THE ROLE OF AFFECT AND COGNITION IN THE IMPACT OF POSITIVE/NEGATIVE ONLINE CONSUMER REVIEWS ON BRAND ATTITUDE AND PURCHASE INTENTION

By

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To Dr. Y. Kim, a passionate scholar, respected educator, and beloved father
(1940-2009)
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THE ROLE OF AFFECT AND COGNITION IN THE IMPACT OF POSITIVE/NEGATIVE ONLINE CONSUMER REVIEWS ON BRAND ATTITUDE AND PURCHASE INTENTION

By

Jinsoo Kim

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Along with the prosperity of the Internet, WOM (or eWOM) has become one of the most powerful forces emerging in marketing today as it is widely accepted by consumers as a critical information source. However, there has been little formal research published in scholarly journals until recent years, especially to understand the process of how consumers form their attitudes towards a brand/product based on online consumer reviews.

The goal of the current study is two-fold. The study investigates how affective and cognitive processing – two of the main components in forming an attitude – play roles in the impact of online consumer reviews on brand/product attitude formation, and, consequently, on purchase intention formation. The study develops and tests a conceptual model to explain this process by using the Structural Equation Modeling (SEM) technique. The study also examines individuals’ affective and cognitive responses formed by their thinking about the product/brand under various conditions (e.g., product type, level of involvement, and valence of eWOM messages).
The study found the predominant direct influence of affect on consumer review attitude compared to cognition. It also detected the role of affective response as a mediator for cognitive response. The findings suggest that in terms of consumer review attitude (Ar), affect is a more direct and dominant predictor, whereas cognition seems to play a more critical and immediate role in forming product attitude (Ap) and purchase intention (Pl). The study also found a dominant moderating effect from valence of consumer review whereas the effects from the other moderating variables – product types and involvement levels – were merely detected. In positive consumer review situation, cognition dominated affect for predicting consumer review attitude (Ar), product attitude (Ap), and purchase intention (Pl) regardless of product type and involvement level. On the other hand, when people were exposed to negative consumer review situation, the results were totally the opposite, i.e., affect, in turn, dominated over cognition for predicting consumer review attitude (Ar), product attitude (Ap), and purchase intention (Pl) regardless of product type and involvement level. The theoretical and practical implications of these findings are discussed.
CHAPTER 1
INTRODUCTION

People want to make good decisions. People who attempt to make good decisions will often refer to the opinions of others to help make up their own mind; this is even truer when making a decision as a consumer who is attempting to reduce risk (Hennig-Thurau & Walsh, 2003). Consumers reduce risk by seeking out information and being influenced by advertising, publicity, salespeople, peers, the Internet, and TV news. While there are numerous information sources available, consumers are likely to gather third-party opinions when making decisions (Wang, 2005). These third-parties are considered non-marketer-dominated sources and include critiques, peers, and word of mouth (WOM) referrals. Such sources are not supposed to have a personal stake in consumers' purchases and as such are perceived as more credible and less biased (Hoyer & MacInnis, 2007). Among those sources, WOM is widely available and considered to be a critical component of marketing in recent years because consumers often seek out WOM opinions before they purchase books, movie tickets, IT products, cars, or choose restaurants. Consequently, WOM is generating an increased interest from marketers (Chevalier & Mayzlin, 2006).

The Rise of WOM in the Internet Era

Word of mouth is generally defined as interpersonal communication with a verbal exchange of positive and negative information about products and services (Haywood, 1989). Many researchers have shown that WOM is one of the most influential marketing elements (Bayus, 1985; Richins, 1983; Rosen, 2000; Whyte, 1954). Katz and Lazarsfeld (1955) found in their classic work that the influence of WOM is twice as important as personal selling and 7 times more important than print advertising to consumers making
purchasing decisions. Arndt (1967) also maintains that WOM effects consumers’ decision making in a wide range of product categories.

In recent years, as the Internet has become a revolutionary phenomenon of communication, WOM has naturally incorporated itself with the Internet, and, in so doing, it has become empowered even more (Hennig-Thurau et al., 2004). Today, companies take online WOM (eWOM hereafter) as one of the most powerful marketing forces and opportunities since consumers – now more than ever – tend to pay attention to eWOM.

Although there are a number of ways in which eWOM messages are communicated through the Internet, online consumer reviews are the most common form of eWOM that is readily available and frequently accessed by consumers (Hennig-Thurau et al., 2004; Sen & Lerman, 2007). As online shopping has become a prevalent phenomenon throughout the world, in today’s online shopping environment, consumers often make online purchases after they have consulted online consumer reviews provided by the web sites for books (e.g., Barnesandnoble.com), travel (e.g., Priceline.com), or just about any product from MP3 players to home improvement items (e.g., Amazon.com). Because of the nature of online shopping where online shoppers cannot see and feel the goods personally as they can in brick and mortar stores, more consumers are making their purchase decisions based on online consumer reviews that provide indirect experiences with the goods from other consumers (Park, Lee, & Han, 2007). Also, Epinions.com, Consumerreview.com, Rottentomatoes.com, or Kellybluebook.com are only some of the numerous popular web sites that are not online shopping malls but rather provide platforms for consumer reviews to share experiences.
and opinions about products and services. According to recent research conducted by Forrester.com, more than 50% of consumers refer to other consumers’ online reviews when they make purchase decisions (2005). Consequently, the importance of online consumer review is increasing for marketers (Park, Lee, & Han, 2007).

Need for the Study

Although online consumer reviews (or eWOM) have received substantial coverage by the trade and popular press for many years, little formal research had been published in scholarly journals until recent years (Park & Chung, 2006; Rosen, 2000; Sen & Lerman, 2007). The studies that have been published in scholarly journals mainly focus on user motivation or the effect aspect of eWOM (Bickart & Schindler, 2001; Chatterjee, 2001; Chen & Xie, 2008; Cheung, Lee & Rabjohn, 2008; Gruen, Osmenbekoy, & Czaplewski, 2006; Hennig-Thurau & Walsh, 2003; Hu, Liu & Zhang, 2008; Samson, 2006). Despite the significance of online consumer reviews as a form of eWOM communication and as a critical factor in marketing, there are still many questions yet to be answered, and many areas yet to be explored. One of the critical voids understudied in the arena of the online consumer review is probably the process of how consumers form their attitudes towards a brand/product based on online consumer reviews.

Today’s marketers are not just naïve observers of consumers’ WOM communication. As fast as today’s market changes, marketers also continuously create new ways to approach consumers and develop new marketing communications. Contradictorily enough to the traditional definition of WOM, today’s marketers have been exploring new and innovative methods to exercise control over WOM (Breazeale, 2009), which is supposed to be a non-marketer dominated form of communication.
among consumers. “WOM marketing,” a word that may sound contradictory itself, has become one of the most widely used new marketing terms in today’s business world. Despite the use of this term, less attention has been focused on the underlying mechanism of the process of how consumers are influenced by online consumer reviews, one of the most common types of eWOM, in forming attitudes towards a brand/product and finally in making purchasing decisions.

The purpose of the current study is two-fold. First, Main Study I will examine individuals’ affective and cognitive responses formed by their thinking about the product/brand under various conditions (e.g., product type, level of involvement, and valence of eWOM messages). This study will examine the effects of those various conditions on affective- and cognitive-based attitudes toward online consumer reviews, toward brands, and ultimately decision making.

Second, Main Study II will investigate how affective and cognitive processing – two of the main components in forming an attitude – play roles in the impact of online consumer reviews on brand/product attitude formation, and, consequently, on purchase intention formation. The study will attempt to develop and test a conceptual model to explain this process by using the Structural Equation Modeling (SEM) technique.

Attitudes have become one of the most popular and essential constructs for most social science domains today (Eagly & Chaiken, 1993; p.1), especially marketing because marketing research in attitudes (e.g., attitudes towards marketing communications or brands/products) provides marketers with critical information to develop marketing strategies and tactics that connect them with consumers. Understanding how consumers form attitudes also enables marketers to predict consumer behavior
(purchasing intention of products or services), which is a critical part of the goals of marketing.

By achieving the two goals, the current study is expected to contribute to understanding the underlying mechanism of how consumers are influenced by online consumer reviews, one of the most common, and powerful eWOM phenomena in the marketing process today.
CHAPTER 2
LITERATURE REVIEW AND HYPOTHESES

Classic Studies in WOM

Since Whyte (1954) first coined the term in his article “The web of word of mouth” in *Fortune*, WOM has been defined by several researchers (Aaker & Myers, 1982; Bayus, 1985; Haywood, 1989). These traditional definitions share a common ground in that WOM is an exchange of information by verbal means in an informal, person-to-person manner.

Katz and Lazarsfeld (1955) were pioneers of survey analysis and conducted the empirical study of WOM. In their classical personal influence study in 1955, they determined how individuals obtained information and opinions from others to make their decisions. The study interviewed a group of more than 800 women in Illinois to examine the influence of opinion leaders on general consumers relative to mass media and other marketing communication sources. Katz and Lazarsfeld suggested a two-step flow model as a WOM process (Figure 2-1). The model suggested that, unlike the traditional model, there are opinion leaders between the mass media and general consumers (followers), and those opinion leaders have a greater and more direct influence on general consumers than the mass media.

Arndt and May (1981) hypothesized a dominance hierarchy of information sources, which maintains the existence of a direct hierarchy of influence among different types of sources (Figure 2-2). According to Arndt and May, the use of WOM communication (interpersonal sources) depends on the level of brand experience (direct prior experience), whereas the use of advertising (mass media) depends on the level of WOM information. Based on a logical process of deduction, interpersonal sources rank
lower in perceived usefulness than direct prior experience but rank higher than mass media. Therefore, direct prior experience (brand experience) tends to dominate interpersonal sources (WOM), and interpersonal sources tend to dominate mass media (advertising). The researchers supported this notion by comparing and contrasting the structural and operational characteristics of these three different source levels, including attribution of biases, opportunity for feedback, control of feedback, relevance of content, completeness, validity, and accuracy.

Although this idea was originally developed for durable consumer goods, Faber and O’Guinn (1984) conducted exploratory research to apply Arndt and May’s hypothesis to movie-going decision making. Faber and O’Guinn’s study notes that, in most cases, people are influenced by multiple sources that can provide conflicting information regarding a new movie. The receivers in this situation must eliminate the contradiction between sources and reach their own decisions. Faber and O’Guinn agreed with Chaffee (1979) on the notion that people learn source credibility by using and comparing different information sources through repeated experiences. Over time, people gradually perceive some sources as more credible than others. Given this background, Faber and O’Guinn assessed movie-goers’ perceptions of different sources’ potential influence on movie selection to test Arndt and May’s hierarchy. Faber and O’Guinn investigated eight different sources in order to determine their frequency of consultation, perceived credibility, importance, and usefulness: one direct prior experience (preview), four mass media sources (critics’ reviews, television ads, radio ads, magazines), and three interpersonal sources (comments from friends, comments from a spouse/date, comments from someone known by the respondent and considered
to be a movie expert). The authors found that interpersonal sources were generally more influential than mass media sources in selecting movies.

More recently, Acland (2003) completed another study that supports Arndt and May's argument (1981). Acland's study compares the impact of mass media and interpersonal sources on people's movie-going decision making by surveying college students. Students were asked what attracted them to the movies they had most recently seen. The students were given twenty eight options to choose from to rate the importance of information sources that could be used to make their decisions for the movie. Among the 28 information sources, friends' comments (WOM) were rated as the second-most important influence after to movie characteristics (e.g., plot and genre) and followed by mass media advertising, previews, etc.

**eWOM**

One of the unique characteristics of the Internet is its interactivity. The emergence and prevalence of the Internet make it possible for consumers to interactively share their thoughts and experiences about products, services, and brands with other people more easily than ever (Schindler & Bickart, 2005). This kind of information exchange, in other words, WOM, which is generated on the Internet, is specifically called "Electronic Word of Mouth (eWOM)." It is also known as "Internet WOM" (Schindler & Bickart, 2005) and "Word of Mouse" (Tibbetts, 2001).

Schindler and Bickart (2005) claim that there are a number of ways in which WOM messages are communicated through the Internet, and they can be divided into seven categories. First, a “posted review” is a type of eWOM that appears on online shopping and commercial web sites that specialize in posting consumer opinions. The “posted review (referred to as ‘consumer review’ for the current study)” is the type the current
study analyzes because it is currently considered the most commonly found form of eWOM with increasing interest from marketers. Second, a “mailbag” is a type of eWOM that includes consumer and reader comments and feedback posted on the web sites of consumer products’ manufacturers, service providers, magazines, and news organizations. Third, “discussion forums” include bulletin boards and Usenet groups. Fourth, “electronic mailing lists” email the members of an email list with consumer opinions. Fifth, “personal emails” are messages sent by one individual to others. Sixth, “chat rooms” are places where real-time conversations between groups of people over the Internet take place. Finally, “instant messaging” includes one-on-one real-time conversations over the Internet (Schindler & Bickart, 2005).

Goldsmith and Horowitz (2006) noted in their research that eWOM is an important aspect of e-commerce. According to the authors, eWOM affects the sales of products and services because consumers tend to actively give and seek opinions online in the same manner that opinions are traded offline. According to Hung and Li (2007), eWOM could be considered even more effective because it provides explicit information, tailored solutions, interactivity, and empathetic listening directly to consumers. Also, several other studies (Bang, 2006; Hennig-Thurau et al., 2004; Jung, 2006) confirm that eWOM could be more powerful in communication than traditional WOM due to its distinct characteristics (e.g., availability to reach unspecified multiple individuals with no geographical/time limit) and the impressive technological development of the Internet (e.g., enhanced interactivity, information searchability).

**Distinct Characteristics of eWOM versus WOM**

There are several known important differences between traditional WOM and eWOM. First, consumers are no longer constrained by time, place, or acquaintances
either in transmitting or receiving information with eWOM as they are with WOM. That is, traditional WOM is typically conducted face-to-face, whereas eWOM is web-based communication that overcomes most of the physical barriers that hold back traditional communication (Hennig-Thurau et al., 2004).

Second, the amount of information and the number of sources that consumers can access online is greater than what is available offline (Chatterjee, 2001). Offline, WOM is limited to those a consumer can physically contact. Through the Internet, however, consumers have access to a larger and more diverse set of opinions about products and services posted by individuals who have used the product or are knowledgeable about the service, yet consumers need not have a prior relationship with those individuals to take advantage of the information provided (Schindler & Bickart, 2005).

Third, eWOM enhances the cost efficiency of acquiring information. It saves time, effort, and money to find the appropriate information compared to searching offline in a more traditional way (Bang, 2006). All these traits give eWOM a far greater reach than most traditional offline methods of gathering information.

**eWOM and Attitude**

As previously discussed, there has not been not much academic research on how people form their attitudes when responding to eWOM, despite it being one of the most intriguing topics in marketing communication today. (The concept of attitude will be detailed in the next section.) In fact, this area of study has been pioneered and led by only a handful of foreign scholars. Park, Lee, and Han (2007) investigate the effects of online consumer reviews on people’s behavioral intention. The researchers especially focus on how the quantity of consumer reviews (the number of online consumer reviews), and quality of consumer reviews (the number of arguments presented in a
consumer review) influence purchase intention of the product. Their findings revealed positive correlations between purchase intention both with quantity and quality of consumer reviews. They also found that consumer’s purchase intentions in a low-involvement situation tend to be more influenced by the quantity rather than the quality of consumer reviews, which is in line with the findings of Elaboration Likelihood Model (ELM); however, consumers in a high-involvement situation tend to be more affected by the quantity of consumer reviews only when the quality of the reviews is high.

Lee, Park, and Han (2007) conducted another interesting investigation that focuses on how online consumer reviews influence consumer’s product attitudes, especially when the valence of the review is negative. The study detected a strong influence of negative consumer reviews on consumer attitude, especially when the quality of the review (referring to the number of arguments presented in consumer review) is high. More specifically, consumers in a low-involvement situation tend to be more easily influenced (i.e. view a brand as unfavorable) by negative consumer reviews whereas consumers in a high-involvement situation tend to show the greater conformity effect only when the quality of the negative reviews is high.

Park and Lee (2008), this time, control the valence of consumer reviews as positive and examine the effect of eWOM in a very practical setting – “eWOM overload” – on consumer’s behavioral intention. eWOM overload (or information overload: e.g., too many consumer reviews for a certain product) happens when there is too much information about a product/service provided to consumers, which may have a negative impact on consumers’ cognitive processing, their attitude toward a brand, and may eventually work adversely for marketers. The researchers detected a negative effect of
eWOM overload and argued that ‘the more, the better’ is not necessarily true for eWOM, even if positive messages are included. The researchers, however, also found that in a low-involvement situation, eWOM overload may generate perceived popularity among consumers and eventually increase the purchase intention.

**The Concept of Attitude**

Attitude is the most important concept to the current study. It is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993; p.1). Generally, attitude is about how someone views or evaluates a person, object, action, issue, or a thing (Petty, Unnava, & Strathman, 1991).

Attitudes are considered a state of mind that can be changed by persuasion. Attitudes change as a response to communication; therefore, over the past century, the concept of attitude has become one of the most important areas of interest of scholars in social science including advertising, marketing, and communication (Perloff, 2008). Especially in advertising and marketing communication, perceived as a type of persuasive communication, attitude toward advertising or brand has been one of the most frequently measured indicators to evaluate the effectiveness of communication (Jun, Cho, & Kwon, 2008).

The concept of attitude is a very complex, hypothetical construct. It cannot be observed but only inferred by observing people’s responses elicited by stimuli (Perloff, 2008). Researchers have investigated the structure of attitude for many decades, resulting in controversies, mixed use of terms, and conflicting findings.
Tripartite Attitudinal Structure

Although findings of attitude research have been confusing and indecisive, most scholars in the area seem to agree that attitude is an inferred state that can be divided into three classes: cognitive, affective, and conative (behavior) processes (defined below). This multidimensional approach of attitude has been widely accepted for many decades of attitude study (Bagozzi & Burnkrant, 1979; Breckler, 1984; Brown & Stayman, 1992; Eagly & Chaiken, 1993; Holbrook & Batra, 1987; Katz & Stotland, 1959; Zajonc & Markus, 1982).

Among the three components, scholars have long been seeking better understanding of the roles of affective and cognitive components. Affective and cognitive components are thought to form people’s attitude account for the last component – behavioral intentions (Bagozzi & Burnkrant, 1979; Morris et al., 2002). Katz and Stotland (1959) maintain that all true attitudes comprise cognitive and affective content. Rosenberg (1968) adds:

The authors and proponents of most of the other consistency theories pay ready lip service to the definition of attitude as an internally consistent structure of affective, cognitive and behavioral components. But, in practice, the last of these components is usually slighted. Behavior (in the sense of externally visible, overt action) toward the attitude object is usually relegated to the status of a dependent variable; implicitly it is assumed that the person will simply act toward an attitude object in a manner consistent with his coordinated affective-cognitive orientation toward that object. (p.101)

The majority of attitude studies have been focusing on affective and cognitive components of attitude and treating the behavioral (conative) component of attitude as dependent effects of cognitive and affective variables (Bagozzi & Burnkrant, 1979). Since Bagozzi and Burnkrant (1979), cognition and affect – the two dimensions of
attitude construct – have been consistently studied by advertising and marketing communications researchers (Jun, Cho, & Kwon, 2008).

**Cognition**

Cognitive response includes thoughts, learning, knowledge, or ideas about the attitude object that are often conceptualized as beliefs (e.g., “Nuclear power plants can cause dangerous nuclear contamination”) (Eagly & Chaiken, 1993; Fishbein, 1963). Beliefs often play a critical role in creating associations between the attitude object and its attributes (Fishbein & Ajzen, 1975). Cognition is also conceptualized as the “internal representation of reality” that is organized and acquired by people’s cognitive skills and experiences (Buck, 1988).

**Affect**

Affective response is feelings, moods, or emotions that people experience when responding to an attitude object (e.g., “anger,” or “hope” that people feel when they consider the concept of “nuclear power plants”) (Eagly & Chaiken, 1993). It is generally perceived that affect, emotions, and feelings are interchangeable terms in most advertising literatures (Homer, 2006) whereas mood is generally considered a state of mind that is longer-lasting and less intense than affect, emotions, or feelings. More importantly, moods generally have no direct association with any particular stimulus object, which differentiates moods from affect, emotions, and feelings (Hansen & Christensen, 2007).

The three-dimensional view of affect – Evaluation, Activation and Surgency (Osgood, Suci, & Tannenbaum, 1957), more recently described as Pleasure, Arousal, and Dominance (PAD) theory – is one of the most widely accepted and studied theories regarding affect (Lang, 1995; Osgood, Suci, & Tannenbaum, 1957; Russell &
Mehrabian, 1977). According to the PAD theory, affect is formed on the basis of three independent and bipolar dimensions: pleasure-displeasure, degree of arousal (excited-calm), and dominance-submissiveness. People are in a constant state of emotion within a three-dimensional space of P, A, and D (Russell & Mehrabian, 1977). The theory suggests that any type of affect (emotion) can be understood as a unique combination of the three primary dimensions: P, A, and D (e.g., “Anger” is characterized by low pleasure, high arousal, and high dominance, whereas “fear” is the same combination of pleasure and arousal, but with low dominance) (Michael & Morris, 2004).

Because of the usefulness and reliability of the three-dimensional theory as a model for measuring human emotions, the theory has gained widespread attention from scholars in advertising and marketing research (Havlena & Holbrook, 1986; Zeitlin & Westwood, 1986).

There have been a lot of measurements explored and developed by researchers to measure emotions. While interviews (Richins, 1997), experimental manipulation (Shiv & Fedorikhin, 1999), psycho-physiological measures (Aaker et al., 1986), and facial expressions (Verma et al., 2005) were some of the attempts (Hansen & Christensen, 2007), AdSAM®, the Attitude Self-Assessment Manikin, by Morris (1995) is perhaps one of the most practical, useful and functional measurements for affective response, especially to marketing communication stimuli (Morris et al., 2002). AdSAM® uses non-verbal visual materials to test affective responses based on Lang’s (1985) SAM (Self-Assessment Manikin) and the three-dimensional PAD model by Russell and Mehrabian (1977).
AdSAM® uses three sets of visualized graphic characters arrayed along with a continuous 9-point scale to represent the three dimensions of affective responses to stimuli – pleasure, arousal, and dominance – without interference of cognitive processing (Mehrabian & Russell, 1974; Morris et al., 2002). The first row of figures represents the pleasure scale (P), ranging from pleasure to displeasure; the second row represents the arousal scale (A), ranging from excited to calm; and the third row represents the dominance scale (D), ranging from controlled to controlling.

Morris and his colleagues investigate the human brain in order to validate the three-dimensional construct of emotion. In a recent study by Morris et al. (2008), emotional responses to five video clips (in this case television commercials) were examined with AdSAM® and functional magnetic resonance imaging (fMRI) to identify corresponding patterns of brain activation. Significant differences were found in the AdSAM® scores on the pleasure and arousal rating scales, which suggest a dimensional approach of constructing emotional changes in the brain.

AdSAM® has been one of the most effective measuring tools for affective responses and is applicable to various marketing communications (Morris, 1995; Morris et al., 2002; Morris et al., 2008). It has been used in many different studies to measure affective responses to a variety of stimuli including product concepts, finished ads, product attributes, product benefits, brands, logos, tag lines, packaging, music, etc. (Jin, 2006). This is discussed further in the method section.

Conation

Conative (behavioral) response is a predisposition toward action (Traindis, 1971). It can be regarded as both the overt actions that people exhibit in responding to an attitude object (e.g., circulating petitions opposing nuclear power plant construction),
and behavioral intentions that are not necessarily exhibited in overt actions (e.g., intention to circulate petitions tomorrow, regardless of whether the intention results in action) (Eagly & Chaiken, 1993).

Conative response of attitude is generally measured by the semantic differential scales, and refers to how cognitive and affective components are associated with people’s behavior, or their behavioral intention to decide what to do (Kane, 1985; Mischel 1996). This is discussed further in the following section.

**Attitude Formation: Cognition and Affect**

As discussed above, among the three components – cognition, affect, and conation – affect and cognition have been identified as two antecedents of attitude by many researchers (e.g., Bagozzi et al., 1999; Ervelles, 1998; Holbrook & Hirschman, 1982). Holbrook (1978) explains that cognition deals with logical, objectively verifiable descriptions of the tangible features of an attitude object, whereas affect comprises emotional, subjective impressions of intangible aspects of an attitude object. Holbrook was one of the scholars who stressed the importance of both components in shaping people’s attitudes toward a certain object in his two-dimensional attitude construct theory (Holbrook & Hirschman, 1982).

Just a few decades ago, in the early stages of consumer behavior research, the cognitive-based approach was a dominant research trend and scholars seemed to perceive consumer choice behavior as merely information processing (Hansen & Christensen, 2007; Morris et al., 2002). For a long time, the affective component of attitude formation was largely neglected and did not attract most researchers’ attention in social science. Affect was often regarded as disruptive and disorganized behavior, and a primary source of human problems. Consequently, research on the role of affect
in forming attitudes seemed to be unscientific until recent years (Izard, 1991; Morris et al., 2002).

Today, despite the widely accepted theory of attitude formation that suggests the roles of affect and cognition, many questions still remain unanswered including inquiries regarding how affect and cognition, in practice, interplay with each other in shaping attitudes, and which is more effective – affect or cognition – in predicting behavioral intention.

**Interplay between Cognition and Affect**

As previously discussed, until recent decades, the affective component of attitude was largely ignored and underestimated by cognitive-oriented scholars (Morris et al., 2002). Most researchers focused on the cognitive component of attitude, suggesting that the cognitive component is a dominant force in people’s attitude formation (Morris et al., 2002). It was widely perceived that the role of affect was limited, and any influence it held on attitude took place through cognition as a mediator. Cognition was perceived to be indispensable to affect in forming attitude, and affect was thought to occur only as a result of the cognitive process (Lazarus, 1982; Lazarus, 1984; Tsal, 1985). Specifically in marketing communication, Fishbein (1965) was another contributor in the notion that suggested consumer’s attitude is primarily a function of cognition.

Zajonc (1980) was one of the early challengers to the traditional notion of cognitive-based attitude. He agreed that in some cases, the cognitive component may be dominant, and attitudes may be formed solely based on cognition with no affective components involved (e.g., A favorable report on an unknown product from an authority can create a favorable attitude toward the product for some people.). However, he
maintained that, under certain circumstances, affect could be evoked prior to cognition, and therefore may at times play a more critical role than cognition in shaping attitudes.

Since then, researchers began to realize the importance of the role of affect in forming attitudes that had long been underestimated and to explore the interrelationship between cognition and affect in shaping attitudes during the communication process. Especially in marketing communications, a number of researchers have been studying to acquire a better understanding regarding the interplay of cognition and affect.

Homer (2006) is one of the researchers who argued that the role of cognition in attitude formation was overestimated. In contrast, her study found that affect exerted more dominant influence on the attitude formation process when the brand is unknown than when the brand is well-known.

Leigh et al. (2006) used print ads to investigate whether two dimensions of memory (recall and recognition) for print ads are associated with cognition and affect. It was found that recall is more influenced by cognition than affect, whereas recognition is more influenced by affect than cognition.

Morris et al. (2002) attempt to extend the research scope and examine how affect and cognition can influence attitude and even predict behavioral intention. The researchers assert that, if measured more rigorously with no interference of cognitive processing in measuring affect by using AdSAM®, a non-verbal measure of affect, affective dimension is more dominant than cognition in shaping consumers' attitude and explaining the variance toward behavioral intention. The relationship among attitude, behavioral intention, and their antecedents — affect and cognition — is discussed more in the following section.
Some researchers even noted the independent role of affect without the presence of cognitive process. The “mere exposure” theory is one of the empirically tested and widely accepted notions that prove the influence of affect imposed directly to attitude (Clore & Schnall, 2005; Zajonc, 1968). The theory suggests that a stimulus in a certain situation (e.g., repeated exposure to attitude objects or to information about them) may directly elicit affect (e.g., enhancing people’s attitude – favorability – toward the stimulus) without any cognitive mediation (Eagly & Chaiken, 1993; Zajonc, 1968; Zajonc, 1980).

Today, most researchers agree and accept the notion that attitude is developed and formed in various combinations of cognition and affect (Perloff, 2008). Based on the previous research, the following hypotheses are submitted:

H1: The effect of affective response toward consumer reviews will have a positive effect on consumer review attitude.

H2: The effect of cognitive response toward consumer reviews will have a positive effect on consumer review attitude.

**Affect and Cognition: Predicting Behavioral Intention**

Can attitude predict behavioral intention?

This current study also looks at how cognitive- and affective-based attitudes toward consumer reviews can predict consumer behavior – purchasing intention of products or services – which is a critical issue in marketing research.

Traditionally, the power to predict human behavior has been a central interest of any social science (e.g., marketing researchers’ interest in consumer purchase behavior, or political science researchers’ interest in people’s voting behavior); therefore
the issue of attitude-behavior consistency to predict behavior from attitude has been one of the most important questions for researchers to explore (Morris et al., 2002).

However, because of the unsuccessful investigations of early researchers (Corey, 1937; LaPiere, 1934) in finding the capability of attitude to forecast behavior, researchers’ views on the relationship between attitude and behavior were skeptical until the 1970s and 80s (Perloff, 2008). One such unsuccessful investigation is the classic work of LaPiere (1934) at Stanford that empirically tested the relationship between attitudes and behavior and showed a huge gap between the two constructs. LaPiere’s (1934) study was a seminal study in establishing the notion that behavior may not be predictable based on verbally reported attitudes.

More rigorous research methods, however, changed the notion of scholars in the 1970s. Drawing on the previous findings in social psychology, Fishbein and Ajzen (1975) formulated the Theory of Reasoned Action (TRA), a well-established theory that provides numerous social science studies with a framework to specify the impact of attitudes on, and, therefore, to predict behavior (more specifically behavioral intention rather than overt behavior) (Hoyer & MacInnis, 2007; Perloff, 2008). According to TRA, behavioral intention is a function of two frequently conflicting determinants, – attitude toward the behavior (e.g., “I am positive about smoking.”) and the subjective norm (social pressure, e.g., “My mom wants me to quit smoking for health.”). The intention itself serves as the immediate determinant of behavior.

Attitude to behavior theory also suggests that attitudes have direct influence on behavior (Fazio, 1986). The evidence of the relationship between attitudes and behavioral intention (in most cases, purchase intention), especially in numerous
advertising and marketing communication studies, has been well documented and confirmed (Jun, Cho, & Kwon, 2008; MacKenzie, Lutz, & Belch, 1986; Muehling, 1987; Shimp, 1981). Researchers have found that attitudes toward ads ($A_{ad}$) often have a direct influence on brand attitudes ($A_{b}$) as the favorable (or unfavorable) attitudes toward the ads are often transferred to the advertised brand, and eventually increase (or decrease) the purchase intention ($P_{I}$). No research, however, has been conducted to investigate how attitudes influence the behavioral intention in the context of consumer reviews to the author’s best knowledge. Because of this shortcoming, the current study extends the discussion to the relationship among attitudes toward consumer reviews, attitudes toward a product/brand, and purchase intention.

Based on the extant literature on the relationship between attitude and behavioral intention, the following hypotheses are submitted:

H3: Consumer review attitude will have a positive effect on brand/product attitude.

H4: Brand/product attitude will have a positive effect on purchase intention.

Moreover, if it is certain that attitude has an impact on behavioral intention, the current study pursues the inquiries further into the issue about what specific component of attitude (i.e. cognitive or affective) is more predictive of behavioral intention under various conditions in the context of a consumer review by testing the overall hypothesized model (Figure 2-4) using SEM analysis.

**Attitude Formation under Various Conditions**

The different roles of affect and cognition in the evaluation process have been investigated under various conditions and in different contexts by a number of scholars. Most frequently, attitude formation processes have been compared across types of
products (hedonic vs. functional) in marketing literature because different types of product may influence consumers’ attitude formation process differently (Batra & Ahtola, 1990).

Hedonic products are the types of products consumed primarily to pursue affective benefits (e.g., taste of toothpaste), whereas functional (a.k.a. utilitarian) products are consumed to seek more cognitive-oriented benefits (e.g., toothpaste’s ability to prevent tooth decay) (Batra & Ahtola, 1990; Kempf, 1999; Woods, 1960). Researchers have found that different product attributes contribute differentially to the two different product types and attitude formation (Batra & Ahtola, 1990). For hedonic products, presumably affective processing of product information (consumer reviews) may be more influential, whereas for functional products, cognitive processing may be more influential.

Another variable that may influence attitude formation is the level of involvement (situational involvement is the focus for the current study). Researchers have found the significant moderate effect of consumer involvement in attitude formation in the context of product-trial experience. One of the early works was done by Batra and Stephens (1994) who found that the role of affect and cognition in attitude formation may vary depending on conditions; however, the involvement level is more important than product type in predicting the role of cognition and affect. The researchers found that the role of affective responses were more critical in shaping brand attitudes in low-involvement situations, whereas cognition played a more critical role in high-involvement situations.

Kempf (1999), however, finds somewhat conflicting findings in his experiment where he detects the moderating effect of product types. According to his study, attitudes are influenced by both affect and cognition; however, for hedonic products,
affect is more important in forming attitude, whereas for functional products, cognition may play more important role.

Kim and Morris (2007) also investigate how affective and cognitive responses to a product trial experience exerts influence on attitude formation of the product under different product types (hedonic vs. functional) and involvement (high vs. low) conditions. The researchers found the dominant power of affect in forming an attitude toward a product trial, whereas the influence of cognition and affect on product trial-based attitude toward product appears fairly balanced. The current study is greatly inspired by Kim and Morris (2007), and adopts some of their methodological framework to examine if the findings of Kim and Morris’s study on product trial would be found in the current eWOM study.

Similar research conducted by Pham et al. (2001), however, finds that the affective response may be a more dominant predictor than cognition regardless of the type or combination of conditions.

Based on the extant literature on the role of cognition and affect in shaping attitudes under various conditions, the following research questions are submitted:

RQ1: How differently would the affective and cognitive responses toward consumer reviews influence consumers’ attitude formation toward consumer reviews under the different product type / involvement situations?

H5: Under the functional product in a high-involvement situation, the effect of cognitive response toward consumer reviews on consumer review attitude formation will be greater than affective response.

H6: Under the functional product in a low-involvement situation, the effect of cognitive response toward consumer reviews on consumer review attitude formation will be greater than affective response.
H7: Under the hedonic product in a high-involvement situation, the effect of affective response toward consumer reviews on consumer review attitude formation will be greater than cognitive response.

H8: Under the hedonic product in a low-involvement situation, the effect of affective response toward consumer reviews on consumer review attitude formation will be greater than cognitive response.

RQ2: How differently would the affective and cognitive responses toward consumer reviews influence consumers’ attitude formation toward products under the different product type / involvement situations?

H9: Under the functional product in a high-involvement situation, the effect of cognitive response toward consumer reviews on consumers’ product attitude formation will be greater than affective response.

H10: Under the functional product in a low-involvement situation, the effect of cognitive response toward consumer reviews on consumers’ product attitude formation will be greater than affective response.

H11: Under the hedonic product in a high-involvement situation, the effect of affective response toward consumer reviews on consumers’ product attitude formation will be greater than cognitive response.

H12: Under the hedonic product in a low-involvement situation, the effect of affective response toward consumer reviews on consumers’ product attitude formation will be greater than cognitive response.

RQ3: How differently would the affective and cognitive responses toward consumer reviews influence consumers’ purchase intention formation under the different product type / involvement situations?

H13: Under the functional product in a high-involvement situation, the effect of cognitive response toward consumer reviews on consumers’ purchase intention formation will be greater than affective response.
H14: Under the functional product in a low-involvement situation, the effect of cognitive response toward consumer reviews on consumers’ purchase intention formation will be greater than affective response.

H15: Under the hedonic product in a high-involvement situation, the effect of affective response toward consumer reviews on consumers’ purchase intention formation will be greater than cognitive response.

H16: Under the hedonic product in a low-involvement situation, the effect of affective response toward consumer reviews on consumers’ purchase intention formation will be greater than cognitive response.

A consumer review as a word of mouth contains information about products or services, and it is either positive or negative in its nature (Haywood, 1989). The valence of this information may exert critical influence on consumers’ attitude formation and generate critical differences in results. In fact, researchers have been debating about the effectiveness of positively versus negatively framed messages under high- versus low-cognitive elaboration situation (Lee, Park, & Han, 2007; Shiv, Britton & Payne, 2004). The following research questions are submitted:

RQ4: How differently would the affective and cognitive response toward consumer reviews influence consumer’s attitude formation (toward consumer review/product) and purchase intention formation under the different valence situations?

![Figure 2-1. The Two-step Flow Model [Adapted from Katz and Lazarsfeld 1955]](image-url)
Figure 2-2. The Hierarchy of Information Sources [Adapted from Arndt and May 1981]

Figure 2-3. AdSAM® (Self-Assessment Manikin) [Adapted from Morris 1995]
Figure 2-4. Hypothesized model and hypotheses
CHAPTER 3
METHODS

Overall Procedure

The purpose of the current study is to investigate individuals’ affective and cognitive responses toward online consumer reviews when thinking about the product/brand under various conditions of product type, level of involvement, and the valence of the information in the consumer reviews (Main Study I). Therefore, the current study was conducted under 2 x 2 x 2 experimentally designed conditions with manipulated valence (positive vs. negative), product type (hedonic vs. functional), and involvement level (high vs. low). In order to manipulate the conditions, three pretests were conducted prior to the main experiment. The entire processes of the three pretests are discussed in detail in the later part of Chapter 3.

The current study also aims at developing and testing a conceptual model to explain how two of the main components in forming attitude – affect and cognition – play their roles in the impact of online consumer reviews on brand/product attitude formation, and, consequently, purchase intention formation (Main Study II).

Experiment was adopted for the current study because one of the main goals is to examine the causal relationship among constructs in order to understand how affect and cognition influence consumer’s attitude formation and behavioral intention under various conditions. Experiment is arguably the best research method for social sciences to establish cause and effect for several reasons: (1) it enables researchers to control the order of the presentation between the cause and the effect; (2) it helps researchers leave out extraneous variables; and (3) it helps researchers to take control over
environments that may affect the results. These issues are very critical conditions for determining causality (Wimmer & Dominick, 1997).

Experiment subjects for the pretests and the main experiment were college students in the United States. Subjects for the pretests (n=39, 20 males and 19 females) were undergraduate students recruited from summer classes in a large southeastern university in July, 2011. All of the subjects voluntarily participated in the study and earned some extra credits for their summer classes. Subjects for the main experiment (n=250, 121 males and 129 females, age range 18 to 29) were also undergraduate students recruited through a market research panel company, uSamp in February, 2012. There was no direct compensation from the researcher for research participation.

The convenient sampling method of using only a homogeneous group such as college students may limit the external validity (generalizability to the general population) of the study; however, using a homogenous group with high commonality may be also advantageous for experiment studies like the current one to examine a theoretical relationship between constructs because it enables the researchers to maintain more control over the sample throughout the entire study. Also, as argued by Kempf (1999), the results may yield more powerful implications for a specific demographic group because college students may be one of the most important target groups for certain product/service markets.

Prior to start of the main experiment, each participant was asked to answer a question to show their level of interest in the product to be used for the main experiment. Data from those who showed no interest, or significantly lower interest than
other participants, were filtered out in order to control any possible extraneous variables or outliers. The detailed processes and results of each pretest are explained below.

**Pretest 1 – Manipulation 1 (Product Type)**

The goal of Pretest 1 was to select a pair of products (product category) to be used for the main experiment. The product category selected by Pretest 1 has to be indeed relevant to the specific demographic group participating in the current study – college students. Also, the two products in the pair should be different from each other in terms of their hedonic and functional nature, but similar in all other aspects (e.g., a grammar book vs. a cartoon book).

A small interview (n=10, 4 males and 6 females) and a paper-and-pencil survey (n=39) were conducted for Pretest 1. The purpose of the interview was to brainstorm and select a pair of hedonic and functional goods that are relevant for college students. The interview was moderated by a third person, a trained graduate student in mass communication who was not informed of the purpose of the study. At the beginning of the interview for brainstorming, the definitions of hedonic and functional goods (as defined in Chapter 2) were given to the 10 participants who were then asked to freely talk about their ideas. The question was worded “Based on the definitions of hedonic and functional goods we just discussed, please give examples of pairs of products that are different from each other in terms of their hedonic and functional nature, but similar in all other aspects.”

The moderator wrote down the ideas about product selection. At the end of the brainstorming, a list with 3 pairs of products was prepared based on participants’ votes. Products that were considered to be inappropriate for the current study were excluded from the list. The final list of the 3 product pairs was then evaluated by a separate group
of participants (n=39, 20 males and 19 females), which was another set of college students, through a paper-and-pencil survey. The participants evaluated each pair of hedonic / functional products on a 9-point scale by answering the following question below as executed by Kim and Morris (2007):

Would you characterize this product as primarily a functional product or an entertainment/enjoyable product? (1 = “Primarily for functional use,” 9 = “Primarily for entertainment use”)

A paired t-test analysis was conducted to examine whether there was a statistical mean difference between functional and hedonic products for each pair as shown in Table 3-1. While all of the 3 pairs showed statistically significant mean differences, Pair 3 (grammar software vs. game software) indicated the most critical mean difference (hedonic product score minus functional product score) and was therefore selected for the main experiment. As a manipulation check between grammar software vs. game software, the same analysis was repeatedly conducted with a larger sample (n=250) of the main experiment.

During Pretest 1, participants were asked to write down the attributes that they thought to be important for each product. Those salient attributes of each product were collected to develop the measurement for one of the constructs, cognitive response toward consumer reviews. As explained later in Chapter 3, Fishbein and Ajzen’s (1975) expectancy-value measures (ΣBiEi), which consist of attribute-level brand beliefs (Bi) and attribute evaluations (Ei), were adopted to measure the construct. The four most-indicated salient attributes for the pair of product types chosen by Pretest 1 for the main experiment (grammar software vs. game software) are shown in Table 3-2.
**Pretest 2 – Manipulation 2 (Involvement)**

Pretest 2 was conducted to pre-check the manipulation of involvement to be used in the main experiment. Involvement is generally defined as the extent to which an individual consumer personally perceives relevant to an entity (Krugman, 1966). Among several types of involvement (e.g., message, product, situation, etc.), situational involvement was used because it can better explain the relationship between consumers' involvement and behavior (Kim & Morris, 2007). Situational involvement refers to the involvement evoked by a specific situation, and one of the most widely used measures in advertising and marketing research is the purchase-decision situation (Kim & Morris, 2007), which is explained below and used for the current study as well.

For the current study, two different hypothetical purchase situation scenarios were adopted from Kim and Morris (2007) and modified for high- vs. low-involvement condition manipulation as below.

*High-involvement situation*: “I went to a store to buy grammar checking (or game) software – a birthday present for my lovely brother who wants to be a professional writer (or gamer)! I have been searching for software that my brother would really want, and I have finally found one that he would like. This product is my final choice among many seen in the local stores and on the Internet. Because his birthday party is tomorrow, I need to buy this one, if it seems to be a good fit. The price of the software is $49.99. I need to be really careful in making my decision because the store provides no return policy for this product. All sales are final."

*Low-involvement situation*: “I just saw grammar checking (or game) software running on a display monitor while I was shopping for other products. The price of the software is $49.99. The store provides a generous 60-day, no-questions-asked return
policy for this product. I am a little interested in this grammar checking (or game) software.”

For Pretest 2, the study followed up with the same group of participants (n=39, 20 males and 19 females) used for Pretest 1. The participants were asked to answer a 3-item, 9-point semantic differential scale survey. This process was to evaluate if the difference between a manipulated high-involvement condition and a low-involvement condition was significant enough for the current study. The questions that were used are below as developed by Mittal (1989):

Based on the situation you were given, in selecting this product from many other choices available in the market, would you say? (1 = “I would not care at all,” 9 = “I would care a great deal.”)

Based on the situation you were given, how important would it be for you to make a choice on this product? (1 = “Not at all important,” 9 = “Extremely important.”)

Based on the situation you were given, how concerned would you be about the outcome of your choice in making your selection of this product? (1 = “Not at all concerned,” 9 = “Very much concerned.”)

A paired t-test result showed significant differences between the high and low involvement conditions as shown in Table 3-3. The mean score for high-involvement condition was 7.18, and the mean score for low-involvement condition was 4.93.

**Pretest 3 – Manipulation 3 (Valence of Online Consumer Review)**

Pretest 3 was conducted to pre-check the valence of online consumer review manipulation for the main experiment. In Pretest 3, two sets of online consumer reviews (one with 5 positive reviews and the other with 5 negative reviews) were created respectively for each product type (i.e., grammar software and game software) selected by Pretest 1 to be used for the main experiment. In total, four sets of 5 consumer reviews – positive reviews for functional products, negative reviews for functional
products, positive reviews for hedonic products, and negative reviews for hedonic products – were created (refer to Appendix). The number 5 was chosen as it is the average number of reviews consumers generally read (Park & Lee, 2008). Each review includes a writer’s name and 3 lines of content with a font size of 10, which is typical of online consumer reviews (Park & Lee, 2008). Considering the possible interference, the quality (the number of arguments in a consumer review = 1~2) and the quantity (the number of consumer reviews = 5; length = 3 lines) were controlled (Lee, Park, & Han, 2007; Park, Lee, & Han, 2007).

To make 5 online consumer reviews for each set more natural and less artificial, actual positive and negative product reviews for the products (selected by Pretest 1) on Amazon.com were referred and partially adopted. Amazon.com has the highest number of visitors within the consumer review/general shopping sites category (source: alexa.com).

In order to pre-check whether the two positive review sets and the two negative reviews sets are clearly perceived differently as intended, the study followed up with the same group of participants (n=39, 20 males and 19 females) used for Pretest 1 and 2. The consumer reviews were given to the participants and they were asked to evaluate the valence of each set of reviews on a 9-point scale:

How do you perceive the consumer reviews above? (1 = “Negative reviews,” 9 = “Positive reviews”)

A paired t-test was performed to confirm if there was a statistical difference in valence of reviews between the two sets. The results are shown in Table 3-4.
Main Experiment (Main Study I & II)

The main experiment was conducted online at Qualtrics.com. Although conducting online experiments has some known weaknesses (e.g., less control, distraction, difference in web browser or Internet speed by users, etc.), it clearly has advantages in convenience and multi-functionality. It also saves money and time.

This online experiment employs a 2 x 2 x 2 design with manipulated valence (positive vs. negative), product type (hedonic vs. functional), and involvement level (high vs. low), which makes 8 unique cells with different conditions. In general, a sample size of thirty (n=30) for each cell is considered to be satisfactory to conduct SEM analyses (Ding & Harlow, 1995). In addition, although there is no single rule about how large a sample needs to be for SEM analysis, in most cases, a sample size of 200+ is considered to be large enough (Kline, 2005). Therefore, the main study aimed at collecting at least 30 college students for each of the 8 cells, which makes 240~250 in total (n=8x30=240). Finally, two hundred fifty college students participated in the online experiment.

The links to access the online experiment were sent to college students who participated voluntarily in the study through uSamp. The research panel company randomly assigned the participants to 1 of 8 different cells (2 x 2 x 2 conditions) by sending them 8 different links based on random order. Balancing gender ratio for each cell was also considered. Finally, in each cell, 31 or 32 participants were assigned. Conditions for each cell are shown in Table 3-5.

Participants in each cell were instructed to go through identical procedures, but in 8 different conditions. All participants were given a set of 5 consumer reviews and manipulated situations designed for each cell. They were then asked to read the
reviews and respond to a series of questions that measure each construct (i.e. affective response, cognitive response, attitude toward consumer reviews, attitude toward product/brand, and purchase intention). Measurements for each construct are further discussed in the following section.

Also, during the main experiment, a manipulation check was conducted to confirm the results of Pretest 1, 2, and 3.

**Measurement Instruments**

**Affective Response toward Consumer Reviews**

Affective responses to ward consumer reviews were measured by AdSAM®, a nonverbal measurement of affective response as discussed in Chapter 2. AdSAM® was originally developed to measure affective responses to advertising stimuli; however, it has been proven to have great potential when used for various types of marketing and promotional communication (Kim & Morris, 2007; Morris et al., 2002).

**Cognitive Response toward Consumer Reviews**

Many researchers developed measurement items to measure cognition by asking a series of bipolar scale questions (Fishbein, 1963; Kempf, 1999; MacKenzie & Lutz, 1989). For the current study, Fishbein and Ajzen’s (1975), expectancy-value measures (ΣBiEi) that consist of attribute-level brand beliefs (Bi) and attribute evaluations (Ei) were adopted to measure cognitive response toward consumer reviews. Cognition is generally known for its role in creating associations between the attitude object and attributes (Fishbein & Ajzen, 1975), so this technique was been frequently used as a practical measurement by numerous previous marketing communications studies (Kempf, 1999; Kempf & Smith, 1998; Marks & Kamins, 1988; Smith, 1993).
To develop the measurement, salient attributes were collected for each product in the pair selected in Pretest 1. Following the technique modified by Kempf (1999) and Kim and Morris (2007), the most frequently found attributes (as shown in Table 3-2) were included for the measurement for cognitive response for the current study. The four most salient attributes for grammar software (functional product) were “accuracy,” “easy to use,” “speed,” and “reliability.” On the other hand, the four most salient attributes for game software (hedonic product) were “entertainment/fun,” “graphics,” “challenge,” and “stability.”

Attribute beliefs (Bi) was measured on a 9-point semantic differential scale asking the following question as suggested by Fishbein and Ajzen (1975):

How likely do you believe it is that the grammar software (or game software) has attribute _____.? (1 = “Zero likelihood,” 9 = “Completely certain”)

For the entire study, a 9-point scale was used instead of a five- or seven-point scale for two reasons: (1) traditional five-point scale is often criticized because some respondents tend to stay in the moderate options in the middle rather than choosing either a negative or positive extreme. A 9-point scale offers more selections for respondents to choose from and increases the accuracy of the measure, and (2) AdSAM®, the well-established measurement tool for emotion used for the current study was originally designed to use a 9-point scale. Because of these reasons, using the same 9-point scale for all other measures within the study may provide convenience and consistency to the current study.

Attribute evaluations (Ei) were measured with a 9-point semantic differential scale by asking the following question as suggest by Fishbein and Ajzen (1975) and modified by Antonides (1996):
How would you evaluate the importance of attribute _____ for this grammar software (or game software)? (1 = “Very unimportant,” 9 = “Very important”) The mean score between measured attribute-level brand beliefs (Bi) and attribute evaluations (Ei) was calculated for each attribute and treated as items that measure the construct, cognitive response toward consumer reviews.

**Attitude toward Consumer Reviews**

Attitude toward consumer reviews was measured by a 3-item, 9-point semantic differential scale asking the following question:

Overall, how would you rate the consumer product reviews? (1 = “Bad,” 9 = “Good” / 1 = “Unfavorable,” 9 = “Favorable” / 1 = “Dislike,” 9 = “Like”)

**Consumer Review-based Attitude toward Product/Brand**

Attitude toward the product/brand formed by consumer reviews was measured by a 3-item, 9-point semantic differential scale that has frequently been used by many marketing studies (Jun, Cho, & Kwon, 2008; Kempf, 1999; Kim & Morris, 2007; MacKenzie & Lutz, 1989; Smith, 1993):

After reading the consumer reviews, how would you rate the product/brand? (1 = “Bad,” 9 = “Good” / 1 = “Unfavorable,” 9 = “Favorable” / 1 = “Dislike,” 9 = “Like”)

**Behavioral (Purchase) Intention**

To measure purchase intentions, 3-item, 9-point semantic differential scale was adopted. The following question was asked as used in many previous marketing studies (Jun, Cho, & Kwon, 2008):

If I were in the marketplace, I would buy the product. (1 = “Unlikely,” 9 = “Likely” / 1 = “Impossible,” 9 = “Possible” / 1 = “Improbable,” 9 = “Probable”)
Analysis Strategy

Multiple Regression Analysis

For Main Study I, multiple regression analyses were conducted to examine the influences of affect and cognition on shaping attitudes in consumer review context. A series of multiple regression analyses was performed to compare the contribution of each indicator of independent variables (cognition and affect) on three different dependent variables – consumer review attitude \((Ar)\), product attitude \((Ap)\), and purchase intention \((Pl)\) formation – respectively under eight different conditions \((2 \text{ valences} \times 2 \text{ product types} \times 2 \text{ involvement levels})\).

Considering the unique nature of each dimension of affect – P, A, and D –, each of them was treated as separate independent variables for regression instead of using a combined value. Therefore, the four independent variables that were used for the multiple regression analysis were the three dimensions of affective response – P (pleasure), A (arousal), and D (dominance) –, and expectancy value from product attributes \((\Sigma BiEi)\), which represents cognitive response.

SEM (Structural Equation Modeling)

For Main Study II, SEM (Structural Equation Modeling) was conducted to determine the overall relationship among constructs. SEM is a combination of multiple multivariate techniques, such as multiple regression and factor analysis, and, unlike most other multivariate data analysis techniques, SEM allows researchers to examine “a series of dependence relationships simultaneously” (Hair et al., 1998: p.578). The technique is especially powerful when researchers deal with multiple relationships simultaneously where one dependent variable works as an independent variable in subsequent relationships (Hair et al., 1998).
For SEM analysis, there are 5 logical steps that most researchers generally follow. (1) The researcher specifies a hypothesized model based on theory and previous research. For the current study, the hypothesized overarching model (Figure 2-4) that shows the overall comprehensive relationship among affective response, cognitive response, attitude toward consumer reviews, attitude toward product/brand, and purchase intention is suggested. (2) The researcher needs to determine whether the suggested model is identified. To be identified, the model has to be theoretically possible for the SEM program to derive a unique estimate of every model parameter. (3) The researcher needs to select the measures of the variables in the model. (4) The researcher needs to conduct the analysis using a SEM program with the collected data and estimate the model. In this stage, the researcher needs to evaluate the model fit calculated by the program (further discussed below). (5) If needed, the researcher needs to specify the model again and evaluate the fit of the revised model with the same data set until a satisfactory model is yielded (Kline, 2005).

Evaluating model fit is a critical process of the SEM analysis. In this process, researchers determine how well the model as a whole explains the data. Although different researchers use different sets of indices, there are sets of fit indices that are more commonly used than others in SEM analyses. (1) the model chi-square (the smaller, the better; this measure is more effective for a model with small cases that have less than 200 participants.), (2) the Root Mean Square Error of Approximation (RMSEA; An RMSEA value of .05 or less is considered good, whereas .10 or higher is considered to be a bad fit.), (3) the standardized root mean square residual (SRMR; An SRMR value of less than .08 is considered a good fit.), (4) TLI (An TLI value of higher
than .95 is considered a good fit.), and (5) the Bentler-Bonett Index or Normed Fit Index (NFI; An NFI value between .90 and .95 is considered acceptable; a value over .95 is considered good.) (Hair et al., 1998; Kline, 2005).

The final model achieved by SEM is especially effective in providing managerial, as well as theoretical, implications for the current study.

Table 3-1. Paired t-test of product type

<table>
<thead>
<tr>
<th>Pair</th>
<th>Product Type</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>d.f.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conference Travel</td>
<td>2.64</td>
<td>1.90</td>
<td>-16.79**</td>
<td>38</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Spring Break Travel</td>
<td>8.15</td>
<td>1.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grammar Book</td>
<td>2.31</td>
<td>1.20</td>
<td>-20.20**</td>
<td>38</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Cartoon Book</td>
<td>8.07</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Grammar Software</td>
<td>2.28</td>
<td>1.31</td>
<td>-26.33**</td>
<td>38</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Game Software</td>
<td>8.38</td>
<td>.96</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .05 (two-tailed)

Table 3-2. Salient attributes of grammar and game software

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Evaluation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar Software</td>
<td>Accuracy</td>
</tr>
<tr>
<td></td>
<td>Easy to use</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
</tr>
<tr>
<td>Game Software</td>
<td>Entertainment/Fun</td>
</tr>
<tr>
<td></td>
<td>Graphics</td>
</tr>
<tr>
<td></td>
<td>Challenge</td>
</tr>
<tr>
<td></td>
<td>Stability</td>
</tr>
</tbody>
</table>

Table 3-3. t-test of involvement level

<table>
<thead>
<tr>
<th>Level</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>d.f.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Involvement</td>
<td>7.18</td>
<td>1.09</td>
<td>11.21**</td>
<td>38</td>
<td>.00</td>
</tr>
<tr>
<td>Low Involvement</td>
<td>4.93</td>
<td>2.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .05 (two-tailed)

Table 3-4. t-test of valence of online consumer reviews

<table>
<thead>
<tr>
<th>Reviews</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>d.f.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>3.08</td>
<td>2.59</td>
<td>8.64**</td>
<td>38</td>
<td>.00</td>
</tr>
<tr>
<td>Positive</td>
<td>7.64</td>
<td>1.27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .05 (two-tailed)
Table 3-5. Combinations of conditions for 8 cells

<table>
<thead>
<tr>
<th>Cell #</th>
<th>Valence</th>
<th>Product type</th>
<th>Involvement level</th>
<th>Number of participants</th>
<th>Gender ratio (male : female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>P</td>
<td>F</td>
<td>H</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>02</td>
<td>P</td>
<td>F</td>
<td>L</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>03</td>
<td>P</td>
<td>H</td>
<td>H</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>04</td>
<td>P</td>
<td>H</td>
<td>L</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>05</td>
<td>N</td>
<td>F</td>
<td>H</td>
<td>32</td>
<td>15:17</td>
</tr>
<tr>
<td>06</td>
<td>N</td>
<td>F</td>
<td>L</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>07</td>
<td>N</td>
<td>H</td>
<td>H</td>
<td>31</td>
<td>15:16</td>
</tr>
<tr>
<td>08</td>
<td>N</td>
<td>H</td>
<td>L</td>
<td>32</td>
<td>16:16</td>
</tr>
</tbody>
</table>

8      | 250     | 121:129      

Valence: P (Positive) vs. N (Negative)
Product type: F (Functional) vs. H (Hedonic)
Involvement level: H (High) vs. L (Low)
CHAPTER 4
RESULTS

Main Study I

Manipulation Checks

The 3 conditions manipulated for the current study – (1) product type, (2) involvement level, and (3) valence – were verified in the main experiment.

(1) To verify the significant difference in how the participants perceived the two different product types (functional vs. hedonic) manipulated by Pretest 1, the participants were asked the following question:

How would you categorize the product in the consumer reviews above? (1 = “It’s primarily for functional use,” 9 = “It’s primarily for entertainment use.”)

As expected, there was a significant difference detected. Participants perceived the grammar checking software as a functional product (Mean = 3.99, SD = 2.58, t = 17.32, df = 124), and the game software as a hedonic product (Mean = 6.70, SD = 2.16, t = 34.60, df = 124) at p < .001.

(2) To verify the significant difference in how the participants perceived the two different involvement levels (high vs. low) after reading the scenario as manipulated by Pretest 2, the participants were asked the same 3-item questions asked for Pretest 2:

Based on the situation you were given, in selecting this product from many other choices available in the market, would you say? (1 = “I would not care at all,” 9 = “I would care a great deal.”)

Based on the situation you were given, how important would it be for you to make a choice on this product? (1 = “Not at all important,” 9 = “Extremely important.”)

Based on the situation you were given, how concerned would you be about the outcome of your choice in making your selection of this product? (1 = “Not at all concerned,” 9 = “Very much concerned.”)
As expected, the main experiment also showed that the participants perceived the two manipulated situations differently. The mean score of the three measured items was calculated and treated as the level of involvement for each condition. The gap was narrower than the pretest: however the difference was still statistically significant between a high-involvement situation ($\text{Mean} = 7.34$, $SD = 1.31$, $t = 62.57$, $df = 124$), and a low-involvement situation ($\text{Mean} = 6.89$, $SD = 1.51$, $t = 50.94$, $df = 124$) at $p < .001$.

(3) To verify the significant difference in how the participants perceived the valence of consumer reviews (positive vs. negative), the participants were asked the same question that was asked for Pretest 3:

How do you perceive the consumer reviews above? (1 = “Negative reviews,” 9 = “Positive reviews”)

As expected, the main experiment also showed that the participants perceived the valence of consumer reviews differently as intended. Participants perceived the positively manipulated consumer reviews positively ($\text{Mean} = 7.80$, $SD = 1.55$, $t = 56.17$, $df = 123$), and the negatively manipulated consumer reviews negatively ($\text{Mean} = 3.40$, $SD = 2.85$, $t = 13.40$, $df = 125$) at $p < .001$.

**Hypothesis Testing**

A series of multiple regression analyses was conducted to investigate the main inquiry of the current study which is the role of affect and cognition in the impact of positive/negative online consumer reviews on brand attitude and purchase intention across 8 different conditions (2 product types x 2 involvement levels x 2 valences). As discussed in Chapter 3, the four independent variables that were used for the analysis were the three dimensions of affective response – P (pleasure), A (arousal), and D (dominance) –, and expectancy value from product attributes ($\Sigma B_i E_i$), which represents
cognitive response. Each dimension of affect – P, A, and D – they were treated as separate independent variables for regression instead of using a combined value.

A factor analysis on PAD representing affective response was initially conducted to generate factor scores, and alternatively, the scores were used as independent variables as surrogates for the raw data. Although there have been some pros and cons regarding this method (Horst, 1965; Kerlinger & Pedhazur, 1973; Kukuk & Baty, 1979; Rummel, 1970), using factor scores is considered to be theoretically superior in terms of ease of interpretation and generalizability. Using factor scores is also considered to increase the research sensitivity (Cohen & Cohen, 1983).

Three sets of separate multiple regressions were conducted to examine the influence of the four independent variables on the three dependent variables – consumer review attitude (Ar) formation, product attitude (Ap) formation, and purchase intention (Pl) formation – respectively.

**RQ1, RQ4. Consumer Review Attitude (Ar) Formation (H5 ~ H8)**

**Hypothesis 5 (Functional product + High involvement)**

H5 was supported only in positive review condition. As shown in Table 4-1, cognitive response was a dominant influencer on consumer review attitude when subjects were exposed to positive online consumer reviews (coefficient = .81, p < .01). This finding is consistent with Kempf (1999), Batra and Stephens (1994), and Kim and Morris (2007). The hypothesis, however, was not supported in negative review condition. Two of the dimensions of affect (P: coefficient = .66, p <.01, and A: coefficient = .38, p < .01) were the only predictors of consumer review attitude formation while the influence of cognition was not significant.
Hypothesis 6 (Functional product + Low involvement)

As expected, the effect of cognition (coefficient = .50, p < .01) on consumer review attitude (Ar) seems to be greater and more significant than affect (P: coefficient = .39, p < .05, but A & D: insignificant) when subjects were exposed to positive reviews: however, affect (P) was the only significant predictor of consumer review attitude (Ar) formation when the participants were exposed to negative reviews (coefficient = .58, p < .05).

Hypothesis 7 (Hedonic product + High involvement)

In the case of positive review condition, D of affect seems to exert a certain level of influence (coefficient = .30, p < .05) on consumer review attitude (Ar) formation: however, the results again found more significant influence from cognitive response (coefficient = .57, p < .01). In the case of negative review condition, none of the affective dimensions were found to be significant predictors of consumer review attitude (Ar) formation while cognitive response showed a certain level of influence (coefficient = .49, p < .05) on the dependent variable. Therefore, H7 was not supported.

Hypothesis 8 (Hedonic product + Low involvement)

Again, cognitive response showed a more significant influence (coefficient = .71, p < .01) on consumer review attitude (Ar) when respondents were exposed to positive reviews, which may conflict with findings from Kempf (1999), Batra and Stephens (1994): however, as expected, in the case of negative consumer review exposure, affect (P: coefficient = .38, p < .1) showed a certain level of significant influence whereas the influence from cognitive response was not significant.

Overall, as shown in Table 4-1, hypotheses were partially supported depending on the valence of consumer reviews. In other words, the influence of cognitive and affective
responses on consumer review attitude ($Ar$) was found to be moderated only by the valence of consumer reviews. However, the moderating effects of the other two variables – product type and involvement level – were merely detected.


**Hypothesis 9 (Functional product + High involvement)**

As shown in Table 4-2, significant impacts from both affective ($P$: coefficient = .38, $p < .01$) and cognitive responses (coefficient = .62, $p < .01$) on product attitude ($Ap$) formation were detected when participants were exposed to positive consumer reviews: however, the effect of cognition seemed to be greater than that of affect. The difference in coefficient size between $P$ and cognition was .24. On the other hand, when exposed to negative reviews, participants’ affective responses ($P$: coefficient = .74, $p < .01$, and $A$: coefficient = .33, $p < .01$) were a more powerful predictor for product attitude ($Ap$) formation than cognitive response (coefficient = .22, $p < .05$). Therefore, the results support H9, and coincide with previous findings by Kempf (1999) and Batra and Stephens (1994) under positive review condition only.

**Hypothesis 10 (Functional product + Low involvement)**

Results were similar to those found for H9. When respondents were exposed to positive reviews, as expected, cognitive response (coefficient = .55, $p < .01$) was a dominant influencer on product attitude ($Ap$) formation: however, for negative review condition, it was found that affect ($P$: coefficient = .79, $p < .01$) was the dominant and the only variable that influenced product attitude ($Ap$) formation. The finding is consistent with Batra and Stephens’s (1994) study, but does not support H10 for the current study in negative review condition.
Hypothesis 11 (Hedonic product + High involvement)

For positive review condition, influences from both affect and cognition were detected. Interestingly, the only affective dimension that was significant was D (coefficient = .36, p < .05): however, in terms of the size of the coefficient, cognition (coefficient = .60, p < .01) was a more powerful influencer than D of affect. Consequently, the results do not support H11: however, for negative review condition, the results were the opposite. Influences from both affect (P: coefficient = .52, p < .01) and cognition (coefficient = .38, p < .01) were detected: however, the size of the effect of affect (P) appears to be greater than cognition in forming product attitude (Ap). The difference was .14.

Hypothesis 12 (Hedonic product + Low involvement)

In positive review condition, although some degree of significant influence from affect (P: coefficient = .31, p < .05, and D: coefficient = .28, p < .05) was detected, cognition (coefficient = .53, p < .01) seemed to exert more influence in forming product attitude (Ap). Therefore, the results under positive review condition do not support H12. In negative review condition, however, affect (P: coefficient = .56, p < .01) was the only significant influencer of product attitude (Ap) formation, which supports H12.

Overall, the results of multiple regression analysis on the influence of affect and cognition on product attitude (Ap) formation showed very similar pattern found in consumer review attitude (Ar) formation. As shown in Table 4-2, hypotheses were again partially supported depending on the valence of consumer reviews, and the influences from the other moderating variables – product type and involvement level – were merely detected.
RQ3, RQ4. Purchase Intention (PI) Formation (H13 ~ H16)

Hypothesis 13 (Functional product + High involvement)

As shown in Table 4-3, when participants were exposed to positive consumer review condition, significant impacts from cognitive responses (coefficient = .49, p < .01) on purchase intention (PI) formation were detected, and were greater than the impact from affective responses (P: coefficient = .29, p < .05). Therefore, H13 was supported under positive review condition: however, when participants were exposed to negative review condition, the effects of both affective response (P: coefficient = .69, p < .01, and A: coefficient = .33, p < .01) and cognitive response (coefficient = .23, p < .05) were detected to some degree. However, P was found to be the most powerful predictor of all independent variables (at p < .01). Therefore, the results for negative review condition do not support H13.

Hypothesis 14 (Functional product + Low involvement)

When participants were exposed to positive reviews, cognition (coefficient = .54, p < .01) seemed to be the only independent variable that significantly influenced the purchase intention (PI) formation. On the other hand, under negative review condition, P was found to be the most powerful predictor of purchase intention (PI) that was significant (coefficient = .79, p < .01). Therefore, again, H14 was supported only when the participants were exposed to positive reviews.

Hypothesis 15 (Hedonic product + High involvement)

For positive review condition, cognition (coefficient = .70, p < .01) was the only predictor that significantly influenced the purchase intention (PI) formation, which conflicted with H15. For negative review condition, although influences from both affect (P: coefficient = .53, p < .01, and D: coefficient = .26, p < .05) and cognition (coefficient
were detected, P of affect was found to be the most dominant influencer. Therefore, H15 was supported in negative review condition only.

**Hypothesis 16 (Hedonic product + Low involvement)**

In positive review condition, the effects of affective (P) and cognitive responses were fairly balanced (coefficient = .45, p < .01). The impact from cognitive response was slightly larger than P of affect, but the difference was minimal (.003). On the other hand, when participants were exposed to negative reviews, affective response (P: coefficient = .50, p < .01, D: coefficient = .27, p < .10) was found to be a significant influencer of purchase intention (PI) formation. Therefore, H16 was supported only under negative review condition.

Again, the results of multiple regression analysis on the influence of affect and cognition in predicting purchase intention (PI) showed the same overall pattern found in consumer review attitude (Ar) and product attitude (Ap) formation. As shown in Table 4-3, hypotheses were again partially supported depending on the valence of consumer reviews. When participants were exposed to positive consumer reviews, cognition shadowed the influence of affect in predicting purchase intention (PI) regardless of product type and involvement level. However, when people were exposed to negative consumer reviews, affect dominated over cognition for predicting purchase intention (PI) regardless of product type and involvement level. In any cases, P (pleasure) was always the most dominant influencer among the three dimensions of affect in predicting purchase intention formation.
Main Study II

Overall Relationship among Constructs

CFA (Confirmatory Factor Analysis) and SEM (Structural Equation Modeling) analysis by AMOS (19th edition) were conducted to test the hypothesized model suggested in Chapter 2 and to examine the overall relationship among the 5 constructs (latent variables: affective response toward consumer reviews, cognitive response toward consumer reviews, attitude toward consumer reviews [Ar], consumer review-based attitude toward product/brand [Ap], and behavioral (purchase) intention [Pl]).

The SEM analysis of the current study followed the rest of the SEM procedures stated in Chapter 3. To test the hypothesized model, all data from the 8 cells were combined and analyzed. The analysis was conducted using the following procedures: (1) the reliability and validity of each construct was examined, (2) the model fit calculated by AMOS was evaluated, and, (3) based on examination of the measurement and structural parameters, the hypothesized model and alternative models were compared to determine the model that the experiment data supported the most (Kline, 2005).

All Skewness and Kurtosis values for each item were within a range of ±1.96. All Skewness values were between -.72 and .02, and all Kurtosis values were between -1.55 and .06, which indicates the normality of the data.

The descriptive results of each measurement item and correlation matrix of measurement items are shown in Table 4-4 and Table 4-5. Table 4-4, especially shows the difference in the mean scores of each measured item based on the valence of consumer reviews (positive vs. negative).

The results of validity and reliability checks are discussed below.
Reliability and validity

Reliability and validity of the construct measures were assessed using the combined data from all 8 cells.

The reliability was assessed based on Cronbach’s alpha, which indicates the internal consistency among items by measuring each construct. Results confirmed that all construct measures were reliable producing Cronbach’s alpha of .90 for cognitive response, .98 for attitude toward consumer review, .99 for attitude toward product, and .98 for purchase intention, which are above the minimal standard of .80 suggested by Nunnally (1978).

Discriminant and convergent validity, two of the construct validities were also used to assess the construct measures. Discriminant validity refers to the extent to which a measure differentiates a particular concept from other concepts (Singleton & Straits, 1999). Discriminant validity of the construct measures was confirmed by testing the pairwise correlations in Table 4-6. As shown in the table, the correlations between constructs ranged from .53 to .84, which confirms discriminant validity (Affect * Cognition = .57, Affect * Ar = .53, Affect * Ap = .67, Affect * PI = .66, Cognition * Ar = .70, Cognition * Ap = .77, Cognition * PI = .78, Ar * Ap = .84, Ar * PI = .82). Correlation of less than .85 is a generally accepted criterion for decent discriminant validity. Although the correlation between the two constructs, Ap and PI is evidently higher than the criterion (Ap * PI = .95), they both have been strongly established by numerous previous studies, and they do not serve as independent variables in the current study, therefore, there should be no multicollinearity issue for the current study caused by this high correlation. Multicollinearity issue generally occurs when there are high correlations among the independent variables (Hair et al., 1998).
Convergent validity refers to the correspondence of results when a construct is measured in different ways (Singleton & Straits, 1999), and it was assessed by checking whether all items’ factor loadings on their corresponding constructs were significant or not (Anderson & Gerbing, 1988). The results, shown in Table 4-7, indicate that all items significantly loaded to the corresponding constructs at a .001 level: therefore, adequate convergent validity was achieved.

**Confirmatory Factor Analysis (CFA)**

A confirmatory factor analysis was conducted with all combined data across the 8 different cells to check the measurement model.

The goodness-of-fit indices of the initial model ($\chi^2 = 266.74$, df = 94, GFI = .89, TLI = .97, SRMR = .03, RMSEA = .09) generated a marginally acceptable overall fit, but indicated needs to respecify the initial measurement model for improvement.

Based on the information provided by the modification indices, the covariance relationships between variables in the initial model were altered to improve the model fit. The alterations were made only when the changes were theoretically justifiable because theory-based respecification can reduces the possibility of sampling error to improve the goodness of fit (Anderson & Gerbing, 1988).

The first noticeably high modification index was between the item #3 (Ar3: likability of consumer reviews) of consumer review attitude (Ar) and the item #2 (Ap2: favorability of product) of product attitude (Ap). Numerous researchers found the theoretical relationship between attitude formation toward a product/brand message and attitude toward product/brand (Jun, Cho, & Kwon, 2008; MacKenzie, Lutz, & Belch, 1986; Perloff, 2008). Therefore, the error covariance for the two items was freed to estimate.
The next high modification index reported was between the item #3 (Ar3: likability of consumer reviews) of consumer review attitude (Ar) and the item #2 (PI2: possibility of purchase) of consumer review-based purchase intention (Pl). Likewise, error covariance of those two items was freed for the same theoretical background as the first respecification.

After those two respecifications, there were considerable increases in the model fits especially the chi-square and RMSEA ($\chi^2 = 204.77$, df = 91, GFI = .91, TLI = .98, SRMR = .03, RMSEA = .07). Figure 4-1 shows the final measurement model with factor loadings for each item and the construct correlations.

**Structural Equation Modeling (SEM): H1, H2, H3, H4**

SEM analysis was conducted to determine the overall relationships among the constructs. SEM is a combination of multiple multivariate techniques such as regression and factor analysis, and allows researchers to examine “a series of dependence relationships simultaneously” (Hair et al., 1998: p.578).

For SEM analysis, the current study especially adopted a MIMIC model as an alternative to multiple-sample analysis (Kline, 2005; Reisenzein, 1986) on the basis of the findings from Main Study I. The Main Study I tested the moderating effects of three variables – product type, involvement level, and valence of consumer reviews. However, the series of multiple regression analysis found a dominant moderating effect of valence of consumer reviews, whereas the effects from the other two moderating variables were merely detected. Therefore, Main Study II adopted a MIMIC model to estimate group differences (valence of consumer reviews: positive vs. negative) on latent variables. MIMIC model is especially useful when “factors with effect indicators are regressed on
one or more dichotomous cause indicators that represent group membership, such as
one coded 0 = treatment and 1 = control” (Kline, 2005: p.307).

The main experiment of the current study manipulated valence of consumer
reviews as consumer reviews generally contain either positive or negative information
about products/brands/services in its nature (Haywood, 1989). The valence of the
information may exert critical role in consumers’ attitude formation, and presumably
generate critical difference in results of the current study. When there are two sets of
data due to experimentally manipulated dichotomous situations, the MIMIC model
technique allows researchers to conduct the SEM analysis with combined data set
instead of dividing the data for two separate analyses (in case of the current study,
positive review group: n = 124, negative review group: n = 126, number of combined
data: n = 250). The technique is useful in examining the differences between two data
sets as it uses experimentally manipulated dummy variable that represents the
comparison of two dichotomous situations, which is valence of consumer reviews
(positive vs. negative) in case of the current study. Experimentally manipulated
situations (i.e. positive vs. negative reviews) were treated as a covariate in the SEM
model tested for the current study. The situations were named as a new variable
“Valence” with single indicator dichotomy (negative review situation coded as 0, and
positive review situation as 1), and used as an observed, exogenous variable.

The initial model in Figure 4-2 hypothesizes the relationship among all constructs
including affective response, cognitive response, attitude toward consumer review (Ar),
attitude toward product (Ap), and purchase intention (Pl). The variable named “group’ is
a covariate. The initial model includes six paths (valence → affect, valence → cognition,
affect $\rightarrow$ attitude toward consumer review, cognition $\rightarrow$ attitude toward consumer review, attitude toward consumer review $\rightarrow$ attitude toward product, attitude toward product $\rightarrow$ purchase intention). Since a MIMIC model is a covariate structure, the path coefficients for the direct effects of “Valence” provide information about the degree to which the difference between positive and negative review predicts the factors (Kline, 2005). As indicated in Table 4-9, all paths showed significant path coefficients (at .a 05 level) ranging from .40 to .96 (valence $\rightarrow$ affect: .66, valence $\rightarrow$ cognition: .51, affect $\rightarrow$ consumer review attitude: .59, cognition $\rightarrow$ consumer review attitude: .40, consumer review attitude $\rightarrow$ product attitude: .85, product attitude $\rightarrow$ purchase intention: .96), however the model fits were not acceptable as indicated in Table 4-8 ($\chi^2 = 481.26$, TLI = .93, SRMR = .15, RMSEA = .12, NFI = .93). Especially, SRMR and RMSEA indices were poor. Examination of the modification index suggested that a new path (cognition $\rightarrow$ affect in dashed arrow) be added to the model as shown in the Mod1 in Figure 4-2 for respecification. There was a huge improvement in $\chi^2$ and SRMR indices, but still unsatisfactory ($\chi^2 = 379.29$, TLI = .95, SRMR = .09, RMSEA = .10, NFI = .94). As the new path was added (cognition $\rightarrow$ affect), the coefficient of the existing path (cognition $\rightarrow$ Ar) dropped dramatically from .40 to .04 and became insignificant as shown in Table 4-9.

Finally, the Amos modification index suggested to add another new path (cognition $\rightarrow$ Ap, in dashed arrow) to the Mod1 as shown in Mod2 in Figure 4-2. Because the suggestion was theoretically meaningful, the Mod1 was revised allowing for this new loading showing significant increase in $\chi^2$ and SRMR indices and acceptable model fits ($\chi^2 = 312.48$, TLI = .96, SRMR = .05, RMSEA = .09, NFI = .95) as indicated in Table 4-
8. As additional change in the model did not increase the fit any further, no more respecification was made for parsimoniousness of the model. As shown in Figure 4-3, the final model indicates that affective response dominantly influences attitude toward consumer review (standardized path coefficients = .87) while cognitive response has no significant influence on attitude toward consumer review (-.02) except some indirect effect through affective response only.

Table 4-1. Consumer Review Attitude (Ar) formation

<table>
<thead>
<tr>
<th>Conditions</th>
<th>DV</th>
<th>P (β coefficients)</th>
<th>A</th>
<th>D</th>
<th>Cog.(ΣBiEi)</th>
<th>R², F</th>
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<tbody>
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<td>-.19*</td>
<td>-.06</td>
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<td>.67, 16.10***</td>
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<tr>
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<td>.00</td>
<td>-.06</td>
<td>.50***</td>
<td>.64, 11.64***</td>
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<td>Ar</td>
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<td>-.04</td>
<td>.30**</td>
<td>.57***</td>
<td>.54, 7.48***</td>
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<td>-.02</td>
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<td>.82, 29.91***</td>
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<tr>
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<td>Ar</td>
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<td>.05</td>
<td>.16</td>
<td>.72, 17.64***</td>
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<td>-.23</td>
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</table>

PFH = Positive review + Functional product + High involvement
PFL = Positive review + Functional product + Low involvement
PHH = Positive review + Hedonic product + High involvement
PHL = Positive review + Hedonic product + Low involvement
NFH = Negative review + Functional product + High involvement
NFL = Negative review + Functional product + Low involvement
NHH = Negative review + Hedonic product + High involvement
NHL = Negative review + Hedonic product + Low involvement

*p < .10, **p < .05, ***p < .01

= the most dominant predictor
Table 4-2. Product Attitude (Ap) formation

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<td>.08</td>
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PFH = Positive review + Functional product + High involvement
PFL = Positive review + Functional product + Low involvement
PHH = Positive review + Hedonic product + High involvement
PHL = Positive review + Hedonic product + Low involvement
NFH = Negative review + Functional product + High involvement
NFL = Negative review + Functional product + Low involvement
NHH = Negative review + Hedonic product + High involvement
NHL = Negative review + Hedonic product + Low involvement

* p < .10, ** p < .05, *** p < .01

= the most dominant predictor

Table 4-3. Purchase Intention (PI) formation

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PFH = Positive review + Functional product + High involvement
PFL = Positive review + Functional product + Low involvement
PHH = Positive review + Hedonic product + High involvement
PHL = Positive review + Hedonic product + Low involvement
NFH = Negative review + Functional product + High involvement
NFL = Negative review + Functional product + High involvement
NHH = Negative review + Hedonic product + High involvement
NHL = Negative review + Hedonic product + Low involvement

* p < .10, ** p < .05, *** p < .01

= the most dominant predictor
**Table 4-4. Descriptive statistics of measurement items**

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<tr>
<th></th>
<th>Mean (Positive, n=124)</th>
<th>Mean (Negative, n=126)</th>
<th>Mean (Combined, n=250)</th>
<th>SD (Combined, n=250)</th>
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P: Pleasure  
A: Arousal  
D: Dominance  
Cog: Cognitive Response  
Ar: Attitude toward Consumer Reviews  
Ap: Attitude toward Product  
Pl: Purchase Intention

**Table 4-5. Correlation matrix of measurement items**

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<td>.93**</td>
<td>.96**</td>
<td>.95**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

P: Pleasure
A: Arousal
D: Dominance
Cog: Cognitive Response
Ar: Attitude toward Consumer Reviews
Ap: Attitude toward Product
Pl: Purchase Intention
* Correlation is significant at the .05 level (2-tailed).
** Correlation is significant at the .01 level (2-tailed).

Table 4-6. Summary statistics and correlation among constructs

<table>
<thead>
<tr>
<th></th>
<th>Affect</th>
<th>Cognition</th>
<th>Ar</th>
<th>Ap</th>
<th>PI</th>
<th>Mean</th>
<th>SD</th>
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<tr>
<td>Affect</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognition</td>
<td>.57***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ar</td>
<td>.53***</td>
<td>.70***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ap</td>
<td>.67***</td>
<td>.77***</td>
<td>.84***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>.66***</td>
<td>.78***</td>
<td>.82***</td>
<td>.95***</td>
<td>1.00</td>
<td>5.47</td>
<td>3.07</td>
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*** Correlation is significant at the .01 level (2-tailed).
<table>
<thead>
<tr>
<th>Factor</th>
<th>Loading</th>
<th>Standard Error</th>
<th>Critical Ratio (t value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.26</td>
<td>.06</td>
<td>3.93***</td>
</tr>
<tr>
<td>D</td>
<td>.33</td>
<td>.06</td>
<td>5.20***</td>
</tr>
<tr>
<td>Cog1</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog2</td>
<td>.90</td>
<td>.04</td>
<td>25.81***</td>
</tr>
<tr>
<td>Cog3</td>
<td>.94</td>
<td>.03</td>
<td>30.35***</td>
</tr>
<tr>
<td>Cog4</td>
<td>.93</td>
<td>.04</td>
<td>29.09***</td>
</tr>
<tr>
<td>Ar1</td>
<td>.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ar2</td>
<td>.97</td>
<td>.03</td>
<td>38.48***</td>
</tr>
<tr>
<td>Ar3</td>
<td>.98</td>
<td>.03</td>
<td>40.86***</td>
</tr>
<tr>
<td>Ap1</td>
<td>.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ap2</td>
<td>.98</td>
<td>.02</td>
<td>52.01***</td>
</tr>
<tr>
<td>Ap3</td>
<td>.98</td>
<td>.02</td>
<td>50.22***</td>
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<td>PI1</td>
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<td></td>
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<td>PI2</td>
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<td>43.89***</td>
</tr>
<tr>
<td>PI3</td>
<td>.98</td>
<td>.02</td>
<td>50.96***</td>
</tr>
</tbody>
</table>

Goodness-of-fit statistics: $\chi^2 = 171.56$, TLI = .98, GFI = .93, RMSEA = .06
Figure 4-1. Final measurement model
Table 4-8. Fit Indices of competing models

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>d.f.</th>
<th>TLI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>NFI</th>
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</thead>
<tbody>
<tr>
<td>Initial</td>
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<td>107</td>
<td>.93</td>
<td>.15</td>
<td>.12</td>
<td>.93</td>
</tr>
<tr>
<td>Mod1</td>
<td>379.29</td>
<td>106</td>
<td>.95</td>
<td>.09</td>
<td>.10</td>
<td>94</td>
</tr>
<tr>
<td>Mod2 (final)</td>
<td>312.48</td>
<td>105</td>
<td>.96</td>
<td>.05</td>
<td>.09</td>
<td>.95</td>
</tr>
<tr>
<td>Criterion</td>
<td></td>
<td></td>
<td>$\geq .90$</td>
<td>$&lt;.05$</td>
<td>$&lt;.08$</td>
<td>$&gt;.90$</td>
</tr>
</tbody>
</table>

Figure 4-2. Path diagrams of competing models
Table 4-9. Standardized path coefficients of competing models

<table>
<thead>
<tr>
<th>Exogenous</th>
<th>Endogenous</th>
<th>Initial</th>
<th>Mod1</th>
<th>Mod2 (final)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valence</td>
<td>Affect</td>
<td>.66**</td>
<td>.34**</td>
<td>.32**</td>
</tr>
<tr>
<td>Valence</td>
<td>Cognition</td>
<td>.51**</td>
<td>.51**</td>
<td>.52**</td>
</tr>
<tr>
<td>Affect</td>
<td>Ar</td>
<td>.59**</td>
<td>.83**</td>
<td>.87**</td>
</tr>
<tr>
<td>Cognition</td>
<td>Ar</td>
<td>.40**</td>
<td>.04</td>
<td>-.02</td>
</tr>
<tr>
<td>Ar</td>
<td>Ap</td>
<td>.85**</td>
<td>.86**</td>
<td>.57**</td>
</tr>
<tr>
<td>Ap</td>
<td>Pl</td>
<td>.96**</td>
<td>.97**</td>
<td>.97**</td>
</tr>
<tr>
<td>Cognition</td>
<td>Affect</td>
<td>N/A</td>
<td>.66**</td>
<td>.68**</td>
</tr>
<tr>
<td>Cog</td>
<td>Ap</td>
<td>N/A</td>
<td>N/A</td>
<td>.39**</td>
</tr>
</tbody>
</table>

** Significant at .05 level

Goodness-of-fit statistics: $\chi^2 = 312.48$, d.f. = 105, TLI = .96, SRMR = .05, RMSEA = .09, NFI = .95

** Significant at .05 level

Figure 4-3. Final model with standardized path coefficients
CHAPTER 5
SUMMARY AND DISCUSSIONS

Summary

Along with the prosperity of the Internet, WOM (or eWOM) has become one of the most powerful forces emerging in marketing today as it is widely accepted by consumers as a critical information source. As eWOM attracts more attention from people, marketers are also attempting to better understand the new phenomenon that could have critical impact on their brands and companies.

In spite of some limitations to be discussed in Chapter 6, the current study made some contributions to advance the understanding on the process and the influence of eWOM (more concretely, online consumer reviews as a most-common form of eWOM) on consumers’ attitude and purchase intention formation.

More specifically, the current study was conducted to compare the contribution of affect (P, A, and D) and cognition on the prediction of consumer review attitude (Ar), product attitude (Ap), and purchase intention (Pl). Until scholars started to realize the important role of affect in forming attitude in the 1980s, the role of affect had long been ignored and underestimated by scholars, and research had been centered mainly around people’s cognitive processing, which was considered a dominant force over affect in forming people’s attitudes (Lazarus, 1982; Lazarus, 1984; Tsal, 1985).

The findings of the current study are mainly two-fold.

First, a series of multiple regression analyses was conducted to investigate the main inquiry of the current study, which is the role of affect and cognition on the impact that online consumer reviews have on brand attitude and purchase intention across various conditions (2 product types x 2 involvement levels x 2 valences). In conclusion,
the regression analyses detected very powerful moderating effects of the valence of consumer reviews on the role of affect and cognition.

Researchers have investigated the different roles of affect and cognition in the evaluation process across different conditions in various marketing contexts. Most of the previous studies tested the moderating effect of product type and involvement level in the context of product-trial, corporate identity, advertisements, and the like. Kempf (1999) detected the moderating effect of product type as he found affect to be a dominant influencer in hedonic product situations whereas cognition was a dominant influencer in functional product situations. On the other hand, Batra and Stephens (1994) found a moderating effect of involvement situations that showed the role of affect may be more influential in shaping brand attitudes in low-involvement situations whereas cognition may be a more powerful predictor in high-involvement situations.

The current study added and examined an additional moderating variable to this rather inconsistent line of research findings: the valence of online consumer reviews (i.e. positive eWOM vs. negative eWOM). Unlike other marketing communications, WOM may contain negative information about a product or brand (Haywood, 1989), so the valence of information may be assumed to be critical in influencing how cognition and affect interplay to shape attitudes and purchase intentions.

As noted earlier and as expected, the current study clearly found a consistent overarching pattern of effects of cognition and affect on attitude / purchase intention formation. The series of the multiple regression analysis found a dominant moderating effect from valence of consumer review whereas the effects from the other moderating variables – product types and involvement levels – were merely detected. In positive
consumer review situation, cognition dominated affect for predicting consumer review attitude \((Ar)\), product attitude \((Ap)\), and purchase intention \((PI)\) regardless of product type and involvement level. On the other hand, when people were exposed to negative consumer review situation, the results were totally the opposite, i.e., affect, in turn, dominated over cognition for predicting consumer review attitude \((Ar)\), product attitude \((Ap)\), and purchase intention \((PI)\) regardless of product type and involvement level. Among the 3 dimensions of affect \((P, A, and D)\), P (pleasure) dominated as the most important influencer in predicting attitude and purchase intention formation.

Second, based on the interesting findings from the multiple regression analysis, the current study also conducted SEM analysis to examine the overall relationship among the five constructs (affective response toward consumer reviews, cognitive response toward consumer reviews, consumer reviews attitude \([Ar]\), product/brand attitude \([Ap]\), and behavioral (purchase) intention \([PI]\)).

The analysis found the predominant direct influence of affect on consumer review attitude \((\text{coefficient} = .84 \text{ at } p < .05)\) compared to cognition \((\text{coefficient} = .01 \text{ at } p > .05)\). It also detected the role of affective response as a mediator for cognitive response. When a new path from cognition to affect \((\text{Cog} \rightarrow \text{Affect}, \text{coefficient} = .66 \text{ at } p < .05)\) was added for model respecification, the path coefficient (direct effect) from cognition to consumer review attitude \((\text{Cog} \rightarrow \text{Ar})\) almost completely disappeared \((.40 \text{ at } p < .05 \rightarrow .04 \text{ at } p > .05)\). In other words, the direct effect of cognition on consumer review attitude became insignificant, and cognition was only mediated by affect. The finding is nearly opposite to those of Lazarus (1984) and Tsal (1985) who maintain affective responses are always mediated by cognition.
The results of the SEM analysis, however suggest that the effect of cognition should not be neglected either. In the final respecified model of the SEM analysis, cognition is still a powerful influencer of affect (coefficient = .67 at p < .05) as well as important predictor of product attitude (Ap) (coefficient = .36 at p < .05) which advertisers would be more interested in because of its high correlation with purchase intention (Pl). In addition, standardized indirect effect of cognitive response on purchase intention was .62 (at p < .05), which is fairly high.

Taken together, it is assumed that in terms of consumer review attitude (Ar), affect is a more direct and dominant predictor, whereas cognition seems to play a more critical and immediate role in forming product attitude (Ap) and purchase intention (Pl).

**Think Positive, Feel Negative!**

The current study provides various theoretical and managerial implications that should be carefully considered by practitioners and researchers.

First, the findings of the study imply that advertisers need to take more care of, and pay closer attention to, eWOM, especially for negative consumer reviews since it is assumed that consumers may respond more emotionally when they are exposed to negative reviews rather than positive reviews. It may be an important finding because, according to prior research, negative reviews with more emotional opinions can be more powerful and effective than logical, positive opinions (Yang & Fang, 2004). Also, according to a recent survey (Cone Communications, 2011), eighty percent of consumers have changed their purchase decisions based solely on a negative consumer review found online. No advertiser can afford to ignore negative consumer reviews about their products in today’s interconnected world.
While good consumer services have always been necessary for successful marketing, the findings of the current study provide yet another reminder of the importance of good communication skills used by marketers with their consumers in today’s marketplace, which is increasingly dominated by eWOM (Kim, Lee, & Ragas, 2011). By responding more swiftly to negative online consumer reviews, marketers may be able to limit the amount of negative reviews and ultimately turn a negative into a positive (Kim, Lee, & Ragas, 2011).

Second, another managerial implication is that advertisers need to understand the overall mechanism of how consumers form their attitude and purchase intention when responding to consumer reviews in different situations. According to the current study, affect may play a more significant role in forming attitude toward consumer reviews in negative conditions whereas consumers tend to use more cognition when exposed to positive reviews regardless of product type and involvement level. The results seem to be very consistent with the findings of Kim, Lee, and Ragas (2011) who content-analyzed 840 actual consumer reviews from the consumer review writers’ point-of-view. The researchers found that when consumers are negative about a product/brand, their reviews tend to be less logical and more emotional than when they are writing positive reviews. The current study found a consistent pattern from the consumer review readers’ point-of-view as well.

These findings should be carefully considered and used strategically by advertisers to more appropriately respond to consumers’ feedback or reviews. It would be very important for advertisers to understand the status of consumers before they create either cognition or emotion-based communication strategies to deal with
consumers or the consumer reviews. When advertisers respond to negative reviews, they should understand that the consumers involved (whether they are the readers or the writers of consumer reviews) may be highly emotional. A logical approach, based on cognition-based strategy, may be more effective in dealing with the situation. On the other hand, when exposed to positive reviews, the current study suggests that consumers tend to use more cognition than affect when forming their attitudes. While providing additional cognition-based information on products, advertisers should consider strategies used to direct the consumers’ cognition-based consumer review attitude to a more overall favorable attitude toward the company’s products/brands.

Third, although the importance of the role of affect and cognition in forming attitudes varies based on the valence of consumer reviews, advertisers need to understand the balanced roles of affective and cognitive responses to facilitate the formation of a good product attitude (Ap). As detected by the SEM analysis, in general situations, an affective response should be highlighted more for its dominant direct influence on consumer review attitude (Ar); however, when it comes to the influence on product attitude (Ap) formation, consumers may be more influenced by cognitive processing. Because online consumer reviews are direct information from other consumers regarding a product/brand, and consumers usually refer to the online consumer review information when they are close to making a purchase, it may be assumed that consumers tend to make more cognition-based decisions to avoid risks. Also, the indirect effect of cognition on consumer review attitude (Ar) should not be neglected or underestimated.
Fourth, the current study found that affect may play a more critical role in forming attitudes when consumers are exposed to negative information (consumer reviews) whereas cognition is assumed to be more influential when exposed to positive information. The findings may be theoretically linked to the “Cognitive Miser” theory suggested by psychologists, Fiske and Taylor (1984). The theory suggests that when evaluating new information and making decisions, people often tend to rely on more time-efficient, effort-efficient strategies for information processing to save their cognitive energy. Therefore, people often use their existing knowledge structure rather than rationally thinking and making cognition-based decisions when it is not required (Fiske & Taylor, 1984). eWOM or online consumer reviews are information that people actively seek to ultimately make better-informed decisions. Based on this, it may be assumed that people use cognition-based rational thinking only when they see positive information about the product they are interest in; however, when people are exposed to negative reviews, which may be a sign of not needing further careful elaboration of information, it is assumed that people tend to save their cognitive energy and become emotional. According to ELM (Elaboration Likelihood Model) by Petty and Cacioppo (1981), people tend to take either central route or peripheral route to persuasion based on their level of motivation. Less motivated by negative consumer reviews, people may take the peripheral route with no serious message elaboration or thinking too much about message arguments, and process messages based on simple affective cues at a very heuristic level.
There should be further investigation on the linkage and how and why affect and cognition influence people’s information processing and attitude forming differently in different valence situations.
CHAPTER 6
LIMITATIONS AND SUGGESTIONS

While the current study makes several unique contributions to understanding the relationship between the role of cognition/affect and attitude formation, as with any study, there are several limitations that need to be noted.

First, in this study, only two products (Grammar checking vs. Game software) were chosen to represent functional and hedonic products, respectively. There could be some controversy, however, on the ability of the two products to represent the two product types and to generalize the results. Therefore, replications are needed through future research to enhance validity.

Second, the current study only adopted a few variables. For future research, adding additional variables should be considered to examine any significant relationship among cognition/affect, online consumer reviews, and other variables. Over the past few years, researchers have begun to explore eWOM in the context of new online social media (e.g., Facebook, Twitter, etc.). Also, there are many other variables that were not tested by the current study, but may be theoretically related to the important constructs used in the study (e.g., perceived risk, intention to seek out WOM, source credibility, etc.). Further analyses using various research variables and methods to replicate and extend the different dimensions of the topic of the current study would help compliment this growing line of inquiry.

Third, the current study used college students for the sample. Although this homogeneous sampling was considered effective in controlling other extraneous variables, future studies should consider gathering a sample from a more general population in order to enhance the generalizability of the study. Product type and
involvement situation scenarios should also be appropriately modified for replication or extension of the current study.

Fourth, although both the pretest and manipulation check showed statistically significant difference between high and low involvement situations (manipulation 2), the difference was not large as it was intended. Narrow difference was also detected for participants' perceived valence of positive vs. negative consumer reviews. The process of manipulation should be re-examined for future study to maximize the difference between different conditions.

Lastly, as with any other studies adopting SEM, the relationships among constructs suggested by the current study are only causal inferences based on theories. It does not confirm the perfect causality as indicated in the model.

In spite of these limitations, the current study contributes to understanding the underlying mechanism of how consumers are influenced by online consumer reviews. As of yet, there have been few studies conducted to understand how consumers form their attitude and behavioral intention in responding to WOM; therefore, there are still a lot of questions yet to be answered, and a lot of areas yet to be examined.
APPENDIX
Consumer Review (Functional – Positive)

PerfectWriter:
Grammar Correction Software [CD-ROM]
Elite Inc.
4.8 out of 5 stars
Price: $49.99

Stephen Brennan
I picked up this program because I’m a writer and my grammar skills are not very strong. I researched several different software packages, and settled on this one based on reviews I had read. I performed a series of test runs with the package. It picked up a lot more errors than Word 2007’s grammar checker did. If you need a good grammar checker I can recommend this one.

Laura A. Rennert
I really like PerfectWriter. It does catch all of my serious errors and I know my writing is better because of this. I have also learned to avoid many errors after fixing them a few times from prompting with PerfectWriter.

Neil Farnam
PerfectWriter works the right way and is the safest way to make corrections. PerfectWriter gives suggestions and examples, all you have to do is hover the mouse over the error and a popup shows the suggestion and an example. I love it.

David M. Goodman Sr.
PerfectWriter is a fast grammar and punctuation program. I’m a Writer; I had a book published last year, and have had short stories and articles published in magazines. My next novel is being revised. PerfectWriter has been a lifesaver.

Sheridan Destin
For the money, you can’t beat PerfectWriter. I recommend it! It really helped me improve my writing and avoid dumb mistakes. I like my PerfectWriter and I will be keeping it.
Consumer Review (Functional – Negative)

PerfectWriter:
Grammar Correction Software [CD-ROM]
Elite Inc.

2.1 out of 5 stars
Price: $49.99

Stephen Brennan
I hated it. It required me to connect to the internet every time I wanted to use it which meant anytime I was writing on my laptop and did not have web access the program did not work. It also created popup ads trying to make me buy their new software.

Laura A. Rennert
I tried a demo of this product and hated it. It inserted some plugin into my MS Word which caused it to crash when I tried to use the graph feature. I had to uninstall it. It gave me nothing but headaches.

Neil Farram
Be careful – be very very careful - I was using it with a Word document and when I did not accept its recommendations it would, at times, delete whole paragraphs. Also I found, at times, it gets itself into a loop and, short of rebooting the computer, nothing will stop it. It is a genuine attempt at a worthwhile writer support tool, but leaves much to be desired with reliability.

David M. Goodman Sr.
I recently purchased PerfectWriter thinking it is an advanced Grammar Checker that would integrate with Word or other programs. Wrong! It appears to be a cut and paste program that reads only text files .txt. If I had all of the information at the time of the purchase I would not have purchased it.

Sheridan Destin
The key disadvantage is that analysis is not very deep. This product is less capable than other programs I have used before. In addition, recommendations are not very varied. Like other reviewer noted, soon you learn to check for those problems yourself and do not need a PerfectWriter engine.
Consumer Review (Hedonic – Positive)

3D Game package:

Game Software [CD-ROM]

Elite Inc.

4.8 out of 5 stars

Price: $49.99

Stephen Brennan
Great game to play with 2 people. It may be better than the real thing. Well worth the money. The game play itself is straightforward and exactly what you would expect. The graphics are nice, and the controls are very easy to use and intuitive. Well done!

Laura A. Rennert
I was really impressed with how well the game was made. It has incredible graphics! I was blown away by how awesome it is and how well the controls work. Great game lots of fun! Get this game! I love it.

Neil Farman
First of all, the graphics of this game is amazing. Also, the physics in the game is like real life. I totally recommend this game to people who like creative games. The game runs smooth and is super fun.

David M. Goodman Sr.
The game is fun. It is a great time killer, with innovative controls, soothing music and several different gameplay modes. It also runs very smooth. Awesome and addictive game. Runs with no problems on my computer.

Sheridan Destin
It installs automatically to my computer, and runs very smoothly. The graphics and sound effects are very nice. Somebody put a lot of work into the 3D effects of the game. It is easy to get playing and the tutorial is simple.
3D Game package:
Game Software [CD-ROM]
Elite Inc.

2.1 out of 5 stars
Price: $49.99

**Stephen Brennan**
Not sure why this game was made. The graphics are boring, and pointless. It took a long time to open, and had awful controls. It really isn't fun at all. I also found it very hard to play. It was more frustrating than fun. I've taken it off my computer. Some may like it, but it's not for me!

**Laura A. Rennert**
Tried to install this on my computer several times, but this stupid software won't install on my computer. Each time it would reboot the computer and not install. This game software obviously has some problems. Needs to be fixed.

**Neil Farnam**
I have tried installing this game twice. Both times when reaching install point my computer turns off, restarts, and the reboot screen flashes for 20 minutes or longer. This is a serious issue. This is outrageous.

**David M. Goodman Sr.**
Won't install on my computer. When attempting to install it, this software causes my computer to Crash and Automatically reboot for no reason. This is my first computer game software. It is amazingly bad software. Very disappointing.

**Sheridan Destin**
Gameplay bored me in less than 10 minutes. I am a huge fan of the computer game but I think this version is pretty boring and unwieldy. Uninstalled. Can't rate more than 1 star. I will never play it again.
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Jinsoo Kim was born in South Korea in 1971. He received his Bachelor of Arts degree in Russian Language and Literature from Korea University (Seoul, South Korea) in 1996. He earned his master’s degree from University of Missouri – Columbia in 2000. After six years of advertising industry experience at a multi-national company (McCann Erickson) in Korea, he came back to the United States to pursue his Ph.D. degree in advertising. During his stay at the University of Florida, he conducted several research projects on eWOM and emotion under the guidance of Dr. Jon D. Morris. In fall, 2011, he accepted a position and has been working as an assistant professor of communication (advertising) at the Rhode Island College, Providence, RI. He received his Ph.D. from the University of Florida in the spring of 2012.