severity of health risks, social disapproval risks, self efficacy at refusing cigarette offers. Future researchers may consider investigating the other elements including fear, response cost, and rewards that may generate better outcomes.

♦ Future researchers should consider replicating this investigation with other students who are at adolescent age studying in different parts of Thailand to confirm or refute the findings, thus contributing to greater generalized ability.

BIBLIOGRAPHY

Aaro, L.E. (1998). The role of theory in adolescent health behavior research and partners' experience employing theories in their investigations. The Second Workshop of the Adolescent Reproductive Health Network (ARHNe): Health System and Health Promotion Research in Eastern and South Africa. October pp.11-16.

Ajzen, I. (1991). The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, 50, pp.179-211.

Ajzen, I., and Fishbein, M. (1980) Understanding Attitudes and Predicting Social Behavior. Englewood cliffs. New Jersey: Prentice Hall.

Anderson, Gary. (1996), "Fundamentals of Educational Research", Routledge Falmer, Taylor and Francis Inc. p: 202.

Andrews, C. J., Netemeyer, G. R., Burton, S., Moberg, P.D., and Christiansen, A. (2004). Understanding adolescent intentions to smoke: An examination of relationships among social influence, prior trial behavior, and antitobacco campaign advertising, Journal of Marketing, Vol.68 (July 2004), pp.110-123.

Arnett, J. J. (1992). Reckless behavior in adolescence: A developmental perspective, Developmetal Review, 12, pp.339-373.

Bachman, J.G., Johnston, L.D., and O'Malley, P.M. (1998). Explaining recent increases in students' marijuana use: Impacts of perceived risks and disapproval, American Journal of Public Health, 88, pp.887-892.

Bagozzi, R. P., Moore, D.J. (1994). Public services advertisements: Emotions and empathy guide prosocial behavior, Journal of Marketing, 58(1), pp. 56-70

Bandura, A. (1997). Self-efficacy: The Exercise of control. New York: W.H.Freeman and Company.

Bauer, Raymond A. (1960), "Consumer Behavior as Risk Taking", In Dynamic Marketing for a Changing World, R.S. Hancock (Ed.), Chicago: American Marketing Association, pp. 389-98.

Bearden, O. W., Ingram N.T., and LaForge, W. R. (2004). Marketing Principles and Perspectives. Mc Graw Hill. 4th Edition.

Berndt, T. (1979). Developmental changes in conformity to peers and parents. Developmental Psychology, 15, pp.608-616.

Block, L. G. (1995). When to accentuate the negative: The effects of perceived efficacy and message framing on intentions, Journal of Advertising Research, vol. 30,3, p.48.

Botvin, G.j., Goldberg, C.J., Botvin, E.M., Dusenbury, L., (1993). Smoking Behavior of adolescent exposed to cigarette advertising, Public Health Reports, 108 (2), pp.217-223.

Brighan, J. (1998). Dying to Quit. Joseph Henry Press, Washington, D.C.

Brucks, M., Gary, M. A., and Marvin, E. G. (1988). Children's use of cognitive defenses against television advertising: A cognitive response approach. Journal of Consumer Research, 14 (3), pp. 471-82.

Campbell, M. C., Amna, K. (2000). Consumers' Use of Persuasion Knowledge: The Effects of Accessibility and Cognitive Capacity on Perceptions of an Influence Agent, Journal of Consumer Research, 27 (6), pp. 69-83.

Chassin, L., Presson, C. C., Rose, J.S., and Sherman, S. J. (2001). From adolescence to adulthood: Age-related changes in beliefs about cigarette smoking in a Midwestern community sample. Health Psychology, 20 (5), pp. 377-386.

Child Watch Project/Thailand Research Fund. (2006, April 2). What Thai teens do. The Nation, pp. A1, A2.

Churchill, G. A. (1996). Basic Marketing Research. Orlando, FL: The Dryden Press. 3rd edition.

Congsuvivatwong, P. (1996). An application of the protection motivation theory in preventive behavior against complication of essential hypertension patient in Songkhanagarind Hospital. Unpublished Master Thesis. Mahidol University, Thailand.

Conrad, K. M., Flay, B. R., and Hill, D. (1992). Why children start smoking cigarettes: Predictors of onset. British Journal of Addiction, 87, pp.1711-1724.

Cooper, D. R., and Schindler, P, S. (2001). Business Research Method. Singapore: McGraw-Hill.

Cox, D. F. (1967). Risk Taking and Handling in Consumer Behavior. Boston, MA: Harvard University Press.

Davis, D., and Cozenza, R. M. (1993). Business Research for Decision Making. Wadsworth Publishing Company.

Davitz, R., and Davitz, L. (1996). Evaluating Research Proposals: A Guide for the Behavioral Sciences. New Jersey, Prentice Hall.

De Vries, H., Backbier, E., and Dijkstra, M. (1995). The Impact of Social Influence in the content of attitude, self-efficacy, intention, and previous behavior as predictor of smoking onset. Journal of Applied Social Psychology, 25, pp.237-257.

Diclemente, J. R., Hansen, B. W., Ponton, E. L. (1996). Handbook of Adolescent Health Risk Behavior. Plenum Press, New York.

Dijkstra, A., Hein, D. V., and Jolanda, R. (1998). Computerized Tailored Feedback to Change Cognitive Determinants of Smoking: A Dutch Field Experiment. Health Education Research, 13 (6), pp.197-206.

Donna, J. F., Chris, P., and Neville, O. (1991). Protection Motivation Theory and adolescent's perceptions of exercise. Journal of Applied Social Psychology, 1991, 22, pp: 55-69.

Dorn, L.D., Crockett, L.J., and Peterson, A.C. (1988). The relations of pubertal status to interpersonal changes in young adolescents. Journal of Early Adolescence, 8, pp: 405-419.

Dwyer, T., Pierce, J.P., Hannan, C.D., and Burke, N. (1986). Evaluation of the Sydney 'Quit for life' antismoking campaign. Part II. Changes in smoking prevalence, Medical Journal of Australia, 144, pp.344-7.

Erikson, E. (1968). Identity: Youth in Crisis. New York: Norton.

Faust, M.S. (1983). Girls at puberty: Biological and psychosocial perspectives: In J. Brooks-Gunn and A. C. Peterson (Ed.), Alternative constructions of adolescents' growth (pp: 105-125). New York: Plennum.

Fishbein, M., and Ajzen, A. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Friestad, M., Peter, W. (1994). The Persuasion Knowledge Model: How
people cope with persuasion attempts, Journal of Consumer Research, 21 (6),
pp.1-31.

Frisch, R. (1983). Fatness, Puberty, and Fertility: The Effects of nutrition and physical
training on menarche and ovulation. In J. Brooks-Gunn and A.Peterson (Edn.),
Girls at puberty (pp. 29-49). New York: Plenum.

Glynn, T.J. (1993). Improving the health of U.S. Children: The need for early
intervention in tobacco use, Preventive Medicine, 22(4), pp.513-519.

Greene, A.L. (1986). Future time-perspective in adolescence. The present of things future
revisited, Journal of Youth and Adolescence, 15, pp.99-113.

Greening, L. (1972). Adolescets' cognitive appraisals of cigarette smoking: An
application of the Protection Motivation Theory, Journal of Applied Social
Psychology, 27(22), pp. 1972-1985.

Guttaleeradapum, N. (1997). The study of risk behavior of urban students. Bangkok: The
Social Research Institute, Chulalongkorn University.

Harris, D.M., and Guten, S. (1979). Self-efficacy: The Exercise of Control. New York:
W.H. Freeman and Company.

Hart, C. (2000). Doing Literature Review: Releasing the Social Science Research
Imagination. London: SAGE Publication.

Harter, S. (1990). Self and identity development. In S.S. Feldman and G.R. Elliot (Ed.),
At the threshold: the developing adolescent (pp: 352-387). Cambridge, MA:
Harvard University Press.

Hastings, G. B., and Philip, P. A., (1995). Tobacco Advertising and Children's smoking : A review of the Evidence, European Journal of Marketing, 29, 11, pp. 16-17.

Havinghurst, R. J. (1972). Developmental tasks and education. New York: David Mckay. 3rd edition.

Ho, R. (1998). The intention to give up smoking: Disease versus social dimensions, Journal of Social Psychology, 138 (6), pp. 368-80.

Irwin, C. E., Jr. (1990). The theoretical concept of at-risk adolescents. Adolescent Medicine: State of the Art Reviews, 1, pp. 1-14.

Irwin, C.E., Jr., and Millstein, S.G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence. Journal of Adolescent Health Care, 7, pp. 82S-96S.

Inhelder, B., and Piaget, J. (1958). The Growth of Logical Thinking From Childhood to Adolescence. New York: Basic Books.

Kaplan, C.P., Napoles-Springer, A., Stwart, S. L., and Perez-Stable, E.J. (2001). Smoking acquisition among adolescents and young Latinas the role of socioenvironmental and personal factors. Addictive Behaviors, 26, pp. 531-550.

Kuhn, D., Amsel, E., and O' Loughlin, M. (1988). The Development of Scientific Thinking Skills. San Diego, CA: Academic Press.

LaSala, K.B., and Sher-Janel, T.T. (2000). Preventing youth use of tobacco products: The role of nursing, Pediatric Nursing, 26(2), pp. 143-148.

Lewis, C. (1981). How adolescents approach decisions: Changes over grades seven to twelve and policy implications. Child Development, 52, pp. 538-544.

Lloyd, B. and Lucas, K. (1998). Smoking in Adolescence: Images and Identities. New York: Routledge.

Maher, R. A., and Rickwood, D. (1997). The theory of planned behavior, domain specific self-efficacy and adolescent smoking, Journal of Child and Substance Abuse, 6, pp. 57-76.

Makmaitree, S. (1995). An application of the protection motivation theory for developing AIDS preventive behavior among air technical training students. Unpublished Master thesis, Mahidol University, Thailand.

Meyrick, D.J. (2001). Forget the "blood and gore": An alternative message strategy to help adolescents avoid cigarette smoking, Journal of Health Education, 101(3), pp. 99-108.

Millstein, S.G. (1993). An insider's view: Health Promotion from the adolescent's American Medical Association State-of-the art conference on adolescent health promotion: Proceedings (pp: 5-14). Arlington, VA: National Center for Education in Maternal and Child Health.

Montemayor, R., Adams, G.R., and Gullotra, T.P. (1990). From Childhood to Adolescence a Transitional Period?, California: Sage publications, Inc.

National Health Statistical Office. (1996). The report of smoking behavior survey among population in 1986, 1988, 1991, 1993. Bangkok: Auk-Sorn Thai.

Orbell, S., Hodgkins, S., and Sheeran, P. (1997). Implementation intentions and the theory of planned behavior, Personality and Social Psychology Bulletin, 23(9), pp. 945- 954.

Parpis, E. (1997), Up in Smoke: Kicking Butt, Ad Week (Eastern Edition), 38 (41), pp.33-38.

Pechmann, C., Shih, C. (1999). Smoking scenes in movies and antismoking advertisements before movies: Effects of youth, Journal of Marketing, 63(7), pp. 1-13.

Pechmann, C., Zhao, G., Goldberg, E.M., and Reibling, E. T. (2003), What to convey in antismoking advertisements for adolescents: The use of protection motivation theory to identify effective message themes, Journal of Marketing, 67 (4), pp. 1-18.

Peracchio, L.A., Luna, D. (1998). The development of an advertising campaign to discourage smoking initiation among children and youth, Journal of Advertising, 27 (3), pp.49-56.

Peterson, A.C. (1988). Adolescent Development, Annual Review of Psychology, 39, pp. 583-607.

Peterson, L. (1996). Establishing the study of development as a dynamic force in health psychology, Health Psychology, 15, pp. 155-157.

Peterson, A.C., and Taylor, B. (1980). The biological approach to adolescence: Biological change and psychological adaption. In J.Adelson (Ed.), Handbook of adolescent psychology (pp: 117-155). New York:Wiley.

Peto, R. (1994). Mortality from Smoking in Developed Countries 1950-2000. Oxford University Press, Oxford.

Pierce, J.P., Anderson, M., Romano, R.M., Meissner, H.I., and Odenkirchen, J.C. (1992). Promoting smoking cessation in the United States: Effects of public Service

announcements of the Cancer Information Service Telephone Line: Journal of the National Cancer Institute, 84(9), pp. 677-83.

Pierce, J.P. and Gilpin, E. A. (1996). How long will today's new adolescent smokers be addicted to cigarettes? American Journal of Public Health, 86, pp.253-6.

Pierce, J.P. and Gilpin, E. A. (1994). Trends in Physicians' smoking behavior and Patterns of Advice to quit. In National Institute of health (Ed.), Tobacco and the Clinician: Interventions for medical and dental practice, smoking and tobacco control (pp: 12-23). Monograph No: 5 National Institute of Health, National Cancer Institute.

Prentice-Dunn, S., and Rogers, R.W. (1986). Protection motivation theory and preventive health : Beyond the health belief model, Health Education Research, 1, pp. 153-161

Reiter, E.O. (1987). Neuro endocrine control processes. Journal of Adolescent Health Care, 8(6), pp. 479-491.

Rice, F.P. (1993). The Adolescent Development, Relationships and Culture. Boston: Allyn and Bacon. 7th edition.

Rindflesch, A., Crockett, D. X. (1999). Cigarette smoking and perceived risk : A multidimensional investigation, Journal of Public Policy and Marketing, 18 (2), pp.159-71

Robinson, L.A., and Klesges, R.C. (1997). Ethnic and gender differences in risk factors for smoking onset, Health Psychology, 16(6), pp. 499-505.

Rogers, R. W. (1983) Cognitive and Physiological Process in Fear Appeals and Attitude Change: A Revised Theory of Protection Motivation. In Social Psychophysiology:

A Source Book, John Cacioppo and Richard Petty, (Eds.). (pp. 153-76) New York: Guilford Press.

Ryan, G. J., and Dzewaltowski, D.A. (2002). Comparing the relationships between different types of self-efficacy and physical activity in youth, Health Education and Behavior, 29 (4), pp. 491-504.

Schulenberg, J., Maggs, J., and Hurrelmann, K. (1997). Health risks and developmental transitions during adolescence. Cambridge, England: Cambridge University Press.

Schoenbachler, D. D., and Tommy, E. W. (1996). Adolescent Processing of Social and Physical Threat Communications, Journal of Advertising, 25 (12), pp. 37-54.

Sekaran, Uma. (1992). Research Methods for Business: A Skill Building Approach. New York, NY:John Wiley and Sons, Inc. 2nd edition.

Smith, K. H., Stutts, M. A. (1999). Factors that influence adolescents to smoke, Journal of Consumer Affairs, 33(2), pp. 321-57

Sornsri, C. (1998). The study of health risk behavior of adolescents in Bangkok s secondary school. M.A. Thesis in Maternal and Child Nursing, faculty of Graduate Studies, Mahidol University.

Sprinthall, R. C. (1997). Basic Statistical Analysis, American International College. Boston: Allyn and Bacon.

Stead, C., Hastings, G., and Smith, C. T. (1996). Preventive adolescent smoking: a review of options, Health Education Journal, 55, pp.31-54.

Steinberg, L., and Silverberg, S. (1986). The vicissitudes of autonomy in early adolescence. Child Development, 57, pp. 841-851.

Sturges, J.W., and Rogers, R. W. (1996). Preventive health psychology from a developmental perspective : An extension of protection motivation theory. Health psychology, 15, pp. 158-166.

Tobacco Control Program: Findings from the Florida Youth Tobacco Survey, 1998-2000, Journal of the American Medical Association, 284 (8), pp. 723-34.

Tobin-Richards, M.H., Boxer, A.M., and Peterson, A. C. (1983). The psychological significance of pubertal change: Sex difference in perceptions of self during early adolescence. In J. Brooks-Gunn and A.C. Peterson (Eds.). Girls at puberty: Biological and Psychosocial Perspectives. New York: Plenum.

Tunsakul, C., Thongyod., Nonthasorn, T., and Kengkarnpani. T. (2001). The effectiveness of the application of the protection motivation theory to the health education program on high blood pressure preventing among elderly people in Det-Udom Muncipality of Ubon-Rachathani, Journal of the Health Professional Association, 1(3).

Turiel, E. (1989). Domain-specific social judgments and domain ambiguities, Merrill – Palmer quarterly, 35, pp. 89-114.

U.S. Department of Health and Human Services. (1994). Preventing tobacco use among young people : A report of the surgeon general (DHHS Publication No: 017-001-00491-0). Atlanta, GA: U. S. Department of Health and Human Services, Public Health Services Center for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Vakratsas, D., and Tim, A., (1999). How advertising works: What do we really know? Journal of Marketing, 63 (1), pp. 26-43.

Vanichbuncha (2001), "SPSS Base for Windows in data analysis Version 7-10",
Bangkok.

Warner, K.E. (1977). The Effects of the antismoking campaign on cigarette consumption,
American Journal of Public Health, 67, pp. 645-50.

Weinstein, N.D. (1982). Unrealistic optimism about susceptibility to health problem,
Journal of Behavioral Medicine, 5, pp.441-460.

Weithorn, L.A., and Campbell, S.B. (1982). The competency of children and adolescents
to make informed treatment decisions, Child Development, 53, pp.1589-1598.

WHO. (2003). Tobacco free initiative. WHO, Geneva.

Witte, K. (1995). The Role of Threat and Efficacy in AIDS Prevention, International
Quarterly of Community Health Education, 12(3), pp. 225-49.

Wong, D.L. (2001). Essentials of Pediatric Nursing. Washington D.C: Mosby

Wurtele, S.K., and Maddux, J. E. (1987). Relative contributions of protection motivation
theory components in predicting exercise intentions and behavior. Health
Psychology. 6(5), pp.453-66.

Zikmund, W. G. (2003). Business Research Methods. New York: The Dryden Press. 7th
edition.

ONLINE SOURCES

American Legacy Foundation (2002), Retrieved March 10, 2006. From http://www.americanlegacy.org

Campaign for Tobacco Free Kids (2002), "Show us the Money: An update on the states' allocation of the tobacco settlement dollars," Retrieved February 12, 2006. From http://www.tobaccofreekids.org

Hartgers, C., Hartgers, P., Krijnen, J., and Van der Pligt (1991), "HIV and injections drug users: the role of protection motivation." Retrieved March 22, 2006. From http://www.tcw.utwente.nl/theorieenoverzicht/Theory%20clusters/

Stesser, Stan (2005), "Tobacco Control in Asia". Retrieved February 12, 2006. From www.thenationmulitmeida.com

Sukin, Kamol (2005), "Cigarette puffers feel the heat in South East Asia," Retrieved March 14, 2006. From http://www.tobacco.org/articles/country/thailand

Teenage Research Unlimited (1999), "Counter-tobacco advertising exploratory summary report January-March 1999," Retrieved February 22, 2006. From http://www.tobaccofreekids.org/reports/smokescreen/studt.html

World Health Organization (2001), "Smoking behavior of Thai youths Thailand," Tobacco Free Initiative, WHO, Geneva, Retrieved February 14, 2006. From http://advisor.anamai.moph.go.th/factsheet/smoke.html

World Health Organization (2003), "Tobacco Free Initiative," Retrieved March 2, 2006. From http://www.tobacco.who.int/page.cfmMpid=53

http:// www.tobaccofreekids.org/ (Accesses on February 06, 2006).

http://www. americanlegacy.org/ (Accessed on February 12, 2006).

http://www.skincarephysicians.com/agingskinnet/basicfacts.html, (Accessed on March 26, 2006).

http:// tobaccofreekids.org/reports/smokescreen/study.html (Accessed on February 14, 2006).

http:// www.tobacco.org/articles/country/Thailand (Accessed on March 2nd, 2006).

http:// advisor.anamai.moph.go.th/factsheet/smoke.html (Accessed on March 4th, 2006).

http://www.tobaccofreeasia.net/newsview.asp?ID=31 (Accessed on March 5th, 2006).

http://w3.whosea.org/cntryhealth/thailand/index.htm (Accessed on March 6th, 2006).

http://ash.org/no-smoking/nov05/11-02-05-4.html (Accessed on March 6th, 2006).

http:// www.tcw.utwente.nl/theorieenoverzicht/Theory%20clusters/ (Accessed on March 8th, 2006).

http://www.dictionary.com (Accessed on March 22, 2006).
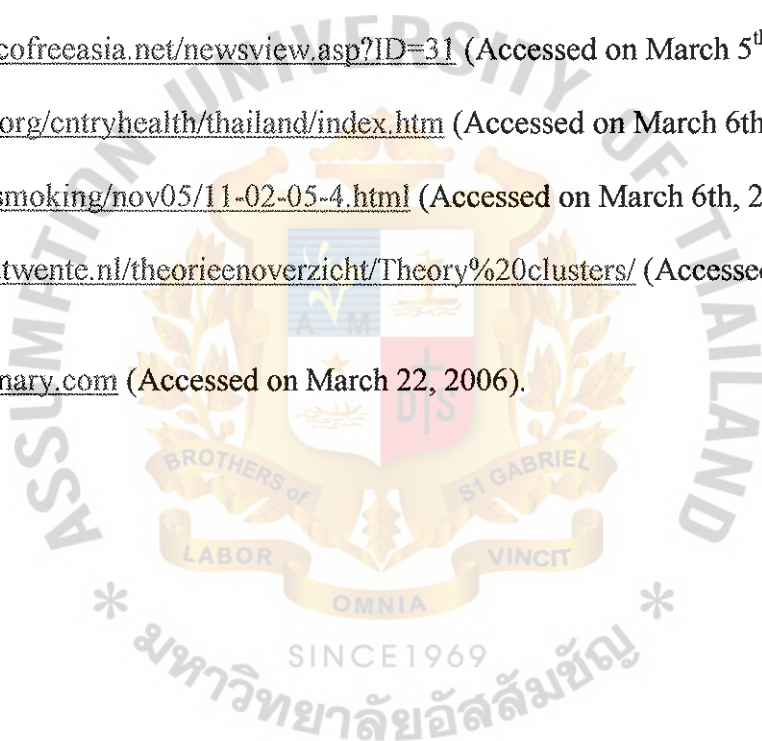
APPENDIX A

Questionnaire

Dear Student,

This questionnaire is constructed for use as part of the thesis entitled "The Relationship Between Protection Motivation Theory Variables and Intention Not To Smoke: A Study of Undergraduate Students of Assumption University of Thailand" by an MBA student from Assumption University of Thailand. Please fill in each item of the questionnaire according to your opinion. The information obtained will be used only for the study purpose. The anonymity of your responses will be protected. Your cooperation in filling in the questionnaire is highly appreciated.

Thank you.

Part I: Screening Questions:

1. Are you an undergraduate student in Assumption University of Thailand?

Yes _____   No _____

2. Do you smoke cigarettes?

Yes _____   No _____

(If "NO", please terminate the interview)

Part II: Protection Motivation Theory Components

Following are the components of protection motivation theory. Please study the list carefully and then rate each value using the following scale:

     5 = Strongly Agree

     4 = Agree

     3 = Neutral

     2 = Disagree

     1 = Strongly Disagree

Please put "√" in the appropriate block provided.

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
1.Self efficacy at resisting tobacco Marketing					
I can resist being fooled by cigarette advertisements					
I can resist being fooled by cigarette promotions					
If cigarette companies encourage me to smoke, I can say no					
I can help to make public places smoke-free					
I am confident that I can manage the situation by either avoiding or neutralizing obstacles					
2. Severity of health risks					
I do not want to die early					
I do not want to get lung disease					
I do not want to get wrinkles					
I do not want to become addicted to nicotine					

I do not want to have bad breath					

3. Social disapproval risks

Smoking cigarettes is acceptable to my close friends					
If I smoked cigarettes, I would look attractive to others					
If I smoked cigarettes, I would fit in better with kids of my age					
If I smoked cigarettes, I would fit in at parties					
Your close friends will strongly approve of your smoking cigarettes					

4. Self-efficacy at refusing cigarette offers

If others pressure me to smoke, I can say no					
If others pressure me to smoke, I can walk away/leave					
If others pressure me to smoke, I can change the subject					

I can cope with any stressful situation					
I am certain that I can resist to smoke even when I drink alcohol with my friends					

Part III: Adolescents intention not to smoke

Please tick "√" corresponding to the answer that is applicable to your opinion on intention not to smoke.

5 = Definitely yes

4 = Probably yes

3 = Not sure

2 = Probably Not

1 = Definitely Not

Intention not to smoke	1 Definitely Not	2 Probably Not	3 Not sure	4 Probably Yes	5 Definitely Yes
In the future, you might smoke one puff or more of a cigarette					
You might try out cigarette smoking for a while					
If one of your best friends were offer you a cigarette, you would smoke it					
If you smoke cigarettes now, do you plan to quit soon					

Part IV: Demographic Factors

1. Age	**2. Gender**
☐ 10-14	☐ Male
☐ 15-17	☐ Female
☐ 18-21	
☐ 22 years old and above	

3. Nationality

☐ Thai

☐ Non Thai

3. Personal Income / Allowance from Parents

☐ Below 10,000 Baht

☐ 10,000 - 20,000 Baht

☐ 20,000 – 30,000 Baht

☐ More than 30,000 Baht

*********************************THANK YOU***

APPENDIX B

Reliability results of Pre-test (30 Respondents)

Reliability analysis for <u>Self-efficacy at resisting tobacco marketing</u>

* * * * * * Method 1 (space saver) will be used for this analysis * * * * * * *

R E L I A B I L T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

Reliability Coefficients

N of Cases = 30.0   N of items = 5

Alpha = .7632

Reliability analysis for <u>Severity of health risks</u>

* * * * * * Method 1 (space saver) will be used for this analysis * * * * * * *

R E L I A B I L T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

Reliability Coefficients

N of Cases = 30.0   N of items = 5

Alpha = .7099

Reliability analysis for <u>Severity of social disapproval risks</u>

* * * * * * Method 1 (space saver) will be used for this analysis * * * * * * *

R E L I A B I L T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

Reliability Coefficients

N of Cases = 30.0   N of items = 5

Alpha = .6686

Reliability analysis for <u>Self-efficacy at refusing cigarette offers</u>

****** M e t h o d   1   (s p a c e   s a v e r)   w i l l   b e   u s e d   f o r   t h i s   a n a l y s i s   *******

R E L I A B I L T Y   A N A L Y S I S   –   S C A L E   (A L P H A)

Reliability Coefficients

N of Cases =   30.0   N of items = 5

Alpha =   .7123

Reliability analysis for <u>intention not to smoke</u>

****** M e t h o d   1   (s p a c e   s a v e r)   w i l l   b e   u s e d   f o r   t h i s   a n a l y s i s   *******

R E L I A B I L T Y   A N A L Y S I S   –   S C A L E   (A L P H A)

Reliability Coefficients

N of Cases =   30.0   N of items = 4

Alpha =   .7108