

DESIGNING PERSUASIVE DESTINATION WEBSITES:
A MENTAL IMAGERY PROCESSING PERSPECTIVE

A Dissertation

by

WOO JIN LEE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2008

Major Subject: Recreation, Park and Tourism Sciences

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ABSTRACT

Designing Persuasive Destination Web Sites:

A Mental Imagery Processing Perspective. (August 2008)

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The previous research have found that consumers' choices of vacations may be significantly influenced by mental imagery processing, which is considered to be high elaboration cognitive processing. Mental imagery is defined as an experience that significantly resembles the experience of perceiving some object, event, or scene, but which occurs in the absence of the appropriate stimuli for the relevant object, event, or scene. This study first aims to identify imagery-eliciting Web site features and second, to test their influence on persuasion-related outcomes such as attitude strength, confidence, and attitude resistance. Finally, this study investigates the role of individual processing style (e.g., visualizer or verbalizer) as a moderator variable.

A total of 252 subjects participated in a Web-based experiment to examine the influence of selected Web site features on individual imagery processing and its effect on consumers' attitudes and expectations. It involved a 2 (narrative vs. expository text) \times 2 (pictures vs. no picture) \times 2 (sounds vs. no sound) full factorial between-subjects design. The data was analyzed primarily using a structural equation modeling methodology.

Structural model results revealed that the mental imagery construct strongly influenced the communication effects, which were represented by attitude strength and attitude confidence. In addition, the results of the study found that the communication effects had a significant impact on attitude resistance. This implies that the stronger attitude creates stronger resistance to a negative impact. In the context of the influence of Web site features (e.g., narrative text, pictures, and sound) inducing mental imagery processing, only pictures have a significant effect on mental imagery processing, which support positive effects of concrete pictures on mental imagery processing.

In conclusion, the findings of this study show that mental imagery processing is important. Thus, we need to continue to investigate what forms of Web site designs and features best support imagery processing. More specifically, tourism marketers need to understand how certain stimuli influence mental imagery processing, and then they need to enhance Web site designs to capture potential customers.

DEDICATION

This dissertation is dedicated to my loving father, Kihong, Lee,
who will be missed and never forgotten, I love you.

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It would not have been possible for me to complete this dissertation without the support, guidance, and encouragement of my committee members. I am grateful for their interest in this research and for all their effort and willingness to help me. First of all, I would like to sincerely thank my chair, Dr. Ulrike Gretzel, who provided opportunities for me to work on the projects and who gave me a chance to be able to grow in the real academic world. She is not just my advisor, but also a very good friend and partner who always advises me to “be confident”. Her patience, guidance, support, and knowledge have been the key to my becoming what I am today.

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CHAPTER I

INTRODUCTION

Tourism products are unique, complex, and experiential; thus it is important to understand how customers make sense of these products or create and attach self-relevant meanings to them. Even though an ever greater number of travel Web sites are available, current online travel information is not supportive enough to help tourists form concrete expectations and, therefore, make more informed decisions. Online tourism marketing will only be persuasive if it can successfully communicate the essence of these destination experiences. Being able to imagine what a vacation at a specific destination will be like is a crucial factor that can greatly enhance travelers' decision making processes. The major concern of providers of tourism products is how tourists can experience visiting, seeing, learning, and enjoying the products before purchasing (Stamboulis & Skayannis, 2003). As mentioned previously, tourism products are intangible and experiential, and before experiencing the products, consumers may be uncertain until they discover and evaluate the value by actually trying and using the product (Nelson, 1970, 1974). Regarding these aspects, Oh, Fiore and Jeoung (2007) stated that visiting a particular destination is not just motivated by the elaborated physical attractiveness of the site, but more strongly, it is influenced by the powerful mental and emotional image or "pre-experience" the tourist obtains from the expected experience at the destination. Miller and Stoica (2003) have demonstrated that consumers' choices of

This dissertation follows the style of *Tourism Management*.

vacations may be significantly influenced by mental imagery processing which is considered to be high elaboration cognitive processing. In the context of marketing research, mental imagery is defined as “a process in which nonverbal information is represented in working memory” (MacInnis & Price, 1987). On the other hand, from the literature of psychology, mental imagery is identified as all those quasi-sensory or quasi-perceptual experiences of which we are self consciously aware and which exist for us in the absence of any stimulus conditions that are perceived to produce their genuine sensory or perceptual counterparts (Kosslyn 1988; Richardson 1969, 1983). It has been long time noted that mental imagery had been a very efficient tool as a learning aid for several centuries (Elliott, 1973). Especially the early study on mental imagery processing showed that by explicitly instructing respondents to use mental imagery in assimilating presented material, their retention or recall of information can be significantly enhanced (Elliott, 1973). Based on these findings, from the perspective of marketers, if mental imagery is effectively evoked, it can be an aid to enhance consumer learning of product information.

Online travel Web sites have the potential to contain mental imagery evoking features including narrative texts, sounds, and pictures (Brewer, 1988; Burns et al., 1993; Miller & Stoica 2003). Past research has revealed that imagery can be stimulated by various external advertising sources such as pictures, concrete words, sound effects, and instructions to imagine (Babin & Burns, 1997; Bone & Ellen, 1992; Lutz & Lutz, 1977; MacInnis & Price, 1987; Miller & Marks, 1997). While picture processing has been studied extensively in consumer research, few studies have reliably reported positive

effects of visual imagery on message learning when the imagery is provoked by verbal information. It is useful to examine the effects of imagery especially provoked by narrative text presented in promotional messages since marketing communications are often in the form of narratives (Unnava et al., 1996). Narrative is defined as the mode of thought that best captures an experience particularly of human action, thus it involves reason, intentions, beliefs, and goals (Baumeister & Newman, 1994). Green and Brock (2000) found that narratives persuade through transportation, which could be explained as “immersion into a text,” in other words, the degree to which individuals become “lost” in a story. The components of transportation include emotional reactions, mental imagery processing, and a loss of access to real world information (Green & Brock, 2000). In the context of tourism products such as hotels or destinations, while engaging in other people’s stories, tourists may elaborate and reorganize past tourist experiences or vividly imagine potential future trips. This process makes their experiences more vivid, more meaningful, and thus more salient in their minds.

MacInnis and Price (1990) have also pointed out that mental imagery has a positive influence on consumer attitudes and leads to greater confidence that events will unfold as expected. Furthermore, it leads to higher levels of satisfaction. This study aims to identify imagery-eliciting Web site features and to test their influence on persuasion-related outcomes such as attitude strength, confidence, and attitude resistance. Finally, this study investigates the role of individual processing style (e.g., visualizer or verbalizer) as a moderator variable.

CHAPTER II

LITERATURE REVIEW

From the perspective of consumer research, a consumer's mental image of a tourism product can be the main source of information available to enhance a consumers' expectation and facilitate their purchasing decisions (Walters, Sparks, & Herington, 2007). Miller and Stoica (2003) have demonstrated that consumers' choices of vacations may be significantly influenced by mental imagery processing, which is considered to be high elaboration cognitive processing. Furthermore, several researchers found that attitudes formed through mental imagery processing tend to be stronger, more stable over time, and more resistant to persuasion. (Haugtvedt & Petty, 1992; Petty, Haugtvedt, & Smith, 1995). Considering these aspects, it is critically important for tourism marketers to understand what types of stimuli on a tourism Web site efficiently induce mental imagery.

Past research reveals that concrete words, pictures, and instructions to imagine have been found to elicit mental imagery (Babin & Burns, 1997; Miller & Marks, 1998; Unnava & Burnkrant, 1991). However, little research addressed the effects of narratives on mental imagery processing even though much of the marketing communication materials are in the form of narrative text. Padgett and Allen (1997) contend that narrative advertising would be the most effective way to communicate especially in the context of an experiential product such as tourism.

The overall organization of the chapter is as follows: In the first section, the definition of mental imagery and the power of mental imagery in an online marketing

context are demonstrated. Then, two widely used theories for explaining the effects of mental imagery processing is provided. In the next section, previous research regarding imagery-eliciting external stimuli is reviewed. In this section, especially among the imagery-eliciting stimuli, varieties of research in terms of narrative processing are identified. Then, empirical findings on the effects of mental imagery processing on attitude formation are reviewed. In the final section, an explanation of individual differences in mental imagery processing, especially processing style (e.g., verbalizer or visualizer) is presented.

Mental Imagery

Definition of Mental Imagery

Mental imagery can be conceptualized as “a mode of information processing which includes sensory representations (images) in working memory that are used in the same way as perceptions of external stimuli” (Goossens, 2000, p. 306). Similarly, it is identified by MacInnis and Price (1987) as “a process by which sensory information is represented in working memory” (p. 473). Alternatively, mental imagery can be defined as “a mental event involving visualization of a concept or relationship” (Lutz & Lutz 1978, p. 611). Mental imagery theory assumes that we mentally “re-present” in our minds something that was “presented” to us before by experience or that we imagine based on information available.

Mental imagery processing involves the activation of concrete representations. According to Burns, Biswas and Babin (1993), “there are various types of mental

imagery which are voluntary and stimulated by instructions from an external source or even oneself.” (p. 72) Miller and Stoica (2003) state that imagery may vary in terms of quantity, vividness, affective meaning, and sensory modality. Quantity refers to the number of images evoked by a stimulus and is an indication of the number of activated memory structures containing perceptual information. Vividness relates to the quality of the imagery, including its clarity, intensity, and distinctiveness. Affective meaning of imagery refers to its positive or negative valence. “The affective meaning of imagery can be very powerful - emotionally powerful images encountered in dreams and fantasies are universal to all cultures and individuals” (Miller & Stoica, 2003, p. 13). Finally, sensory modality means that imagery can differ based on the sensory experience it involves. Mental imagery can be visual, auditory, gustatory, olfactory, tactile, or comprised of various combinations of these sensory stimuli. A scale to measure these four dimensions (quantity, vividness, affective meaning, and modality) of mental imagery has been developed by Miller, Hadjimarcou, and Miciak (2000).

Research on imagery has provided increasing evidence that elaborate imagery processing may positively influence decision outcomes (Babin & Burns, 1997; Bone & Ellen, 1990). Additionally, Miller and Stoica (2003) state that a consumers’ choice of vacations can be significantly influenced by mental images concerning alternative locales. Thus, it is important to consider imagery-eliciting advertising strategies in the context of online tourism marketing.

Power of Mental Imagery in an Online Marketing Context

From the perspective of online marketing strategy, Web sites have unique interactive qualities which are missing from traditional advertising media. These qualities can make it possible for a potential customer to have an experience similar to a product trial even if the product is an experience goods (Klein, 1998). As online users become immersed in object-interactive Websites, they may experience vivid mental imagery which can influence attitudes and behavioral intentions (Schlosser, 2003). Furthermore, previous research has indicated that when real objects, pictures or scenes are viewed, the same imagined objects have almost identical properties in the workings of the mind (Eysenck & Keane, 2000; Richardson, 1999). According to Branthwaite (2002), from the point of view of communication and persuasion, mental imagery has the capacity to transcend the boundary between the outside world and what is happening inside us. More specifically, Branthwaite (2002) suggested, “external objects and events can impinge on us as if they are inside of us; equally, we can imagine objects or places and project them outwards as if they were physical, real and external.” When imagery was encouraged through vivid product information, McGill and Anand (1989) stated, consumers’ attitudinal judgments were predominantly influenced. Additionally, MacInnis and Price (1990) claimed that mental imagery has a positive influence on consumer attitudes and levels of satisfaction. Consequently, designing tourism Web sites in a way that they actively evoke mental imagery can be expected to lead to greater enjoyment of the Web site, greater satisfaction, and greater support of tourism consumers in their travel decision-making.

Explanations for the Effects of Mental Imagery Processing

Dual Coding Theory

Allan Paivio (1971) developed the dual-code model, which explains the effects of mental imagery processing while expressing how verbal and visual information is processed and stored in memory. Paivio's (1971, 1986, 1991) Dual Coding Theory posits that not only does imagery processing activate a visual encoding process, but it also activates a verbal encoding process. In other words, Paivio(1971, 1986) points out that people learn better when the materials include related verbal and pictorial information compared to verbal material alone or pictorial material alone. He also indicated that information presented via the pictorial channel is more salient and better remembered than information presented through the verbal channel. Paivio's (1971, 1986, 1991) Dual Coding Theory also supports the idea that people learn more efficiently by associating new knowledge with prior knowledge.

According to Paivio's Dual Coding Theory (1971, 1986, 1991) there are two cognitive subsystems: one specialized for the representation and processing of nonverbal objects/events (i.e., imagery) and the other specialized for dealing with verbal objects (i.e., language). Figure 1 indicates a model of the general structures and processes assumed by Dual Coding Theory (Paivio, 1986).

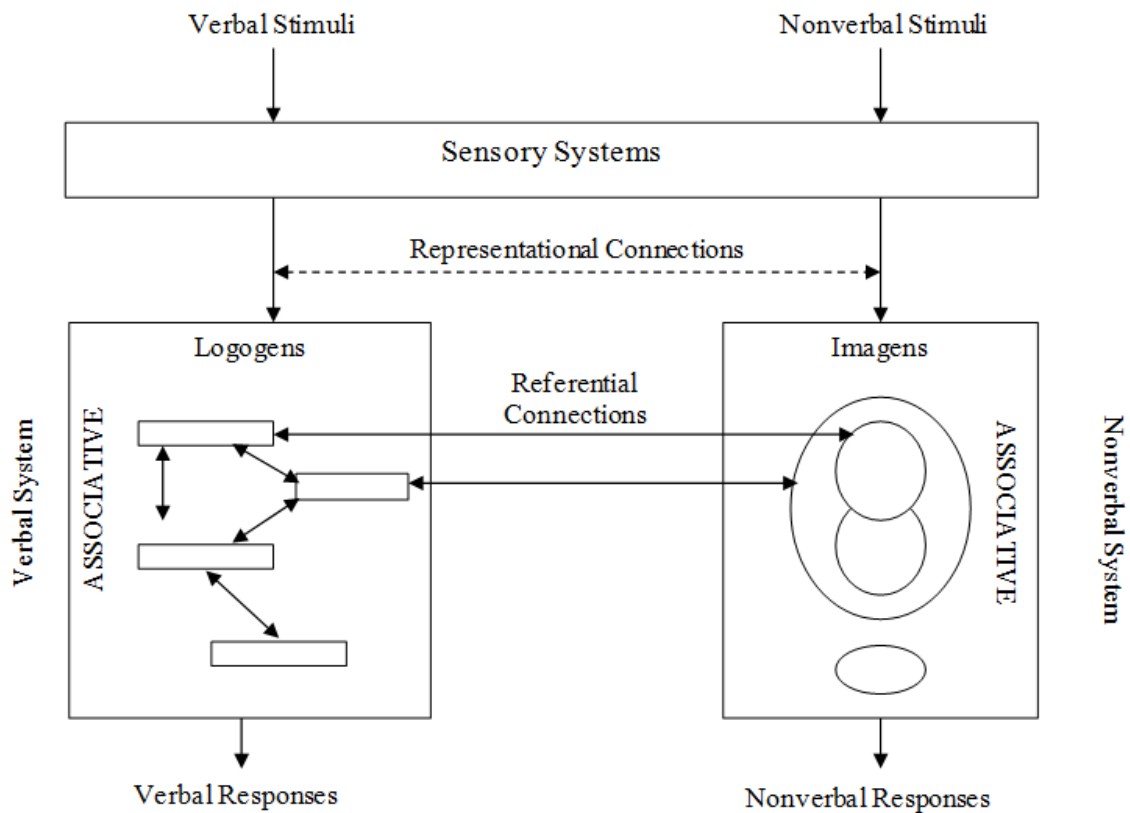


Figure 1. General Model of Dual Coding Theory (Paivio, 1986)

Paivio (1971) postulated two different types of representational units as following; “Imagens” for mental images and “Logogens” for verbal entities. Paivio (1971) also identified the nonverbal system as the imagery system since its critical functions include the analysis of scenes and the generation of images, whereas the verbal system is perceived to involve specialized language representations such as auditory, visual words and writing patterns of these words.

Sadoski, Paivio, and Goetz (1991) claimed that the modality and size of the units can vary, in other words, a logogen could be recognized as a phoneme, grapheme,

morpheme, word, phrase, or a larger familiar unit; similarly, an imagen may be also correspond as a natural object, a part of that object, or a natural grouping of objects. The difference is that logogens are organized in terms of associations and hierarchies, while imagens are organized in terms of part-whole relationships. Chanlin (1994) explored this point using the example of face; that is, if processed visually, it is perceived concurrently as a whole made up of distinctive sub-elements (eyes, nose, and mouth). On the other hand, verbal components are sequentially perceived as from small to larger units, such as from syllables, words, poems, to stories.

Dual Coding Theory assumes three types of processing: 1) representational; the direct activation of verbal or nonverbal representations, 2) referential; the activation of the verbal system by the nonverbal system or vice-versa, and 3) associative processing; the activation of representations within the same verbal or nonverbal system (Paivio, 1991). More specifically, *Representational processing* is engaged with the activation of a particular type of memory code by the corresponding type of stimulus. For instance, the word “cat” initially stimulates the verbal memory code whereas a picture of cat stimulates the visual system. Referential processing is related with the cross-activation of the two types of codes. It can be explained using following examples. The word “cat” activates the corresponding imagen in the visual system and the picture of a cat activates the related logogen in the verbal system. Associative processing is defined as an activation of additional information within either system (Paivio, 1991). Processing in Dual Coding Theory involves external and internal variables. According to Sadoski, Paivio, and Goetz (1991), this processing includes the probabilistic activation of

particular verbal and/or nonverbal mental representations by external stimuli or by previously activated representations.

Richardson (1999) also pointed out that information is likely to be retrieved more accurately when it is encoded using the dual codes rather than utilizing just one code. With regard to recall/memory, if one code is forgotten, then the other code can still facilitate the retrieval of the whole information (Richardson, 1999). As the extension of dual coding theory, Lukosius (2004) claimed that if a particular piece of information is encoded in modality-associated codes (e.g., a picture of a dog, a sound made by a dog), then information should be recalled more accurately compared to that encoded in fewer modality-associated codes.

In the context of online destination marketing, following Dual Coding Theory, it can be assumed that some modality-sensory information on the destination websites can stimulate logogens and imagens more efficiently since it has the potential to provide more vivid and imaginative content for consumers. It can then lead to profound changes in consumer attitudes (Gobe, 2001).

A Cognitive Theory of Multimedia Learning

Mayer (1997)'s Cognitive Theory of Multimedia Learning Theory also explained the effects of mental imagery processing under the current environments using a variety of media channels for the purpose of communicating information to a person.

Mayer (1997) developed Cognitive Theory of Multimedia Learning Theory based on Paivio's Dual Coding Theory (Clark & Paivio, 1991; Paivio, 1986), Baddeley's (1992)

model of working memory, and Sweller’s cognitive load theory (Chandler & Sweller, 1991; Sweller, 1994). Mayer (1997) focuses on the auditory/verbal channel and visual pictorial channel. The following model presents Mayer’s (1997) Cognitive Theory of Multimedia Learning. (See Figure 2)

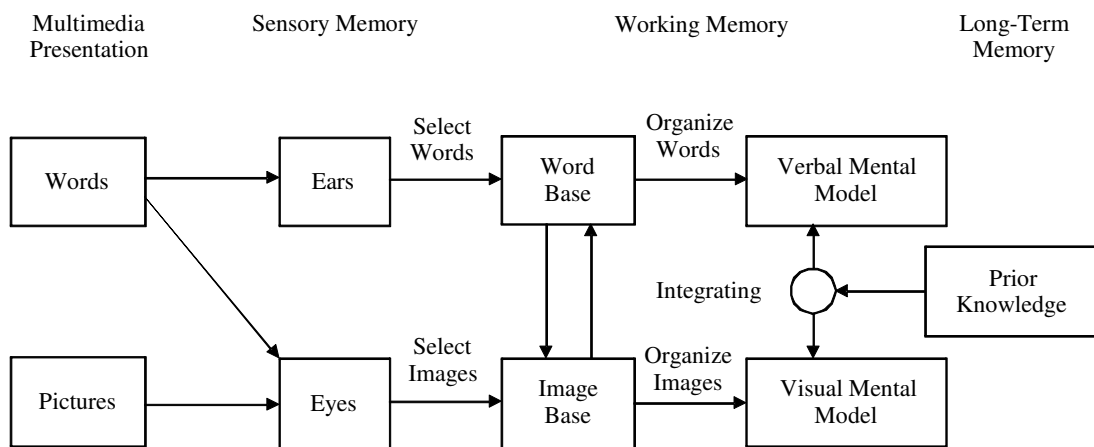


Figure 2. A Cognitive Theory of Multimedia Learning

Mayer (1997) believed that one of the promising approaches to meaningful learning is to involve multimedia presentation of explanations in visual and verbal format. The proposed cognitive theory of multimedia learning is based on the following three assumptions: 1) visual and auditory experiences/information are processed through separate and distinct information processing “channels;” 2) each information processing channel is limited in its ability to process experience/information; 3) processing experience/information in channels is an active cognitive process designed to construct coherent mental representations (Mayer, 2001). Additionally, based on this theory, the

learner engages in the following important cognitive processes: “a) selecting relevant words for processing in verbal working memory; b) selecting relevant images for processing in visual working memory; c) organizing selected words into a verbal model d) organizing selected images into a visual mental mode; and e) integrating verbal and visual representations as well as prior knowledge” (Meyer, 2001, p. 54). More specifically, *selecting* is related to incoming verbal information and incoming visual information to yield a text base and an image base. The second cognitive process, *organizing*, is applied to the word base and to the image base to create a verbally-based model and a visually-based model of the to-be-explained system. Finally, *integrating* occurs when the learner builds connections between corresponding events (or states or parts) in the verbally-based model and the visually-based model (Mayer, 2001).

Mayer and Moreno (2002) described the Cognitive Theory of Multimedia Learning more comprehensively. At the verbal stage, a cognitive active learner engages in relevant portions of the words (indicated by the “select words” arrow) and holds these words in verbal working memory; similarly, this learner also engages in relevant portions of the pictures (indicated by the “select images” arrow) and holds these images in visual working memory. Next, the learner will mentally build connections that organize the words into a cause-and-effect chain (indicated by the “verbal mental model” box), in the same way, the learner will mentally build connections that organize the images into a cause-and-effect chain. Finally, the cognitive active learner will integrate verbal and visual representations with prior knowledge.

By conducting research in terms of processing the multimedia information, Mayer and his colleagues found some major principles of multimedia design (Mayer, 2001). First, *Multimedia principle* represents that individuals learn better from words and pictures than from words alone (Mayer, 2001). A large body of research supports this principle, both for retention and transfer of knowledge. It is one of the most validated principles (Scielzo & Fiore, 2003). Second, *Contiguity principle* demonstrates that individuals learn better when corresponding words and pictures are presented simultaneously rather than successively. The cognitive theory of multimedia learning assumes better retention and transfer from integrated presentation than from separate presentations. In other words, effective learning can be achieved when corresponding words and pictures are presented near each other. (Mayer, 2001). The third, *Coherence principle* indicates that individuals learn better when extraneous words, pictures, and sounds are excluded rather than included. In this case, coherence refers to the structural relations among the elements in a message such as a cause and effect chain in the explanations (Scielzo & Fiore, 2003). This principle also indicates that individual learning may be diminished when interesting but irrelevant sounds and music are added to a multimedia presentation (Mayer, 2001). The fourth, *Modality principle* presents that individuals learn better from animation and narration than from animation and on-screen text. In other words, this principle indicates that an animation and audio presentation is better than animation with printed text (Mayer, 2001). Finally, the fifth, *Redundancy principle* states that individuals learn better from animation and narration than from animation, narration, and on-screen text. Any multimedia situation in which learning

from animation and narration is superior to learning from the same materials along with printed text that matches the narration (Scielzo & Fiore, 2003). According to the cognitive theory of multimedia learning (Mayer, 1997), the mixture of multimedia presentations can foster focused attention and immersion into the content and make it more meaningful.

Mental Imagery-Eliciting External Stimuli

Using external stimuli is important in tourism advertising and promotional materials can effectively evoke tourists' mental imagery and embellish their consumption visions (Reilly, 1990). Online tourism advertising includes a variety of external stimuli such as interactive photos, animation, video clips, etc presented on Web sites. These features provide consumers a quasi-direct experience without actually being there. Information presented on a Web site in multimodal ways, (e.g. audio in addition to text), can be expected to evoke mental imagery by adding richness. From the perspective of marketers, it is critically important to understand the most effective usage of these types of external stimuli to evoke consumers' mental imagery of the specific destination (Walters, Sparks, & Herington, 2007).

As previously mentioned, while the impact of pictures on imagery processing has been studied extensively in consumer research, little empirical research has reliably reported positive effects of narrative text on mental imagery processing. There is a need to examine the relations between narratives and mental imagery.

Narrative Persuasion and Mental Imagery Processing

Brewer (1988) claimed that narrative texts tend to induce strong imagery and distinguish narrative texts from descriptive texts as follows: descriptive texts embody a stationary perceptual scene in linguistic form, and narrative texts embody a series of events that occur in time. For the current study, expository text is compared to narrative text. Expository text addresses topics that are far removed from a person's everyday experience. In other words, expository texts are normally written for a wider audience of diverse readers who need not rely on shared experiences to understand them (Dubravac & Dalle, 2002). Narrative text and expository text may be different in that "the way the texts are structured, and causal coherence of information, the presence of a protagonist, and the circumstances under which readers normally read these texts" (Wolfe, 2005). Deighton, Romer, and McQueen (1989) mentioned that if the information shown in television ads included more narrative types of text, the participants in the research were more likely to have greater feelings of empathy and immersion in the text, which can contribute to strong mental imagery processing. While tourism-related print and TV advertising make extensive use of sensory descriptions and narrative texts, tourism Web sites often contain functional lists, e.g. of attractions or accommodation establishments (Gretzel & Fesenmaier, 2002). It can be argued that including a greater amount of narrative text on tourism Web sites will more likely encourage Web site users to engage in mental imagery processing.

These mental imagery processing can lead to higher assessed probability estimates of simulated events and positive changes in attitudes, evaluations and actual

behavior (Escalas, 2004b). Green and Brock (2002) claimed that mental imagery may be facilitated by a person's powerful experience with a narrative account, that person's "transportation". Transportation is translated as "immersion into a text," that is, the extent to which individuals become "lost" in a story (Green & Brock, 2000, p. 702). Transportation into a narrative world is conceptualized as a distinct mental process, which may mediate the impact of narratives on beliefs, and this transportation may derive its force from most recipients' general ability to create vivid mental images (Green & Brock, 2002).

As described above, narrative processing has been found to affect persuasion through transportation (Green & Brock, 2000). Transportation is distinguished from analytical processing in that analytical processing occurs when "elaboration leads to attitude change via logical consideration and evaluation of arguments," whereas transportation leads to persuasion through reduced negative cognitive response, realism of experience, and strong affective responses (Green & Brock, 2000, p. 702). Consequently, it is valuable to apply narrative principles into online tourism marketing since narratives can convey a great amount of information quickly and easily while creating enhanced experiences and greater potential for persuasion (Gretzel, 2006).

The Structure of Narratives

A narrative is a message that gives the particulars of an act or occurrence, or cause of events (TheFreeDictionary.com, 2006). Narrative is also defined as "the presentation of an event or a series of events in context over time" (Abbott, 2002, p. 12).

Narratives have certain structural features which provide an organized framework that builds up the relation between the story's elements and allows for causal inference (Escalas, 2004a).

Delgadillo and Escalas (2004) have identified two required narrative structure features chronology and causality; the temporal dimension and relationship between story elements (Escalas, 2004). First of all, in the context of narrative thought, events can be organized in terms of temporal dimension: things happens over time (Delgadillo & Escalas, 2004). In this case, time can be interpreted in narratives as episodes as if something happened in a beginning, middle, and end order, contrast to the time in reality, which is undifferentiated, continuous flow (Polkinghorne, 1991). Second, with regard to narrative thought, elements can be structured into an organization framework that builds relationships between the story's each elements and thus, resulting in causal inference. Simply put, as narrative elements are organized through time, causal inferences can be created (Delgadillo & Escalas, 2004).

Stein and Albro (1997, p. 12) suggest that stories are comprised of "goal-directed action-outcome sequences" called "episode schema," that is, they start from initial events which result in a response from a character's physical, psychological state or both. These responses develop goals which lead to courses of action and certain outcomes (Pennington & Hastie, 1986). Alternatively, narrative in a broad sense refers to anything recounted or retold, whereas in a narrower sense it describes something that is told or recounted in the form of a story (Denning, 2000).

Narrative Information Processing

The basic premise of narrative psychology demonstrates that individuals have a natural propensity to organize information about people and their actions in story format (Padgett & Allen, 1997). According to Packer and Jordon (2001), narratives are defined as "multithreaded networks that reflect the associative tendencies of the mind and collapse boundaries of space and time, drawing attention to previously undetected connections, creating links between disparate ideas and elements (p. 174)."

From the perspective of advertising strategy, narrative can be used to convey selected experiences involving the consumption of services or the use of products (Mattila, 2000), thus stories will be especially effective for promoting abstract or intangible products, including tourism products. Several researchers expressed why narratives are useful in the following three propositions:

1. People think narratively rather than argumentatively or paradigmatically (Weick, 1995, p. 127).
2. A substantial amount of information stored and retrieved from memory is episodic (Fournier, 1998).
3. It is highly persuasive to express things in a story format (McKee, 1997, 2003).

When narrative ads are presented in the form of stories, potential customers are likely to build up functional consequences and symbolic meanings to interpret the advertisement (Padgett & Allen, 1997). In the context of tourism, Gretzel (2006) suggests that "travel stories help us understand and make meaning of our travel experiences and encourage us to relive and reflect on trips, as well as integrate travel experiences with the

rest of our experiences and knowledge” (p. 175). It was also claimed by Adaval and Wyer (1998) that vacations at unfamiliar destinations were more positively evaluated by consumers who were exposed to advertising information in a narrative format rather than in a list of attributes.

The Functions of Narrative Text

Brewer and Lichtenstein (1981) mention that the main function of narratives is to convey information as efficiently as possible. More recently, storytelling has been recognized as an important means of transferring and managing knowledge in organizations (Denning, 2000).

According to Brewer and Lichtenstein (1981), another function of narratives is to entertain. On the other hand, Stein (1982) claimed that a narrative text should serve to create both pleasure and pain; additionally he (1982) stated that “the story should be used to satisfy almost any sub goal relevant to creating pleasure or pain. Thus, the storyteller can aim to persuade, flatter, embarrass, shame, anger, teach, explain, etc” (p. 491). However, persuasive stories are different from regular stories in that they are designed to draw attention to stimulate higher levels of interest and make the listener reach the conclusions necessary to take the action the teller wants them to take (Lakhani, 2005).

Narrative text used for online tourism marketing should serve all of these functions. They should explain and help the potential tourist learn about the destination, they should be entertaining to make the trip planning process engaging and enjoyable,

and they should persuade, as they are essentially promotional messages that seek to bring more tourists to a specific destination.

Pictures and Mental Imagery

There are a number of individual forms of external stimuli eliciting mental imagery. For example, several researchers found that pictures influenced mental imagery processing (Paivio, 1971; Rossiter 1978; Shepard, 1967). Lutz and Lutz (1977, 1978), Alesandrini and Sheikh (1983) and Rossiter and Percy (1983) investigated the effects of various types of pictures on recall and attitude.

Additionally, Babin, Burns, and Biswas (1992) posited a picture superiority effect which demonstrated that visual information would be remembered over verbal information; moreover, they contended that the visual code was thought to be qualitatively superior to the verbal code. Later, Babin and Burns (1997) also compared the effects of concrete pictures with abstract pictures. Concrete pictures are those in which the subject is easily identifiable and abstract pictures refer to pictures in which the subject is not as easily identified. Kisielius and Sternthal (1984) claimed that the presence of pictures in advertisement elaborates mental imagery processing, and in turn, enhances information recall and evaluative responses towards the advertisement and brand. MacInnis and Price (1987) claimed that the ad containing the more concrete picture indicated more vivid imagery, and consequently resulted in more favorable attitudes toward the ad and greater behavioral intentions. In the context of destination marketing, Olson, McAlexander, and Roberts (1986) found that external pictures presented on

destination advertisement have an influence on a consumer's perception of the vacation experience through the association of variety of pictures with certain types of experiences. The study by Miller and Stoica (2003) posited that photographic images of beach scenes more effectively stimulated people's mental imagery processing than artistic renditions. More recently, Walters, Sparks and Herington (2007) reported that the presence of more concrete pictures could affect the extent of elaboration and the quality of consumer's consumption visions. On the other hand, Goossens (1994) demonstrated that using pictorial images may smother an individual's imagination as he/she becomes over reliant on the features image as an information source rather than elaborating ones own mentally enhanced images.

Pictures and Narrative Text

Due to burgeoning marketing communications containing visual and verbal product information, much attention has been paid to the most effective mixture of visual and verbal cues (Houston, Childers, & Hecker, 1987). Adaval and Wyer (1998) noted that the addition of pictures to a narrative format can encourage readers to imagine the sequence of events, and can facilitate the construction of a representation to be used as a basis for judgment. On the other hand, Adaval and Wyer (1998) also suggested that when pictures were combined with non-narrative text, they have little influence on judgment over that of text information alone. More specifically, they claimed that pictures along with descriptions of vacations in a non-narrative format such as a disorganized list may decrease the impact of information. A picture presented in

combination with narrative text can cause a verbal event description to be more vivid, help the recipients to enhance perceptual links between events, and increase the story's coherence (Adaval, Isbell, & Wyer, 2007).

Sound and Mental Imagery

With regard to the effects of sound on mental imagery, several researchers found that the inclusion of sound effects in radio ads enhanced listeners' mental imagery processing, and thus increased imagery activity can result in a positive attitude toward the ad (Miller & Marks, 1992, 1997). Additionally, Frick (1984) discovered that if processing was evoked visually with a set of items followed by a series of auditory items, recall was better than if both sets of items were elicited by auditory or visual mode. Ferrington (1994) stated that "an effectively designed audio work may facilitate a listener's integration of life-based experiences into a "movie" created within the "theater of the mind," (p. 62). Audio design is defined as the process of creating meaning through the use of auditory imagery (Ferrington, 1994). More specifically, the ability to form mental images of objects or a series of events can be greatly affected by the listener's capability to analyze of the sound received, and his/her interpretation of the subject or content based on personal experience (Ferrington, 1994).

Sound and Narrative Text

Audio is regarded as a participatory medium which strongly engages the listener in the processing of incoming information (Ferrington, 1994). Research by Kerr (1999)

indicated that “when sound effects is combined with a narrative function, the sound effects add more to the image’s apparent information” (p. 5). In other words, sound effects are able to communicate the subtle aspects of images. Subtle aspects can be regarded as those features that are hard to be defined or perceived, but that have an influence on the emotional effect of the image or scene (Kerr, 1999). For example, the sounds of gentle ocean surf may include gulls, people’s voices, and boat sounds used to set a particular mood, whereas the sound of a violent ocean and warning sirens in the background can create a different mood from the previous example (Kerr, 1999). Pleasant sounds, especially, can have a great influence on people’s emotions and arousal (Lin, 2004). Also, sounds from water, such as fountains, waterfalls, waves, and streams often make people feel pleasant, relaxed and refreshed (Morinaga, Aono, Kuwano, & Kato, 2003).

In the context of narrative comprehension, Verhallen, Bus, and De Jong (2006) asserted that stories accompanied with multimedia features including video, sounds and music were able to stimulate people to construct meaning and gain a deeper understanding of the story line. Given that video and sounds generally are related to the main features of the story such as characters, time, goal, story events and theme (Labbo & Kuhn, 2003), presenting the story with rich images and sounds can result in a listener’s greater ability to process the story, and thus can lead to construct a more coherent mental representation of the story events (Verhallen, Bus, & De Jong, 2006).

Attitude Formation from Mental Imagery Processing

Some studies indicate that mental imagery plays a significant role in mediating ad-evoked feelings and attitudes (Bone & Allen, 1990, 1992; Burns et al, 1993; Mitchell, 1986; Mitchell & Olsen, 1981). Petty and Krosnick (1995) noted that there are two dimensions of strong attitudes; one is related to the persistence of attitude (stability), which is the degree to which an attitude remains unchanged over an extended period. The other is resistance, the attitude's ability to withstand an attack. It is assumed running a simulation-like scenario in one's mind is important in the process of destination decision making. While customers are surfing travel Web sites, imagery processing enables them to engage in greater information elaboration and, thus form more certain expectations (Goossens, 2003). On the other hand, since mental imagery is self-generated cognitive processing, it can be expected to be more personally relevant. Thus, it may result in self-generated persuasion and stronger attitudes (MacInnis & Jaworski, 1989). Importantly, mental imagery can lead to self-sell and therefore greater belief that the formed attitude is strong (Tormala & Petty, 2004). In fact, several researchers found that attitudes formed through high elaboration cognitive processing tend to be stronger, more stable over time, and more resistant to persuasion. (Haugtvedt & Petty, 1992; Petty, Haugtvedt, & Smith, 1995).

Research by Petty and Cacioppo (1986) also indicated that strong attitudes are more likely to come to mind faster, persist over time, resist counter persuasive attempts and guide behavior more than weak attitudes. Pomerantz, Chaiken, and Tordsillas (1995) claimed that high levels of certainty could foster resistance to persuasion. Similarly,

Tormala and Petty (2002) found that when people became more certain of their attitudes, they are more likely to resist subsequent persuasive attacks. Many researchers have demonstrated that attitude certainty has been shown to facilitate resistant to persuasion (Babad, Ariav, Rosen, & Salomon, 1987; Bassili, 1996; Krosnick & Abelson, 1992). Using the scales drawn from the existing literature, the current study will measure the strength and resistance of attitudes.

Individual Differences in Mental Imagery Processing

Numerous mental imagery studies have addressed individual differences in imagery ability, imagery content, and processing style (Richardson, 1994; Childers et al., 1985). Differences in imagery ability are important to consider in the context of consumer information processing. Depending on the situation, consumers exhibit a variety of different information processing skills in terms of their acquisition of information, the strategies they apply and their utilization of information while they are forming judgments (Capon & Davis, 1984). Imagery ability is related to the vividness and controllability of individuals' imagery (MacInnis & Price, 1987). Individuals differ in their tendency to engage in vivid imagery and their propensity to use imagery in anticipating the future, in solving problems, and in fantasizing (MacInnis & Price, 1990).

Cognitive Style

Individual differences occur due to cognitive preferences for either visual or verbal processing styles (Childers, Houston, & Heckler, 1985). Cognitive style refers to a

person's typical mode of perceiving, thinking, remembering or problem solving (Allport, 1937). Generally, individual differences can be expressed as the differences in background experience interacting with innate characteristics (Sadoski, 2001). Characteristics or preferred modes of thinking (i.e., cognitive styles) may be differentiated as an individual may be more of a “verbalizer” or a “visualizer,” that is, to use relatively more or less language or imagery in cognition (Richardson, 1994; Sadoski, 2001). Ernest (1977) acclaimed that individual differences in imagery processing can significantly influence a range of cognitive functions such as learning, memory, perception, and problem solving. Cognitive preference can also be identified as an individual’s style of or inclination in information processing depending on personal preferences (Riding & Douglas, 1993). Customer groups can be categorized as visualizers or verbalizers-visualizers are the customers who prefer visual information and visual features; on the other hand, verbalizers prefer written or verbal information (Chiou, Wan, & Lee, 2008). Additionally, Paivio (1971) and Richardson (1978) define imagery processing style as individuals' habitual tendencies and preferences for processing information visually or verbally. Given the differences in consumers’ cognitive preferences, marketers should be aware of how cognitive preference moderates the effects of verbal and visual materials on mental imagery processing.

Cognitive Style and Information Processing

Differences in cognitive processing styles have also been identified as important factors to consider in the design of technologies, specifically Web sites. Rosen and

Purinton (2004) conceptualize interfaces as cognitive landscapes and stress that users have individual preferences for specific types of online environments. These preferences for interfaces stem from differences in perception and preference for certain types of information. Thus, cognitive styles can be defined as the preferred way to interact with information systems (Biocca et al., 2001). Cognitive styles affect information gathering, evaluation, and selection processes in interactions with information systems (Grabler & Zins, 2002). Rumetshofer, Pühretmair, and Wöß (2003) and Rosen and Purinton (2004) argue that information presentation needs to match the cognitive style of the system user in order to be effectively processed and encourage positive use experiences. Similarly, Zins (2003) concluded that adaptation of an information system interfacing to a user's cognitive style is crucial for improving the quality of the human-computer interaction.

A measure to assess processing style was originally developed by Richardson (1977). It consisted of a 15-item questionnaire-Visualizer/Verbalizer Questionnaire (VVQ)-for differentiating verbalizers from visualizers. Richardson's (1977) VVQ is probably the most widely used measurement of verbal-visual cognitive style, but has been criticized it lacks construct validity (Edwards & Wilkins, 1981) and does not have a high level of internal consistency (Boswell & Pickett, 1991; Sullivan & Maclin, 1986). Additionally, the study by Mayer and Massa (2003) found that Richardson's VVQ and Santa Barbara Learning Style loaded on the same factor and strongly correlated each other. Messick (1976) identified as many as 19 different cognitive styles and Smith (1984) provided an inventory of 17 different cognitive styles. Given the deficiencies inherent in the VVQ, Childers et al. (1985) designed a new measure of processing style -the Style of

Processing Questionnaire (SOP). MacInnis (1987) describes the SOP as a 22-item questionnaire which includes substantially modified items compared to the VVQ and more adequately assesses processing preference dimensions. This study will investigate the effect of these imagery processing styles as moderator variables.

Burns, Biswas, and Babin (1993) propose a conceptual framework for visual imagery processing. They describe imagery-evoking stimuli as antecedents while identifying recall, attitudes, intentions, behavior, and brand beliefs as consequences of mental imagery processing. In the mean time, they posited mental imagery as a mediating factor and suggested that an information processing mode affected by moderators such as individual differences, product type/needs, familiarity and opportunity. Figure 3 illustrates the framework provided by Burns, Biswas, and Babin (1993).

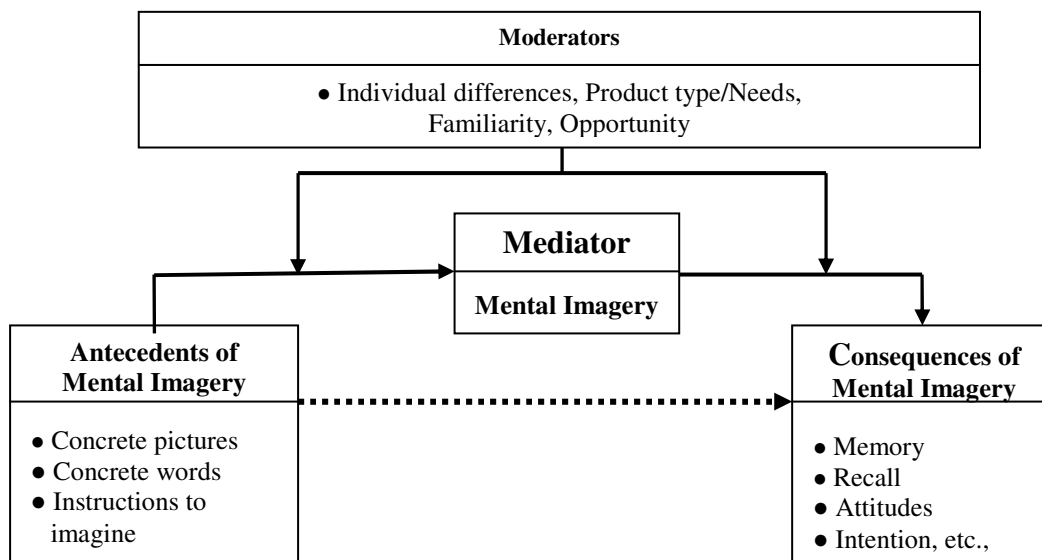


Figure 3. Framework for Effects of Ad-evoked Imagery (Burns, Biswas, & Babin, 1993).

CHAPTER III

CONCEPTUAL FRAMEWORK AND HYPOTHESES

As above described, Burns, Biswas, and Babin (1993) propose a conceptual framework for visual imagery which describes predictor variables such as instructions to imagine, use of concrete/abstract words, and concrete/abstract pictures; while dependent variables are conceptualized as recall, attitude, intentions, behavior, and brand beliefs. In this framework, visual mental imagery is a mediating factor; individual differences, product type, familiarity, and opportunity are assigned as the moderator variable.

Based on Burns, Biswas, and Babin's (1993) conceptual framework, this study proposes a newly developed framework which incorporates the above-described theoretical constructs. As illustrated in Figure 4, specific Web site features (text information in narrative format, presence of pictures and presence of sounds) are posited as predictor variables, while communication effects in the form of attitude strength and attitude confidence, and attitude resistance are assigned as dependent variables. Mental imagery serves as a mediator to accentuate or attenuate the effects of the predictor variables on the dependent constructs.

More specifically, an imagery-eliciting Web site feature is assumed to evoke mental imagery which in turn is expected to lead to stronger or more resistant attitudes. The moderating variable is assumed to affect the strength of the relationship between predictors and mediator variables. In accordance with the proposed model by Burns,

Biswas, and Babin (1993), individual difference in imagery ability, specially, individual processing style is included as a moderator variable. (See Figure 4)

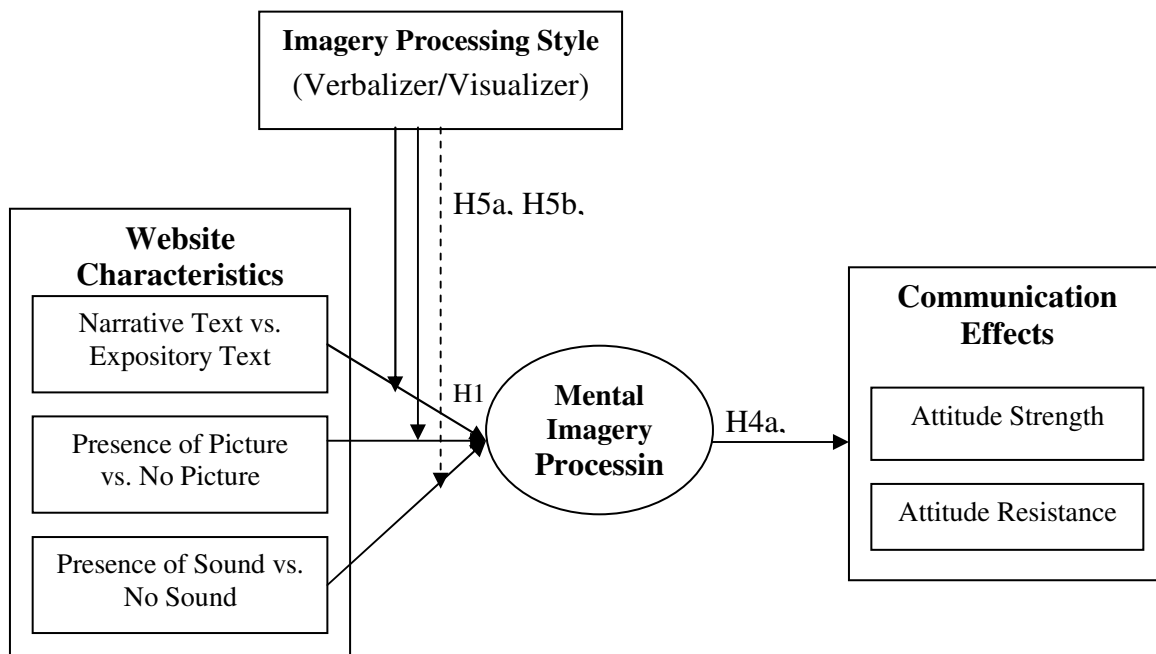


Figure 4. Research Framework for Imagery-Evoking Processing Web site Design

The Effects of Web Site Characteristics on Mental Imagery Processing

Brewer (1988) reports that narrative texts tend to produce strong imagery. Adaval and Wyer (1998) state that “mental images may often be formed spontaneously in the course of comprehending information that is conveyed in narrative form.” Mattila (2000) suggests that it is essential to apply story-based communication to services advertising since narratives are uniquely effective in portraying and conveying experience. In other words, story-based appeals might be highly effective for communicating the value of

experiential services such as tourism products (Mattila, 2000). Stories can uniquely incorporate pictures and sounds to enhance perceptual links between events and increase the story's coherence (Adaval, Isbell, & Wyer, 2007). Additionally, the research by Verhallen, Bus, and Jong (2006) suggests that presenting pictures or sounds can increase the ability to process a story and construct a more coherent mental representation of story events. Therefore, the following hypotheses are proposed:

H1: Narrative text on a Web site will have a positive influence on mental imagery processing.

H2: Pictures on a Web site will positively affect mental imagery processing.

H3: The presence of sound on a Web site encourages mental imagery processing.

According to the cognitive theory of multimedia learning (Mayer, 1997), a story supplemented with multimedia such as video, sounds, or music may foster a deeper understanding of the story line while enhancing the capability of mental imagery processing (Verhallen, Bus, & De Jong, 2006). In general, the study of the cognitive theory of multimedia learning (Mayer, 1997) has concentrated on the effectiveness of combining verbal and visual media for understanding specific scientific passages through mental imagery processing. In other words, the effectiveness of multimedia presentations of destination, which include a combination of text, pictures, and sounds, can foster mental imagery processing, and then it can enhance understanding of specific information about a destination.

H1a: The positive impact of narrative text on imagery processing will be even greater when pictures are present.

H1b: The positive impact of narrative text on imagery processing will be even greater when sounds are present.

H1c: The positive impact of imagery processing will be greater when pictures and sounds are present

H1d: The positive impact on imagery processing will be the greatest when narrative text, pictures and sounds are all present.

Effects of Mental Imagery Processing

In order to understand the nature and extent of mental imagery processing, several researchers have tried to establish common descriptive dimensions of imagery experiences (Babin & Burns, 1997; Ellen & Bone, 1990; Miller, Hadjimarcou, & Miciak, 2000). For this study, particularly, the four dimensions of mental imagery developed by Miller, Hadjimarcou, and Miciak (2000) were identified. First, vividness was defined as “the clarity of the mental images” (Childers et al., 1985, p. 126). Second, quantity refers to the number of images that come to mind while processing information, no matter what the evoked images are (McGill & Anand, 1989). Third, imagery valence refers to the affective meaning of imagery. Fourth, modality refers to visual and non-visual imagery dimensions (e.g., taste, scent).

According to Bone and Ellen (1992), persuasive messages that evoke greater imagery not only result in stronger attitudes toward the ad or the brand, but also lead to stronger behavioral intentions. Further, the self-relatedness, plausibility, and distinctiveness of mental imagery are important aspects in informing attitude formation processes (Bone & Ellen 1990). Specifically, mental imagery could lead to self-sell and, thus, greater belief that the formed attitude is correct (Tormala & Petty, 2004). Some studies also indicate that mental imagery plays a significant role in mediating ad-evoked feelings and attitudes (Bone & Ellen, 1990, 1992; Burns et al., 1993; Mitchell 1986; Mitchell & Olsen 1981).

Consequently, it can be assumed that mental imagery greatly influences a consumer's attitudes toward a destination. Running a simulation-like scenario in one's mind is important in the process of destination decision making. While customers are surfing travel Web sites, imagery processing allows them to form more concrete expectations and engage in greater information elaboration, which will likely make their attitudes stronger and more resistant to change.

H4a: More imagery, more vividness, more enjoyable and multi-mode mental imagery processing will positively influence attitude strength.

H4b: Attitude strength effects generated through mental imagery processing will have a significant influence on attitude resistance to change.

H4c: Mental imagery processing will mediate the relationship between the Web site characteristics and communication effects.

Moderator Variables

The majority of mental imagery studies have addressed individual differences in imagery ability, imagery content, and processing style. Specifically, imagery processing style refers to the individual's willingness to habitually engage in visually versus verbally oriented processing (Childers, Houston, & Heckler, 1985). Individuals with different cognitive preferences (visualizers vs. verbalizers) may have an impact on various types of mental imagery processing and on experiencing vivid imagery (Childers et al., 1985). That is, visualizers are expected to be stimulated mostly by visual materials, whereas verbal materials may stimulate a verbalizer.

H5a: Individuals preferring the verbal processing mode will be more engaged in mental imagery processing stimulated by narrative text compared to visually oriented processors.

H5b: Individuals preferring the visual processing mode will be more engaged in mental imagery processing stimulated by pictures compared to verbally oriented processors.

H5c: No difference between visualizers and verbalizers exist for mental imagery processing stimulated by sound.

CHAPTER IV

METHODOLOGY

Based on the results of pre-tests, a series of experiments was designed to examine the influence of certain Web site design features including narrative texts, presence of pictures, and sound effects on vividness, quantity, valence, and modality of mental imagery processing and the proposed consequences such as attitude strength and attitude resistance. The experiments further examined how individual differences in cognitive processing moderate the relationship between website features and mental imagery processing. The following describes the design of the methodology, participants, procedure, and analysis.

Design

A Web-based experiment was conducted to examine the influence of selected Web site features on individual imagery processing and its effect on consumers' attitudes and expectations. This study was a 2 (narrative vs. expository text) \times 2 (pictures vs. no picture) \times 2 (sounds vs. no sound) full factorial between-subjects design. The first factor refers to the types of text. Narrative and expository text about beach destinations were presented. The second factor was the presence of pictures which had been manipulated to include pictures of beach scenes. The third factor was manipulated by including or not including an audio file with ocean sounds.

Müthen and Müthen (2007) stress that “if you have a significant interaction, the main effect needs to be interpreted with the interaction. The main effect alone should not be interpreted when there is a significant interaction. If there is no significant interaction, then the main effect can be interpreted alone.” In order to represent the interactions, dummy variables for narrative text, picture, and sound were created, and then these dummy variables were multiplied by each other.

Measures

Mental Imagery Scales

To measure the mental imagery construct, the present study adapted a valid and reliable imagery scale developed by Miller, Hadjimarcou, and Miciak (2000). In the present study, the mental imagery scale consists of four dimensions including 1) vividness 2) quantity 3) valence, and 4) modality. Quantity and modality are measured using a seven-point scale composed of three items (“A lot of images came to my mind.”, “Many different images came to my mind.”, “I experienced various images in my mind.”), and two items (“I imagined tastes.”, “I imagined scents.”) respectively. Another imagery scale measuring vividness and valence consist of five items also using a seven-point scale (Miller et al., 2000). In other words, vividness was measured using the following scales: “The mental imagery I had while looking at the travel Web site was-----vivid imagery, clear imagery, sharp imagery, intense imagery, or well-defined imagery.” Similarly, valence imagery was estimated using the following: “The mental imagery I had while

looking at the travel Web site was---pleasant imagery, good imagery, nice imagery, likable imagery, or positive imagery.” (See Appendix A).

Attitude Scales (Attitude Strength, Attitude Confidence, Attitude Resistance)

As dependent variables, the current study explored attitude strength, confidence, and resistance of attitudes to counterarguments. Scales have been adapted to measure these constructs based on prior research in advertising. In order to measure attitude strength, subjects were asked the following questions: “How good would the destination be for a pleasure trip?” “How positive would you say your impression of the destination is?” “How much do you think you would like this destination?” “How favorable is your impression of the destination?” These scales have been adapted and modified from research by Bizer, Tormala, Rucker, and Petty (2006) and use a seven-point scale.

Several researchers found that attitude certainty has been shown to facilitate resistance to persuasion (Bassili 1996; Krosnick & Abelson, 1992; Swan, Pelham, & Chidester, 1988). Supportively, Bassili (1996) contends that “the more certain respondents were about their attitudes, the less attitude change they evinced in response to persuasive argument” (p. 638). Thus, subjects were requested to answer attitude certainty questions including “How certain are you of your attitude about this destination?” and “How sure are you that your current impression of the destination is correct?” These scales have been adapted and modified based on the research by Bizer, Tormala, Rucker, and Petty (2006).

In order to measure attitude resistance, subjects were exposed to destination reviews that contradict the initial destination description, and then attitude resistance was measured before and after exposure to the additional information applying the same scales used before: “How good would the destination be for a pleasure trip?”, “How positive would you say your impression of the destination is?”, “How much do you think you would like this destination?”, “How favorable is your impression of the destination?” More specifically, attitude resistance was produced by subtracting the attitude strength score in time one from attitude strength, which was measured in time two (See Appendix C).

Visualizer-Verbalizer Scales

The moderator variables, the Visualizer Verbalizer Questionnaire (VVQ) in a revised version by Kirby, Moore, and Schofield (1988), were adapted for this study, which included twenty statements about visual and verbal preference that are answered using a seven-point scale. Statements about verbal preference were “I enjoy work that requires the use of words.” and “I read rather slowly.” For visual preference, “I find maps helpful in finding my way around in a new city.” and “I do not believe that anyone can think in terms of pictures.” There is another VVQ questionnaire for the current study, “The Santa Barbara Learning Style Questionnaire” (Mayer & Massa, 2003). This questionnaire consists of the following six questions: “I prefer to learn visually.”, “I prefer to learn verbally.”, “I am a visual learner.”, “I am a verbal learner.”, “I am a good at learning from labeled pictures, illustrations, graphs, maps, and animations.”, and “I am

good at learning from printed text.” on a seven-point scale from “Strongly disagree” to “Strongly agree.” These two VVQ questionnaires are possibly the most commonly used measure of verbal-visual cognitive style (Mayer & Massa, 2003) even though some researchers find that the VVQ lacks construct validity and does not indicate high levels of internal consistency (Boswell & Pickett, 1991; Edwards & Wilkins, 1981; Sullivan & Mackiln, 1986). Researchers often find (e.g., Riding & Buckle, 1990; Riding & Cheema, 1991; Walter, 1953) that despite the fact that most individuals are likely to use either mode of representation, there are some persons who prefer to use only one mode, either visual or verbal. Additionally, pre-test subjects and some experts related to the current research were asked to identify any ambiguities or inconsistencies in the questionnaire as they answer it (See Appendix B).

Participants

This study intended to obtain a minimum of twenty-five responses per cell, thus, a minimum of 200 undergraduate and/or graduate students needed to be recruited. The students were solicited through classes or in front of the libraries at Texas A&M University. A \$3 gift card was given to each participant as an incentive to join the study. The recruitment effort resulted in 252 responses. However, seven students could not complete the survey due to the online Website server problem, and five students completed the survey but rated the same numbers for every question, thus it was not considered as appropriate data, and one subject was identified as an outlier based on the result of test for normality and outliers provided by AMOS program.

Consequently, a total of 239 subjects were included in the analysis of the study. Approximately, half the subjects were female (54%, N=239), with men making up the remaining 46% (N=239). Most students were undergraduate (70%, N=239), and the remaining were the graduate students (30%, N=239). Over half of the participants represented themselves as Caucasian (57.3%, N=239), the remainder were split among Asian (25.1%, N=239), Hispanic (10.5%, N=239), Native (8%, N=239), African American (4.6%, N=239), and other (1.3%, N=239). With regard to age, the respondents were divided between 19 years and younger (10.9%), 20-24(62.3%, N=239), 25-34 (22.2%, N=239), and 35-49 (4.6%). Participants in the experiment rated their internet knowledge and skills as relatively high, with an average rating of 4.12 on a seven point Likert scale, where one indicated knowledge and skills of a novice and seven those of an expert.

Procedure

The study followed a multi-step procedure outlined in Figure 5.

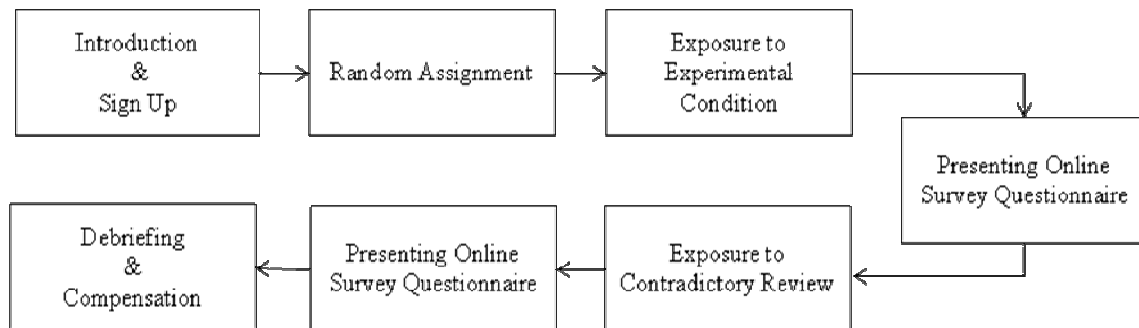


Figure 5. Procedure of the Experiment

Subjects were solicited through 1) classes or in front of the libraries at Texas A&M University, 2) approached through personal contacts, and 3) recruited by posting notices at Texas A&M University to encourage participation in a Web-based experiment. Students willing to participate in this experiment contacted the lab research assistant to sign up for a time slot and were asked to provide contact information. When subjects arrived at the research lab, they were greeted by a research assistant and informed that an online travel agency was interested in developing a newly created destination Web site and would like students to complete an online-based questionnaire after looking at the Website. Next, they were seated at a computer and randomly assigned based on their order of appearance to an experimental condition. That is, the research assistant opened a browser window in Internet Explorer 6 and clicked on a shortcut in the background selecting one address among eight experimental destination Web site conditions (narrative text, picture, sound; narrative text, picture, no sound; narrative text, no picture, sound; narrative text, no picture, no sound; expository text, picture, sound; expository text, picture, no sound; expository text, no picture, sound; expository text, no picture, no sound) (See Appendix D). The subjects were instructed to carefully look at the Web site and read the vacation destination description provided. After being exposed to the Web site for two minutes, they were presented with an online, self-administered questionnaire asking them to evaluate the Web site, describe their mental imagery processing and ability, and rate their attitude toward the destination (See Appendix F). The Web-based survey then presented a negative review of the destination. The participants were asked to

indicate their attitudes toward the destination again after their exposure to the negative review (See Appendix E). After completion of the survey, all subjects were debriefed and compensated. They were also asked to sign a receipt and thanked for their participation.

Pre-tests

Pre-tests to evaluate experimental design

Pre-tests were conducted to determine the specific design of the experimental conditions and to establish if the narrative texts, pictures and sounds are appropriate and able to evoke mental imagery. Specifically, explication of the description of the narrative vs. expository text was necessary.

Pictorial Content

Several ocean scenes, which included tall green palm trees and slightly waving blue-white oceans, were selected for the pictures. A total of twenty participants were asked if they could see the pictures and form overall mental images of the destination in their mind. Most students simply mentioned that they saw the pictures and had a mental imagery of the destination. However, some students wondered whether the logo displayed in the non-picture condition should be counted as a picture. Thus, the survey question was changed from “Did the Web site you reviewed include photographs?” to “Did the Web site you reviewed show photographs of the island?”

Sound Effects

Several sound effects were tested to determine if they were able to arouse mental pictures of the destination. Twenty students from the same subject pool for the main study participated in this pre-test to rate which sounds included in the Web site were appropriately eliciting mental imagery processing. Most of the students chose ocean waves and seagull sounds while responding that these sounds did in fact cause them to imagine something in their mind.

Narrative Text Content

Narrative and expository descriptions of the destination were presented to twenty students and evaluated to determine if each description was expressed correctly as either narrative or expository. Two experts reviewed this description and suggested revising some statements. After revising, the twenty students were asked if they could recognize the difference between the narrative and expository descriptions of the destination. About eighteen participants out of twenty mentioned that they could differentiate the narrative from expository text, and they were able to mentally picture the objects described by the text.

Negative Review Content

The current study aims to measure attitude resistance after presenting a negative review of the destination. In order to determine whether or not the manipulation of the negative review was successful, twenty students were asked the following three questions

after being exposed to the negative review: “How credible is this review?” using a seven-point scale ranging from 1-not at all credible to 7-very credible; “How negative is this review?” measured with a seven-point scale ranging from 1-not at all negative to 7-very negative; and “Would you still go to this destination after reading the review?” using a seven-point scale with 1-definitely would not go and 7-definitely would go. After analysis of these responses, over eighty percent (81.4%) answered that the review was credible, and all responded that the review was negative, indicating it with six or seven points. In response to the question “Would you still go to this destination after reading the review?” half of the respondents marked “4,” which indicated that half of the respondents were still considering going to the destination even after the being exposed to the negative review.

Additional pre-tests focused on the believability of the experiment and whether or not the created Web site looked real, if the program functioned smoothly, the amount of time required to complete the experiment, and if the explanation provided by the instructors was understandable.

Pre-tests to Evaluate Internal Consistency of Scales

Twenty students from the same subject pool for the main study were involved in another series of pre-tests to evaluate the validity and score reliability of scales used in this study. The items to be included to measure the various constructs were evaluated in terms of understandability. Additionally, the internal consistency of the scales was tested through Cronbach Alpha scores and their unidimensionality was investigated using

exploratory and confirmatory factor analysis. Specifically, imagery scales were designed to measure imagery quantity, vividness, affective valence and modality (Miller, Hadjimarcou, & Miciak, 2000). Also, attitude strength scales, attitude certainty scales, and attitude resistance scales (Petty & Krosnick, 1995) were tested for their validity and reliability. In order to make sure that all scales indicated good measurement properties, all items to be presented in this study were designed as seven-point scales with “Strongly Disagree” and “Strongly Agree.” (Devillis, 1991).

The scales to be used in the analysis of the relationship between mental imagery, communication effects (e.g., attitude strength and attitude confidence), and resistance to negative reviews were examined with respect to their internal consistency using Cronbach alpha scores (DeVellis, 1991; Traub, 1994). First, the mental imagery construct, consisting of quantity, modality, vividness, and valence, was measured. Cronbach’s alpha scale for quantity, modality, vividness, and valence was 0.92, 0.82, 0.93, and 0.96 respectively. With regard to attitude strength and attitude confidence, it also indicated very a high Cronbach alpha with 0.94 and 0.84 respectively. The attitude resistance scale also demonstrated a high Cronbach alpha score of 0.91 (See Table 1). Additionally, in terms of the moderator variable, the Cronbach alpha for the verbalizer scale was 0.89, while the Cronbach alpha for the visualizer scale was 0.86, both high Cronbach alpha scores (See Table 2).

Table 1 presents the mean and standard deviation for each item and the Cronbach alpha score for each scale.

Table 1. Descriptive Statistics for Each Construct

Construct Name	Items in Scale				Internal Consistency
	Item No.	Item Wording	Mean	SD	Cronbach's Alpha
Quantity	Q12a	Many images came to my mind	5.23	1.34	0.92
	Q12b	A lot of images came to my mind	4.96	1.45	
	Q12c	I experienced various images in my mind	5.02	1.41	
Modality	Q12d	I imagined tastes	3.38	1.71	0.82
	Q12e	I imagined scents	3.72	1.85	
Vividness	Q13a	The mental Imagery I experienced was Vivid	2.77	1.49	0.93
	Q13b	The mental Imagery I experienced was Clear	2.90	1.44	
	Q13c	The mental Imagery I experienced was Sharp	3.34	1.60	
	Q13d	The mental Imagery I experienced was Intense	3.69	1.61	
	Q13e	The mental Imagery I experienced was Well-defined	3.28	1.61	
Valence	Q13f	The mental Imagery I experienced was Pleasant	2.20	1.21	0.96
	Q13g	The mental Imagery I experienced was Good	2.37	1.26	
	Q13h	The mental Imagery I experienced was Nice	2.38	1.30	
	Q13i	The mental Imagery I experienced was Likable	2.21	1.23	
	Q13j	The mental Imagery I experienced was Positive	2.08	1.16	
Attitude Strength-Time 1	Q14	How good would the destination be for a pleasure trip?	6.12	1.02	0.94
	Q15	How positive would you say is your impression of the destination?	5.88	1.01	
	Q16	How much do you think you would like this destination?	6.02	1.05	
	Q17	How favorable is your impression of the destination?	5.86	1.05	
Attitude Confidence	Q18	How certain are you of your attitude toward this destination?	5.40	1.23	0.84
	Q19	How sure are you that your current impression of the destination is correct?	4.85	1.39	
Attitude Strength-Time 2	Q20	How good would the destination be for a pleasure trip?	3.68	1.48	0.95
	Q21	How positive would you say is your impression of the destination?	3.46	1.36	
	Q22	How much do you think you would like this destination?	3.72	1.54	
	Q23	How favorable is your impression of the destination?	3.47	1.32	

Table 2. Visualizer and Verbalizer Scale

Construct Name	Item No.	Item Wording	Mean	SD	Cronbach's Alpha
Visualizer	Q25a	I prefer to learn visually	6.00	.99	.0.89
	Q25c	I am a visual learner	5.99	1.00	
	Q25e	I am good at learning from labeled pictures, illustrations, maps and animations	5.95	.98	
Verbalizer	Q25b	I prefer to learn verbally	4.10	1.43	0.86
	Q25d	I am a verbal learner	4.12	1.41	
	Q25f	I am good at learning from printed text	4.34	1.53	

Manipulation Checks

As previously mentioned, the research design is composed of eight conditions. In order to make sure that the manipulations were reliable and effective, picture and sound manipulation were checked through the pre-test.

Picture manipulation Four different types of pictures (e.g., various types of island pictures with bungalows, big palm trees, small waves, or blue skies) were presented in the picture conditions and twenty students were asked if they saw the pictures. All the students stated that they saw pictures of “the ocean,” “blue sky,” and “a big palm tree.”

Sound manipulation Some specific sounds, waves and seagull sounds, were included in the condition and twenty of the participants were asked if the Web site the participant contained any sound. All participants noted that they could hear some waves and sea gull sounds.

Explorative Methods

Using main study sample, a univariate General Linear Model analysis with experimental conditions and their interaction effects and communication effects as dependent variables was conducted as a pre-test. It aimed to explore the impact of the three mental imagery evoking stimuli---narrative descriptions, pictures, or sounds of a destination---independently or in combination, on influencing communication effect.

A 2×2×2 ANOVA was performed to determine the main and interaction effects of the narrative content, pictures, and sounds on the dependent variables, communication effect.

As can be seen in Table 3, the result of the ANOVA illustrates that the main effect of the picture only variable was significant on communication effect, $F(1, 231) = 15.19, p < .01$. That means that subjects exposed to pictures are significantly more likely to present strong attitude and confidence toward the destination. However, no significant relationship was found between the other types of Web site features and communication effect. Thus, although the inclusion of pictures on the destination website influence a subject's positive attitude toward a destination, other multimedia combinations do not seem to influence a subject's attitude formation.

Table 3. Tests of Between-Subjects Effects of Communication Effects

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Observed Power(a)
Corrected Model	17.03(b)	7	2.43	2.93	.01	.93
Intercept	7724.46	1	7724.46	9291.74	.00	1.00
Narrative	1.92	1	1.92	2.31	.13	.33
Picture	12.63	1	12.63	15.19	.00 **	.97
Sound	.01	1	.01	.01	.92	.05
Narrative × Picture	.04	1	.04	.05	.82	.06
Narrative × Sound	.76	1	.76	.91	.34	.16
Picture × Sound	1.22	1	1.22	1.47	.23	.23
Narrative × Picture × Sound	.65	1	.65	.78	.38	.14
Error	192.04	231	.83			
Total	7940.39	239				
Corrected Total	209.06	238				

a. R-Squared = .08 (Adjusted R Squared = .05), b. Dependent Variable: Communication Effects

Another univariate General Linear Model analysis with experimental conditions as independent variables and Mental Imagery as the dependent variable was conducted as a pre-test. It aimed to explore the impact of the three mental imagery evoking stimuli--- narrative descriptions, pictures, or sounds of a destination---independently or in combination, on mental imagery. As shown in Table 4, the result of the ANOVA

illustrate that there was a statistically significant main effect for picture, $F(1, 231) = 5.90$, $p < .01$. That means that subjects exposed to pictures are significantly more likely to experience mental imagery. However, no significant relationship was found between other conditions and mental imagery. Thus, other multimedia combinations do not seem to influence a subject's mental imagery processing.

Table 4. Tests of Between-Subjects Effects of Mental Imagery

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Observed Power(a)
Corrected Model	13.33(b)	7	1.90	1.27	.27	.04
Intercept	4433.725	1	4433.73	2952.142	.00	.93
Narrative	.12	1	.12	.082	.76	.00
Picture	8.87	1	8.87	5.90	.01 **	.03
Sound	.04	1	.04	.02	.88	.00
Narrative × Picture	2.30	1	2.30	1.53	.22	.01
Narrative × Sound	.12	1	.12	.08	.78	.00
Picture × Sound	.00	1	.00	.00	.98	.00
Narrative × Picture × Sound	1.96	1	1.96	1.30	.26	.01
Error	346.93	231	1.50			
Total	4797.736	239				
Corrected Total	360.26	238				

a. R-Squared = .04 (Adjusted R Squared = .008), b. Dependent Variable: Mental Imagery

Analysis

The hypothesized relationships between independent, mediator, moderator, and dependent measures were tested by means of structural equation modeling (SEM) using Amos 5.0 (Arbuckle, 2003). Two of the most desirable features of AMOS are 1) that it has a flexible graphical interface and 2) it is part of the SPSS package. That is, one can create one's SPSS data set, making any desired data modifications, and then click on AMOS as one of the available analyses within the SPSS package. (Weiner, Freedheim, Schinka, Velicer, & Lerner, 2003).

Structural Equation Modeling

Structural equation modeling (SEM) was chosen for the estimation of parameters and hypotheses of the conceptual model in the present study. Structural equation modeling (SEM) was not originally designed to analyze experimental data, however, it has been utilized in the context of consumer research related experiments and has been advocated by several researchers such as MacKenzie (2001) and Wang, Beatty, and Foxx (2004). Kaplan (2000) states, "structural equation modeling can perhaps best be defined as a class of methodologies that seeks to represent hypotheses about the means, variances, and covariances of observed data in terms of a smaller number of 'structural' parameters defined by a hypothesized underlying model" (p. 1). Structural equation models are often called LISREL models, Linear Structural Relations (Nachtigall, Korehne, Funke, & Steyer, 2003). More specifically, "structural relations involves the main concept of SEM dealing with the relationships between latent variables (Nachtigall et al., 2003). These

relationships are usually presented by linear regression equations and graphically expressed by path diagrams using arrows. Simply put, SEM estimates relationships among latent variables while minimizing the effects of the measurement model.

The key advantages of structural equation modeling for experimental consumer research are demonstrated by Mackenzie (2001) as follows: “It would allow a) the testing of alternative explanations of the effects of the same manipulation (e.g., processing goals, ad format, etc.), b) examination of the relative magnitudes of the effects of alternative mediating processes triggered by the same manipulation, and c) the efficiency of manipulation to be improved by providing estimates of the impact of the manipulation on hypothesized and non-hypothesized factors” (p. 163).

SEM is very flexible since it not only addresses a single simple or multiple regression, but also a system of regression equations. In SEM, it is possible to consider several equations simultaneously in contrast to ordinary regression analysis (Musil, Jones, & Warner, 1998). Path diagrams and the calculation of direct, indirect and total effects were drawn from the methodology of path analysis more than seventy years ago, however, SEM containing this technique offers a more efficient way (Nachtigall et al., 2003). In other words, it has the capability of dealing with latent variables, (i.e., non-observable quantities such as factors underlying observed variables). With SEM, the reliability of each of the latent variables considered in the analysis can be assessed. That is, SEM determines the degree of imperfection in the measurement of underlying constructs, whereas regression and path analyses do not distinguish between less than perfect

measurements of variables, and nonrandom, unexplained variance (Musil, Jones, & Warner, 1998).

Maximum Likelihood Estimation (ML)

For this study, maximum likelihood (ML) estimation was employed as the estimation method for covariance matrices. The principle of ML estimation is to find the model parameter estimates that maximize the probability of observing the available data if the data were collected from the same population (Brown, 2006). In other words, the purpose of the ML is to explore the parameter values that make the observed data most likely. There are some key assumptions for ML: 1) The sample size is large, 2) the indicators have been measured on continuous scales (e.g., in this case the indicators of latent factors), 3) the distribution of the indicators is multivariate normal (Klein, 1998; Brown, 2006). Because the current study adapted ML to test the hypothesized model, the multivariate normality of the observed variables was checked.

Parceling

Item parcels are commonly created to reduce the number of indicators of lengthy scales and surveys conducting CFA analyses (Bandalos & Finney, 2001). The idea of creating and using item parcels was originally introduced by Cattell (1956), and further explored by Cattell and Burdsal (1975). Item parcels have different aspects compared to subscale or scale scores in that the entire set of item parcels reflects a single primary

factor dimension, or latent construct, whereas a set of subscale or scale scores reflects several separable latent constructs (Hall, Snell, & Foust, 1999).

Parceling is usually done by summing or averaging several items that presumably measure the same construct (Meade & Kroustails, 2005). Item parcels have been advocated by many researchers for a variety of reasons. Item parcels tend to be more reliable and normally distributed (Meade & Kroustails, 2005). Hall, Snell and Foust (1999) explain that “as the number of indicators per factor increases, there are accompanying decreases in the value of a number of commonly used fit indices (Anderson & Gerbing, 1984; Ding et al., 1995; Williams & Holahan, 1994). This may occur because, as the number of indicators increases, there is greater potential for shared secondary influences and cross loadings among indicators, thus it can contribute to the overall lack of fit of the model” (p. 235). Another reason that item parcels are frequently used is that they can be a more optimal indicator to sample size as the remedy for small sample sizes (Bagozzi & Edwards, 1998; Gottfried, Fleming, & Gottfried, 1994; Vandenberg & Scarpello, 1991). Based on prior study, increasing the number of indicators directly can influence the sample requirements for the study, thus it may be implied that the number of indicators per factor should be limited (e.g., three or four), especially in the case of obtaining small sample sizes (Hall, Snell, & Foust, 1999). In short, using item parcels as indicators of the latent constructs in SEM analyses is an attractive option in that it can address some problems with large sample size requirements, unreliability, and non-normal or coarsely measured item-level data (Landis, Beal, & Tesluk, 2000).

According to Bandalos and Finney (2001), there are three common reasons researchers prefer to use item parceling. First, it increases the stability of the parameter estimates, second, it improves the variable to sample size ratio, and finally, it becomes a remedy for small sample sizes. Given the above aspects, this study used item parceling for structural equation modeling. Parcels have been shown to significantly improve the fit of the SEM model in many circumstances (Bandalos & Finney, 2001; Hall, Snell, & Foust, 1999).

For the current study, a total of eight parcels were created. First, under the mental imagery construct, three items (“A lot of images came to my mind.”, “Many different images came to my mind.”, “I experienced various images in my mind.”), and two items (“I imagined tastes.” and “I imagined scents.”) were combined into quantity and modality parcel respectively. Additionally, each of the five items for vividness (“vivid imagery, clear imagery, sharp imagery, intense imagery, and well-defined imagery”) and valence (“pleasant imagery, good imagery, nice imagery, likable imagery, and positive imagery”) were averaged to form two distinctive parceling items.

In the context of the communication effect construct, attitude strength and attitude confidence parcels were formed using four items (“How good would the destination be for a pleasure trip?”, “How positive would you say is your impression of the destination?”, “How much do you think you would like this destination?”, “How favorable is your impression of the destination”), and two items (“How certain are you of your attitude toward this destination?” and “How sure are you that your current impression of the destination is correct?”) respectively. However, attitude resistance was

measured using four items separately since its factor loadings under the communication effect construct was too low at .11. Four of the attitude resistance items were created by subtracting each score of attitude strength items in the second response from each score of attitude strength items in the first response. In other words, after measuring attitude strength using four items in time one, each subject was shown the negative review of the destination. Then, they were asked to respond to the same attitude strength questions a second time. Consequently, attitude resistance was measured by subtracting attitude strength scores in the second response from attitude strength scores from the first response. With regard to the moderator variables, visualizer and verbalizer parcels were also created using three items respectively (e.g., visualizer items: “I prefer to learn visually.”, “I am a visual learner.”, “I am good at learning from labeled pictures, illustrations, maps and animations.” Verbalizer items: “I prefer to learn verbally.”, “I am a verbal learner.”, “I am good at learning from printed text.”)

Two Step Procedures for SEM

According to Anderson and Gerbing (1988), the two-step approaches consist of the analysis of the measurement model and analysis of the structural model with directional paths. The measurement model, or factor model, specifies the relationships among measured (observed) variables underlying the latent variables (Schumaker & Lomax, 2004).

More specifically, in the first step, the factor structure of the present conceptual model was tested. A confirmatory factor analysis (CFA) was conducted to test that the

factors sufficiently predict measured variables in the model. It tests whether indicators load on specific latent variables as proposed. At first, there are no directional associations between latent variables; instead bidirectional associations are estimated (Hatcher, 1994). After model specification, path loadings and modification indices were examined to determine if any indicators did not load as expected (Kallstrom-Fuqua, Weston, & Marshall, 2004).

The second step investigated the structural model by estimating expected directional associations among latent variables. That is, the structure model was tested to examine the hypothesized relationships.

Model Fit Indices

As previously mentioned, the measurement and structural models were estimated using the maximum likelihood estimation method and were evaluated on the basis of the chi-square test and several other fit indices. As suggested by researchers (Hu & Bentler, 1999; Quinta & Maxwell, 1999), several indices were used instead of one model fit index. First, the chi-square is a statistical test of “badness of fit,” with significant value suggesting that the model does not replicate the underlying covariance structure; however, the chi-square statistic is influenced by model degrees of freedom, thus, this index is sensitive to large sample sizes (Bentler, 1990). A value less than 3.0 is considered acceptable. Second, the comparative fit index (CFI) ranges from 0-1, where 1 indicates the best possible fit, values of .95 or greater are desirable and values above 0.90 are acceptable (Bentler, 1990). Third, the Normed Fit Index (NFI) indicates the proportion in

the improvement of the research's model over the independent model (Klein, 1998), and the fourth is the root-mean-square error of approximation (RMSEA). The RMSEA compensates for model complexity. A value of 0.05 or less indicates a close fit of the model, values of .06 or less are desirable, and a value of 0.08 is reasonable in relation to the degree of freedom (Kline, 1998). Finally, the Goodness of Fit Index (GFI) is less sensitive to sample size. Values range from 0 (poor fit) to 1 (a perfect fit). The value of 0.95 or less is desirable (Kline, 1998).

Modeling of Interaction Effects

In order to investigate the interaction effects involving nominal scales, analysts should choose a coding scheme that most adequately represents their research questions. In an experimental design, this would typically be un-weighted effects or dummy or coding (Cohen, Cohen, West, & Aiken, 2003). Dummy variable coding, a series of numbers assigned to indicate group membership in any mutually exclusive and exhaustive category, is the most frequently utilized procedure in the literature for representing categorical variables in regression equations and in SEM. Dummy coding is used when categorical variables are of interest in prediction. In order to represent the interactions, dummy variables for narrative text, picture, and sound were created. These dummy variables were then multiplied by each other to determine whether interaction effects among narrative \times picture; narrative \times sound; and narrative \times picture \times sound would have an influence on mental imagery processing. The model containing these interaction variables was analyzed as follows (See Figure 6).

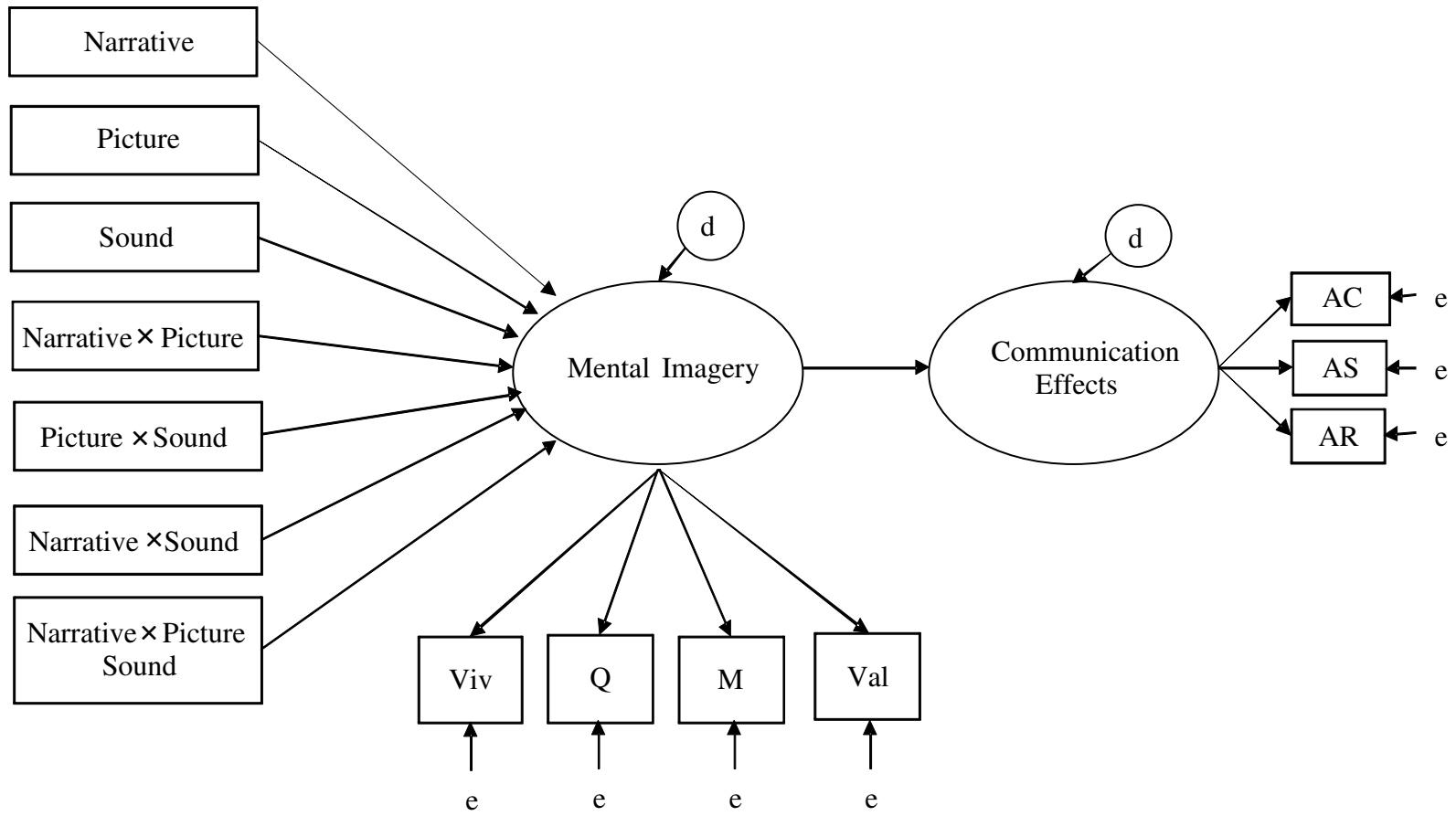
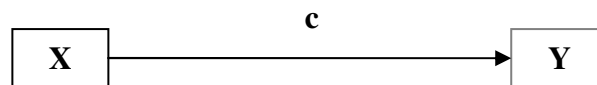


Figure 6. Testing of Interaction Effects among Exogenous Variables on Mental Imagery
 Note: Viv=Vividness, Q=Quantity, M=Modality, Val=Valence,
 AC=Attitude Confidence, AS=Attitude Strength, AR=Attitude Resistance

Testing Mediation

Based on Baron and Kenny's (1986) method, this study will explore a mediated structural model while testing the significance level of the mediated effects. In other words, it examines the role of mental imagery as the mediator variable between experimental conditions and attitude communication effect. Frazier, Tix, and Barron (2004) demonstrated a way of testing the mediation effects based on Baron and Kenny's (1986) normal theory. First, there must be a significant correlation between the predictor variable X and the dependent variable Y, shown as Path c in Figure 7A.

A



B

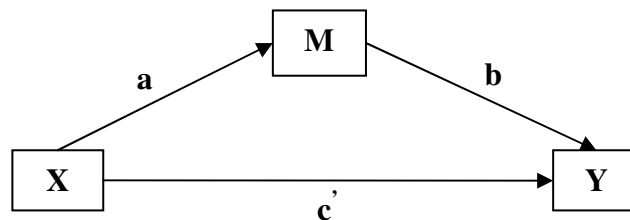


Figure 7. The Mediation Model Requirements Based on Baron and Kenny's (1986)

Note: Method: A: The direct model, B: The mediation model

Second, the predictor variable X must account for a significant proportion of the variance in the mediating variable M (path a), presented in Figure 7B. Third, the mediator variable M must account for a significant proportion of variance in the dependent variable Y (path b). Fourth, the association between the predictor variable X and the dependent variable Y must be significantly less after controlling for the variance shared between the mediator and dependent variable. In other words, Path c' must be significantly less than Path c. However, later, Kenny, Kashy, and Bolger (1998) claimed that the first of these conditions is not necessary. Additionally, Frazier et al. (2004) assert that several situations are possible in which mediation might occur in the absence of a significant relationship between the predictor and dependent variable (Frazier, Tix, & Barron, 2004).

Testing Moderator Effects

Researchers can use SEM to examine moderator effects whether the predictor or moderator variables are categorical or continuous. The choice of a moderator and the hypothesized nature of interaction should be based on theory (Frazier, Tix, & Barron, 2004).

Steps involved in analyzing data, including predictor and moderator variables:

1. Representing categorical variables with code variables

If either the predictor or moderator variable is categorical, the first step is to represent this variable with code variables. One of several coding systems can be chosen

to represent the categorical variable. Specifically, dummy coding is used when comparison with a control or base group is desired (Frazier, Tix, & Barron, 2004).

2. Centering continuous variables

The next step in formulating involves centering or standardizing predictor and moderator variables that are measured on a continuous scale because predictor and moderator variables generally are highly correlated with the interaction terms created from them. Centering reduces problems associated with multicollinearity among the variables in the regression equation (Cohen et al., 2003; Jaccard et al., 1990)

3. Creating product terms

It is necessary to create product terms that represent the interaction between predictor and moderator. In order to form product terms, one simply multiplies the predictor and moderator variables using the newly coded categorical variables or centered continuous variables (Aiken & West, 1991; Cohen et al., 2003; Jaccard et al., 1990).

After product terms have been created, an overall model to measure the moderator effects is drawn from the AMOS program. Moderator variables are visualizer and verbalizer, thus two models testing each moderator effect were provided as follows (See Figure 8).

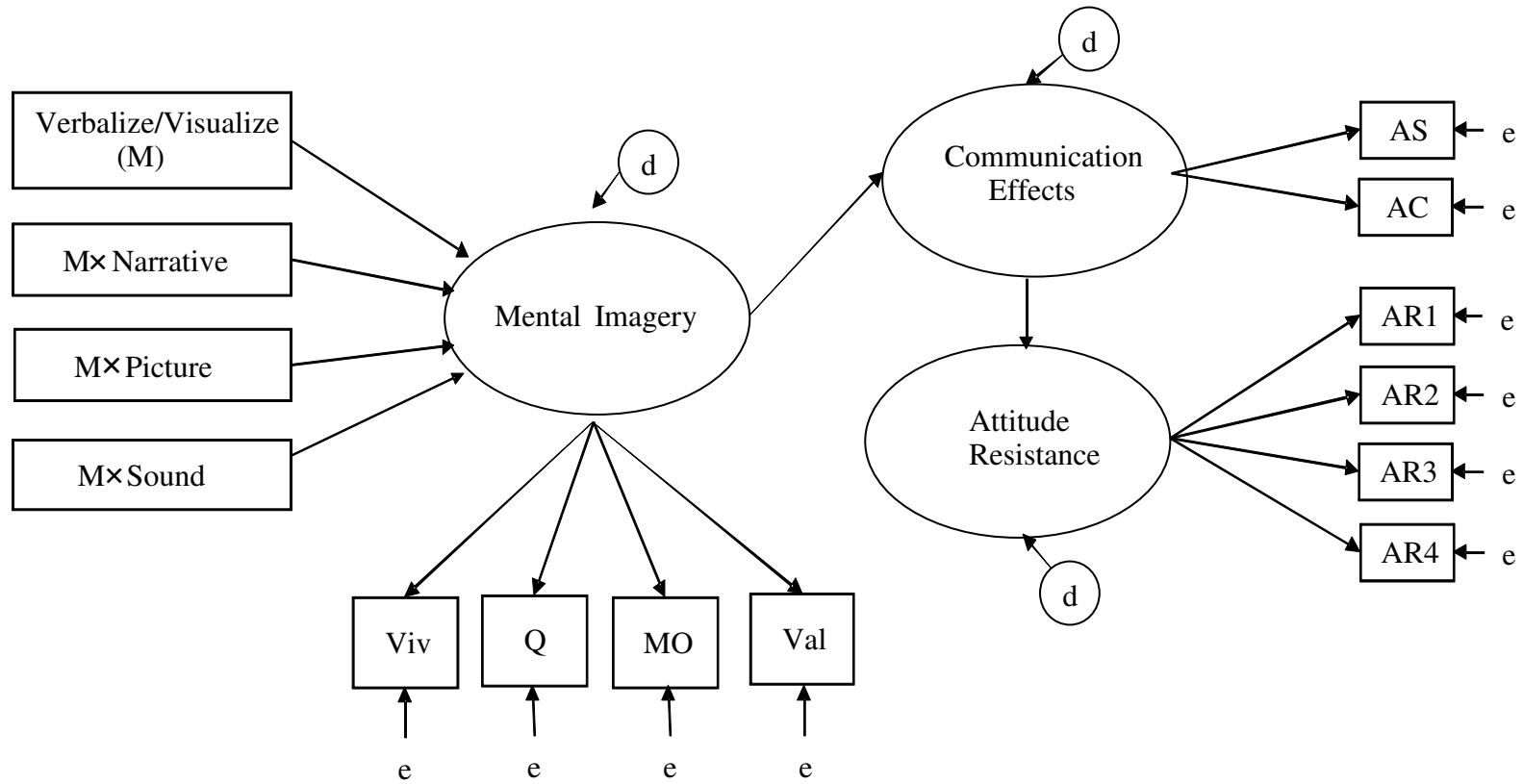


Figure 8. Testing of Moderator (Verbalizer) Effects
 Note: M=Moderator, Viv=Vividness, Q=Quantity, MO=Modality, Val=Valence,
 AC=Attitude Confidence, AS=Attitude Strength, AR=Attitude Resistance

CHAPTER V

RESULTS

The results of this study present the hypothesized overall relationships between the impact of imagery-evoking antecedents (e.g., narrative text, picture, and sound) on mental imagery processing and its influence on attitudes toward a destination. It was hypothesized that narrative processing and multimedia information processing efficiently evoke mental imagery, and this cognitive imagery processing has a strong influence on a subject's attitude strength, confidence, and resistance. The moderated effects of individual imagery ability was tested.

Manipulation Checks

The research design is comprised of eight conditions. In order to make sure that the manipulations were reliable and effective, this study conducted manipulation check regarding to picture and sound by including the following question in online questionnaire; "Did the Web site you reviewed show photographs of the island?", " Did the Website you received have sound?"

Picture manipulation Four different types of pictures (e.g., island pictures with bungalows, big palm trees, small waves, or blue skies) were presented in the picture conditions and all participants (N=239) were asked if they saw the pictures. All the students who received picture condition (N=120) stated that they could see pictures.

Sound manipulation Some specific sounds, waves and seagull sounds, were included in the condition and all participants (N=239) were asked if the Web site the participant saw contained any sound. All participants in the sound condition (N=119) noted that they could hear some sound.

Assumptions

Before empirically testing the theoretical model, assumptions for multivariate analysis, including multivariate normality and homocedasticity were examined. Before examining assumptions for multivariate analysis, visual inspection of data plots (e.g., histograms & Q-Q plots) and skewness and kurtosis statistics were examined for univariate level. For the multivariate normality assumption, the result of Mardia's coefficient of multivariate kurtosis (Mardia, 1970; Mardia, 1980) was examined to determine whether or not the data met the normality assumption. If the assumption is violated, a multivariate outlier tends to affect the assumption. Using the Mahalanobis distance analysis, evidence of multivariate outliers under the assumption of normality was examined. The homogeneity of variance assumption assumes that the groups all have equal values for their population variances as well as normality in the underlying population (Page, Baraver, & Mackinnon, 2003; Stevens 2002).

As seen in Table 5, the means, standard deviations, skewness, and kurtosis for all measures for entire population are presented. The maximum likelihood estimation is valid if the data conform to a certain number of basic assumptions. In other words, before empirically testing the theoretical model, the data for normality and homocedasticity were examined. Based on the visual inspection of data plots (e.g., histograms of variables, Q-Q plots), mean and standard deviation values revealed that the variables displayed acceptable dispersion. Kurtosis values range from -1.15 to 1.99, whereas skewness values range from -1.08 to 1.27. Despite a few high values, the univariate values of kurtosis and skewness are considered adequate since mean kurtosis ($|M| = .08$) and mean skewness ($|M| = .05$) are within an acceptable range of 0-1.00 (Muthen & Kaplan 1985). (see Table 5). One extreme outlier was found as the result of Mahalanobis distance statistics embedded in the AMOS program. After deleting this case, critical ratio does not violate the multivariate normality assumption ($p > .05$). The final sample size for the model was a total of 239 subjects.

Preliminary Analysis

As indicated in Table 5, the mean of quantity imagery is quite high at 5.23, 4.96, and 5.02. This implies that people were more likely to have numerous and a variety of destination images in their mind. However, with regard to valence imagery, respondents indicate quite low mean scores such as 2.20, 2.37, 2.38, 2.31, and 2.08. Imagery valence refers to the affective meaning of imagery. That is, people were less likely to have affective imagery of a destination when looking at the Web site. This table shows the

Table 5. Descriptive Statistics

Item	Mean	SD	Skewness	Kurtosis
IMAG1(Q)	5.23	1.338	-.492	-.451
IMAG2(Q)	4.96	1.445	-.448	-.449
IMAG3(Q)	5.02	1.408	-.412	-.582
IMAG4(M)	3.38	1.713	.397	-.892
IMAG5(M)	3.72	1.854	.189	-1.152
IMAG6(VI)	2.77	1.490	.777	.032
IMAG7(VI)	2.90	1.441	.618	-.223
IMAG8(VI)	3.34	1.603	.286	-.763
IMAG9(VI)	3.69	1.608	-.010	-.713
IMAG10(VI)	3.28	1.606	.346	-.760
IMAG11(VA)	2.20	1.212	1.272	1.991
IMAG12(VA)	2.37	1.257	1.022	1.216
IMAG13(VA)	2.38	1.297	.904	.493
IMAG14(VA)	2.21	1.226	.905	.270
IMAG15(VA)	2.08	1.160	1.057	.782
AtStr1-T1	6.12	1.018	-1.080	.554
AtStr2-T1	5.88	1.014	-.884	.702
AtStr3-T1	6.02	1.047	-.972	.556
AtStr4-T1	5.86	1.048	-.707	.115
AtCon1	5.40	1.232	-.713	.372
AtCon2	4.85	1.391	-.719	.298
AtStr1-T2	3.68	1.476	.071	-.694
AtStr-T2	3.46	1.359	.063	-.511
AtStr-T2	3.72	1.537	-.071	-.872
AtStr-T2	3.47	1.324	-.014	-.526

Q: Quantity, M: Modality, VI: Vividness, VA: Valence, AtStr-T1: Attitude strength in time 1

mean value of attitude strength score in time one and attitude strength score in time two. Based on this score, attitude resistance was calculated by subtracting attitude strength score in time one from attitude strength score in time two.

Given the bivariate correlations for all variables (See Table 6), interestingly, the correlation between the fifteen mental imagery variables (IMAG1—IMAG15) that can be categorized by quantity, modality, vividness and valence imagery, and the four attitude strength variables (AtStr1—AtStr4) and the two attitude confidence (AtCon1—AtCon2) variables are all significant. These correlations provide some evidence that there is a direct effect of these mental imagery variables on attitude strength and/or attitude confidence (See Table 6).

Item Parceling

As previously described, for the current study, a total of eight parcels were created. Given the bivariate correlation among the parceling items, which is shown in Table 7, only quantity and modality imagery is significantly related to attitude strength and attitude resistance, whereas vividness and valence imagery is not significantly related to attitude strength. It also indicates that only quantity, vividness and valence imagery is significantly associated with the verbalizer and visualizer variables.

Table 6. Intercorrelations among Proposed Indicators

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	-																					
2	.79**	-																				
3	.75**	.86**	-																			
4	.33**	.33**	.38**	-																		
5	.34**	.29**	.33**	.69**	-																	
6	-.69**	-.59**	-.63**	-.35**	-.43**	-																
7	-.61**	-.5**	-.5**	-.34**	-.35**	.73**	-															
8	-.58**	-.5**	-.55**	-.37**	-.45**	.72**	.81**	-														
9	-.57**	-.47**	-.57**	-.44**	-.44**	.68**	.73**	.8**	-													
10	-.55**	-.43**	-.51**	-.37**	-.36**	.69**	.73**	.74**	.77**	-												
11	-.61**	-.52**	-.59**	-.24**	-.31**	.73**	.68**	.64**	.6**	.65**	-											
12	-.6**	-.52**	-.57**	-.27**	-.34**	.67**	.65**	.66**	.59**	.66**	.8**	-										
13	-.62**	-.53**	-.59**	-.28**	-.36**	.67**	.63**	.66**	.58**	.61**	.79**	.91**	-									
14	-.58**	-.48**	-.55**	-.29**	-.35**	.68**	.66**	.67**	.61**	.67**	.8**	.84**	.86**	-								
15	-.62**	-.52**	-.57**	-.27**	-.32**	.68**	.64**	.66**	.57**	.61**	.79**	.77**	.81**	.86**	-							
16	.48**	.41**	.47**	.25**	.34**	-.57**	-.52**	-.55**	-.47**	-.53**	-.64**	-.56**	-.57**	-.61**	-.57**	-						
17	.54**	.46**	.48**	.35**	.39**	-.57**	-.54**	-.55**	-.51**	-.52**	-.65**	-.57**	-.6**	-.61**	-.61**	.77**	-					
18	.42**	.36**	.4**	.28**	.33**	-.51**	-.47**	-.51**	-.45**	-.51**	-.58**	-.5**	-.49**	-.56**	-.52**	.71**	.69**	-				
19	.50**	.46**	.51**	.32**	.35**	-.58**	-.52**	-.58**	-.52**	-.55**	-.65**	-.57**	-.59**	-.62**	-.61**	.71**	.77**	.82**	-			
20	.35**	.35**	.39**	.3**	.35**	-.45**	-.49**	-.54**	-.49**	-.5**	-.49**	-.47**	-.47**	-.5**	-.46**	.56**	.65**	.59**	.68**	-		
21	.32**	.31**	.32**	.36**	.43**	-.36**	-.44**	-.45**	-.44**	-.46**	-.37**	-.39**	-.38**	-.45**	-.37**	.48**	.52**	.46**	.52**	.71**	-	

Note. N = 239. 1=IMAG1, 2=IMAG2, 3= IMAG3, 4= IMAG4, 5= IMAG5, 6= IMAG6, 7= IMAG7, 8= IMAG8, 9= IMAG9, 10= IMAG10, 11= IMAG11, 12= IMAG12, 13= IMAG13, 14= IMAG14, 15= IMAG15, 16= AtiStr1, 17=AtiStr2, 18=AtiStr3, 19=AtiStr4, 20=AtiCon1, 21=AtiCon2.

* $p < .05$. ** $p < .01$

Table 7. Intercorrelations among Proposed Indicators

	1	2	3	4	5	6	7	8	9	10	11
1. AtRes1	-										
2. AtRes2	.39**	-									
3. AtRes3	-.66**	-.48**	-								
4. AtRes4	-.65**	-.36**	.78**	-							
5. Quan	.54**	.39**	-.66**	-.70**	-						
6. Modality	.40**	.42**	-.56**	-.50**	.66**	-					
7. Vividness	.20**	-.03	-.05	-.14*	.23**	-.01	-				
8. Valence	.19**	.04	-.12	-.16*	.30**	.13*	.72**	-			
9. Verbalizer	.13*	-.01	-.02	-.08	.24**	-.02	.68**	.66**	-		
10. Visualizer	.21**	.04	-.15*	-.20**	.33**	.12	.70**	.74**	.81**	-	
11. AttiS	.25**	.24**	-.37**	-.28**	.23**	.17**	.00	-.01	-.04	.05	-
12. AttiC	.03	.11	-.01	.01	-.01	.02	.10	.05	.02	.01	-.15*

Note. $N = 239$. 1=AtRes ,2= AtRes2 , 3= AtRes3 , 4=AtRes4 , 5=Quantity ,6=Modality ,7= Vividness , 8=Valence , 9=Verbalizer , 10=Visualizer, 11=Attitude Strength , 12=Attitude Confidence

* $p < .05$. ** $p < .01$.

Structural Equation Modeling

The hypothesized model was tested using structural equation modeling (SEM). Anderson and Gerbing (1988) suggest a two-step model building approach that emphasizes the analysis of two conceptually distinct models: a measurement model followed by the structural model.

Measurement Model

The originally proposed measurement model consisted of two latent constructs; there were four indicators of mental imagery factor, three indicators of communication effect factors. This measurement model was estimated using a maximum-likelihood estimation method in the AMOS 5.0 program. As suggested by Hu and Bentler (1999) and Quintana and Maxwell (1999), several indices were used to assess goodness of fit for the models.

The initial test of the measurement model resulted in poor model fit as follows; Chi-Square = 4.1, the CFI = .95, the NFI = .93, and the RMSEA =.1. Also, these mental imagery had very poor construct reliability as .14, which means that these four indicators loaded one latent variable inappropriately. Especially, vividness and valence variables were removed from further analysis since the validity and reliability of these variables seems to be problem for mental imagery construct. With regard to communication effect, which is measured attitude strength, confidence and resistance, attitude resistance caused

to produce very poor construct reliability for communication effect construct such as $R^2 = .11$. Accordingly, attitude resistance was measured using four items separately.

That is, four of the attitude resistance items were created by subtracting each score of attitude strength items in the second response from each score of attitude strength items in the first response. The alternative measurement model was also estimated using the maximum-likelihood method in the AMOS 5.0 program (See Figure 9). Consequently, all of the loadings of measured variables on the latent variables were statically significant and all positive, ($p < .001$). It also demonstrated that the construct reliability for mental imagery is .57, for communication effects is .82 and for attitude resistance is .90 (See Table 8).

Table 8. Factor Loadings and Construct Reliability for the Alternative Measurement Model

Latent Variable	Indicators	Factor Loadings	Construct Reliability
Mental Imagery	Quantity	.72	.57
	Modality	.54	
Communication Effect	Attitude Strength	.96	.82
	Attitude Confidence	.69	
Attitude Resistance	Attitude Resistance 1	.76	.90
	Attitude Resistance 2	.78	
	Attitude Resistance 3	.86	
	Attitude Resistance 4	.94	

As shown in Figure 9, overall model fit is relatively good: Chi-Square=3.0, which is acceptable (Kline, 1998), CFI = .97, NFI = .95, and RMSEA =.09. Consequently, all of the latent variables appear to have been adequately measured by their respective indicators. In addition, the estimated correlations between latent factors were not extremely high. For example, Brown (2006) suggested that a latent factor correlation that equals or exceeds .85 is often used as the cutoff criterion for problematic discriminant validity. As described in Figure 9, each correlation between latent factors did not exceed .85.

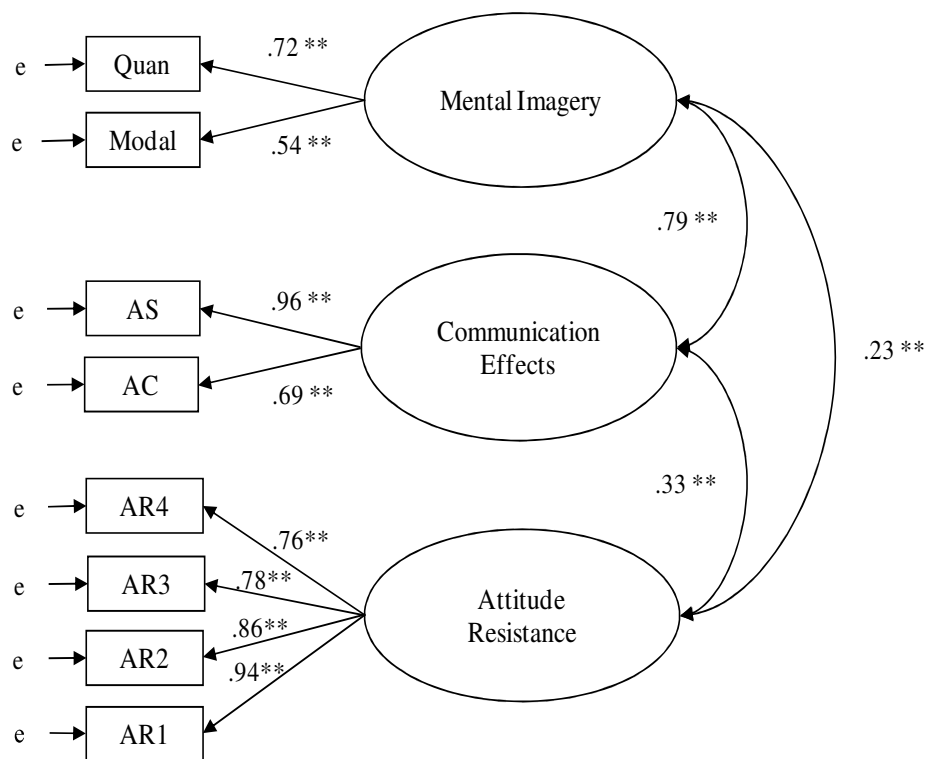


Figure 9. Measurement Model

Structural Model

The structural model specifies relationships among the latent variables as posited by the theory. The most apparent examination of the structural model involves the significant tests for the estimated coefficients (paths), which provide the basis for accepting and rejecting the proposed relationship between latent constructs. In other words, following the CFA, correlation matrices were used to estimate the hypothesized structural model in SEM (Schumaker & Lomax, 2004).

The overall model fit and the regression paths were estimated to determine if the proposed model described the data well. The overall model fit of the structural model revealed a very good fit to the data. Even though the chi-square statistic is significant ($\chi^2=132.49$, $df=65$), which could indicate a poor fit (See Table 9), this test has been found to be significant even in the models with adequate fit when the sample size is large (Anderson & Gerbing, 1988; Bentler & Bonett, 1980; Bentler & Chou, 1987). Therefore, several model fit indices were used to determine the goodness of fit of the model. As seen in Table 8, the normalized chi-square statistic is 2.03, which indicated an adequate fit (Kline, 1998). Other fit indices suggest that the model fits the data quite well (NFI=.88, CFI=.93, GFI=.93, and RMSEA=.065), as the recommended threshold is 0.9. for NFI, CFI and GFI (Brown, 2006), RMSEA values less than .08 is adequate model.

Table 9. Model Fit Indices for Structural Model

Model Fit Statistics	χ^2	<i>df</i>	χ^2/df	CFI	GFI	NFI	RMSEA
	132.49	65	2.03	.93	.93	.89	.065

The squared multiple correlation coefficients (SMC; R^2) for indicator variables were assessed. SMCs lie between 0 and 1 (the closer to 1, the better the variable acts as an indicator of the latent construct). As the result of SMCs, it is revealed that the model does not explain mental imagery ($R^2=.07$) and attitude resistance ($R^2=.10$) very well. However, this model explains a large portion of the communication effects construct ($R^2= .722$).

The hypothesized structural model paths are depicted in Figure 10. Structural model results reveal that most model paths yield significant parameter estimates. However, in the context of the influence of multimedia presentation (e.g., narrative text, pictures, and sound) on mental imagery processing, only pictures have a significant effect on mental imagery processing. ($\beta=.23$, $p < .01$). These results provide support for hypothesis 2, but not for hypotheses 1 and 3. Additionally, any interactive effects of multimedia presentations were not found to be significant. Thus, the results of the structural model did not support H1a, H1b and H1c.

However, Figure 10 reveals that the mental imagery construct was strongly related to the communication effects ($\beta=.85$, $p < .01$), which is represented by attitude strength and attitude confidence. In other words, evoked mental imagery has an influence on communication effects, and it supports hypothesis H4a. In addition, results given in

Figure 10 shows that the communication effect has a significant impact on attitude resistance ($\beta = .32, p < .01$). It implies that the stronger the attitude, the more resistant it is to negative stimuli. This finding supports hypothesis H4b.

Testing Partial Mediation

Mental imagery processing is expected to mediate the relationship between the imagery evoking features and communication effect. The previously developed model demonstrates a full mediation model (See Figure 10). In order to test the partial mediation role of mental imagery, the following conditions must be satisfied. First, the independent variable must affect the mediator variable in the first equation; second, the independent variable must be present to affect the dependent variable in the second equation; and third, the mediator must influence the dependent variable in the third equation (Baron & Kenny, 1986).

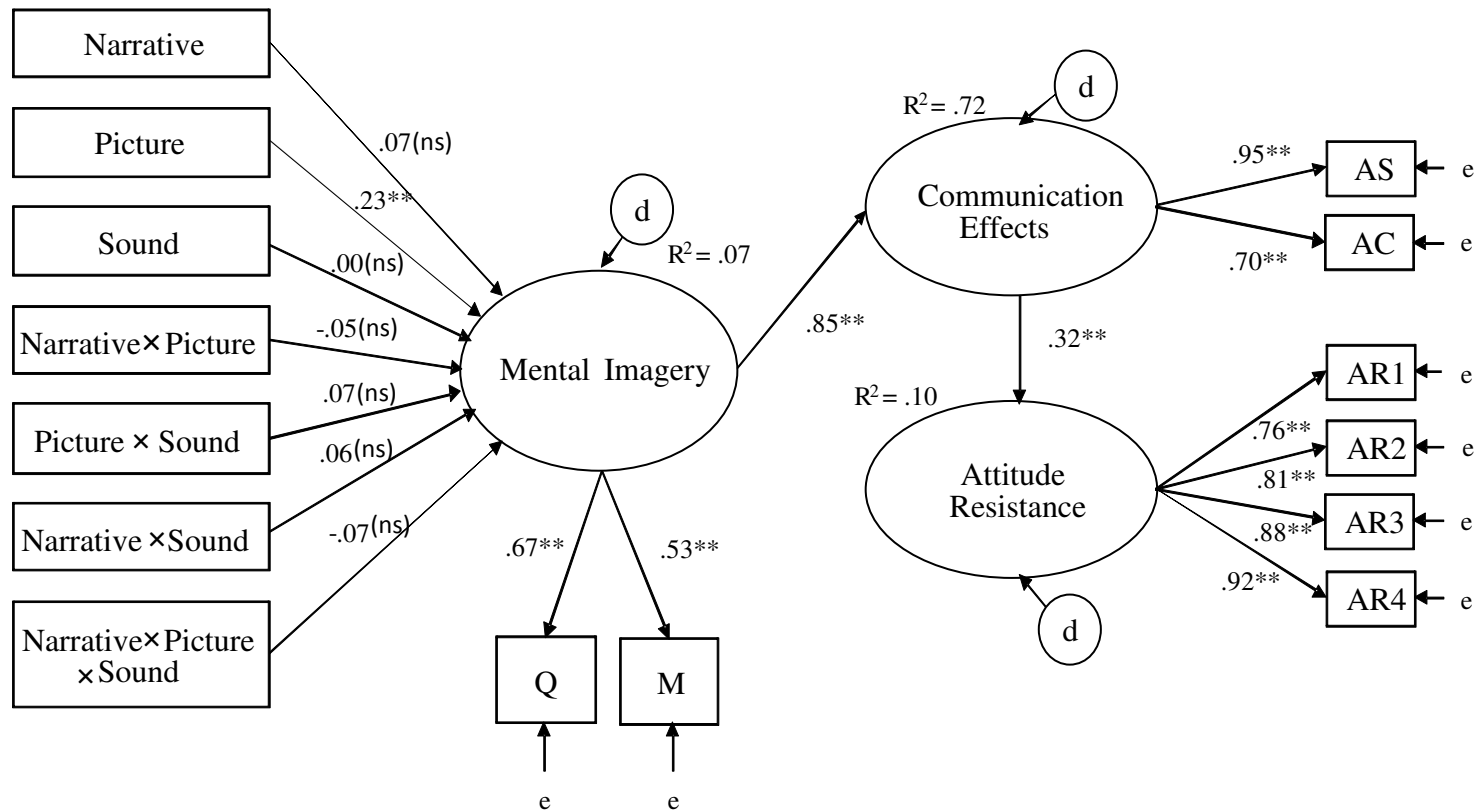


Figure 10. Hypothesized Structural Model

Following the methodology outlined by Baron and Kenny (1986), the current study examined the partial mediation role of mental imagery between the imagery evoking features (e.g., narrative text, picture, and sound) and communication effects (See Figure 11). First, it tested whether the picture condition significantly affected the mental imagery construct. It found that there is no significant relationship between the picture stimuli and mental imagery processing. Consequently, even though the structural model shows that pictures significantly affect the communication effect, and mental imagery has an effect on communication effects, mental imagery cannot be interpreted as the mediating variable between the picture stimuli and communication effect since the first condition is not satisfied and does not establish the mediator variable.

The overall model fit of the structural model suggests that it is somewhat worse than in the case of the originally proposed model (full mediation model), but the model fit is still adequate. The chi-square statistic is acceptable ($\chi^2=146.97$, $df=64$), and several model fit indices indicate that the model fits the data well. As seen in Table 9, the normalized chi-square statistic is 2.29, which indicates an adequate fit (Kline, 1998). Other fit indices suggest that the model fits the data reasonably well (NFI=.87, CFI=.92, GFI=.93, and RMSEA=.072) (See Table 10).

Table 10. Model Fit Indices of Partial Mediator Model for Mental Imagery

Model Fit Statistics	χ^2	df	χ^2/df	CFI	GFI	NFI	RMSEA
	146.97	64	2.29	.92	.93	.87	.072

As mentioned above, even though the overall model fit of this partial mediation model suggests that the model fit is acceptable, the full mediation model indicated better model fit to data. In order to compare the full mediation model to the partial mediation model, a restricted chi-square test was developed using comparative χ^2 (Smith, Tisak, Bauman, & Green, 1991; Werts, Rock, Linn, & Jöreskog, 1977). This restricted chi-square test assessed the significance of the differences in chi-square values across the two models. To determine if the chi-square difference test was statistically significant, the difference scores for the chi-square value and degrees of freedom were compared to a chi-square table. Following the above suggestion, a chi-square difference test for the current study was conducted using $\chi^2_1 - \chi^2_2 = 14.48$, with a degree of freedom = 1. The probability value can be read from a chi-square distribution table. The result of a chi-square difference test showed that, $\chi^2_1 - \chi^2_2 = 14.48$ is greater than 3.84 ($p < .05$, $df = 1$); this means that the full mediation model is significantly different from the partial mediation model. In other words, it can be concluded that the full mediation model has a significantly better fit to the data than the other partial mediation model. Accordingly, the current study values the full mediation role of mental imagery over the partial mediation role of mental imagery.

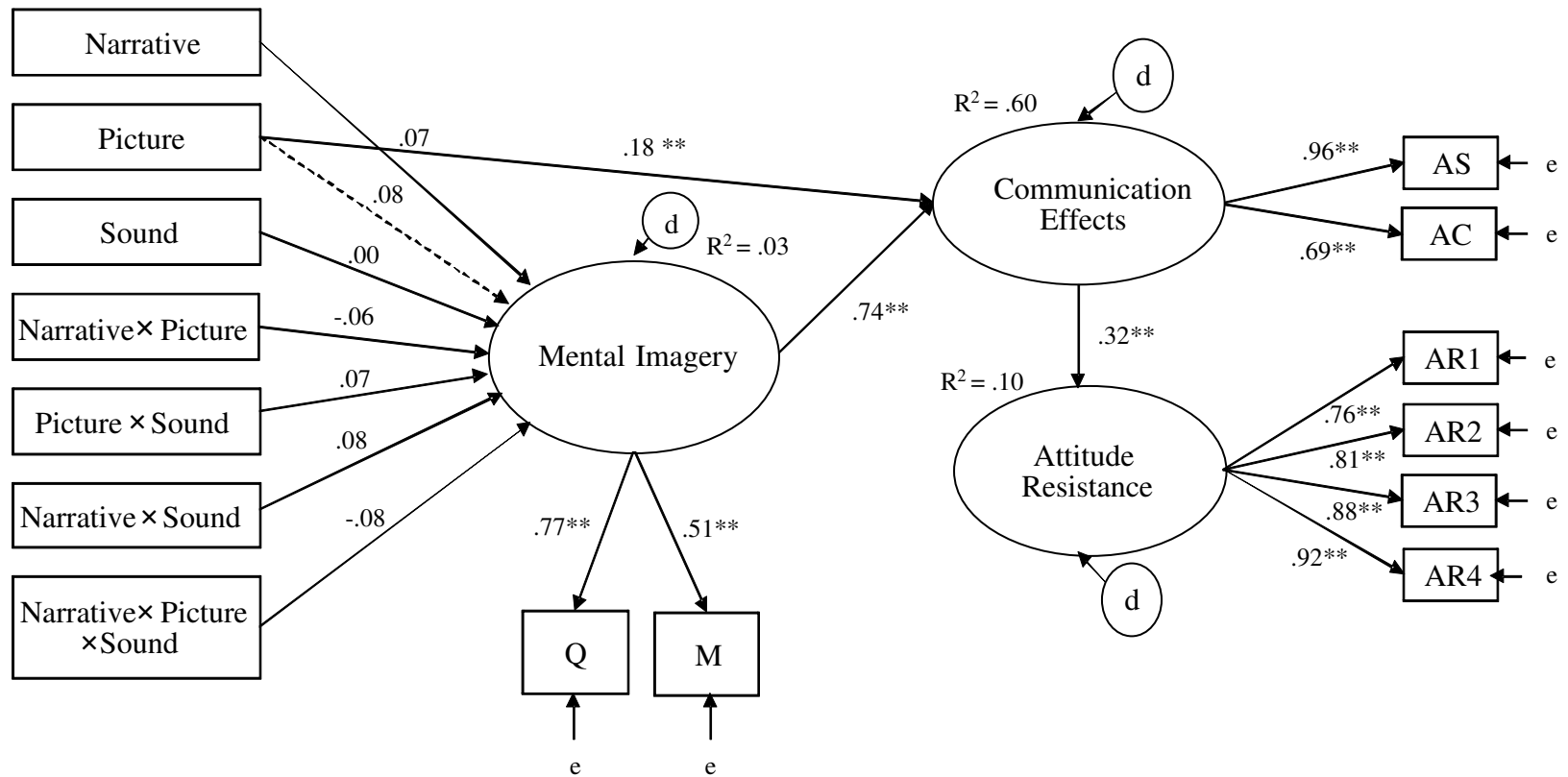


Figure 11. Testing Mediator Role of Mental Imagery

Testing for Moderation

Under the three-step approach provided by Frazier, Barron, and Tix (2004), since the predictor variable is categorical, coding is adapted to represent the categorical variable. The second step involved centering the moderating variables (e.g., verbalizer or visualizer variable), which were measured on a continuous scale. Third, the predictor and moderator variables, using the newly coded categorical variables and centered continuous variables, were multiplied by each other (Aiken & West, 1991; Cohen et al., 2003; Jaccard et al., 1990). After conducting these three steps, an overall structural model to measure the moderator effects was drawn on the AMOS program using a maximum likelihood estimation with robust standard errors (Müthen & Müthen, 2004) (See Figures 12 and 13). A moderator is defined as a variable that may alter the direction or strength of the relationship between a predictor and an outcome (Baron & Kenny, 1986; James & Brett, 1984; Holmbeck, 1997). Thus, Frazier et al. (2004), state that a moderator effect is nothing more than an interaction whereby the effect of one variable depends on the level of another. There are numerous studies which explore whether relationships between predictor and outcome variables are stronger for some people than for others (Frazier et al. 2004). According to Baron and Kenny (1986), when running a test for moderation, the

main effects of the predictor and moderator on the outcome variable and the interaction between the predictor and the moderator are tested. In this case, when the interaction effect is significant, then it can be claimed to demonstrate moderation. However, whether the main effects are significant or not is not strictly relevant to whether the testing model has demonstrated moderation (Baron & Kenny, 1986).

Moderator variables for this study were visualizer and verbalizer. Two-model tests were performed as follows (See Figures 12 and 13). That is, two models that included interaction effects were tested, one for verbalizer and the other for visualizer. As seen in Tables 11, and 12, each overall model fit of the two structural models revealed a very good fit to the data. That is, each normalized chi-square statistic is 2.88 and 2.78 for verbalizer and visualizer model respectively, which indicates an acceptable fit (Kline, 1998). In addition, other fit indices for the two models presented a good model fit to the data while satisfying the cutoff values suggested in the literature review.

Table 11. Model Fit Indices of Structural Model for Verbalizer

Model Fit Statistics	χ^2	<i>df</i>	χ^2/df	CFI	GFI	NFI	RMSEA
	106.72	37	2.88	.93	.92	.90	.089

Table 12. Model Fit Indices of Structural Model for Visualizer

Model Fit Statistics	χ^2	<i>df</i>	χ^2/df	CFI	GFI	NFI	RMSEA
	102.96	37	2.78	.94	.93	.91	.087

However, as seen in Figures 12 and 13, the estimated interaction effect of picture and verbalizer, or picture and visualizer did not have a significant effect on mental imagery. On the other hand, even though it did not show any interaction effects, there is a main effect between visualizer and mental imagery as shown in Figure 13, which means that visualizers are more likely to have mental imagery, no matter what Website features they are presented with.

Consequently, according to Baron and Kenny's (1986) study, even though the testing model demonstrated a significant relationship between picture and mental imagery or visualizer and mental imagery (e.g., in visualizer model), it cannot be claimed that the model demonstrates a moderation effect because the interaction effect is not significant. Thus, it can be concluded that the relationship between presenting pictures on the Website and mental imagery processing is not affected by verbalizer or visualizer.

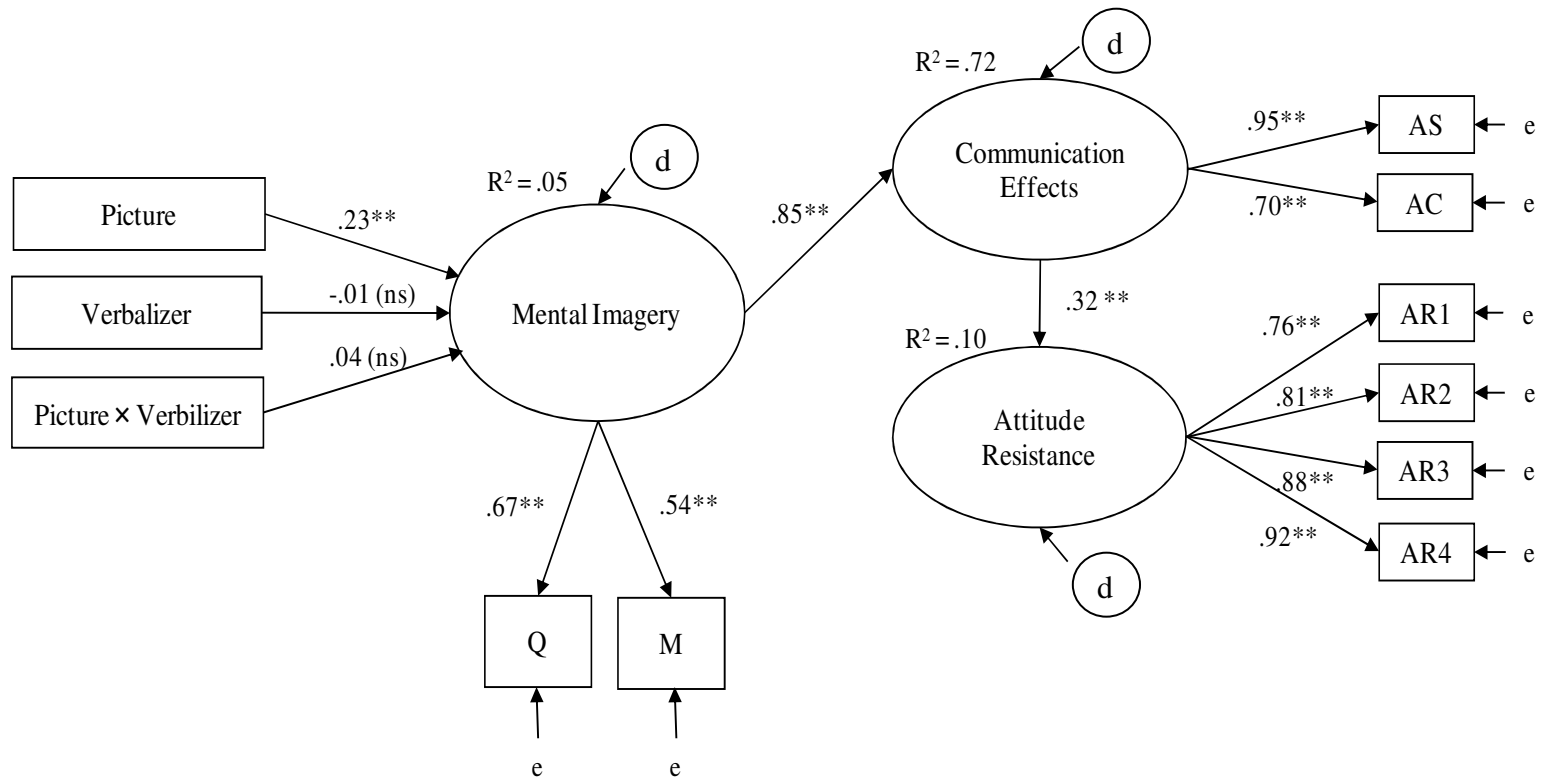


Figure 12. Structural Equation Model Testing for Moderation (Verbalizer)

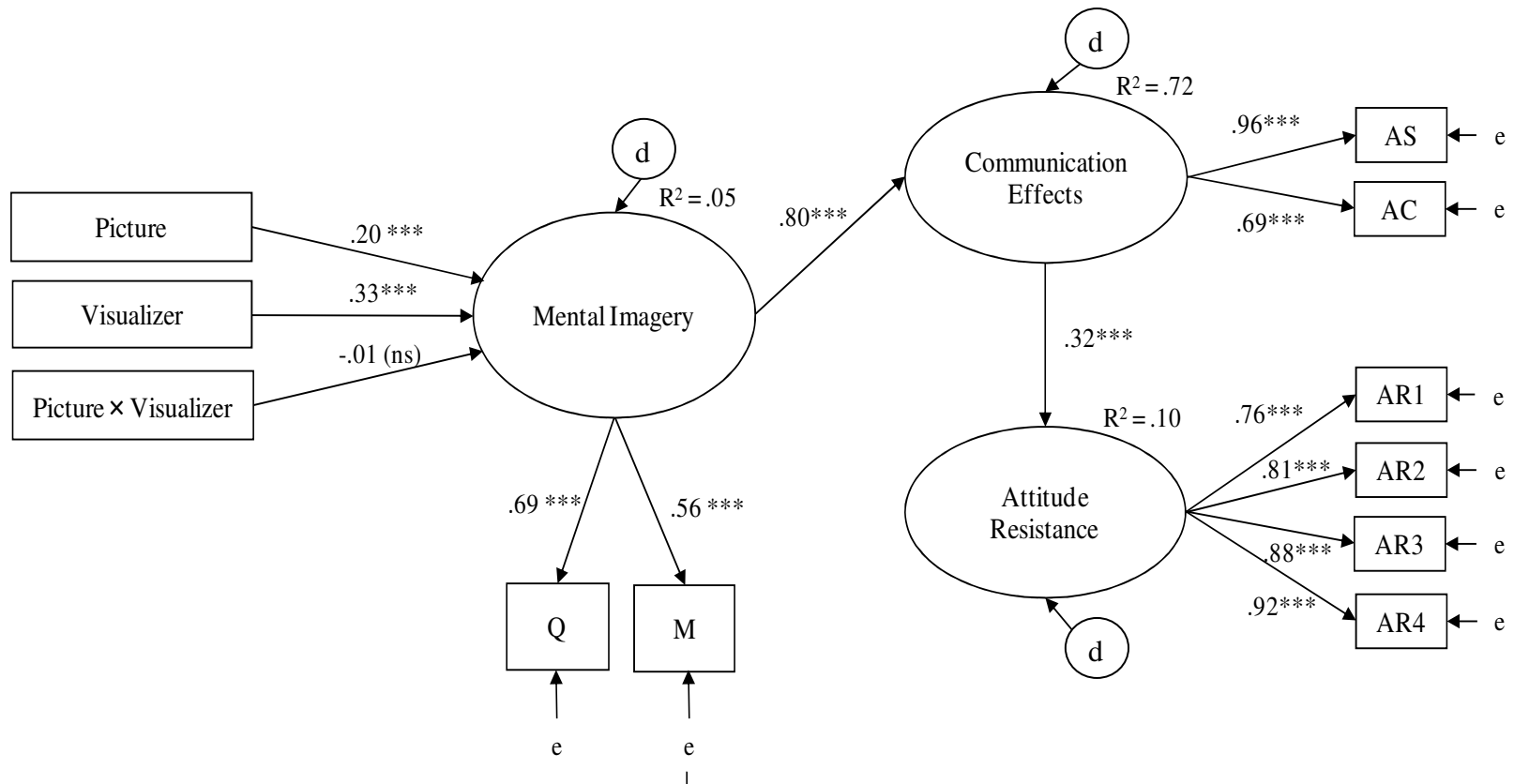


Figure 13. Structural Equation Model Testing for Moderation (Visualizer)

Summary of Results

The first hypothesis suggests that narrative text on a Web site will lead to more imagery processing than an expository text on a Web site. Contrary to expectations, narrative text does not significantly influence mental imagery processing. Thus, it does not support hypothesis 1.

In the context of the influence of pictures on mental imagery processing, the results of the structural model show that pictures significantly affect mental imagery processing. ($\beta = .23, p < .01$). This result supports hypothesis 2.

Hypothesis 3 proposed that the presence of sound on a Web site encourages mental imagery processing. However, the structural model finds that sound effects do not significantly contribute to evoking mental imagery processing, and consequently hypothesis 3 is not supported.

The current study tested the interaction effects between the experimental conditions. However, with respect to hypotheses H1_a, H1_b, H1_c, H1_d, non of the interactive effects of multimedia presentations (i.e., text and picture, picture and sound, sound and text, text, picture, and sound) on mental imagery processing were significant. Consequently, the results of the structural model did not support H1_a, H1_b, H1_c and H1_d.

With regard to the influence of mental imagery processing on attitudinal responses, which are represented as communication effects in this study, three hypotheses were developed. H4_a predicts that more images, increased vividness, greater enjoyment, and multi-mode mental imagery processing will positively influence attitude strength,

H4_b assumes that positive communication effects generated through mental imagery processing will have a significant influence on attitude resistance, and H4c proposes that mental imagery processing will mediate the relationship between Web site characteristics and communication effects.

The results of the analyses reveal that mental imagery processing strongly impacts communication effects ($\beta = .85, p < .01$), and the resulting communication effects significantly impact attitude resistance, which supports H4_a and H4_b. In addition, this study confirmed full mediator role of mental imagery processing supporting H4c.

The current study aimed to measure the difference between verbalizer and visualizer as moderator variables. Thus, the following three hypotheses were created and tested. First, H5a predicts that individuals preferring the verbal processing mode will be more engaged in mental imagery processing stimulated by narrative text in contrast to visually oriented processors, and H5_b assumes that individuals preferring the visual processing mode will be more engaged in mental imagery processing stimulated by pictures compared to verbally oriented processors. H5_c posits that there is no difference between visualizers and verbalizers with respect to mental imagery processing stimulated by sound. The results show that only H5_b ($\beta = .33, p < .01$) and H5_c were supported. However, even though H5b was supported, it cannot be claimed that there are moderator effects (i.e., verbalizer / visualizer effects) on mental imagery processing since the interaction effects are not significant. Table 13 illustrates the summary of the results.

Table 13. Summary of Support for Hypotheses

Relationship		Results	
The Effects of Web Site Characteristics on Mental Imagery Processing		S	NS
H1	Narrative text on a Web site will significantly influence mental imagery processing.		×
H2	Pictures on a Web site will significantly affect mental imagery processing	×	
H3	The presence of sound on a Web site encourages mental imagery processing.		×
H1 _a	The positive impact of narrative text on imagery processing will be even greater when pictures are present.		×
H1 _b	The positive impact of imagery processing will be greater when pictures and sounds are present		×
H1 _c	The positive impact of narrative text on imagery processing will be even greater when sounds are present.		×
H1 _d	The positive impact of imagery processing will be greater when narrative text, pictures and sounds are all present.		×
Effects of Mental Imagery Processing			
H4 _a	More images, and multi-mode mental imagery processing will positively influence attitude strength.	×	
H4 _b	Generating positive communication effects through mental imagery processing will have a significant influence on attitude resistance.	×	
H4 _c	Mental imagery processing will mediate the relationship between Web site characteristics and communication effects (attitude strength, attitude confidence)		×
Moderator Variables			
H5 _a	Individuals preferring the verbal processing mode will be more engaged in mental imagery processing stimulated by narrative text compared to visually oriented processors		×
H5 _b	Individuals preferring the visual processing mode will be more engaged in mental imagery processing stimulated by pictures compared to verbally oriented processors	×	
H5 _c	No difference exists between visualizers and verbalizers for mental imagery processing stimulated by sound.	×	

Note. S=Supported; NS=Not Supported; PS=Partially Supported; NT=Not tested

CHAPTER VI

DISCUSSION AND CONCLUSIONS

The purpose of this study was to generate insights into the nature of imagery-evoking Web site features including narrative text, pictures, and sounds, and to explore the relationship between these Web site features and communication effects that are encouraged through mental imagery processing. Communication effects were conceptualized as attitude strength, attitude confidence, and attitude resistance. This study also aimed at investigating the role of individual processing style (e.g., visualizer or verbalizer) as a moderator variable. This chapter describes the implication of the results and the contribution of this study. Limitations are also addressed, as well as recommendations for future research.

Implications of Results

The following sections demonstrate the theoretical and practical implications of the results. The theoretical and research implications address hypotheses that indicate either the significance or non-significance of tested theories as well as suggestions for further research of imagery. The practical implications focus on managerial benefits that can result from the current study and provide applicability, or the lack of applicability, to the real tourism business market.

Theoretical Implications

Prior research has found that imagery can be evoked by various external advertising stimuli such as pictures, texts, sound effects, and instructions to imagine (Babin & Burns, 1997; Bone & Ellen, 1992; MacInnis & Price, 1987; Miller & Marks, 1997; Lutz & Lutz, 1977). Kisielius and Sternthal (1984) claim that the presence of pictures in advertisements improves mental imagery processing, and in turn, enhances information recall and evaluative responses towards the advertisement and brand.

As the result of analysis, among the imagery evoking stimuli including narrative text, pictures, and sounds, only pictures on a Web site significantly affected mental imagery processing. This result is consistent with those reported by many other researchers (Babin et al., 1992; Kisielius & Sternthal, 1984; Paivio, 1971; Rossiter, 1978; Shepard, 1967), who find that the presence of pictures more efficiently elaborated mental imagery processing. In the tourism industry, very little research has been conducted on the effects of pictures included in destination Web sites on consumer purchase behavior (Jeong & Choi, 2004). Olson, McAlexander, and Roberts (1986) found that external pictures presented on destination advertisements have an influence on a consumer's perception of the vacation experience through the association of a variety of pictures with certain types of experiences. Thus, the findings can contribute to the picture processing and mental imagery literatures in the context of destination marketing. Interpretations of these findings could show that subjects stimulated by some destination pictures were more likely to have many images of the destination in their minds.

On the other hand, surprisingly, the narrative text did not affect mental imagery processing. This result did not successfully support the previous research findings that narrative texts tend to induce strong imagery (Brewer, 1988). However, the other researchers demonstrated different idea that visual information is superior to verbal information in mental imagery (Hirschman & Solomon, 1984; Shepard, 1967; Starch, 1966). Thus, the finding of this study can be interpreted that the pictures of destination were more effective in inducing mental imagery than the narratives of the destination.

Several issues need to be discussed with regard to the text manipulation. First, all subjects were exposed to a text - either in expository or narrative form. Thus, even though the finding of this study revealed that the narrative versus expository text did not influence mental imagery processing, there was a high possibility that the information contained in the text by itself might evoke mental imagery processing. The proposed structural model showed that the picture condition significantly affected mental imagery, but indicated a small standardized coefficient $\beta=0.23$, which means that picture has a small influence on mental imagery. On the other hand, when considering the factor loadings of quantity and modality on the mental imagery construct, coefficients of these variables on the mental imagery were high, indicating $\lambda= .67$ and $\lambda= .53$. Then, it needs to be asked what generated this mental imagery. Indeed, both text conditions contained a great amount of sensory words. Previous research found that the proper mixture of sensory information presented on websites can strongly evoke mental imagery, which can greatly influence consumer attitudes and behavioral intentions (Miller, Hadjimarcou, & Miciak, 2000; Schlosser, 2003). Especially, within the current experimental conditions, imagery in

different modalities most likely arose from the text rather than from the pictures since no picture includes scents or taste related features. Consequently, the information contained in a text and the amount of sensory cues it portrays seem to encourage mental imagery processing.

In addition, the current study revealed that sound does not influence mental imagery. Some researchers claim that when imaging and auditory perception compete for the same resources, elaboration of information can be reduced (Unnava, Agarwal, & Haugtvedt, 1996). In other words, they assert that images generated by subjects selectively interfered with the processing of externally provided information (Unnava, Agarwal, & Haugtvedt, 1996). For example, while conducting the experiment for this study, subjects were informed that they would see certain beach destinations in order to evaluate the Web sites. At that time, each subject might generate auditory imagery regarding the beach in their mind, and then actually hear waves and seagull sounds of the beach. In this case, based on Unnava, Agarwal and Haugtvedt (1996), the interference between generating auditory imaging and actual sounds can adversely affect the elaboration of mental imagery processing.

Supporting the dual-coding theory (Paivio, 1991), and the cognitive theory of multimedia learning (Mayer, 2001), some researchers found that if a particular piece of information was encoded in modality-associated codes (e.g., picture and sound, picture and text, and text and sound), the information should be recalled more accurately compared to those encoded with fewer modality-associated codes (Lukosius, 2004; Verhallen, Bus, & Jong, 2006). Based on the prior research, this study predicted the

effect of multimedia presentation (e.g., narrative text and pictures, pictures and sounds, sounds and narrative texts, pictures and sounds and narrative text) on enhancing mental imagery processing. Unfortunately, no significant interaction effects among imagery evoking Web site features were found. However, this result can imply that even though the mixture of multimedia presentation might not lead to mental imagery processing, it might have other positive effects such as personal experience/familiarity, individual difference in imagery ability. For example, including music, 3-D features, and rich descriptions of other sensory experiences will be able to enhance the customers' imagery ability of destination.

Regarding the above results, the lack of construct validity or reliability inherent in the imagery scale developed by Miller, Hadjimarco, and Miciak (2000) should be noted. Especially, among the four dimensions- quantity, modality, vividness and valence measuring mental imagery- vividness contains some deficiency as the measurement of mental imagery. Mental imagery has been perceived to play an important role in enhancing memory and aiding recall of information (Paivio, 1996). However, there is little evidence to suggest that there is a correlation between vividness ratings and memory performance (Conway, Cathercole, & Cornoldi, 1998). In other words, even though many studies have attempted to relate subjective vividness to memory or recall, little research has found a major effect of rated vividness of imagery on memory or recall performance (Conway et al., 1998). Due to the questionable measurement properties of the scale, it is not clear whether the lack of influence is due to a real lack of impact or is an artifact of the inadequate measurement. The valence imagery scale was initially developed by

Miller et al. (2000). Even though the overall imagery scale was found to be improved compared to previous imagery scales (e.g., Babin & Burns, 1998; Ellen & Bone, 1991; Miller & Marks, 1997), the newly developed scale (e.g., valence imagery) might still need to be refined. Additionally, according to Miller et al. (2000), modality imagery is supposed to measure sound, taste, and scent; however, it would be interesting to add touch for measuring modality.

In the context of verbalizer and visualizer scales, several points need to be discussed. Even though the verbalizer and visualizer questionnaire (VVQ) is a frequently used measure of verbal-visual cognitive style, critics point out that the VVQ lacks construct validity (Edwards & Wilkins, 1981) and does not have high levels of internal consistency. In other words, since the verbalizer/visualizer scales address two modes of information processing, internal consistency might be influenced by scale multidimensionality (Childers et al., 1985). Additionally, reviews of previous studies reported low reliability of this scale indicating an Alpha range between 0.52 and 0.57 (Richardson, 1994). The current study adapted the Santa Barbara Learning Style Questionnaire as the VVQ; however, it just included six-items, which is a small number for identifying verbalizer or visualizer. This questionnaire seems to be vague in that these questions are for identifying cognitive style or learning preference. Also, individuals might not have a good understanding of their own learning styles (e.g., I am a visual learner vs I am a verbal learner). In reviewing recent research on the visualizer-verbalizer dimension, Leutner and Plass (1998) stressed some of the shortcomings of the measurement instruments regarding VVQs. They demonstrated that although some

researchers refer to the visualizer-verbalizer dimension as a cognitive style (i.e., thinking with words or images), others refer to the visualizer-verbalizer dimension as a learning preference (i.e., preferring instruction with text or graphics) (Plass, Chun, Mayer, & Leutner, 1998). Sternberg and Zhang (2001) claimed that there is a need to understand how to conceptualize and measure the key dimensions of cognitive style or learning preference. Supportively, Mayer and Massa (2003) asserted that measures of visual-verbal preference within the context of an authentic learning scenario should be distinct from general measures of verbal-visual cognitive style such as those included in the verbalizer-visualizer questionnaire.

Previous research has found that imagery-evoking stimuli induce mental imagery, which in turn results in more positive and favorable attitudes toward the advertisement and brand (MacInnis & Jaworski, 1989). The results of this study demonstrate when subjects evaluated destination Web sites, mental imagery was evoked by the pictures on the Web site, which significantly influenced attitude strength and attitude confidence of the destination.

This result is consistent with the previous research presented in this study. In the context of attitude resistance, this study also successfully supports past research indicating that generated positive communication effects significantly influence attitude resistance (Hagtvedt & Petty, 1992; Petty, Hagtvedt, & Smith, 1995). Based on these findings, it may be said that once subjects form strong attitudes and confidence in the destination through mental imagery processing, they are more likely to resist negative reviews of the destination. Given that very little research has been conducted regarding

attitude resistance in the context of tourism marketing, the findings of this study can contribute to the academic body of literature in terms of consumer behavior research in the tourism industry.

This study explored the partial mediator role of mental imagery between imagery-evoking Web site features (e.g., narrative text, pictures, sounds) and communication effects (e.g., attitude strength). Following Baron and Kenny's (1986) method, it first involved calculation of relationships. In order to check the three relationships, additional parameters from imagery eliciting Web site features to communication effects were included and estimated based on the original structural model. In the original structural model (full mediator model), it was found that only pictures significantly affected mental imagery processing and in turn, the mental imagery have significantly influence attitude formation. However, surprisingly, once the parameter between pictures and communication effects was created, the significant relationship between pictures and mental imagery processing was absent. Because this result did not satisfy the first equation, the condition of which was that the independent variable must affect the mediator variable, mental imagery cannot be perceived as a partial mediator, which operates between pictures and communication effects. The interpretation of this finding may be that, due to the strong correlation between pictures and communication effects, and correlation between mental imagery and communication effects, the significant relationship between the picture and mental imagery was reduced. The results from this study did not support partial mediator role of mental imagery, however, the finding of this study supported Kisielius and Sternthal's (1984) position that the presence of pictures

in advertisement elaborates mental imagery processing, and in turn, enhances information recall and favorable attitude towards the advertisement and brand. Study findings of partial mediator role of mental imagery model can be interpreted that subjects were strongly affected by pictures first before engaging in mental representation. In fact, Goossens (1994) demonstrated that using pictorial images may smother an individual's imagery processing as he/she becomes over reliant on the features image as an information source rather than elaborating one's own mentally enhanced images.

Prior research has shown that individual differences exist in terms of willingness to habitually engage in visually- versus verbally-oriented processing (Childers et al., 1985). Based on the findings of past research, the current study attempted to explore the moderator (verbalizer/visualizer) effects on the relationship between Web site features and mental imagery processing. The result only presents the effects of pictures on mental imagery while testing moderator effects since only pictures significantly influenced mental imagery processing among the imagery-evoking Web site features. Unfortunately, the findings of this study show that each estimated interaction effect of picture and verbalizer on mental imagery, or the interaction effect of picture and visualizer on mental imagery, were not significant. Theoretically, the moderating variable (verbalizer/visualizer) is perceived to affect the strength of the relationship between imagery-evoking Web site features and mental imagery processing. As the result of the study, it might be suggested that there are individual differences in mental imagery between verbalizer and visualizer. For example, visualizers were more likely to have mental imagery.

As the implication for the research, more studies need to be conducted to find out which specific Web site features evoke mental imagery processing so that Web site design can be informed. Moreover, the study regarding mental imagery and narratives can be extended while manipulating the length and content of the narrative description.

Practical Implications

Currently, with the growing amount of information available on the Internet and the increasing number of destination options available to travel consumers, it will be ever more important to create persuasive Web site designs that can help consumers learn about destinations and form strong attitudes about them. Moreover, in the context of successful tourism marketing, with the rocketing amounts of consumer-generated contents such as traveler's own stories, their pictures, and real sounds available at tourism Web sites, it effectively instills confidence in consumers and helps them form attitudes that are more resistant to counter-arguments. Also, given the many benefits for marketing that can be assumed to result from imagery processing, it appears to be critical for online tourism marketing to be better informed about the effectiveness of imagery processing.

First, the findings provide insights into Web site features, which could enhance the relative effectiveness of imagery and lead to the persuasive design of online destination offerings. However, depending on the features, it may differently affect the mind of each customer. For example, some customers prefer the Web sites without any sounds, on the other hand, others prefer music to specific sounds effects. Also some people prefer motion pictures to still pictures, that is, one particular stimulus may

represent different meanings to different markets (Walters, Sparks, & Herington, 2007) Tourism managers and advertisers should take more care to select a proper mixture of imagery-evoking features, which can lead to persuasive Web site designs.

Second, this study shows that mental imagery processing significantly affects positive communication effects such as attitude strength and attitude confidence. Tourism products are unique experiential products. When consumers are evaluating experience products, they may have a higher degree of uncertainty compared to other physical products. Running a simulation-like scenario in one's mind can facilitate the process of destination decision making and lead to more certainty of the decision. While customers are surfing travel Web sites, imagery processing enables them to engage in greater information elaboration and form more certain expectations (Goossens, 2003). Furthermore, the generated high levels of certainty could foster resistance to subsequent negative persuasion. These findings can help tourism marketers to recognize the characteristics of each Web site feature which can efficiently stimulate potential customers' mental imagery processing and lead to affect their positive attitude toward tourism products.

Finally, this study releases important implications regarding individual differences in mental imagery processing in terms of visualizer or verbalizer. Even though the results of this study did not find a moderator relationship between imagery-evoking Web site features and moderator variables such as verbalizer or visualizer, it could claim that there are individual differences in mental imagery processing. Among the imagery-evoking Web site features, verbally based message elements such as

narratives or some episodes or just descriptions of destinations can appropriately appeal to verbalizer customers, whereas visually based Web site features such as pictures, 3-Ds, and videos could be efficient advertising for visual customers. Thus, it is essentially important for tourism marketing organizations to make an effort to explore their target market's precise needs, and then personalize contents on the Web site to fit the target market's style.

Limitations of the Study

This study aimed to explore the effectiveness of imagery-evoking Web site features on imagery processing, and to examine how the generated mental imagery influences a consumer's favorable attitude formation for a destination. As with any research, the study should be considered in light of its limitations.

First, the choice of pictures or sounds, or manipulations of the narrative text might not be enough to encourage subjects to have a high level of mental imagery processing. Especially, in terms of narrative manipulation, it could be assumed that the experimental design probably did not successfully manipulate the storyboard stimulus so that the participants could not fully engage in the narrative. Furthermore, the mixture of modality conditions might compromise the mental imagery processing. For example, in the narrative text * picture* sound experimental condition, while a subject is reading the text, he/she needs to listen to sound and simultaneously look at the rotating pictures. These conditions might compete with each other, thus, distracting the subject's focused attention, and accordingly lead to a low level of mental imagery processing.

Second, using just a beach destination for this experiment may constrain the generalizability of the results found in this study. The use of a broader array of tourism products such as hotels, events and festivals, and other destinations can generate different results of mental imagery processing.

Third, the use of student subjects also can be limiting due to the constraints on the generalizability of the results obtained in this study. Even though it can be assumed that the underlying mental imagery processing may be the same for any human subjects, the use of student sampling may influence research results since imagery processing can vary in terms of age. In other words, the students can be different from older people, depending on their experience or proficiency in interpreting information (James & Sonner, 2001). Moreover, when students process tourism information, their interests in the information and their purchasing decisions can be quite different from older people.

Suggestions for Future Research

This study can be extended to more research regarding varieties of imagery-evoking features and more investigation of mental imagery processing.

First, for this study, imagery-evoking Web site features were limited to narrative text, pictures, and sounds. Besides these features, future research should pay more attention to various features that can be applied to destination Web sites. For example, it may be interesting to investigate how interactive or customized features such as an interactive map or chatting with travel experts on the Web site influence mental imagery processing. On the other hand, just presenting pictures to subjects without any other

conditions, or pictures with narration in the form of audio instead of narrative text can result in a different level of mental imagery. Also, varying the length of the narratives and the quality of sound might produce different results. Additionally, instructions to imagine have been widely tested for evoking mental imagery processing and can be a subject for future research as they have not been tested in online environments.

Second, this study tested moderator variables such as visualizer or verbalizer, which can affect mental imagery processing. In addition to an individual's preferred cognitive style, the level of a customer's involvement, past experience, and/or different goals when looking at the Web site can become the moderator variables. For example, a customer's hedonic or utilitarian goals may be included to measure the effects of mental imagery processing induced by pictures and narratives.

Third, the degree of imagery produced by each of the stimuli was measured using the scale developed by Miller, Hadjimarcou, and Miciak (2000). Even though this scale has been found to be improved compared to previous imagery scales (e.g., Babin & Burns, 1998; Ellen & Bone, 1991; Miller & Marks, 1997), further refinement of the measurement instrument is necessary.

Fourth, among the imagery-evoking features, this study explores the effects of narratives on the Web site through traditional computers. However, Fogg, Booker and Don (2004) find that recently developed mobile phones are a more compelling platform for narratives. They claim that mobile phones are highly personal devices, thus people are more likely to have experience content from those phones in a way that is more personal and more influential than content from a computer. Given that people are more receptive

to persuasive messages through mobile phones, it will be valuable to study mental imagery processing while using these other types of platforms.

Fifth, the current study explored the effect of the narratives on mental imagery processing; alternatively, narratives can be replaced by a story as the stimulus to evoke mental imagery. While narratives consist of a series of events in context over time, story encompasses a variety of different factors and longer content than narratives. Four story elements are 1) Message; 2) Conflict; 3) Characters; and, 4) Plot (Fog, Budtz, & Yakaboylu, 2003). These elements can be mixed, matched and applied in various ways to the context in which the story is defined and expressed. Given the difference between story and narratives, it would be interesting to discover how story differently evokes mental imagery processing compared to narratives.

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APPENDIX A
SCALES FOR MEASURING MENTAL IMAGERY

APPENDIX B
SCALES FOR MEASURING VISUALIZER VERBALIZER
QUESTIONNAIRES I AND II

Verbalizer Questionnaire (VVQ) by Kirby, Moore, and Schofield (1988)

	Strongly Disagree						Strongly Agree
1. I enjoy doing work that requires the use of words	1	2	3	4	5	6	7
2. I enjoy learning new words	1	2	3	4	5	6	7
3. I can easily think of synonyms for words	1	2	3	4	5	6	7
4. I read rather slowly	1	2	3	4	5	6	7
5. I prefer to read instructions about how to do something rather than have someone show me	1	2	3	4	5	6	7
6. I have better than average fluency in using words	1	2	3	4	5	6	7
7. I spend little time attempting to increase my vocabulary	1	2	3	4	5	6	7
8. I dislike word games like crossword puzzles	1	2	3	4	5	6	7
9. I dislike looking words up in dictionaries	1	2	3	4	5	6	7
10. I have a hard time remembering the words to songs	1	2	3	4	5	6	7
11. I don't believe that anyone can think in terms of mental pictures	1	2	3	4	5	6	7
12. I find illustrations or diagrams help me when I am reading	1	2	3	4	5	6	7
13. I have hard time making a "mental picture" of a place that I've only been to a few times	1	2	3	4	5	6	7
14. I seldom use diagrams to explain things	1	2	3	4	5	6	7
15. I like newspaper articles that have graphs	1	2	3	4	5	6	7
16. I don't like maps or diagrams in books	1	2	3	4	5	6	7
17. When I read books with maps in them, I refer to the maps a lot	1	2	3	4	5	6	7
18. The old saying that "a picture is worth a thousand words" is certainly true for me	1	2	3	4	5	6	7
19. I have always disliked jigsaw puzzles	1	2	3	4	5	6	7
20. I find maps helpful in finding my way around a new city	1	2	3	4	5	6	7

The Santa Barbara Learning Style Questionnaire (Mayer & Massa, 2003)

	Strongly Disagree						Strongly Agree
1. I prefer to learn visually	1	2	3	4	5	6	7
2. I prefer to learn verbally	1	2	3	4	5	6	7
3. I am a visual learner	1	2	3	4	5	6	7
4. I am a verbal learner	1	2	3	4	5	6	7
5. I am good at learning from labeled pictures, illustrations, maps and animations	1	2	3	4	5	6	7
6. I am good at learning from printed text.	1	2	3	4	5	6	7

APPENDIX C

SCALES FOR MEASURING ATTITUDE STRENGTH AND RESISTANCE

Please indicate your attitude toward to the destination you saw through the Website

How certain are you of your attitude about this destination?

Not at all _____: _____: _____: _____: _____: _____: _____: Extremely
Certain _____: _____: _____: _____: _____: _____: _____: Certain

How sure are you that your current impression of the destination is correct?

Not at all _____: _____: _____: _____: _____: _____: _____: Extremely
Sure _____: _____: _____: _____: _____: _____: _____: Sure

How good would the destination be for a pleasure trip?

Very Bad _____: _____: _____: _____: _____: _____: _____: Very Good

How positive would you say your impression of the destination is?

Very _____: _____: _____: _____: _____: _____: _____: Very
Negative _____: _____: _____: _____: _____: _____: _____: Positive

How much do you think you would like this destination?

Do not like it _____: _____: _____: _____: _____: _____: _____: Like it
at all _____: _____: _____: _____: _____: _____: _____: very much

How favorable is your impression of the destination?

Very _____: _____: _____: _____: _____: _____: _____: Very
Unfavorable _____: _____: _____: _____: _____: _____: _____: Favorable

APPENDIX D
DESTINATION WEBSITE STUDY

The screenshot shows the official website of Merian Island. The browser window title is "The Official Website of Merian Island - Internet Explorer provided by Dell". The address bar shows the URL: http://list.rpts.tamu.edu/projects/LeMerian/Le_Merian/index_Eps.html. The website features a navigation menu with "Airport Information", "Accommodation", "Travel Agents", and "Other Services". The main content area includes a large aerial photograph of Merian Island, a sidebar with "Destination Merian Island... a Tropical Paradise" and "Merian Info" (Fast facts, Geography, History, Culture, Arts and Craft, Music & Dance, People, Climate), and a "Merian Island" section with descriptive text. A "Related Links" section includes "Ministry of Tourism" and "Local Weather Update". The footer contains copyright information: "© 2008. Merian Island Tourism Promotion Board. All rights reserved. Design by The Official Website of Merian Tourism".

Expository Text × Pictures × Sound

This screenshot is similar to the one above, showing the same website layout. However, the main image is a ground-level view of a wooden pier extending into the turquoise water of a lagoon, with palm trees and buildings visible in the background. The rest of the page content, including the navigation menu, sidebar, and footer, remains identical to the previous screenshot.

Expository Text × Pictures



Expository Text × Sounds



Expository Text Only

The screenshot shows a web browser window displaying the official website of Merian Island. The browser's address bar shows the URL: http://list.rpts.tamu.edu/projects/LeMerian/Le_Merian/index_Np0.html. The website features a navigation menu with links for "Airport Information", "Accommodation", "Travel Agents", and "Other Services". A sidebar on the left lists categories under "Merian Info": "Fast facts", "Geography", "History", "Culture", "Arts and Craft", "Music & Dance", "People", and "Climate". The main content area is titled "Merian Island" and contains a large, vibrant aerial photograph of the island's lagoon and white-sand beaches. Below the photo is a paragraph of narrative text describing the travel experience. To the right of the text, there are "Related Links" for the "Ministry of Tourism" and a "Local Weather Update" link. The footer of the page includes the copyright notice: "© 2008. Merian Island Tourism Promotion Board. All rights reserved. Design by The Official Website of Merian Tourism".

Narrative Text × Pictures × Sounds

This screenshot is identical to the one above, showing the same website layout and navigation. However, the main image is a smaller photograph of a wooden pier extending into the turquoise water of the lagoon, with palm trees visible in the background. The narrative text and other elements of the page remain the same. The footer text is also consistent: "© 2008. Merian Island Tourism Promotion Board. All rights reserved. Design by The Official Website of Merian Tourism".

Narrative Text × Pictures



Narrative Text × Sounds



Narrative Text Only

APPENDIX E

NEGATIVE DESTINATION REVIEW & PRE-TEST

I chose to visit this island for my Christmas holiday. Overall, I was rather disappointed. First of all, this place was too crowded for me during the peak holiday season and it was incredibly humid. Due to the weather, I even saw a few mosquitoes in my over-water bungalow. Additionally, there was no shopping on the island. One had to commute by boat to the mainland for shopping and the transportation fee was quite steep. In general, I found the destination to be rather expensive and not up to my standards. Everything from taxis, soft drinks, to excursion fees for fishing and rafting were just beyond any sense of the word reasonable. The island looked very pretty and the water was indeed turquoise but in some areas I didn't find it to be very clean. Many of the local people there do not speak English, which made getting around quite difficult. Accordingly, I do not recommend this destination. For the amount of money you have to spend, you certainly deserve way more.

1. How credible is this review?

**Not at All
Credible**

1

2

3

4

5

6

**Very
Credible**

7

2. How negative is this review?

**Not at all
Negative**

1

2

3

4

5

6

**Very
Negative**

7

3. Would you still go to this destination after reading the review?

**Definitely
would
NOT go**

1

2

3

4

5

6

**Definitely
would go**

7

APPENDIX F
DESTINATION WEBSITE STUDY

DESTINATION WEBSITE STUDY - Internet Explorer provided by Dell

http://www.surveymonkey.com/s.aspx?sm=T99OUVZhI2k

Google

DESTINATION WEBSITE STUDY

Home Feeds (1) Print Page Tools

DESTINATION WEBSITE STUDY

1 / 10 10%

We would like to obtain your opinion regarding the travel Website you just looked at.

*** 1. What is your subject number? Please fill in your number.**

*** 2. Did the Website you reviewed show photographs of the island?**

Yes

No

*** 3. Did the Website you reviewed have sound?**

Yes

No

Next >>

Destination Web Study 1 /10

DESTINATION WEBSITE STUDY - Internet Explorer provided by Dell

http://www.surveymonkey.com/s.aspx?sm=T99OUVZh2ki

DESTINATION WEBSITE STUDY

Home Feeds Print Page Tools

***5. How did the Website make you feel?**

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hopeful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stimulated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frenzied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wide Awake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aroused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<< Prev Next >>

Destination Web Study 2 /10

DESTINATION WEBSITE STUDY - Internet Explorer provided by Dell

http://www.surveymonkey.com/s.aspx?sm=T99OUVZhI2ku

DESTINATION WEBSITE STUDY

3 / 10 [REDACTED] 30%

*** 6. Did you feel that you were virtually visiting the destination while looking at the Website?**

1 Not at all 2 3 4 5 6 7 Very Much

*** 7. Did you get immersed in the task while looking at the Website?**

1 Not at All 2 3 4 5 6 7 Very Much

*** 8. How easy was it for you to concentrate on the content presented on the Website?**

1 Not at all Easy 2 3 4 5 6 7 Very Easy

*** 9. How much do you agree or disagree with the following statements:**

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
In my mind I was at the tropical destination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pictured myself being there	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All my thoughts were about the destination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At least for a moment, I forgot that I was participating in an experiment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My attention was focused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 10. Overall, how would you rate the attractiveness of the Website?**

1 Not at all Attractive 2 3 4 5 6 7 Extremely Attractive

*** 11. To what extent would you recommend this Website to others?**

1 Not at all Recommended 2 3 4 5 6 7 Strongly Recommend

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Destination Web Study 3 /10

DESTINATION WEBSITE STUDY - Internet Explorer provided by Dell

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DESTINATION WEBSITE STUDY

Home Feeds Print Page Tools

DESTINATION WEBSITE STUDY

4 / 10 ██████████ 40%

***12. Describe whether any of the following happened while you reviewed the Website.**

While looking at the travel Website....

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
A lot of images came to my mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Many different images came to my mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I experienced various images in my mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I imagined tastes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I imagined scents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***13. Did you experience any of the following?**

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
Vivid imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharp imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intense imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Well-defined imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasant imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nice imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Likable imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positive imagery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Destination Web Study 4 /10

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DESTINATION WEBSITE STUDY

5 / 10 50%

The following questions will ask you about your attitude toward to the destination.
Please indicate your attitude toward to the destination you saw through the Website.

*** 14. How good would the destination be for a pleasure trip?**

Very Bad(1) 2 3 4 5 6 Very Good(7)

*** 15. How positive would you say is your impression of the destination?**

Very Negative(1) 2 3 4 5 6 Very Positive(7)

*** 16. How much do you think you would like this destination?**

Do not like it at all (1) 2 3 4 5 6 Like it very much (7)

*** 17. How favorable is your impression of the destination?**

Very Unfavorable (1) 2 3 4 5 6 Very Favorable (7)

*** 18. How certain are you of your attitude toward this destination?**

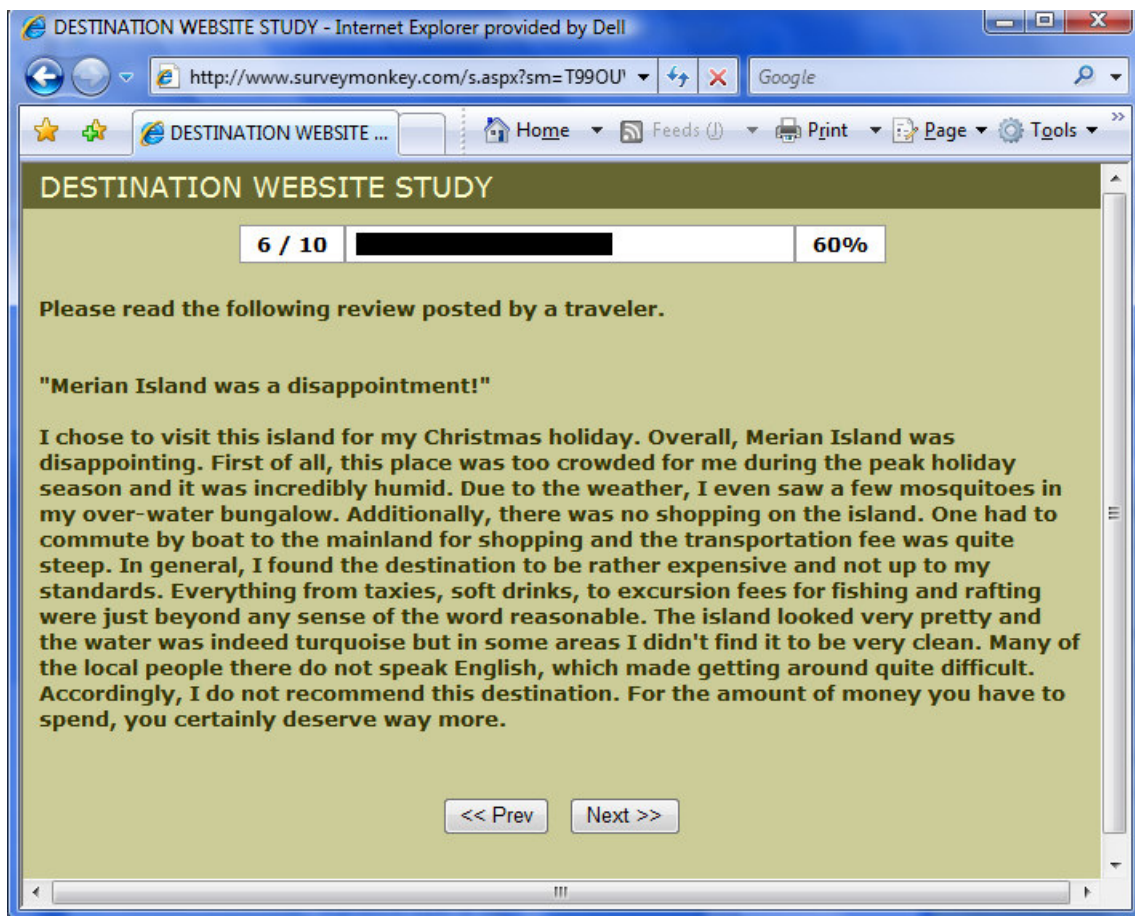
Not at all certain (1) 2 3 4 5 6 Extremely certain(7)

*** 19. How sure are you that your current impression of the destination is correct?**

Not at all sure(1) 2 3 4 5 6 Extremely Sure(7)

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Destination Web Study 5 /10



Destination Web Study 6 /10

DESTINATION WEBSITE STUDY - Internet Explorer provided by Dell

http://www.surveymonkey.com/s.aspx?sm=T99OUVZh Google

DESTINATION WEBSITE ST... Home Feeds(?) Print Page Tools

DESTINATION WEBSITE STUDY

7 / 10 ██████████ 70%

Now that you have read the destination review, please tell us again what your attitudes toward the destination are.

*** 20. How good would the destination be for a pleasure trip?**

Very Bad(1) 2 3 4 5 6 Very Good(7)

*** 21. How positive would you say is your impression of the destination?**

Very Negative(1) 2 3 4 5 6 Very Positive(7)

22. How much do you think you would like this destination?

Do not like it at all (1) 2 3 4 5 6 Like it very much (7)

23. How favorable is your impression of the destination?

Very Unfavorable (1) 2 3 4 5 6 Very Favorable (7)

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Destination Web Study 7 /10

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DESTINATION WEBSITE STUDY

8 / 10 80%

YOU ARE ALMOST DONE!!!

*** 24. The following questions aim to determine the style or manner you use when carrying out mental tasks. These statements attempt to discover characteristics of the way you think in various situations. Please answer each question as carefully and honestly as you can.**

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
I enjoy doing work that requires the use of words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy learning new words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily think of synonyms for words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I read rather slowly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to read instructions about how to do something rather than have someone show me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have better than average fluency in using words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend little time attempting to increase my vocabulary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I dislike word games like crossword puzzles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I dislike looking words up in dictionaries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a hard time remembering the words to songs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't believe that anyone can think in terms of mental pictures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find illustrations or diagrams help me when I'm reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a hard time making a "mental picture" of a place that I've only been to a few times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I seldom use diagrams to explain things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like newspaper articles that have graphs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like maps or diagrams in books.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I read books with maps in them, I refer to the maps a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The old saying "A picture is worth a thousand words" is certainly true for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have always disliked jigsaw puzzles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find maps helpful in finding my way around a new city.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Destination Web Study 8 / 10

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DESTINATION WEBSITE ... Home Feeds (1) Print Page Tools

DESTINATION WEBSITE STUDY

9 / 10 **90%**

***25. The following statements attempt to discover characteristics or style of the way you think in learning situations. Please answer each question as carefully and honestly as you can.**

	Strongly Disagree (1)	2	3	4	5	6	Strongly Agree (7)
I prefer to learn visually.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to learn verbally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am a visual learner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am a verbal learner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at learning from labeled pictures, illustrations, maps and animations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at learning from printed text.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Destination Web Study 9 /10

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DESTINATION WEBSITE ST...

Home Feeds Print Page Tools

DESTINATION WEBSITE STUDY

10 / 10 100%

This last section of the survey asks some general questions about you.

* 26. Are you a US citizen?

* 27. You are an....

* 28. What is your major?

* 29. How would you describe yourself in terms of your knowledge and familiarity with the Internet? Please click a button for each statement

	Strongly Disagree(1)	2	3	4	Strongly Agree(5)
I am very skilled at using the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to find what I want on the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know a lot about using the Internet than most people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 30. I am...

* 31. My age is...

* 32. Are you married?

* 33. Which of the following best describes your racial or ethnic background?

<< Prev Done >>

Destination Web Study 10 /10

VITA

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- Publication: Gretzel, U., Kang, M. H., & Lee, W. J. (in press). Differences in consumer-generated media adoption and use: A cross-national perspective. *Journal of Hospitality and Leisure Marketing*. To be published 2008.
- Lee, W. J., & Gretzel, U. (under review). Tourism student's mental imagery ability: Implications for multimedia learning environments. *Journal of Teaching in Travel and Tourism*.
- Lee, W. J., & Gretzel, U. (2008). Use and perceived usefulness of destination Website features. 13th Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism, Orlando, Florida, January 3-5, 2008.