

Original Paper

Framing in Healthcare Advertising: The Moderating Effects of Regulatory Focus and Product Category on Advertising Attitudes

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Abstract

This research explores the moderating roles of regulatory focus and product category in the impact of advertising framing on consumers' advertising attitudes toward healthcare products. 236 persons participated in a 2 (framing: negative vs. positive) × 2 (regulatory focus: prevention-focused vs. promotion-focused) × 2 (product category: informational vs. transformational) factorial design. Results indicate that for informational healthcare products, prevention-focused (no-loss seeking) individuals hold more favorable advertising attitudes toward negatively framed advertisements than positively framed advertisements; in contrast, promotion-focused (gain-seeking) individuals do not express differentially favorable advertising attitudes toward negatively framed advertisements over positively framed advertisements. In addition, for transformational healthcare products, promotion-focused individuals hold more favorable advertising attitudes toward positively framed advertisements than negatively framed advertisements; in contrast, prevention-focused individuals do not express differentially favorable advertising attitudes toward negatively framed advertisements over positively framed advertisements.

Keywords

regulatory focus, healthcare advertising, advertising attitudes

1. Introduction

Addressed by Perloff (1983), self-positivity bias indicates that individuals who have not been victimized by negative life events tend to perceive themselves as less vulnerable than others to victimization. That is, self-positivity effect usually leads to lower attention paid to messages that encourage cautions and awareness about health issues (Raghubir & Menon, 1998). Health marketing particularly concerns this self-positivity effect as it implies that people usually assume that they are

impervious to diseases and thus might neglect information that would help them prevent the disease (Menon, Block, & Ramanathan, 2002). For healthcare products manufacturers attempting to enhance advertising effectiveness for their healthcare products, the self-positivity effect is a major challenge to overcome.

Literature has indicated that how healthcare information is presented can influence how individuals process that information (Kiviniemi & Rothman, 2006) and how they make the purchase decisions (Kolodinsky & Narsana, 2003). Smith (1996) also argues that advertisers should pay more attention to how advertising messages are presented to aim at the target markets for better advertising effectiveness. Advertising literature has explored ways to enhance advertising effectiveness (Zhang & Buda, 1999); however, controversies over how to determine advertising effectiveness have remained unabated for decades (Hogan, Lemon, & Libai, 2004). Coulter & Punj (2004) indicate that one of the most prevalently employed measures of advertising effectiveness is change in attitudes. Specifically, advertising effectiveness can be assessed by examining whether the advertising information recipients will engender more positive or favorable advertising attitudes toward the advocated products or services. One approach for advertisers to enhance advertising effectiveness is to adopt a message framing strategy for different target markets to elicit more favorable advertising attitudes.

However, advertising effectiveness can be moderated by distinct motivations of individuals. This research applied regulatory focus to evaluate individuals' motivations. A person who is more promotion-focused highlights the realization of positive goals and views the decision with eagerness. Promotion-focused individuals appear to be more willing to take risks and consider suboptimal possibilities in an attempt to enhance their chances of accomplishing their goals (Crowe & Higgins, 1997). In contrast, a person who is more prevention-focused centers on preserving an absence of undesirable occurrences, maintaining the status quo, and is more vigilant toward the decision so that they might minimize the chances of committing errors (Keller, 2006). Chernev (2004) also argues that prevention-focused individuals demonstrate a greater preference for status quo than promotion-focused individuals.

Previous research has examined the role of regulatory focus in persuasion (e.g., Keller, 2006) and has demonstrated that the advertising effectiveness advocating the attainment of regulatory goals varies depending on the framing valence (e.g., Jain, Agrawal, & Maheswaran, 2006; Kim, 2006). Psychophysics suggests that different expressions may lead to different cognitions, implying that the way of message description affects how people engage in the information processing (heuristic vs. systematic) (Smith & Wortzel, 1997). The way of how messages are demonstrated is called "framing effect". Lee & Aaker (2004) contend that while gain-framed appeals are more persuasive for promotion-focused individuals, loss-framed individuals are more persuasive for prevention-focused individuals. However, scant research on regulatory focus has examined how product category and framing valence interact for prevention- and promotion-focused individuals. In this research, a

three-way ANOVA was administered to examine the potential interaction effect of regulatory focus, product category and framing on advertising attitudes toward the healthcare advertising messages. Specifically, this research aims to explore under what conditions healthcare advertising messages can elicit more favorable advertising attitudes.

2. Background Overview

2.1 Regulatory Focus

Regulatory focus theory contends that distinct motivation systems govern people's drive to attain desired outcomes (Crowe & Higgins, 1997) and identifies two distinct self-regulatory focuses (promotion focus vs. prevention focus). Promotion-focused individuals prefer to maximize the occurrence of positive outcomes, and are driven toward scenarios representing "gains" and away from scenarios associated with "non-gains". In contrast, prevention-focused individuals center on minimizing the occurrence of negative outcomes, and are motivated by the absence of undesirable outcomes and are thus more driven toward approaching 'no loss' situations. Specifically, the promotion focus relies on the use of approach strategies to regulate the achievement of a desirable end and is especially active in the pursuit of ideals; in sharp contrast, the prevention focus relies on avoidance strategies to regulate the achievement of desirable ends and is especially active in the pursuit of fulfillment of responsibilities. Furthermore, Chernev (2004) argues that promotion-focused individuals favor the presence of positive outcomes and aim to ensure the presence of matches and the absence of errors of omission, whereas prevention-focused individuals favor the absence of negative outcomes and aims to ensure the presence of correct rejections and the absence of errors of omission.

Wu and Kao (2011) indicate that promotion-focused individuals and prevention-focused individuals vary in risks inclination. In most situations, the activation of promotion focus entails greater risk-seeking, whereas the activation of prevention focus entails greater risk aversion (Kao, 2012). Higgins (1998) has indicated that two sets of mechanisms contribute to demonstrate the difference in risk inclination across the focuses. First, promotion focus centers on finding matches to desired ends, and creates an inherent drive to capture as many current opportunities as possible, which generally translates into a more active form of exploration and greater risk-taking (Pham and Avnet, 2004). In contrast, prevention focus highlights the avoidance of mismatches to desired ends, and produces a drive to protect against potential mistakes, which generally translates into a more vigilant form of exploration and greater risk aversion. For example, in a choice between a risky alternative with greater upsides and greater downsides and a conservative alternative with smaller downsides and smaller upsides, promotion-focused individuals are likely to prefer the risky option, whereas prevention-focused individuals are likely to favor the conservative option (Zhou and Pham, 2004).

2.2 Message Framing

Message framing can be conceptualized as factually equivalent information that is presented to

individuals in different ways (Chang, 2007). Framing effect is defined as the presentation of message that is framed through using positive versus negative category labels, or the benefits gained versus lost of a product, issue or behavior (Smith, 1996). Framing effect has received much academic attention because it seems to arise from shallow reactions to superficial cues and it violates the assumption of well-ordered preference (LeBoeuf & Shafir, 2003). According to the prospect theory, framing refers to the use of decision-relevant information by a message recipient to comparatively evaluate a product or a service (Kahneman & Tversky, 1979). The underlying rationale for interpreting framing effect contends that individuals are risk-averse when a decision to be made is represented in terms of gain, and risk-prone when the decision to be made is symbolized in terms of loss. Also, framing effect suggests that individuals exhibit loss aversion; that is, losses loom larger than gains (Kahneman & Tversky, 1979).

Literature has indicated that the results of framing effect seem contradictory. For example, Levin and Gaeth (1988) suggest that positive framing is superior to negative framing (75% lean vs. 25% fat). Muehling (1987) and MacInnis and Jaworski (1989) contend that positive ad content generally results in a positive affect reaction, which is likely to facilitate processing of information. The Dual Mediation Mode (DMM) proposed by MacKenzie and Lutz (1989) implies that an ad that evokes positive feelings appears to have a positive impact on attitude formation, and thus advertisers are suggested to frame the ad messages positively rather than negatively to favorably affect the consumer attitudes.

On the contrary, many studies conclude that negative framing is more effective than positive framing, such as the credit card study of Ganzach and Karsahi (1995) and the breast self-examination study of Meyerowitz and Chaiken (1987). Furthermore, Maheswaran and Meyers-Levy (1990) argue that the negatively framed messages are more effective in affecting attitude toward cholesterol testing for highly involved subjects; whereas positively framed messages are more effective for low involved subjects. A heuristic explanation to framing effectiveness suggests that consumers are driven by loss aversion. Negatively framed ad messages increase the perceived likelihood of suffering a post-purchase loss for consumers due to the incorrect purchase decisions (Shiv, Britton and Payne, 2004). A negatively framed ad message hence may favorably affect the consumer attitudes toward the advocated issues, behaviors or products.

The negativity bias concept addressed by Kanouse (1984) contends that negatively framed information may be more salient in an inherently positive world, and thus has a greater impact, which is consistent with the Fiske's (1980) study that negatively framed information is usually regarded to be highly informative and thus may be assigned extra weights on the message assessment.

Prior research has suggested that negatively framed information usually violates expectations (Meyerowitz & Chaiken, 1987), and thus is more attention grabbing (Baker & Petty, 1994), receive greater scrutiny (Smith & Petty, 1996; Ditto & Lopez, 1992) and is more weighted in the decision-making than positively framed information (Donovan & Jalleh, 1999). In addition, Dijkstra

(2009) implies that, as compared with positively framed messages, negatively framed persuasive messages are more effective for smokers to quit smoking behavior. In contrast, Muehling (1987) and MacInnis and Jaworski (1989) contend that positive advertisement content generally results in a positive affect reaction, which is likely to facilitate processing of information.

2.3 Product Category

Rossiter, Percy and Donovan (1991) identify two distinct product categories. “Informational products” are designed to remove or avoid problems and negative emotional states. Purchase motivations for informational products, such as insurance, medicine or cleaning products, are primarily negatively reinforcing to help consumers maintain their current state of well-being and avoid potential losses. In sharp contrast, “transformational products” are designed to enhance the brand user by effecting a transformation in the brand user’s sensory, mental, or social state (Rossiter, Percy, and Donovan, 1991). Purchase motivations for transformational products, such as candy, perfume or champagne, are mainly positively reinforcing to help consumers transcend their current state of well-being to achieve potential gains (Smith, 1996).

3. Hypotheses

Lee and Aaker (2004) have demonstrated that gain-oriented appeals were more effective for promotion-focused individuals, but loss-oriented appeals were more effective for prevention-focused individuals. This notion can be further applied to framing. Positive framing, as noted above, generally results in a positive affect reaction (MacInnis & Jaworski, 1989), and usually represents that the advocated appeals may incur the potential benefits or advancement to the current state of human beings. It is accordingly inferred that the valence of positive framing is consistent with the personality traits of promotion-focused individuals, who are likely to maximize the occurrence of positive outcomes. On the contrary, negative framing characterized by warning and reminding usually represents that the advocated appeals may help prevent the potential losses to the current state of human beings. It is hence predicted that the valence of negative framing matches the predisposition of prevention-focused individuals, who have a higher extent of uncertainty and loss aversion.

H₁: While prevention-focused individuals will engender more favorable advertising attitudes toward negatively framed advertisements than positively framed advertisements, promotion-focused individuals will engender more favorable advertising attitudes toward positively framed advertisements than negatively framed advertisements.

People purchase informational healthcare products with an attempt to avoid the potential losses to their current physical state. Framing effect suggests that consumers are oriented by loss aversion (Kahneman & Tversky, 1979). Negatively framed messages highlight the perceived likelihood of suffering a loss to the current state of an individual. Specifically, the negatively framed messages, characterized by greater elaboration (Ditto and Lopez, 1992) and highly informative (Fiske, 1980), are likely to be

consistent with the individuals' purchase motivations for informational healthcare products, which help maintain their current physical state and avoid potential losses to their health. Hence, it is assumed that negative framing is more effective than positive framing in eliciting favorable advertising attitudes toward informational healthcare products.

On the contrary, people purchase transformational healthcare products with an attempt to achieve the desirable gains or benefits to their health. They are generally motivated to achieve or maintain a positive feeling state and may thus avoid difficulties or unpleasant information or tasks that inhibit information processing. As noted above, positively framed messages generally elicit positive affect reactions, which match the individuals' purchase motivations for transformational products. Hence, positive framing is regarded as more effective than negative framing in eliciting favorable advertising attitudes toward transformational healthcare products.

H₂: For informational healthcare products, negatively framed advertisements will lead to more favorable advertising attitudes than positively framed advertisements; in contrast, for transformational healthcare products, positively framed advertisements will lead to more favorable advertising attitudes than negatively framed advertisements.

People purchase informational healthcare products in order to remove or avoid potential losses to their current physical state. Prevention-focused individuals, who have a higher extent of loss aversion, seek to minimize the occurrence of negative outcomes and are more vigilant than promotion-focused individuals while making decisions (Keller, 2006). Moreover, negatively framed information characterized by highly informative has proved to effectively lower loss aversion (Fiske, 1980). Hence, it is predicted that for informational healthcare products, prevention-focused individuals engender more favorable advertising attitudes toward negatively framed messages than positively framed messages.

However, informational healthcare products, which are designed for maintaining individuals' current physical state or avoid potential hurts to their health, may be inconsistent with the goal of promotion-focused individuals, who seek to maximize the occurrence of positive outcomes (e.g., transcend their current physical state or become healthier). This implies that promotion-focused individuals' advertising attitudes toward informational healthcare products will not be affected by how the advertising messages are framed. It is thus predicted that promotion-focused individuals will not engender differentially favorable advertising attitudes toward negatively framed messages over positively framed messages.

H₃: For informational healthcare products, prevention-focused individuals will hold more favorable advertising attitudes toward negatively framed advertisements than positively framed advertisements; in contrast, promotion-focused individuals will not express differentially favorable advertising attitudes toward negatively framed advertisements over positively framed advertisements.

Transformational healthcare products are designed for individuals to transcend or add benefits to their current physical state, which is associated with the positive affect cognition. As mentioned above,

positively framed information is subject to elicit positive affect responses. In addition, promotion-focused individuals are usually driven toward scenarios representing “gains”, which is susceptible to positivity and advancement. Hence, it is predicted that for transformational healthcare products, promotion-focused individuals express more favorable advertising attitudes toward positively framed advertising messages than negatively framed advertising messages.

In contrast, transformational healthcare products designed for individuals to transcend their current physical state may be inconsistent with the goal of prevention-focused individuals, who seek to minimize the occurrence of negative outcomes (e.g., merely maintain their current physical state or not to become ill). Hence, it is predicted that for transformational healthcare products, negatively framed advertising messages are no better than positively framed advertising messages in eliciting more favorable advertising attitudes of prevention-focused individuals.

H₄: For transformational healthcare products, promotion-focused individuals will hold more favorable advertising attitudes toward positively framed advertisements than negatively framed advertisements; in contrast, prevention-focused individuals will not express differentially favorable advertising attitudes toward negatively framed advertisements over positively framed advertisements.

4. Method

4.1 Experimental Design, Subjects and Procedure

236 persons attending a speech on healthcare issues were invited to participate in this 2 (regulatory focus: prevention vs. promotion) × 2 (framing: negative vs. positive) × 2 (product category: informational vs. transformational) between-subjects factorial design, with framing as a manipulated independent variable, regulatory focus and product category as manipulated moderators, and advertising attitude as a dependent variable.

4.2 Manipulations of Regulatory Focus, Framing and Product Category

The manipulation of regulatory focus was adapted from the study of Liberman et al. (2001). Promotion- (prevention-) focus participants were asked to write down and explain how their “hopes and aspirations” (“duties and obligations”) differed from those they had in their childhood.

Next, respondents completed a second study that exposed them to toothpaste (informational healthcare products) or multivitamin (transformational healthcare products). The manipulation of framing was adapted from the study of Jain et al. (2006). In the positively framed advertisement for the toothpaste, consumers are described as being able to acquire some benefits (such as preventing cavities and maintaining healthy teeth) by using the sponsor brand; in contrast, in the negatively framed advertisement for the toothpaste, consumers are described as being unable to acquire those benefits by not using the sponsor brand. Specifically, the positively framed advertisement stated: “Crown (sponsor brand) is effective in preventing cavities and maintaining healthy teeth. If you use Crown toothpastes, you will have a satisfactory cavity protection and healthy teeth. The negatively framed advertisement

read: “Crown (sponsor brand) is effective in preventing cavities and maintaining healthy teeth. If you don’t use Crown toothpastes, you will have an unsatisfactory cavity protection and unhealthy teeth. The brand name was fictitious to control for prior brand preference.

Multivitamin is regarded as a transformational product in this experiment. In the positively framed advertisement for the multivitamin, Nutri-Tab[®] (sponsor brand) was described as good fit the daily recommended amounts of vitamins and other nutritional ingredients set by FDA. Consuming Nutri-Tab[®] will make you enjoy a healthier life. In the negatively framed advertisement for the multivitamin; in contrast, Nutri-Tab[®] (sponsor brand) was described as good fit the daily recommended amounts of vitamins and other nutritional ingredients set by FDA. Consuming Nutri-Tab[®] will make you away from illness.

4.3 Dependent Measure

The advertising attitudes of respondents were measured by having them assess their overall reaction to the ads with the use of four 7-point scales. These items included bad/good, dislike/like, irritating/not irritating, and uninteresting/interesting (higher scores indicate more positive attitude) (Mitchell and Olson, 1981).

5. Results

5.1 Manipulation Check for Regulatory Focus

The manipulation check for regulatory focus was conducted by asking participants to rate the extent to which they focused on their hopes, aspirations, responsibilities and obligations on separate seven-point scale items for each of these goals, with the scales items anchored by 1 = “not at all” and 7 = “a lot” (Lieberman et al. 2001). Hopes and aspirations were averaged to form a promotion index (Cronbach’s alpha = .84), and responsibilities and obligations were averaged to form a prevention index (Cronbach’s alpha = .79). A paired-samples t test was administered for the manipulation check for regulatory focus. The promotion index was significantly higher than the prevention index for promotion-focused individuals ($M_{\text{promotion}} = 5.37$, $M_{\text{prevention}} = 2.78$, $t(117) = 24.79$, $p < .001$); in contrast, the prevention index was significantly higher than the promotion index for prevention-focused individuals ($M_{\text{promotion}} = 2.57$, $M_{\text{prevention}} = 5.28$, $t(117) = 24.46$, $p < .001$). Therefore, the manipulation of regulatory focus was satisfactory.

5.2 Manipulation Check for Framing

The measure used to assess how positive and how negative the advertisement was perceived was analyzed by an independent-samples t test, with the scale items anchored by 1=“extremely negative”, 7=“extremely positive”. As expected, an independent-samples t test revealed that the perceived positive framing valence was significantly higher than the perceived negative framing valence ($M_{\text{positive framing}} = 4.69$, $M_{\text{negative framing}} = 3.06$, $t(234) = 8.84$, $p < .001$). Hence, the manipulation of framing was successful.

5.3 Manipulation Check for Product Category

As to the manipulation of product category, respondents were asked to rate how they agree to the statement regarding the product, with the scale items anchored by 1="extremely benefit to maintain your current physical state" and 7="extremely benefit to transcend your current physical state". The results of an independent-samples t test indicated that product category valence for informational healthcare products ("maintain your current physical state") and that for transformational healthcare products ("transcend your current physical state") differed significantly ($M_{\text{informational product}} = 2.88$, $M_{\text{transformational product}} = 4.76$, $t(234) = 9.66$, $p < .001$). Therefore, the manipulation of product category was acceptable.

5.4 Hypothesis Testing

A two-way ANOVA was administered to examine the interaction effect of regulatory focus \times framing. Results showed that the interaction effect was significant, $F(1, 232) = 33.57$, $p < .001$, implying that the impact of framing was subject to regulatory focus. Table 1 showed that for prevention-focused individuals, negatively framed advertising messages elicited more favorable advertising attitudes than positively framed advertising messages, $M_{\text{NF}} = 5.25$, $M_{\text{PF}} = 4.71$, $F(1, 117) = 14.80$, $p < .001$. In contrast, for promotion-focused individuals, positively framed messages elicited more favorable advertising attitudes than negatively framed advertising messages, $M_{\text{NF}} = 4.51$, $M_{\text{PF}} = 5.21$, $F(1, 117) = 18.77$, $p < .001$. Hence, H_1 was supported.

Table 1. Dependent measure across regulatory focus \times framing conditions

<i>Advertising Attitudes</i>	Prevention-Focused Individuals		Promotion-Focused Individuals	
	Negative Framing	Positive Framing	Negative Framing	Positive Framing
Mean	5.25	4.71	4.51	5.21
S.D.	.68	.84	.92	.82
<i>F</i>	14.80		18.77	
<i>p</i>	.000		.000	

Similarly, a two-way ANOVA was administered to examine the interaction of product category \times framing. Results showed that the interaction effect was significant, $F(1, 232) = 28.90$, $p < .001$, implying that the impact of framing was subject to product category. Table 2 showed that for informational healthcare products, negatively framed advertising messages elicited more favorable advertising attitudes than positively framed advertising messages, $M_{\text{NF}} = 5.05$, $M_{\text{PF}} = 4.52$, $F(1, 117) = 11.36$, $p < .005$. On the contrary, for transformational healthcare products, positively framed advertising messages elicited more favorable attitudes than negatively framed advertising messages, $M_{\text{NF}} = 4.63$, $M_{\text{PF}} = 5.28$, $F(1, 117) = 17.98$, $p < .001$. Hence, H_2 was supported.

Table 2. Dependent measure across product category \times framing conditions

<i>Advertising Attitudes</i>	Informational Healthcare Product		Transformational Healthcare Product	
	Negative Framing	Positive Framing	Negative Framing	Positive Framing
Mean	5.05	4.52	4.63	5.28
S.D.	.81	.86	.94	.72
<i>F</i>	11.36		17.98	
<i>p</i>	.001		.000	

Subsequently, the results of an ANOVA indicated that, for informational healthcare products (toothpaste), while negatively framed advertising messages elicited more favorable advertising attitudes than positively framed messages for prevention-focused individuals, $M_{NF} = 5.41$, $M_{PF} = 4.13$, $F(1, 55) = 42.50$, $p < .001$, no significant difference in advertising attitudes between negatively framed advertising messages and positively framed advertising messages was found for promotion-focused individuals, $M_{NF} = 4.74$, $M_{PF} = 4.91$, $F(1, 61) = .712$, $p > .05$. Therefore, H_3 was supported.

In sharp contrast, for transformational healthcare products (multivitamin), prevention-focused individuals did not express differentially favorable advertising attitudes toward negatively framed advertising messages over positively framed advertising messages, $M_{NF} = 5.08$, $M_{PF} = 5.13$, $F(1, 61) = .09$, $p > .05$, whereas positively framed advertising messages elicited more favorable advertising attitudes than negatively framed advertising messages for promotion-focused individuals, $M_{PF} = 5.47$, $M_{NF} = 4.19$, $F(1, 55) = 28.57$, $p < .001$. Hence, H_4 was supported.

Table 3. Dependent measure across product category×regulatory focus×framing conditions

<i>Advertising Attitudes</i>	Informational Healthcare Product				Transformational Healthcare Product			
	Prevention-Focused		Promotion-Focused		Prevention-Focused		Promotion-Focused	
	NF	PF	NF	PF	NF	PF	NF	PF
Mean	5.41	4.13	4.74	4.91	5.08	5.13	4.19	5.47
S.D.	.69	.77	.79	.77	.63	.62	.99	.79
<i>F</i>	42.50		.71		.09		28.57	
<i>p</i>	.000		.402		.766		.000	

Note: NF = negative framing

PF = positive framing

6. Discussion

6.1 Practical Implications

The results of H_1 support the notion that while negative framing is more attitudinally favorable than positive framing for prevention-focused individuals, positive framing is more attitudinally favorable than negative framing for promotion-focused individuals. Hence, healthcare products manufacturers,

which intend to communicate advertising messages to prevention-focused individuals, are advised to apply a negatively framed healthcare advertising strategy to enhance their advertising effectiveness. Specifically, for the target market consisting of prevention-focused individuals, advertisers should highlight that those who refuse to follow the advocacy in the negatively framed healthcare advertising messages may not maintain their health and may suffer from health losses. To persuade promotion-focused individuals, on the contrary, advertisers are advised to frame their healthcare advertising messages positively, which emphasize that the positively framed advocacy benefits to make them healthier.

The results of H₂ support the notion that for the healthcare message recipients, negative framing is more attitudinally favorable than positive framing for informational healthcare products (such as toothpaste), whereas positive framing is more attitudinally favorable than negative framing for transformational healthcare products (multivitamins). Specifically, advertisers of informational healthcare products may wish to frame their healthcare products negatively to elicit more favorable advertising attitudes. In contrast, for advertisers of transformational healthcare products, who intend to promote their advocacy, positively framed advertising messages are more effective than negatively framed advertising messages.

The results of H₃ support the notion that informational healthcare products (such as toothpaste) advertisers, who aim at prevention-focused individuals as their target market, are suggested to adopt a negative framing strategy to elicit more favorable advertising attitudes; in sharp contrast, for promotional-focused individuals, advertisers may wish to adopt some other marketing strategies rather than a framing strategy as no preference for either negatively framed advertisements or positively framed advertisements.

Furthermore, the results of H₄ support the notion that transformational healthcare products (such as multivitamins) advertisers, who aim at promotion-focused individuals as their target market, are advised to adopt a positively framed message strategy to elicit more favorable advertising attitudes; however, for prevention-focused individuals, advertisers may choose other marketing strategies to lower their loss aversion and further prompt their purchase motivations for transformational healthcare products.

6.2 Theoretical Contribution

Although literature has investigated the framing effect on the persuasiveness of health communications (e.g., Meyerowitz & Chaiken, 1987; Robberson & Rogers, 1988), few studies have examined the relationship between regulatory focus and advertising framing (e.g., Jain et al., 2006; Kim, 2006). Prior research focuses on exploring the link between regulatory focus and attitudes toward illness-preventing versus detection behaviors (Keller, 2006). However, the Keller's study examined the relationship between regulatory focus and efficacy appraisals (self-efficacy vs. response efficacy) but did not examine the moderating role of framing in the healthcare advertising messages.

In addition, the framing manipulation in this research (negative framing vs. positive framing) is different from that in the study (maximal framing vs. minimal framing) of Jain et al., (2006), as well as that in the study (promotion framing vs. prevention framing) of Kim (2006). Although Lee and Aaker (2004) have contended that gain-framed appeals are more persuasive for promotion-focused individuals and loss-framed individuals are more persuasive for prevention-focused individuals, this research further empirically indicates that Lee and Aaker's (2004) conclusions only hold true for some situations. This research argues that product category moderates the effects of framing and regulatory focus on persuasion. Clearly, this research is the first to empirically investigate the framing effect on the advertising attitudes of consumers with different regulatory orientations (prevention-focused vs. promotion-focused), with product category as a moderator (informational vs. transformational).

6.3 Limitations and Future Research

First, while message framing lies well within the control of advertisers as an advertising strategy, advertisers may wonder how to make use of findings relating to regulatory focus. It is a tough task for advertisers to precisely identify the regulatory orientations of message recipients before launching advertising strategies.

Second, the generalizability of the findings needs additional testing. This research used tangible healthcare products (toothpaste and multivitamin) as the experimental materials, future research may examine whether the findings in this research can be applied to intangible healthcare services.

At last, Keller (2006) indicates that preventative behaviors offer opportunities for people to improve their healthy status and the salient function of a preventative behavior is to provide a relatively certain, future desirable outcome; in contrast, detection behaviors are performed to provide information about the current presence or absence of a potential undesirable health outcome. By definition, it is predicted that individuals are motivated to purchase informational healthcare products in exchange for maintaining their current physical state (detection behaviors) and purchase transformational healthcare products in an attempt to transcend their current physical state (preventative behaviors). However, the relationships between informational healthcare products and detection behaviors, as well as transformational healthcare products and preventative behaviors, have not been examined yet.

There has been an increasing interest in motivational variables (e.g., Agrawal and Maheswaran, 2005; Jain, 2003; Jain and Maheswaran, 2000) as predictors of persuasion-related measures. This research has concluded that an individual's regulatory motivation moderates the advertising framing effects. Future research could investigate the effects of regulatory focus on framing using further measures of processing (e.g., time spent, elaboration) and effectiveness (e.g., advertising credibility, claim believability, and evaluations of competing brands)(Jain et al., 2006). In addition, future research examining other variables, such as cultural differences (Gurhan-Canli and Maheswaran, 2000; Maheswaran and Agrawal, 2004), may further contribute to the horizons of framing effects and comparative advertising effects.

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