MOTIVATIONAL DIFFERENCES IN THE EFFECTS OF STRUCTURAL AND OUTCOME COMPLEXITY ON CONSUMERS' WEB SITE AND BRAND EVALUATIONS

by

REETIKA GUPTA

A dissertation submitted to the Graduate Faculty in Business
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Abstract

MOTIVATIONAL DIFFERENCES IN THE EFFECTS OF STRUCTURAL AND OUTCOME COMPLEXITY ON CONSUMERS' WEB SITE AND BRAND EVALUATIONS

by

Reetika Gupta

Adviser: Professor Stephen J. Gould

As marketers spend significantly to enhance the aesthetics and sophistication of consumer experiences, they are increasing the complexity of interactive consumption environments. However, little is known about how consumers react to such complexity, in terms of their evaluations. In this dissertation we examine two specific types of complexity: 1) *Structural Complexity* is defined as the number of distinct cues at the web site that consumers have to process, and 2) *Outcome Complexity* is defined as the abstractness of icons and symbols that consumers use to navigate the web site. This dissertation focuses on consumer motivations, to analyze how and why complexity affects consumer reactions at web sites.

We posit that distinct consumer motives (goal directed vs. experiential) will interact with the level (low, moderate, high) and type (structural, outcome) of complexity to determine consumer evaluations of the web site and brand. It is proposed that the congruency between the complexity level and the needs of specific motives will drive the favorable evaluations toward a web site. Experiential consumers who are looking for an engaging experience will find the moderate complexity web site stimulating and challenging, triggering favorable evaluations; while the goal directed consumers who are seeking

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efficiency will find the low complexity web site ideal for pursuing their goal in a linear manner. In addition, we predict that due to the conceptual nature of the end goal (seeking specific information), individuals in a goal directed motive display higher sensitivity for low outcome complexity. On the other hand, individuals with an experiential motive are stimulus driven, and more focused on the elements of the stimulus that make the process of browsing engaging and stimulating, displaying higher sensitivity for moderate structural complexity. The results of two experiments support these hypotheses.

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Hem for taking care of my son until the wee hours of the morning while I toiled. I would like to dedicate this piece of work to the memory of my father and brother, who have watched on and been there with me always. I would like to thank Baba for all his prayers and blessings through this endeavor. Finally, I would like to thank all my colleagues, family and friends for their faith and good cheer!

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CHAPTER 1

INTRODUCTION

As marketers spend significantly to enhance the aesthetics and sophistication of consumer experiences, they are increasing the complexity of interactive consumption environments (e.g. online and offline retail stores, interactive television, and mobile devices). For example, a recent UC- Berkeley survey shows that over the last three years, the average web page size has grown from 10-20 Kbytes to 605 Kbytes (including newer formats such as images, audio, movies and animations). Similarly, with the introduction of novel visual interfaces (e.g. interactive "smart spaces", blogs), complexity is on the rise even in traditional offline stores. However, little is known about how consumers react to such complexity, in terms of their evaluations. This dissertation focuses on consumer motivations, to analyze how and why complexity affects consumer reactions in interactive consumption environments; specifically online environments (e.g. web sites). We chose to examine the relationships within an online context, as internet marketers have a wider array of media tools to choose from to create a complex web site, which offers a compelling experience (Coyle and Thorson 2001; Schlosser 2003). We examine two specific types of complexity. *Structural Complexity* is defined as the number of distinct cues at the web site that the consumer has to process. These cues represent distinct information categories and presentation formats such as audio, video, animation etc. Therefore, with the increase in the number of cues, structural complexity of the web site is increased. *Outcome Complexity* is defined as the abstractness of icons and symbols that consumers use to navigate the web site. For example, due to technology such as *roll*

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over mouse, icons at a web site may appear to be abstract, not allowing the consumer to form clear outcome predictions. Therefore, with the increase in the number of abstract icons that the consumer encounters at a web site, outcome complexity is increased. While these types of complexity maybe more memorable, communicate more information and are likely to engage consumers, they can often make the web site difficult to navigate and use. In this research, we investigate if complexity in the form of multiple cues and abstract icons will lead to negative or positive outcomes at a web site.

Extant research on complexity advocates two divergent views of complexity. Research on stimulus complexity (Berlyne 1960, 1970) suggests that (moderately) complex environments will evoke the most favorable evaluations since it creates a stimulating environment. On the other hand, according to the cognitive load theory (Sweller 1988; Sweller, Chandler, Tierney, and Cooper 1990) complexity can be perceived as superfluous and inefficient, leading to unfavorable evaluations. This paper attempts to address this conflict by focusing on specific individual motives. There is research to suggest that motives such as *goal directed* (focused on the end goal) and *experiential* (focused on the experience) persuade individuals to adopt separate mechanisms that guide evaluations (Hoffman and Novak 1996; Rodgers and Thorson 2000; Schlosser 2003), implying that individuals belonging to these two different motive groups will have varying outcomes to complexity in an online environment.

Through a set of two studies, we examine consumers' evaluations that stem from complexity in the environment. We adopt a programmatic research approach where at the outset (in Study 1) we use an existing conceptualization of complexity, structural

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complexity. In Study 1, we compare the effects of structural complexity on site and brand evaluations across individuals with goal directed and experiential motives. We show that individuals looking for specific information (goal directed) may find the structurally complex environment superfluous and inefficient in their goal pursuit, while the individuals looking for entertainment (experiential) may find the structurally complex environment engaging enough to support their goal, resulting in higher evaluations. In Study 2, we introduce the second type of complexity, outcome complexity to examine the interplay between the two complexities in influencing consumer reactions. More specifically, we attempt to examine which type of complexity assumes prominence across the two motives.

This research has theoretical and practical implications. From a theoretical perspective, this research attempts to resolve extant findings of complexity. This research focuses on the two competing processes that may characterize complexity (stimulation and load). By introducing the research on motivation, it provides insights into how and why these two processes manifest, leading to the varying consumer reactions. Further, this research examines the effects of complexity within an expanded scope, where complexity can be of two types, structural and outcome. This framework could be used to understand other kinds of complexity (e.g. product complexity, decision complexity) experienced in an online environment.

From a practical standpoint, it provides insights into how complexity may stimulate or weaken brand image. The results of this research suggest that if marketers can measure the individual motives at the web site, it is possible to tailor the complexity

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in the environment so that it best suits individual motives, and results in favorable consumer reactions of the brand and web site.

The rest of the paper is organized as follows. In Chapter 2 we present extant research on complexity in an online environment. In Chapter 3 we present extant research on motivation. In Chapter 4, we describe the moderating role of motives in structural complexity effects. We then describe and report results of Study 1. In Chapter 5, we assess the combined effects of structural and outcome complexity. We then describe and report results of Study 2. In Chapter 6 we discuss the theoretical and practical implications of the findings and present the limitations and future research in Chapter 7. The theoretical framework of this research is presented in Figure 1.

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CHAPTER 2

COMPLEXITY IN AN ONLINE ENVIRONMENT

Research on Complexity

In marketing, there have been numerous studies that have conceptualized complexity to investigate its effects on evaluations and intentions. In the sub domain of advertising, researchers have focused on *visual complexity* (Cox and Cox 1988; Morrison and Dainoff 1972) --- the number of heterogeneous objects and their irregularity; *lexical complexity* (Chamblee, Gilmore, Thomas, and Soldow 1993) --- readability level of the ad as a function of the different textual elements; *synctatic complexity* (Bradley and Meeds 2002; Lowrey 1998) -- grammatical transformation as a function of voice and particle movement; *message complexity in television advertisements* (Thorson, Reeves, and Schleuder 1985) --- number of visual features (edits, scene changes, superimposed images, zooms etc) and number of audio units (count of linguistic propositions). In product related studies, researchers have focused on *brand logo complexity* (Janiszewski and Meyvis 2001) --- the complexity and familiarity of brand logo characteristics; *product design complexity* (Cox and Cox 2002) --- the extent of heterogeneity and irregularity of the shapes and fabrics of the product design. Internet researchers have extended this structural view to manipulate *web page complexity* by colors and movement (Bruner and Kumar 2000), number of links, number of graphics, home page length and animation (Geissler, Zinkhan, and Watson 2001). Researchers in a retail environment also uphold this structural view where they contend that physical design and décor elements have a significant impact on consumer behavior (Baker, Parasuraman, Grewal,

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and Voss 2002; Bitner 1992). In addition, researchers examining retail store environments have referred to complexity as the uncertainty in the environment (Donovan and Rossiter 1982; Donovan, Rossiter, Marcoolyn, and Nesdale 1994). Some researchers who have investigated c*omplexity in products and product choice tasks* (Dhar 1997a, 1997b; Swait and Adamowicz 2001) focus on how individuals have to adapt to the task characteristics.

Most of this research in complexity has their roots in Berlyne's (1960) stimulus complexity. The stimulus-based studies have defined complexity in terms of an individual's perception of the *structure* and *visual pattern* of the stimuli (Berlyne 1960, Berlyne, Craw and Salapatek 1963). Berlyne (1960) identified several structural elements of stimulus complexity including amount and heterogeneity of elements, their arrangement and incongruity. In summary, he posits that individuals view a stimulus to be more complex as the number of distinguishable elements is increased.

However, the extant studies above focus only on the structural aspects of the environment ignoring the interactive aspect, which is central in an online context. *Icons or hyperlinks* in online environments allow individuals to interactively access information and navigate through the web site (Hoffman and Novak 1996). In an offline setting, Bitner (1992) highlighted the importance of signs and symbols as explicit and implicit communicators that can be used for directional purposes. In an online setting, researchers have asserted that the consumer's offline experiences inform their online experience and help form expectations of the outcomes (Coyle and Gould 2002). While such symbolic communication serves as an interactive tool to navigate through the environment, they

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can be probabilistic, as sometimes the abstract nature of the signs and symbols may not allow the consumer to form clear predictions of the navigational outcomes.

In order to develop a holistic framework, we adapt Wood's (1986) task complexity view to define the types of complexity in an online context. This task-based framework is especially important for the online environment where consumers navigate through the environment to mainly fulfill various task goals such as exploring, being entertained, seeking information, communicating, and purchasing a product (Agarwal and Venkatesh 2002; Hoffman and Novak 1996; Novak, Hoffman, and Duhacheck 2002). Wood (1986) contends that complexity arises from the cues or the attributes of the stimulus that the individuals must process while performing a task.

Online tasks, ranging from browsing (e.g. navigating using hyperlinks) and searching (e.g. looking for specific information) to transacting (e.g. buying) are inherently information processing tasks where individuals interact with the cues present at the web site. The cues at web site may be structure based (i.e. information categories, text, animation, graphics) or navigation based (i.e. icons or hyperlinks) present at web site. We extend Wood's definition of complexity to theorize that the multitude of cues and the abstractness of icons are central to the understanding of web site complexity. Based on Wood's multi dimensional conceptualization, we describe the two types of web site complexity: *structural* and *outcome*.

Structural Complexity

Based on Wood's (1986) definition, structural complexity arises from the number of distinct cues that must be perceived and processed while performing an online

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task. Berlyne (1960) too advocates a similar view where stimulus complexity is characterized by the multitude of structural elements. Internet researchers have extended this structural view to manipulate the complexity of a web page by increasing the various structural elements; colors and movement (Stevenson, Bruner, and Kumar 2000), number of links, number of graphics, home page length and animation (Geissler et al. 2001).

The structural cues comprise the different information categories presented (Agarwal and Venkatesh 2002; Palmer 2002; Te'eni 1989) and the varied formats used to present the information including text, images, video, audio, animation (Agarwal and Venkatesh 2002; McKinney, Yoon, and Zahedi 2002; Palmer 2002). With greater density of these structural cues (e.g. number of information categories, length of text, number of graphics, animation, colors and video) at a web site, the structural complexity of a web site is increased. Figures 2a and 2b illustrate low and high structural complexity web pages. The low structural complexity web page has very few information categories, graphics, videos, and colors on the web page. On the other hand, the high structural complexity page is dense with many information categories, pictures, video, graphic and animation.

Outcome Complexity

Outcome complexity occurs when cues in the task environment do not allow the individual to clearly predict the action-outcome relationship (Wood 1986). We adapt this definition to conceptualize outcome complexity at a web site. We theorize that when icons or hyperlinks are abstract and ambiguous in nature, individuals are not certain of

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the action-outcome relationships (Agarwal and Venkatesh 2002; McKinney et al. 2002), increasing the outcome complexity of the online environment.

The icons or hyperlinks that connect different web pages enable users to construct interpretations and expectations, and navigate effectively through the web site (Coyle and Gould 2002). The extent, to which icons depict things that people are already familiar with, is significant in determining the comprehension and predictability of icons used in online environments. To this end, the use of metaphors in icons have been adopted widely because it allows the individual to form expectations through a process of analogical transfer, transferring information from the familiar to unfamiliar (Gregan-Paxton and John 1997). Accordingly, to facilitate the transfer of information, researchers propose the use of realistic metaphors (Steuer 1992) or natural mapping strategies (Norman 1990), whereby the individual can form expectations of the outcomes. For example, when real world objects are represented in an icon (i.e. the icon is concrete), individuals are likely to find it more meaningful and can easily make links between what is shown in the icon or hyperlink and the function it is supposed to represent (McDougall, De Bruijn, and Curry 2000). However, due to technological innovations, and in an effort to make the web interfaces novel, hyperlinks used today at web sites are becoming increasingly abstract, not allowing the individual to form expectations of the corresponding destination.

Figures 3a and 3b illustrate icons that depict the low and high outcome complexity at a shopping web site. A concrete icon that resembles a *shopping cart* in a real store, represents a low outcome complexity scenario where individuals can form

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clear predictions of the web page they will be taken to, if they clicked on such an icon. On the other hand, an abstract icon such as a *line of interlocked shopping carts*, represents a high outcome complexity scenario, where individuals cannot clearly interpret the icon. An abstract icon does not allow individuals to predict the web page they will be taken to, if they clicked on such an icon. Thus, high outcome complexity, characterized by an unintelligible link does not give any previews of the destination or provide any knowledge about the interrelationships of the information units (Oinas-Kukkonen 1998). In other words, abstract icons increase the outcome complexity of the web site and concrete icons reduce the outcome complexity of the web site.

We have outlined above the two types of complexity, structural and outcome, which individuals encounter in an online environment. Extant research indicates that two opposing mechanisms underlie the relationship between complexity and evaluations. According to the learning theorists (Sweller 1988; Sweller et al. 1990), structural complexity characterized by the multitude of differentiated cues may lead to a split attention effect, imposing a cognitive strain on the individual. On the other hand, Berlyne (1960) and Steuer (1992) posit that a moderate structurally complex environment characterized by the varied ways of presenting information could be viewed as a representationally rich environment, where the individual could have an engaging experience. Similarly, it is unclear whether a web site high on outcome complexity would engender positive or negative reactions among individuals. Coyle and Gould (2002) have shown that when individuals cannot form expectations, it impedes consumers from following their trajectories toward a goal, leading to negative evaluations. Therefore, a

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web site high on outcome complexity, characterized by abstract icons or hyperlinks poses an impediment to the navigation experience of the individual. This is consistent with the schema literature that proposes that unresolved ambiguity elicits more negative affect than congruous situations (Meyers-Levy and Tybout 1989). However, schema theory also suggests that the incongruity (moderate) maybe "interesting and positively valued" (Mandler 1982) because individuals find the "process of resolving incongruity rewarding" (Meyers-Levy, Louie, and Curren 1994; Smith 2003). Accordingly, the abstract icon representing an incongruous situation may offer an opportunity to the individuals to resolve the incongruity, resulting in a positive engaging experience for the individual.

It is therefore important to identify the moderating factor that determines which of the two opposing mechanisms gain prominence. Wood (1986) contends that the person-task input interaction determines the effects of complexity. In other words, the individual's task context will determine whether complexity is perceived as interesting and valued or superfluous and inefficient. Accordingly a potential moderator may be the nature of motives pursued in an online environment—goal directed or experiential (Hoffman and Novak 1996; Schlosser 2003). Goal directed and experiential motives differ significantly in terms of the level of cognitive effort that the individuals are willing to expend in information processing, as well as the level of challenge they seek in the process of navigation (Hoffman and Novak 1996). Individuals with a goal directed motive such as searching, place more effort on reaching the end goal and devote less cognitive effort to undirected exploration. On the other hand, individuals with an

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experiential motive such as browsing focus on the process of exploration. Thus, it is likely that the relationship between complexity and evaluations at a web site may vary across goal directed and experiential motives.

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CHAPTER 3

RESEARCH ON MOTIVATION

The contrast between *goal directed* and *experiential* motives has been a pervasive topic in consumer behavior. Known by various terminologies, these contrasting constructs have been studied extensively in various domains, ranging from instrumental vs. ritualized orientations to media (Li and Bukovac 1999; Rubin 1984; Rubin and Perse 1987); extrinsic vs. intrinsic consumption motivations (Bloch and Richins 1983; Celsi and Olsen 1988; Davis, Bagozzi, and Warshaw 1992); situation vs. enduring involvement in consumption (Bloch, Sherrell, and Ridgway 1986; Richins and Root-Shaffer 1988; Wolfinbarger and Gilly 2001); directed vs. non directed search (Biehal and Chakravarty 1983; Bloch et al. 1986); goal directed vs. oriented to navigational choices (Deci and Ryan 1985; Hoffman and Novak 1996); hedonic vs. utilitarian attitudes (Batra and Ahtola 1990), and goal directed vs. experiential shopping behaviors (Babin, Darden, and Griffin 1994).

Recently, these motives have received attention in online environments (Hoffman and Novak 1996; Novak et al. 2003; Schlosser 2003; Wolfinbarger and Gilly 2001). Using the Internet for its informative value and purchase utility, such as directly searching for information to complete a task or to reduce purchase uncertainty are goal directed motives; whereas experiential motives are relatively unstructured and recreational in nature. Each of these motives embodies a unique set of information and information processing needs (Agarwal and Venkatesh 2002) that persuade individuals to adopt separate mechanisms that guide attitudes and purchase intent (Hoffman and Novak

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1996; Novak et al. 2003; Schlosser 2003). This implies that individuals belonging to these two different groups will have varying perceptions of complexity, leading to distinct evaluations of the brand and the web site. See Table 1 for differences between these two motive groups.

A fundamental difference between a goal directed and experiential motive is the nature of orientation. An individual with a goal directed motive is outcome focused where s/he allocates effort to activities that are a means to achieving an end, while an individual with an experiential motive is process focused where s/he allocates effort to activities where the process rather than realizing the end state is the reward (Deci and Ryan 1985). Most of the differences pertaining to their navigation patterns, attention to elements, and level of challenge permeate from this fundamental difference.

Navigation Patterns. Individuals with a goal directed motive have a clearly definable goal hierarchy (Bloch et al. 1986; Hoffman and Novak 1996; Novak et al. 2003), adopting the most efficient linear navigation routes. In contrast, individuals with an experiential motive are not guided by goals or outcomes, and adopt a non-linear, intuitive and spontaneous navigation route. Therefore, the individuals with a goal directed motive are focused on efficiently acquiring the information needed for the task, precluding them from enjoying other aspects of the environment, such as rhythm and metaphors used (Schlosser 2003), while the individuals with an experiential motive, due to their focus on the process, appreciate the engaging elements in the environment.

Attention to elements. Individuals with a goal directed motive desire limited elements competing for attention, as it is easier for them to select the next area for

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attention, helping them to gather information efficiently to pursue their end goal. However, individuals with an experiential motive are seeking to shift attention on a moment-to-moment basis so as to enjoy the process of browsing (Janiszewski 1998). In other words, individuals with a goal directed motive are "intentional and selective" and want exposure to specific content, while individuals with an experiential motive are "non – selective" and are more open to variegated information (Rubin and Perse 1987; Moe 2003)

Level of challenge. Finally, individuals with an experiential motive seek higher levels of challenge and show greater effort in processing challenging information. On the other hand, individuals with a goal directed motive consider challenge to be a deterrent in their main goal striving effort and do not want to expend effort in processing the challenging information (Wolfinbarger and Gilly 2001). In other words, incongruous elements at web site may instill the curiosity of individuals with an experiential motive, and provide them the positive challenge that they are seeing. On the other hand, such incongruous elements may appear to be a challenge to the individual with a goal directed motive.

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CHAPTER 4

STUDY 1:

MODERATING ROLE OF MOTIVES IN STRUCTURAL COMPLEXITY EFFECTS

The above differences suggest that complexity of the environment may vary in its relevancy to the individual's motive. We theorize that levels of complexity interact with the individual motives to impact the individual's web site and brand evaluations. Goal directed individuals will prefer a low structurally complex environment, which has limited information categories and fewer presentation formats, as it is easier to select the next area for attention, facilitating the scanning of specific goal relevant information. However, the experiential individuals do not prefer such an environment, as there is no incentive to shift attention on a moment-to-moment basis (Janiszweski 1998), thereby not allowing them to enjoy the browsing process.

Conversely, a moderate structurally complex web site, characterized by a multitude of cues prevents the individuals with a goal directed motive to pursue their specific search goal in an efficient and linear manner, while experiential individuals will find the multitude of cues in a moderate structurally complex web site stimulating as it engages them in a moment-by-moment activity in the environment (Janiszweski 1998).

Therefore, congruence is achieved for the goal directed motive at the low structurally complex web site as the low complexity level allows individuals with a goal directed motive to procure goal relevant information efficiently. Conversely, congruence is achieved for the experiential motive at the moderate structurally complex web site, as

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the moderate complexity level creates a stimulating and engaging environment for individuals with an experiential motive.

Resource matching views of ad processing (Peracchio and Meyers-Levy 1997) suggests that when there is congruence between the resources and task requirements, attitudes are optimal. On the other hand attitudes suffer in incongruent situations (when the available resources far exceed the resources needed to process a message or the resources required to process a message are higher than the resources available for the task). Therefore, the match between the low (moderate) structural complexity level and the goal directed (experiential) motive allow optimal processing of the web site, resulting in higher attitude levels while the mismatch between the low (moderate) structural complexity level and the experiential (goal directed) motive result in diminished attitudes.

We specifically look at the effects of complexity and motives on attitude toward the site and attitude toward the brand. The construct attitude toward the site (A_{site}) has recently gained prominence and resembles the construct A_{ad} (Chen and Wells 1999; Chen, Clifford, and Wells 2002). Researchers have found that attitude toward the brand (A_{Brand}) follow a similar pattern as A_{Site} (Luna, Peracchio, and DeJuan 2003).

H1: Motives will moderate the effect of the level of structural complexity such that:

i) In low structural complexity web sites, individuals with a goal directed motive will have more favorable A_{Site} and A_{Brand} than individuals with an experiential motive.

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ii) In moderate structural complexity web sites, individuals with an experiential motive will have more favorable A_{Site} and A_{Brand} than individuals with a goal directed motive.

However, at high structural complexity web sites, both individuals with goal directed and experiential motives experience a cognitive strain as they lack the resources needed to process the excessive number of information categories and presentation formats. Therefore, both these motives will display equally diminished attitudes at a high complexity web site.

H2: In high structural complexity web sites, there will be no significant difference in A_{Site} and A_{Brand} between individuals with goal directed and experiential motives.

In summary, structural complexity effects on attitude towards the web site and brand may be moderated by the type of motives that individuals have during their visit to the web site. H1 and H2 together, also have implications for the pattern of complexity-outcome relationships among the two motive types (see Figure 4). More specifically, the two competing processes (stimulation vs. load) stemming from complexity do play out, but in the two varying motive conditions. The inverted U shaped complexity - outcome relationship posited by stimulus complexity researchers occurs among individuals with an experiential motive, where the moderate level of complexity is the most preferred situation. The congruence between the needs of the experiential individual and the

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moderate level of structural complexity result in such favorable evaluations among experiential individuals. The negatively linear complexity-outcome relationship posited by cognitive learning theorists occurs among individuals with a goal directed motive, where the low level of complexity is the most optimal situation. The congruence between the needs of the goal directed individual and the low level of structural complexity result in such favorable evaluations among goal directed individuals.

Method

To test the hypotheses described in this research, a 3 (Low, Moderate or High Structural Complexity) x 2 (Goal directed or Experiential Motive) between-subject experiment was designed. We used 16 web sites to represent each of the three levels of complexity. Participants were randomly assigned to each of the three complexity conditions and were given one of the two task conditions, capturing the two distinct motives, goal directed and experiential. The nature of the tasks was adapted from research on goal directed and experiential motives (Novak et al. 2003) and object interactivity (Schlosser 2003). Subjects in the goal directed condition were instructed to go to the site with "the goal of efficiently finding something specific within that site." Those assigned to the experiential condition were instructed to "have fun, looking at whatever you consider interesting or entertaining." In order for goal directed and experiential individuals to have similarly heterogeneous information needs, what to look for was not specified in the goal directed condition. Instead, they could tailor their experience to match their own information or entertainment needs. A sample respondent in the goal directed condition visiting the Orbitz site wanted to look up the airfare to

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Mexico and the spring break specials available at the web site. Participants were asked to visit the site for 10 minutes (based on prior studies, Schlosser 2003), after which they completed a questionnaire.

Stimulus. Our selection of web sites representing high, medium and low levels of structural complexity proceeded through a series of steps. First, we randomly selected 150 websites from the Yahoo directory representing ten product categories: travel, music, entertainment, auction, news/media, computer hardware components, office software, auto and fertilizers. Using multiple stimuli (e.g. web sites) to represent the treatment cells decreases the likelihood of skewed results and potential confounds, and increases the robustness and generalizability of the results (Aaker 1997; Cox and Cox 2002).

Second, we classified the 150 web sites into low, medium and high levels of structural complexity based on objective metrics. The websites were evaluated by a Web Metrics software, on a variety of objective complexity measures based on web design literature (Bucy, Lang, Potter, and Grabe 1999; Fenton 1994; Nielsen 2000): average number of images, text headings, animated graphics, number of web pages, number of support tools (e.g. search function, site map, help feature) etc. An aggregate measure of structural complexity was computed to classify the 150 web sites into High Complexity (top 33.3. percentile: 50 web sites), Medium Complexity (middle 33.3 percentile) and Low Complexity (bottom 33.3 percentile). In each of the three complexity categories, we selected 16 web sites that clearly represented the low, moderate or high levels of structural complexity, yielding a total of 48 websites.

Third, we asked 24 experts (business professors, Ph.D. students and web

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professionals) to rate the complexity level of each of the 48 web sites using existing structural complexity measures (varied – not varied; cluttered – open; dense – sparse). Each web site was rated by 3 experts. Previous web evaluation studies have used expert ratings to strengthen web site metrics (Palmer 2002). There was a high correlation between the objective metrics of structural complexity and expert ratings for the 48 web sites ($r = 0.59$, $p<0.001$), confirming that the 16 web sites in each of the three levels of complexity adequately represented the low, moderate and high levels of complexity. See examples of the web sites in Table 3.

Participants. The sample consisted of 332 undergraduate students at a major eastern (170) and a major midwestern (162) university. Most of the subjects belonged to the 18-24 age-group (67%) and 57% of the subjects were male. 95% of the subjects had an experience of over three years of using the Internet and Internet usage of the subjects ranged from 4 to 10 hours per week.

Dependent Measures

Attitude Toward the Web site (A_{Site}) and Attitude Toward the Brand (A_{Brand}). The dependent measures were brand judgments --- 3 seven point scales measured attitude towards the web site (good—bad, favorable --- unfavorable, like --- dislike), and 3 seven point scales measured attitude towards the brand represented by the web site (good—bad, favorable --- unfavorable, like --- dislike). The scales were adapted from previous research which examined the effects of web site interactivity on evaluations (Coyle and Thorson 2001). The variable "attitude toward web site" had a coefficient alpha of .96 and

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the variable "attitude toward brand" had a coefficient alpha of .94 (see Appendix A). The questionnaire for Study 1 with all the measures is attached in Appendix C.

Background Variables. At the end of the study, participants were asked to indicate their age, gender, web site usage patterns and familiarity with the web site.

Results

Manipulation Checks. To test the effectiveness of the complexity manipulation, participants responded on existing complexity measures (varied – not varied; cluttered – open; dense – sparse). A one way ANOVA was conducted on the participants' perceived complexity measures across the three levels of structural complexity, which yielded a significant main effect ($F(2, 329) = 86.9$; $p<.01$). Consistent with the manipulation, the more structurally complex site was perceived to be more complex by the participants (M's for perceived complexity = 2.22 (Low), 2.63 (Medium) and 3.52 (High)).

Attitude Toward the Web site (A_{Site}). A two-way ANOVA was conducted with structural complexity level (low, medium and high) and motives (goal directed, experiential) as the independent factors and attitude toward the website (A_{Site}) as the dependent variable.

Supporting H1, there was a significant two-way interaction between level of structural complexity and motives on the vector of A_{Site} ($F(2,326) = 155$, $p<.01$). The means for A_{Site} across the three complexity levels are reported in Table 3. An analysis of simple effects (see Figure 5a) revealed that at a low structural complexity web site, individuals with a goal directed motive ($M_{Goal\ directed} = 5.27$) held more favorable A_{Site} than individuals with an experiential motive ($M_{Experiential} = 1.95$, $F(1, 326) = 187.03$, $p< .01$).

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In contrast, at a moderate structural complexity web site, individuals with an experiential motive ($M_{Experiential} = 6.14$) held more favorable A_{Site} than individuals with a goal directed motive ($M_{Goal\ directed} = 3.62$; $F(1, 326) = 124.09$, $p < .01$). Moreover, supporting H2, there were no significant differences across individuals with a goal directed and experiential motive, at a high structural complexity web site (M's = 2.58 vs. 2.55 respectively, $F(1, 326) < 1$,NS).

Attitude Toward the Brand (A_{Brand}). A two-way ANOVA was conducted with structural complexity level (low, medium and high) and motives (goal directed, experiential) as the independent factors, and attitude toward the brand (A_{Brand}) as the dependent variable. The pattern of results found for A_{Site} was replicated. The means for A_{Brand} across the three complexity levels are reported in Table 3. Supporting H1, there was a significant two-way interaction between level of structural complexity and motives on the vector of A_{Brand} ($F(2,326) = 41.09$, $p<.01$). An analysis of simple effects (see Figure 5b) revealed that at a low structural complexity web site, individuals with a goal directed motive ($M_{Goal\ directed}= 4.48$) held more favorable A_{Brand} than individuals with an experiential motive ($M_{Experiential} = 2.76$; $F(1, 326) = 35.24$, $p < .01$). In contrast, at a moderate complexity web site, individuals with an experiential motive ($M_{Experiential} = 5.51$) held more favorable A_{Brand} than individuals with a goal directed motive ($M_{Goal\ directed}=3.65$; $F(1, 326) = 106.53$, $p < .01$). Supporting H2, there were no significant differences across individuals with a goal directed and experiential motive, at a high structural complexity web site (M's = 3.25 vs. 3.29 respectively, $F(1, 326) < 1$, NS).

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There were no differences in A_{Site} and A_{Brand}, across participants with the inclusion of familiarity in the model.

Discussion

The results of the experiment indicate that specific motives interact with the levels of structural complexity to influence the site and brand evaluations. It is unclear if the effects change with the introduction of a second type of complexity; outcome complexity. It is interesting to examine how individuals react to situations where both complexities are present. With the introduction of a second type of complexity, the complexity levels are redefined where the low complexity level represents one, in which simultaneously structural and outcome complexity is at the low level. Similarly, a moderate complexity level represents one, in which simultaneously structural and outcome complexity is at the moderate level. Since we did not find any significant differences between the goal directed and experiential motive conditions at the high complexity level, we do not pursue this level of complexity in Study 2.

The first objective of the next study is to examine if a significant interaction occurs between the level of complexity (Low Structural – Low Outcome, Moderate Structural – Moderate Outcome) and motives (Goal directed, Experiential). The second objective is to assess if the individuals in each of the two motive conditions are sensitive to different types of complexity.

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CHAPTER 5

STUDY 2:

ASSESSING THE COMBINED EFFECTS OF STRUCTURAL AND OUTCOME COMPLEXITY

In Study 2, we introduce a second type of complexity, outcome complexity to evaluate how individuals across the two motive conditions (Goal directed, Experiential) react to situations where both types of complexities (Structural, Outcome) are present.

Level of Complexity X Motive Interaction

The primary objective of this study is to examine if the congruence effects of motives and complexity levels shown in Study 1 play out with the introduction of a second type of complexity, outcome complexity. The low level of complexity examined in this study represents a web site, which simultaneously has low structural complexity and low outcome complexity, and the moderate level of complexity examined in this study represents a web site, which simultaneously has moderate structural complexity and moderate outcome complexity.

Consistent with H1(i), we expect to find that in a web site, which simultaneously offers low structural and low outcome complexity, individuals with a goal directed motive will display more favorable attitudes than individuals with an experiential motive. In such a scenario, in addition to the visual ease provided by the low structural complexity, low outcome complexity characterized by concrete icons allows individuals to easily grasp the meaning of the icons and form clear predictions of where the icons will take them. Research has shown that the ability to grasp the semantic meaning of a

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context (i.e. conceptual fluency) improves the predictive power and facilitates ease of processing (Lee and Labroo 2004; Whittlesea 1993). Goal directed motives seek such ease of processing at a web site, as it enables them to reach their end goal in a linear and efficient manner. Therefore, the low structural – low outcome complexity web site matches the needs of goal directed motives, and results in optimal processing. However, while straightforward concrete icons facilitate ease of processing for the individual with a goal directed motive, it does not offer individuals with an experiential motive the desired challenge that they seek from the process of browsing, leading to diminished attitudes toward a low structural – low outcome complexity web site. Therefore, in a low structural – low outcome complexity scenario, individuals with goal directed motives will display higher preferences than those with experiential motives.

However, there is a reversal of preferences in case of web sites, which simultaneously offers moderate structural and moderate outcome complexity. Consistent with H1(ii), we expect to find that in a web site, which simultaneously offers moderate structural and moderate outcome complexity, individuals with an experiential motive will display more favorable attitudes than individuals with a goal directed motive. In such a scenario, in addition to the visual engagement provided by the moderate structural complexity, the moderate outcome complexity characterized by abstract icons may represent an incongruous situation, which offers individuals with an experiential motive the "positive opportunity to resolve the incongruity" (Meyers-Levy, Louie, and Curren 1994). Therefore, the moderate structural – moderate outcome complexity web site matches the needs of experiential motives, and results in optimal processing. However,

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the abstract icons due to their low predictive power impede individuals with a goal directed motive from following their trajectories toward goal, leading to diminished attitudes toward a moderate structural – moderate outcome complexity web site. Therefore, in a moderate structural – moderate outcome complexity scenario, individuals with experiential motives will display higher preferences than those with goal directed motives.

H3: Motives will moderate the effect of the level of complexity such that:

i) In low structural – low outcome complexity sites, individuals with a goal directed motive will have more favorable A_{Site} and A_{Brand} than individuals with an experiential motive.

ii) In moderate structural – moderate outcome complexity sites, individuals with an experiential motive will have more favorable A_{Site} and A_{Brand} than individuals with a goal directed motive.

Sensitivity to Type of Complexity

Most of the prior theorization pertains to understanding how individuals with varied motives have preferences for varied complexity levels. However, it would be informative for marketers to learn if the two distinct motives display sensitivity to a specific type of complexity. In other words, by understanding which of the two specific types of complexity has a larger impact on consumer preferences in each of the two motive conditions, marketers can make strategic decisions about which complexity to focus on when targeting the two distinct motive groups.

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We theorize that individuals with a goal directed motive will show greater sensitivity towards outcome complexity than structural complexity. The conceptual fluency literature suggests that conceptual fluency (i.e. predictability) of a stimulus will drive the judgment regarding a stimulus more than the perceptual fluency (i.e. perceptual ease) if the goal entails a conceptually based process, such as discerning if the product will fulfill the goals of a particular buying situation (Shapiro 1999; Whittlesea 1993). For example, when individuals are pursuing a conceptual goal such as discerning if a certain health drink meets the calorie needs, understanding the nutritional specifications on the packaging of the drink assumes importance over the aesthetic appeal of the packaging. In other words, the consumer will benefit more from clear and predictable nutritional specifications, which provides conceptual fluency than the perceptual fluency derived from the aesthetic packaging. A goal directed motive at a web site, focused on an end goal of a planned purchase or finding specific information, too involves a conceptual drill down process of filtering out irrelevant information at the web site to achieve the end objective. Therefore, for an individual with a goal directed motive, the conceptual fluency derived from low outcome complexity (concrete icons) will assume importance in judgments regarding the web site, as it helps them pursue their end objective in a linear sequential manner. In essence, the predictability of low outcome complexity is more appealing to individuals with a goal directed motive, and will have a larger impact on judgments, than the perceptual ease (focusing on limited cues) offered by the low structural complexity.

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H4a: Among individuals with a goal directed motive,

i) when the level of outcome complexity varies from moderate to low, there will be a significant increase in A_{Site} and A_{Brand}.

ii) when the level of structural complexity varies from moderate to low, there will be no significant increase in A_{Site} and A_{Brand}.

Conversely, individuals with an experiential will show greater sensitivity towards structural complexity than outcome complexity. In an experiential state, individuals are stimulus driven, and are more focused on the elements of the stimulus that make the process of browsing engaging and stimulating. Researchers have shown that the richness in the environment (Babin et al. 1984; Hirschman 1984), and display characteristics (Janiszewski 1998) may give this hedonic stimulating experience. Accordingly, we theorize that for individuals with an experiential motive, the sensory stimulation derived from the moderate structural complexity (multitude of cues) will assume importance in judgments regarding a web site. In other words, although, the moderate outcome complexity (abstract icons) engenders a positive challenge for the individual with an experiential motive and keeps them engaged in the browsing process, moderate structural complexity (multitude of cues) has a higher potential of delivering the satisfaction they seek from the process.

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H4b: Among individuals with an experiential motive,

i) when the level of structural complexity varies from low to moderate, there will be a significant increase in A_{Site} and A_{Brand}.

ii) when the level of outcome complexity varies from low to moderate, there will be no significant increase in A_{Site} and A_{Brand}.

Method

The purpose of the study is two fold: 1) introduce a second type of complexity, outcome complexity and assess if the two distinct motives have preferences for different levels of complexity and 2) to ascertain if the different motives display sensitivity to different types of complexity.

To test the hypotheses, described in this research, a 2 (Low Structural or Moderate Structural Complexity) X 2 (Low Outcome or Moderate Outcome Complexity) X 2 (Goal directed or Experiential Motive) between – subject experiment was designed. The basic experimental task is similar to Study 1, except that the subjects are now exposed to varying complexity levels of one specific web site. Four versions of the same web site were prepared to represent the four complexity scenarios (1. Low structural – Low outcome, 2. Low structural – Moderate outcome, 3. Moderate structural – Low outcome, 4. Moderate structural – Moderate outcome), in which the content and layout was identical but the amount of cues and abstractness of icons were varied. Participants were randomly assigned to one of the four complexity scenarios and were given one of the two tasks representing the two motive conditions, (goal directed, experiential). In the

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goal directed condition, participants were asked to look for specific pieces of information. In the experiential condition, subjects were asked to browse the web site for entertainment and did not have to look for any specific information. After browsing the web site (experiential) or searching for specific information (goal directed), they were instructed to fill out a questionnaire.

Stimulus. An existing jazz web site was tailored for this experiment. While in Study 1 we used a wide variety of web sites, we chose to focus on only one web site. By choosing standardization, what is gained is a better assessment of the direct relation between site complexity and motives on attitudes, while controlling for other unstudied variables (Schlosser 2003). Further, to avoid confronting preconceived site and brand attitudes, an unfamiliar site was selected (Klein 2003).

The adapted Alligatorrecords web site used for this experiment essentially contained information about the company (Alligatorrecords) and its founder, the venues of the Jazz concerts, information about the jazz artistes etc. An earlier study (Gupta, Nadkarni, and Gould forthcoming) served as a pretest to determine which factors should be varied to create the different levels of complexity. A scale development survey administered to 282 subjects, and a subsequent confirmatory factor analysis revealed that the elements that need to be varied for structural complexity are i) amount of text, ii) amount of images, iii) number of icons to click on for information iv) amount of animated images v) number of web pages, and the elements that need to be varied for outcome complexity are the i) clarity and ii) predictability of icons. Accordingly, a moderate structural complexity web site contained more images, icons, text and

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animation while a low structural complexity web site contained lesser images, text, animation and web pages. Moderate outcome complexity web site contained abstract icons. The icons consisted of an image with an ambiguous label, not allowing the individual to form predictions of the subsequent web pages (e.g. "cook it up", "on the road"). Low outcome complexity contained concrete icons. The icons consisted of an image with an unambiguous label, allowing the individual to form clear predictions of the content of the subsequent web pages ("recipes", "tour schedules").

Four scenarios were created by varying the levels of structural and outcome complexity: low structural – low outcome complexity scenario had fewer cues and concrete icons, moderate structural – moderate outcome complexity scenario had more cues and abstract icons, low structural – moderate outcome complexity scenario had fewer cues and abstract icons, and moderate structural – low outcome complexity scenario had more cues and concrete icons (see Figures 6a,b,c,d for the homepages of the 4 complexity scenarios).

Participants. The sample consisted of 133 undergraduate students at a major eastern university who received partial course credit for participating in this experiment. Most of the subjects belonged to the 18-24 age-group (83%). 14% of the subjects belonged to the 25-34 age-group. 61% of the participants were female. There were 15-18 participants in each cell of this 2 (Low Structural or Moderate Structural Complexity) X 2 (Low Outcome or Moderate Outcome Complexity) X 2 (Goal directed or Experiential Motive) design.

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Dependent Measures

Attitude Toward the Web site (A_{Site}). The first measure is a six-item scale developed by Chen et al. (2002) to measure attitude toward web site (A_{Site}). The scale included the following items: i) The web site makes it easy for me to build a relationship with the company, ii) I would like to visit this web site again in the future, iii) I am satisfied with the web site, iv) I felt comfortable when I was at the web site, v) Browsing through this web site is a good way to spend my time. These items were evaluated on seven point scales with anchors of "strongly disagree"(1) and "strongly agree"(7). The last item was "Compared with other web sites, I would rate this one as," which subjects responded to on a seven point scale anchored at "One of the worst" (1) and "One of the best"(7). Higher scores indicate a more favorable A_{Site}. The six items loaded onto a single factor (Alpha=.89) (see Appendix B). The questionnaire for Study 2 with all the measures is attached in the Appendix D.

Attitude Toward the Brand (A_{Brand}). Four seven point scales adapted from Coyle and Thorson (2001) measured attitude toward the brand (A_{Brand}) (good-bad, favorable-unfavorable, like-dislike, satisfactory-unsatisfactory). The four items loaded onto a single factor (Alpha=.78) (see Appendix B). A_{Brand} in Study 2 captured the consumers' evaluation of the products featured at the web site (Luna et al. 2003).

Manipulation Checks. As a manipulation check for the two motive conditions (goal directed and experiential) participants' responded to a 7 item scale that captured both the goal directed and experiential facets (Novak et al. 2003; Schlosser 2003). The items included "I had a distinct identifiable purpose while I was browsing the web site,"

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"I was looking up information to reach a specific end-goal," "I was reading the product information to find answers to factual questions," "I was clicking often and went to many different web pages," "I was just browsing for fun at the web site," "I was looking to be personally engaged by the web site," "I was reflecting upon my experiences of journeying through the web site." All of these items used a scale ranging from 1(Strongly disagree) to 7 (Strongly agree). The items loaded onto a single factor (Alpha=.71) (see Appendix B).

To examine whether individuals in a goal directed and experiential motive, differed in their level of involvement, a shortened version of the personal involvement inventory (PII; Zaichkowsky 1985) was added.

We tested the structural and outcome complexity manipulation, using the scale developed by Gupta et al. (forthcoming). To test the structural complexity manipulation, subjects were presented with five item scales (amount of text, amount of images, number of icons to click on for information, amount of animated images, number of web pages at the web site) and were then asked to assess the degree to which each of the items made the web site visually complex. These items were evaluated on seven point scales with anchors of "Not at all complex" (1) and "Very complex"(7).

To test the outcome complexity manipulation, subjects were presented with two item scales (clarity of icons, predictability of icons) and were then asked to assess the degree to which each of the items made the web site complex to navigate. These items were evaluated on seven point scales with anchors of "Not at all complex" (1) and "Very complex"(7). A further manipulation check was included based on Schlosser's (2003)

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manipulation check of object interactivity, where they had to report the number of interactive features at a web site. We included a similar measure where subjects had to classify the icons into two groups: i) icons allowed them to form expectations vs. ii) icons did not allow them to form expectations. The moderate outcome complexity web site is expected to report a higher number of unpredictable icons (e.g. "cook it up", "on the road") than a low outcome complexity web site.

Perceived Control. Perceived control can be conceptualized as a potential mediator of the effects of complexity and motives on A_{Site} and A_{Brand}. The congruence between the level of complexity and motive may result in increased control over web site navigation. It is possible that this increased control will then function as a potential mediator between complexity, motives and attitudes. In an effort to rule out such a mediational role for perceived control, we examined perceived control as a consequence of the complexity and motive interaction.

Perceived control was measured using a 4 item scale adapted from the domain specific perceived control scale developed by Paulhus (1983). The scale included the following items: I was controlling my navigation experience at the web site – I was controlled; I decided on my own – I was influenced; I had complete autonomy – I was guided; I could do a lot to overcome any problem – There was very little I could do to overcome any problem.

Background Variables. At the end of the study, participants were asked to complete the 18 item need for cognition (NFC) scale (Cacioppo, Petty, and Kao 1984). In addition, they were asked to indicate their age, gender, whether they visited the

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Alligatorrecords web site or heard about the company Alligatorrecords. They also indicated their familiarity level with blues music. Two semantic differential scales, unfamiliar/familiar and not knowledgeable /knowledgeable, adapted from Schlosser (2003) was used to measure individuals' familiarity level with blues music.

Pretests

The outcome complexity manipulation was pretested. 22 subjects rated the degree to which the moderate outcome complexity web site was complex to navigate, from 1(Not at all complex) to 7(Very complex). After several iterations of the procedure, the sites corresponding to the two outcome complexity conditions (moderate, low) were significantly different ($M_{\text{Moderate outcome complexity}}$= 4.73, $M_{\text{Low outcome complexity}}$ = 3.00; F(1,20) = 10.20, p< .01.) Further the moderate outcome complexity condition reported a higher number of unpredictable icons (M= .61) as compared to the low outcome complexity condition (M=.36, F (1,20) =7.16, p <.05).

The manipulation check for the two motive conditions (goal directed and experiential) was pre-tested using a scale, based on the codes constructed by Novak et al. (2003) for the two tasks. The scale included items that specifically measured the goal directed motive versus the experiential motive. Individuals with a goal directed motive reported a significantly lower score (M=2.71) than those with an experiential motive (M=3.80; F=29.17; p<.05) on the manipulation scale suggesting that they were more focused and had an identifiable purpose.

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Results

Manipulation Checks. Supporting the motive manipulation, participants in the goal directed condition ($M_{Goal\ directed}$ = 5.18) reported that they had a distinct identifiable purpose than those assigned to an experiential condition ($M_{Experiential}$ = 3.78; F(1,128) = 101.9; p<.01). In terms of involvement, both individuals with a goal directed and an experiential motive were equally involved (M's = 3.55 vs. 3.20, respectively; F(1,131)=2.68, NS). In addition, all participants in the goal directed condition could answer the questions provided in the task.

Supporting the structural complexity manipulation, the moderate structural complexity web site ($M_{Moderate\ Structural}$ =3.27) was perceived to be more visually complex than the low structural complexity web site ($M_{Low\ Structural}$ =2.32; F(1,128)=23.9; p<.01).

Supporting the outcome complexity manipulation, the moderate outcome complexity web site ($M_{Moderate\ Outcome}$=3.41) was perceived to be more complex to navigate than the low outcome complexity web site ($M_{Low\ Outcome}$=2.58; F(1,128) =11.30; p<.01). Finally, an analysis of consumers' list of predictable/unpredictable icons indicated that as predicted, a higher proportion of predictable icons were present at a low outcome complexity web site (.75) as compared to the moderate outcome complexity web site (.58; F(1,128) = 19.78; p<.01).

Level of Complexity X Motive Interaction (A_{Site}). We conducted a three - way ANOVA with level of structural complexity (low, moderate), level of outcome complexity (low, moderate) and motives (goal directed, experiential) as the three between subjects factors and A_{Site} as the dependent measure. The overall model representing the

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three-way interaction between motives, level of structural complexity, and level of outcome complexity was significant for A_{Site} ($F(7,125) = 4.01$, $p < .01$). Because the cell sizes are relatively small and the effect size is moderately high ($\acute{\eta}^2 = 1.39$), a closer examination of the cell means is encouraged (Cohen 1988).

To specifically test H3, we compared the means of goal directed and experiential motives at the low structural – low outcome complexity level and at the moderate structural – moderate outcome complexity level. The means across the two levels are reported in Tables 4a and 4b. Supporting H3(i), an analysis of the simple effects reveal that in the low structural – low outcome complexity condition, individuals with a goal directed motive ($M_{Goal\ directed} = 4.09$) displayed more favorable A_{Site} than individuals with an experiential motive ($M_{Experiential} = 2.76$, $F(1,30) = 14.68$, $p < .01$) (see Figure 7a). Conversely, in the moderate structural – moderate outcome complexity condition, the reverse effect is found: individuals with an experiential motive ($M_{Experiential} = 4.08$) displayed more favorable A_{Site} than individuals with a goal directed motive ($M_{Goal\ directed} = 3.27$; $F(1,33) = 5.98$, $p < .01$).

Level of Complexity X Motive Interaction (A_{Brand}). The pattern of results for (A_{Brand}) mirrored those for A_{Site}. The overall model representing the three way interaction between motives, level of structural complexity, and level of outcome complexity was significant for A_{Brand} ($F(7,125) = 2.28$, $p < .05$). The means across the two levels are reported in Tables 4a and 4b. Supporting H3 (ii), in the low structural – low outcome complexity condition, individuals with a goal directed motive ($M_{Goal\ directed} = 4.09$) displayed more favorable A_{Brand} than individuals with an experiential motive ($M_{Experiential}$

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=3.02, F (1,30) = 9.50, p<.01) (Figure 7b). Conversely, in the moderate structural – moderate outcome complexity condition, individuals with an experiential motive ($M_{Experiential}$ = 3.97) held more favorable A_{Brand} than individuals with a goal directed motive ($M_{Goal\ directed}$ =3.46, F(1,33) = 2.42, p<.05).

Sensitivity to Type of Complexity (A_{Site}). To examine the sensitivity displayed by specific motive groups toward specific types of complexity, we conducted two separate ANOVAs among goal directed and experiential motive groups. To determine the type of complexity that goal directed individuals are sensitive to, we conducted a 2 (low structural, moderate structural complexity) X 2 (low outcome, moderate outcome complexity) ANOVA among individuals with a goal directed motive, with A_{Site} as the dependent variable. Supporting H4a, among individuals with a goal directed motive, there was a significant main effect of outcome complexity (F(1,63)=8.46; p<.01) on the vector of A_{Site} (see Figure 8a). In addition, as predicted there was no significant main effect of structural complexity (F(1,63)<1, NS). The means for A_{Site} among goal directed individuals in each of the two types of complexity are reported in Table 5a. A closer analysis of the means reveal that among individuals with a goal directed motive, there was a significant increase in A_{Site} when the level of outcome complexity changed from moderate ($M_{Moderate\ Outcome}$ = 3.37) to low ($M_{Low\ Outcome}$ = 4.07) and there was no significant increase in A_{Site} when the level of structural complexity changed from moderate ($M_{Moderate\ Structural}$ = 3.65) to low ($M_{Low\ Structural}$ = 3.80).

To determine the type of complexity that experiential individuals are sensitive to, we conducted a 2 (low structural, moderate structural complexity) X 2 (low outcome,

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moderate outcome complexity) ANOVA among individuals with an experiential motive, with A_{Site} as the dependent variable. Supporting H4b, among individuals with an experiential motive, there was a significant main effect of structural complexity ($F(1,66)=14.92$; $p<.01$) on the vector of A_{Site} (see Figure 8b). In addition, as predicted there was no significant main effect of outcome complexity ($F(1,66) = 2.74$, NS). The means for A_{Site} among experiential individuals in each of the two types of complexity are reported in Table 5b. A closer analysis of the means reveal that among individuals with an experiential motive, there was a significant increase in A_{Site} when the level of structural complexity changed from low ($M_{Low\ Structural} = 3.03$) to moderate ($M_{Moderate\ Structural} = 3.94$) and there was no significant increase in A_{Site} when the level of outcome complexity changed from low ($M_{Low\ Outcome} = 3.32$) to moderate ($M_{Moderate\ Outcome} = 3.69$).

Sensitivity to Type of Complexity (A_{Brand}). We also examined if the sensitivity patterns found in case of A_{Site} remain consistent when the dependent variable is A_{Brand}. To determine the type of complexity that goal directed individuals are sensitive to, we conducted a 2 (low structural, moderate structural complexity) X 2 (low outcome, moderate outcome complexity) ANOVA among individuals with a goal directed motive, with A_{Brand} as the dependent variable. The main effect of outcome complexity on the vector of A_{Brand} was marginally significant ($F(1,63)=3.19$; $p=.08$) (see Figure 9a). In addition, as predicted there was no significant main effect of structural complexity ($F(1,63)<1$, NS). The means for A_{Brand} among goal directed individuals in each of the two types of complexity are reported in Table 5a. A closer analysis of the means reveal that among individuals with a goal directed motive, there was a significant increase in A_{Brand}

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when the level of outcome complexity changed from moderate ($M_{Moderate\ Outcome} = 3.62$) to low ($M_{Low\ Outcome} = 4.09$) and there was no significant increase in A_{Brand} when the level of structural complexity changed from moderate ($M_{Moderate\ Structural} = 3.77$) to low ($M_{Low\ Structural} = 3.95$).

To determine the type of complexity that experiential individuals are sensitive to, we conducted a 2 (low structural, moderate structural complexity) X 2 (low outcome, moderate outcome complexity) ANOVA among individuals with an experiential motive, with A_{Brand} as the dependent variable. As predicted, there was a significant main effect of structural complexity on the vector of A_{Brand} ($F(1,66)=8.69$; $p<.01$) (see Figure 9b). There was no significant main effect of outcome complexity ($F(1,66)=1.48$, NS). The means for A_{Brand} among experiential individuals in each of the two types of complexity are reported in Table 5b. A closer analysis of the means reveal that among individuals with an experiential motive, there was a significant increase in A_{Brand} when the level of structural complexity changed from low ($M_{Low\ Structural} = 3.33$) to moderate ($M_{Moderate\ Structural} = 3.99$) and there was no significant increase in A_{Brand} when the level of outcome complexity changed from low ($M_{Low\ Outcome} = 3.55$) to moderate ($M_{Moderate\ Outcome} = 3.79$).

Role of Perceived Control and Background Variables. Analysis of the perceived control scale found no significant effects of level of complexity and motives on perceived control eliminating a possible mediational effect. Specifically, there was no significant difference in perceived control between individuals with a goal directed and experiential motive (M's = 4.59 vs. 4.02, respectively; $F(1,30) = 1.22$,NS) at the low structural – low outcome complexity condition. Similarly, there was no significant difference in perceived

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control between individuals with a goal directed and experiential motive (M's = 3.81 vs. 4.22, respectively; $F(1,33)<1$,NS) at the moderate structural – moderate outcome complexity condition.

There was also no difference in A_{Site} and A_{Brand} across participants with the inclusion of any of the background variables (age, gender, familiarity with the blues music, previous visit, awareness of company, need for cognition) in the model.

Discussion

In Study 1, the type of complexity examined was only structural, and we found that individuals with a goal directed motive displayed a higher preference for a low complexity level, while the individuals with an experiential motive displayed a higher preference for a moderate complexity level. In Study 2, we introduce outcome complexity to examine the combined effects of structural and outcome complexity. In this study, low complexity level consisted of both low structural complexity and low outcome complexity, and the moderate complexity level consisted of both moderate structural complexity and moderate outcome complexity. The findings support H3. As found in Study 1, we find that the goal directed individual has a higher preference for the low complexity level (low structural – low outcome) than experiential individuals. Conversely, the experiential individual has a higher preference for the moderate complexity level (moderate structural – moderate outcome) than goal directed individuals.

We further examined the sensitivity displayed by the two motive groups towards a specific type of complexity. The findings support H4a and H4b. Individuals with a goal

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directed motive display a significant increase in evaluations, when the level of outcome complexity varies from moderate to low but do not display a significant increase in evaluations, when the level of structural complexity varies from moderate to low. In other words, the goal directed individuals are sensitive to changes in outcome complexity but not sensitive to changes in structural complexity. Individuals with an experiential motive display a significant increase in evaluations, when the level of structural complexity varies from low to moderate but do not display a significant increase in evaluations, when the level of outcome complexity varies low to moderate. In other words, the experiential individuals are sensitive to changes in structural complexity but not sensitive to changes in outcome complexity.

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CHAPTER 6

GENERAL DISCUSSION

In this dissertation, we suggest that motives play a significant role in determining consumers' evaluations to web site complexity. We examine two specific types of web site complexity, structural complexity and outcome complexity. Structural complexity refers to the number of distinct cues (e.g. information categories, images, animation etc) that the consumer has to process at the web site. Outcome complexity refers to the abstractness of signs and symbols that consumers use to navigate the web site. In our empirical studies, we show that distinct consumer motives (i.e. goal directed vs. experiential) interact with the level and type of complexity to determine consumer evaluations of the environments and the products they feature. More specifically, we find that individuals looking for specific information (goal directed) may find the complex environment inefficient and unpredictable, undermining their goal pursuit, and leading to lower evaluations; while the individuals looking for entertainment (experiential) may find the complex environment engaging enough to support their goal, leading to higher evaluations. In addition, we find that individuals with a goal directed motive display higher sensitivity for low outcome complexity, while individuals with an experiential motive display higher sensitivity for moderate structural complexity. We corroborate the findings across the two studies to outline the theoretical and practical relevance of this research.

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Theoretical Implications

Our research extends existing complexity research by reconciling conflicting extant findings on complexity. Two divergent views are salient in extant complexity research. According to the learning theorists (Sweller 1988; Sweller et al. 1990) complexity involves an integration of varied verbal and visual cues which leads to a split attention effect, imposing a cognitive strain on the individual, thereby adversely affecting their learning outcomes. However, Berlyne's (1960) stimulus complexity paradigm predicts an inverted-U relationship between perceived complexity and outcomes. Opposing the learning theorists' view, the stimulus complexity theory suggests that moderate complexity levels could be stimulating and engaging, leading to positive outcomes. In a similar vein, Steuer's (1992) theory of richness posits that the multitude of formal features presented by the mediated environment will positively influence user perceptions as it diminishes the user perception of mediation. The schema theory (Meyers-Levy and Tybout 1989) too proposes that (moderate) incongruity may be "interesting and positively valued" (Mandler 1992). At a combined level, these theories suggest that (moderate) complexity could indeed create a stimulating experience for the individual, leading to positive outcomes. Given this conflict in theories, we suggest that consumer reactions to complexity will depend on the motivations that consumers bring to the web site. More specifically, our findings across Study 1 and 2 indicate that consumers' motives (goal directed and experiential) are differentially aligned to the different complexity levels (low, moderate) and the congruence between the motive and level of complexity trigger higher product evaluations. The findings indicate that the two

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competing processes suggested by extant researchers do play out, but in the two distinct motive conditions. The inverted U shaped complexity – outcome relationship posited by the theories of stimulus complexity, richness and schema occur among individuals with an experiential motive while the negative linear complexity – outcome relationship posited by the learning theorists occur among individuals with a goal directed motive.

Further, this research extends the extant conceptualization of complexity. The existing complexity definitions in marketing are mainly based on Berlyne's (1960) stimulus complexity view, which dwells on the structural cues in the stimulus or the environment. Our research is notable as it adopts Woods' task complexity view to extend the conceptualization of complexity to include outcome complexity. This extended conceptualization is particularly relevant in an online setting as the icons or hyperlinks play a significant role in the navigation experience of the consumer. This broader scope helps us better understand the moderating role of motives in complexity effects. In Study 1, we focused on the existing conceptualization of complexity (i.e. structural complexity), ignoring the role of outcome complexity. In other words, the corresponding level of outcome complexity level at each of the three levels of structural complexity was unknown in Study 1. In Study 2, we introduced outcome complexity, and conducted a more detailed analysis where both levels and types of complexity were examined. This broadened scope in Study 2 modifies the findings of Study 1. In Study 2, we find that at the moderate structural complexity level, there are no significant differences in A_{Site} between goal directed ($M_{Goal\ directed}$ = 3.64) and experiential individuals ($M_{Experiential}$ = 3.93, $F(1,131)=1.45$,NS), although Study 1 confirmed that goal directed individuals

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displayed more favorable evaluations than experiential individuals. This difference in finding occurs as it is likely that in Study 1, a certain level of structural complexity was coupled with only one level of outcome complexity (i.e. the moderate structural complexity level was coupled with only moderate outcome complexity) while in Study 2, a certain level of structural complexity had an equal representation of both low and moderate outcome complexity. In other words, the goal directed individuals' sensitivity towards the changes in the level of the second type of complexity (outcome complexity) leads to the more realistic results found in Study 2. Therefore, future research on complexity in an online environment should address both types of complexity, structural and outcome.

This research has implications for web design research in the domain of information systems. Extant web design research has gauged website usability mainly by its simplicity (Nielsen 2000; Shneiderman 1998). Accordingly, this literature contends that web site complexity reduces the functional efficiency and usability of the websites. The simpler the users find the website; the more usable will be the website for the users. Our study suggests that ease of use and functional efficiency may not be the sole determinants of usability. Usable websites need to arouse the curiosity of users and provide them with an enjoyable and interesting experience at the website (McKinney et al. 2002). Similarly, the web aesthetics literature, suggests that an aesthetically pleasing experience contributes to the overall usability of the website (Badre and Jacobs 1999; Hall and Hanna 2003; Nack, Dorai, and Venkatesh 2001). Our research highlights that

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usability evaluations are determined by the user motives, which focuses on functionality or aesthetics.

It contributes to motivation research by outlining the web site attributes that are aligned to the distinct motives (goal directed, experiential). Previous motivation research in marketing has primarily contrasted search procedures (Janiszweski 1998; Bloch et al. 1986; Moe 2003); shopping behaviors (Babin et al. 1984; Bloch et al. 1994); consumption patterns (Hirschman and Holbrook 1982) but have refrained from examining how the congruence between these motives and attributes of the environment affect evaluations toward the consumption environment (with the exception of Schlosser 2003). This research sheds light on how the motives and elements in the environment are aligned to influence evaluations.

The sensitivities of the two motive groups, toward the two distinct types of complexity extend recent research in conceptual fluency. Previous research on conceptual fluency has been limited to examining the effects on category-exemplar generation, consideration set formation, and brand choice (e.g., Lee 2002; Nedungadi 1990; Shapiro 1999). However, this research sheds light on how low outcome complexity of a web site, characterized by predictable icons can facilitate conceptual fluency of the stimulus, among individuals with a goal directed motive, thereby leading to favorable evaluations of A_{Brand} and A_{Site}.

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Practical Implications

From a practical standpoint, this research provides insights into how complexity may stimulate or weaken brand image. The results of this research suggest that if marketers can measure the individual motives at the web site, it is possible to tailor the structural and outcome complexity in the environment so that it best suits individual motives, and results in favorable consumer reactions of the brand and web site. Based on the findings, marketers should offer different websites to individuals with goal directed and experiential motives. This can be done in several ways. One way is to provide two hyperlinks for consumers entering the site: "Searching for something specific" and "Browsing for fun". Clicking on "Searchers" hyperlink may take goal directed individuals to a simple website with fewer information categories, images, animation, clearly defined hyperlinks, and an open layout with adequate blank space. On the other hand, experiential individuals can click on the "Browsers" hyperlink to access a complex website which has a wide range of information categories, rollover effects in navigation, and varied presentation formats, providing a stimulating and enjoyable experience at the website.

Alternatively, marketers can manage the complexity at a web site through the use of consumer profiling. Current technology available on the web such as dynamic HTML, applets, and cookies provide the means to acquire individual customer profile. Using these applications, customers can be profiled in many ways including registration forms filled by users, history of users' actions, current user activity. Such profiling methods will allow marketers to identify goal directed and experiential consumers and offer web sites

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of varying complexity.

Although marketers would like to create optimal web sites, due to economic constraints, they often cannot offer the most ideal web sites to consumers. The interesting finding with respect to sensitivities provides prescriptive guidelines to marketers aiming to cater to the needs of different segments in the market. This research sheds light on how marketers can effectively manage the different types of complexity at a web site. Since goal directed individuals are sensitive to changes in outcome complexity and not sensitive to changes in structural complexity, marketers should focus their efforts on providing them with a web site, which has clear predictable icons. On the other hand, since experiential individuals are sensitive to changes in structural complexity and not sensitive to changes in outcome complexity, marketers should focus their efforts on providing them with a rich web site, which has a multitude of images, animation, information categories.

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CHAPTER 7

LIMITATIONS AND FUTURE RESEARCH

In this research, structural complexity addresses both content (number of information categories) and form (multiple images, animation, video stills) cues at a combined level. We theorize that a higher structural complexity characterized by a multitude of content and form based cues, engages the experiential individuals in the process, and leads to the favorable attitudes. However, the two types of cues (content vs. form) could entail two distinct processes. In other words, the form based cues could be facilitating a higher sensory stimulation while the content based cues could be facilitating a higher cognitive stimulation. Research has shown that greater sensory stimulation increases the level of telepresence experienced at the environment (Kim and Biocca 1997; Klein 2003;), thereby creating a direct product experience for the individual. Fazio and Zanna (1981) have demonstrated that beliefs, and the resulting attitudes from direct product experiences are stronger, more clearly formed and more confidently held. This suggests that the attitude strength through the sensory stimulation route would be stronger implying that future research should further examine the two specific subtypes of structural complexity.

A related issue pertains to the exclusion of other visual layout aspects that could contribute to structural complexity in an environment. In addition to information categories and presentation formats, structural complexity should capture various layout attributes (e.g. salience, size, contrast) that make a stimulus more or less visually complex (Janiszewski 2003). Further, structural complexity in these experiments was

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limited to only visual aspects. It is possible that the inclusion of other presentation formats such as audio, video could enhance the stimulating experience for experiential individuals or increase the cognitive strain on goal directed individuals. Since the jazz web site was essentially an informative web site it is likely to that other formats would have had little effect. These formats perhaps play a bigger role for web sites or products where sound is an important attribute (e.g. motorcycles, a car stereo etc). We suggest that future research should examine these alternative facets of structural complexity.

The objective of this research was to understand the processes that guide goal directed and experiential motives to influence evaluations. Accordingly, the two motives have been treated independently. However, a number of consumption activities are a combination of these two motives (e.g. information search for purchase) (Janiszewski 1998). Consumers may first engage in an experiential search where they visually explore a novel environment and then engage in a more goal directed focused search where they scan for relevant information (Groner, Walder, and Groner 1984). Given that both these motives can occur within a single site visit, there is a need to examine how these motives dynamically interact with the level and type of complexity to influence site and brand evaluations.

While we eliminated the mediational role of perceived control, future research should examine other possible underlying processes that lead to the complexity effects on evaluations. For example, perhaps, goal achievement related thoughts mediate the effects of complexity on evaluations. Heckhausen and Gollwitzer (1987) postulate that during goal pursuit, individuals could be in one of the two cognitive casts: deliberative and

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implemental. A deliberative cast is activated due to an obstacle in the goal pursuit process, and makes individuals more critical about goal achievement; while, the implemental cast is activated when the environment fosters goal pursuit and individuals are optimistic, and tend to focus on the positive aspects of goal achievement. The goal focus theory therefore suggests that congruence between the level of complexity and motives may engender one of the two cognitive casts, leading to varying effects of complexity on evaluations.

A standardized web site was used to assess the direct relation between web site complexity and motives on attitudes. However, care must be taken in generalizing these results to other products and web sites. Research testing the generalizability of these findings across different products and web sites is needed. For instance, it is likely that complexity has the strongest effects when the product is in innovation as it may enhance the novelty perceptions of the product, and this effect may be more pronounced for a specific type of complexity.

The framework developed in this study could be used to examine other complexities encountered in an online environment such as product complexity, decisional complexity etc. In particular we would like to elucidate two specific types of complexity. Complexity could arise from the presence or absence of information clusters or chunks of related topics at a website (Agarwal and Venkatesh 2002; McKinney et al. 2002). Information clusters could be product related (e.g. brands, prices, product features etc) or company related (e.g. contact details, company history, financial information, press articles etc). These information clusters serve as crucial organizational tools as

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websites are large information spaces that serve as vehicles for delivery and exchange of information in performing online tasks (Thuring, Hannemann, and Haake 1995). Therefore, organizational complexity reflects the degree to which the information clusters provide a coherent and logical structure to the web site. Another type of complexity pertains to the nature of clickstreams (i.e. the clicks made from page to page) generated by consumers as they navigate web sites. Metaphorically, the clickstream may be seen as a trajectory in which one moves from a beginning point through different points along the way toward a goal (Chatterjee, Hoffman, and Novak 1998, Lakoff and Johnson 1999). The clickstreams generated by the consumer depends on the underlying hierarchical structure connecting various web pages. A dense elaborate clickstream would represent a complex web site, while a sparse clickstream would represent a simple web site. Consumer responses to complexity arising from the organization or clickstreams could vary depending on whether they are searching for specific information or browsing for entertainment.

Further, future research should examine several variables within this framework. For example, the greater the level of expertise, consumers are more capable of managing information within a web site (Klein 2003).Therefore, the level of expertise may increase or reduce the cognitive strain of individuals with a goal directed motive in a complex web site.

The stimulus used for this research (i.e. Study 2), Alligatorrecords.com represented an unfamiliar web site. However, the level of familiarity with the web site could play a role in the effects of complexity on evaluations. Based on extant research

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(Berlyne 1970; Bornstein 1989; Cox and Cox 2002), increased familiarity with complex stimuli decreases the conflict created by the complexity, and enhances individuals' comfort and liking for the stimulus. At the same time, increased familiarity with simple stimuli decreases liking because stimulus uncertainty drops to a point where little more is learned from added familiarity, and boredom and monotony set in. Therefore, it is likely that familiarity may reduce the negative effects of complex web sites among goal directed individuals, and increase the negative effects of simple web sites among experiential individuals.

In addition, we might expect that personality traits, such as the locus of control (Hoffman, Novak, and Schlosser 2000), and affective states such as mood may influence individuals' evaluations to complexity within a web site.

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TABLES

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Table 1: Differences between Goal directed and Experiential Motives

Motives / Factors	Goal directed	Experiential
Nature of orientation	Outcome focused	Process focused
Navigation Patterns	Linear	Non-linear
Attention to elements	Limited items	Variegated items
Level of Challenge	Challenge avoidance	Challenge seeking

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Table 2: Examples of Web Sites (Study 1)

Product Category	Low Complexity	Moderate Complexity	High Complexity
Music	Secondspin.com	MyMusic.com	BMG.com
Travel	Orbitz.com	Expedia.com	Priceline.com
Fertilizer	Brookstone.com	Gardener's Supply.com	HomeHarvest.com

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Table 3: Means for all Measures – Study 1

	Low Structural Complexity		Moderate Structural Complexity		High Structural Complexity	
	Goal directed (n=49)	**Experiential (n=59)**	**Goal directed (n=55)**	**Experiential (n=70)**	**Goal directed (n=60)**	**Experiential (n=39)**
A_{Site}	5.27 (1.41)	1.95 (.84)	3.62 (1.52)	6.14 (.37)	2.58 (1.67)	2.55 (1.43)
A_{Brand}	4.48 (1.55)	2.76 (1.58)	3.65 (1.34)	5.51 (.90)	3.25 (1.79)	3.29 (1.81)

The standard deviations are in parentheses.

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Table 4a: Means for all Measures – Study 2 (Goal directed)

	Low Structural Complexity		Moderate Structural Complexity	
	Low Outcome Complexity (n=17)	**Moderate Outcome Complexity (n=15)**	**Low Outcome Complexity (n=16)**	**Moderate Outcome Complexity (n=17)**
A_{Site}	4.09 (.97)	3.47 (1.04)	4.05 (.47)	3.27 (1.21)
A_{Brand}	4.09 (.90)	3.80 (1.64)	4.09 (.50)	3.46 (.87)

The standard deviations are in parentheses.

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Table 4b: Means for all Measures – Study 2 (Experiential)

	Low Structural Complexity		Moderate Structural Complexity	
	Low Outcome Complexity (n=15)	**Moderate Outcome Complexity (n=17)**	**Low Outcome Complexity (n=18)**	**Moderate Outcome Complexity (n=18)**
A_{Site}	2.76 (1.28)	3.27 (.92)	3.80 (1.09)	4.08 (.59)
A_{Brand}	3.02 (1.14)	3.60 (1.00)	4.00 (1.07)	3.97 (.42)

The standard deviations are in parentheses.

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Table 5a: Means for Structural and Outcome Complexity – Study 2 (Goal directed)

	Structural Complexity		Outcome Complexity	
	Low (n=32)	**Moderate (n=33)**	**Low (n=33)**	**Moderate (n=32)**
A_{Site}	3.80 (1.04)	3.65 (.99)	4.07 (.76)	3.37 (1.12)
A_{Brand}	3.95 (1.29)	3.77 (.78)	4.09 (.72)	3.62 (1.28)

The standard deviations are in parentheses.

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Table 5b: Means for Structural and Outcome Complexity – Study 2 (Experiential)

	Structural Complexity		Outcome Complexity	
	Low (n=32)	**Moderate (n=36)**	**Low (n=33)**	**Moderate (n=35)**
A_{Site}	3.03 (1.11)	3.94 (.87)	3.32 (1.27)	3.69 (.86)
A_{Brand}	3.33 (1.09)	3.99 (.80)	3.55 (1.20)	3.79 (.77)

The standard deviations are in parentheses.

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FIGURES

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Figure 1: Theoretical Framework

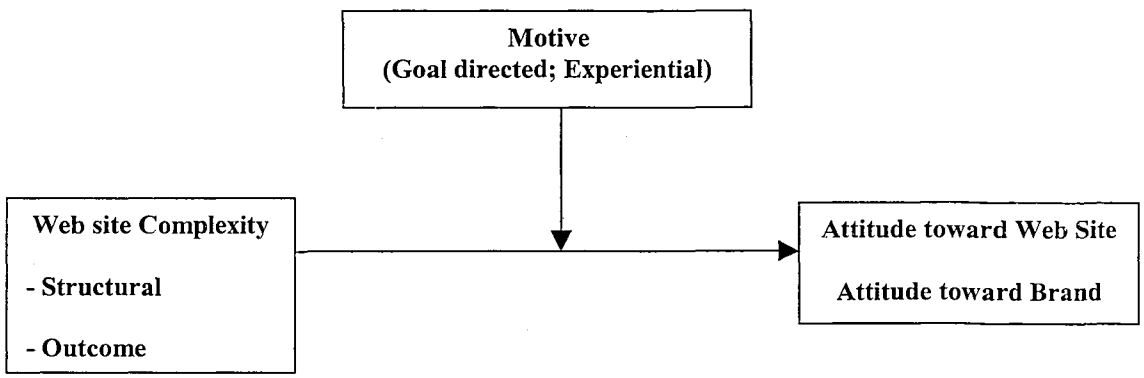

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Figure 2a: Illustration of Low Structural Complexity

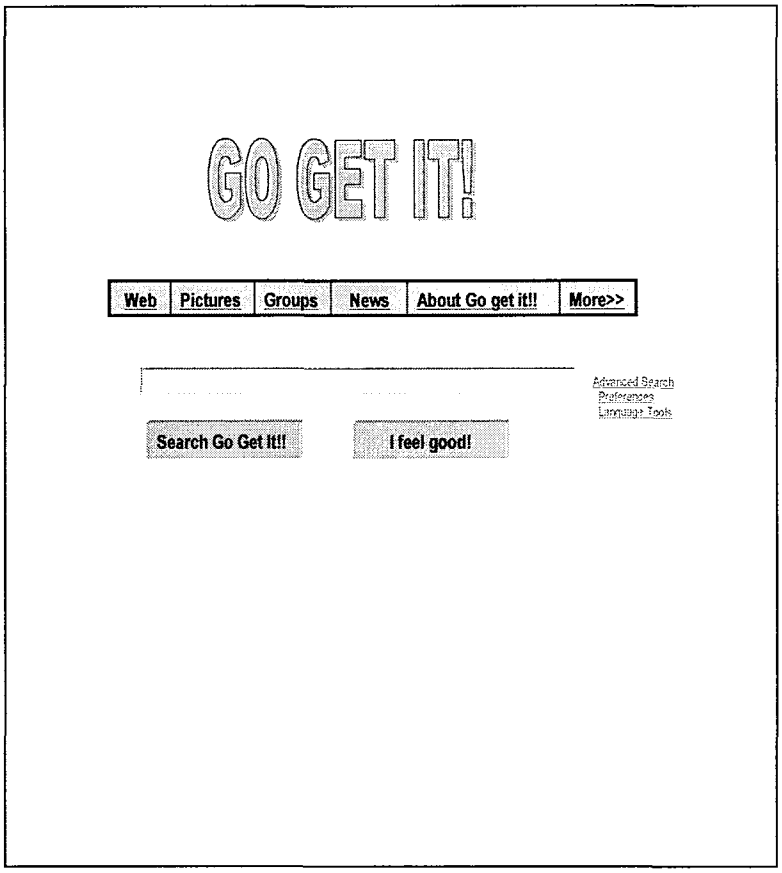

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Figure 2b: Illustration of High Structural Complexity

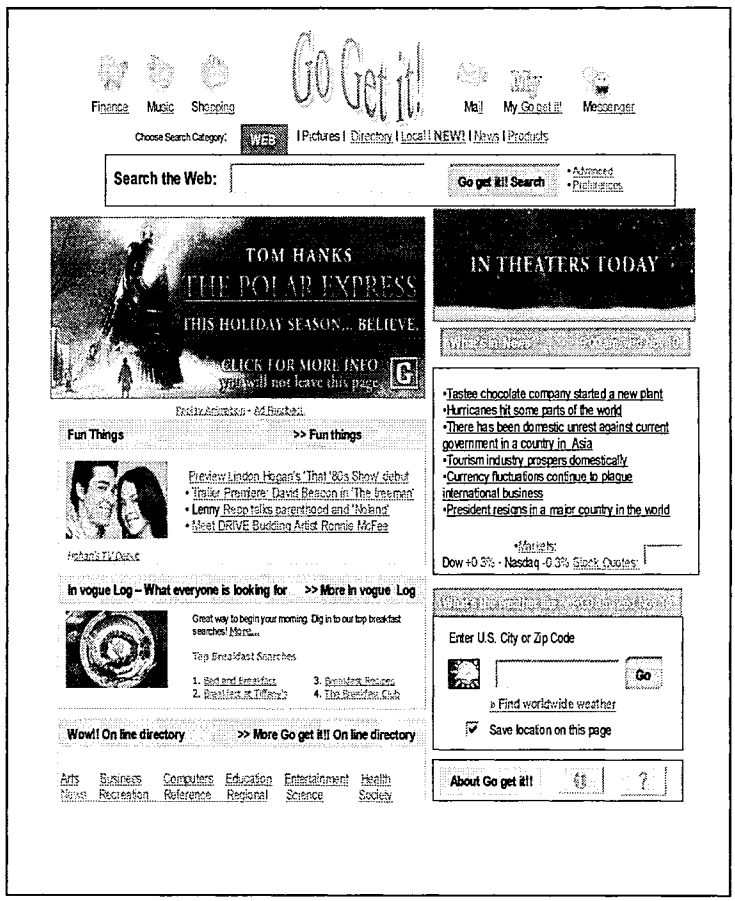

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Figure 3a: Illustration of Low Outcome Complexity

Figure 3b: Illustration of High Outcome Complexity

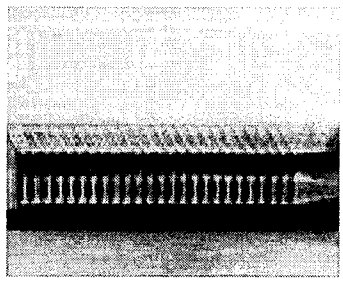

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Figure 4: Pattern of Relationships among Motives

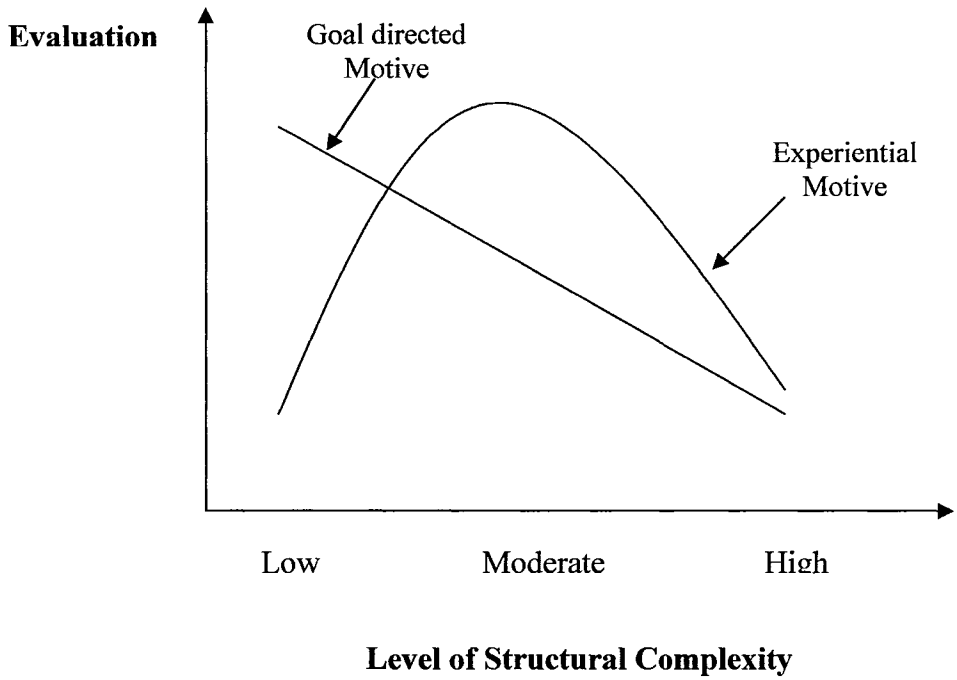

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Figure 5a: Moderating Role of Motives on A_{Site} (Study 1)

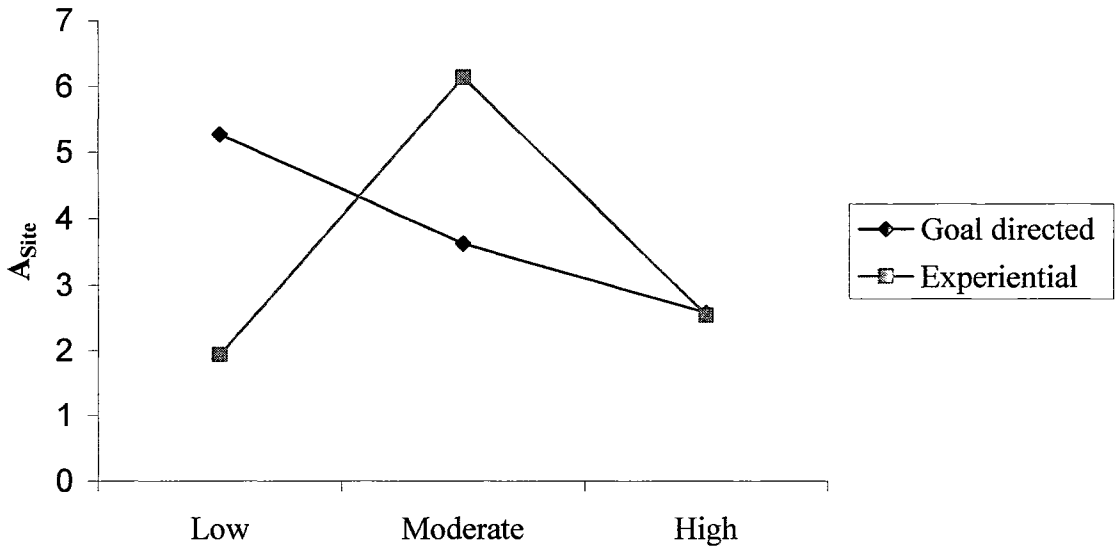

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Figure 5b: Moderating Role of Motives on A_{Brand} (Study 1)

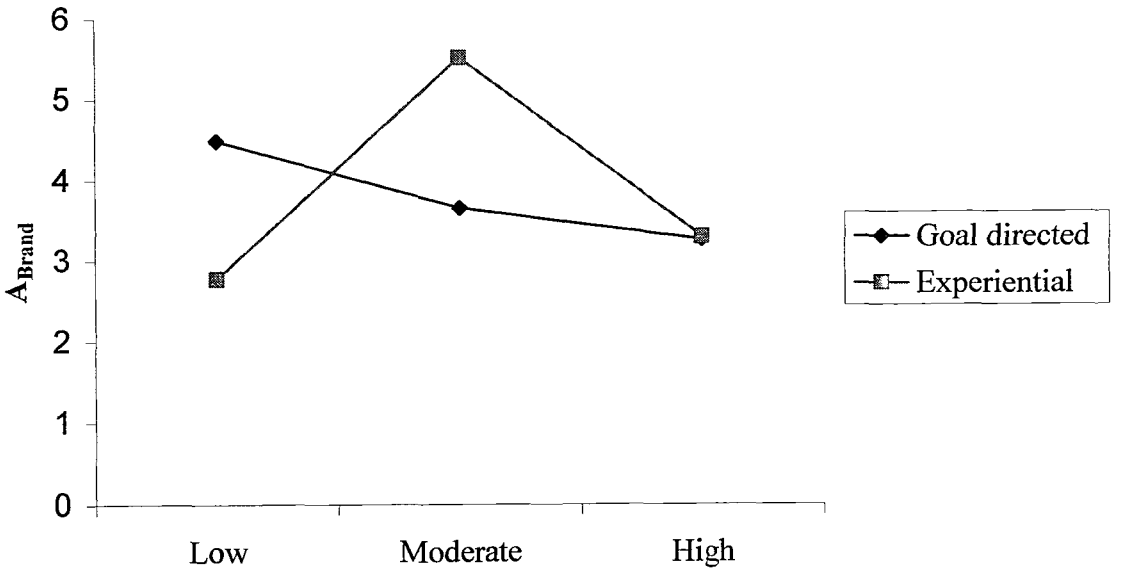

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Figure 6a: Illustration of Moderate Structural - Moderate Outcome Complexity Web Site

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Figure 6b: Illustration of Low Structural – Low Outcome Complexity Web Site

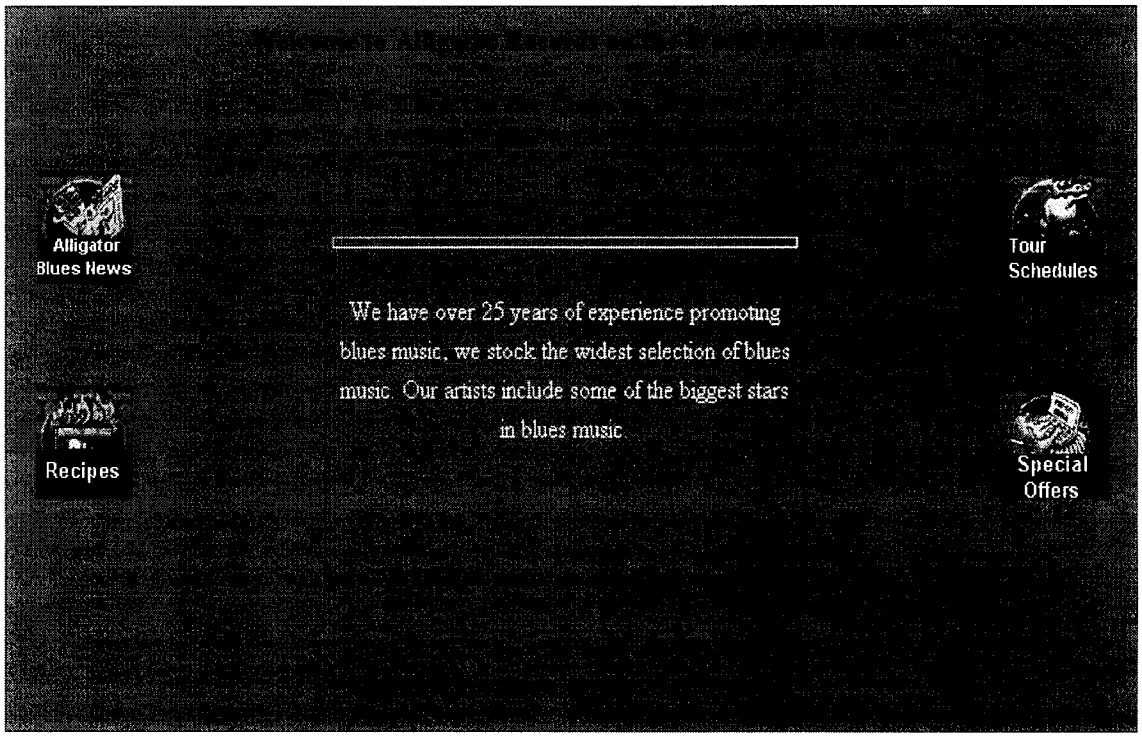

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Figure 6c: Illustration of Moderate Structural – Low Outcome Complexity Web Site

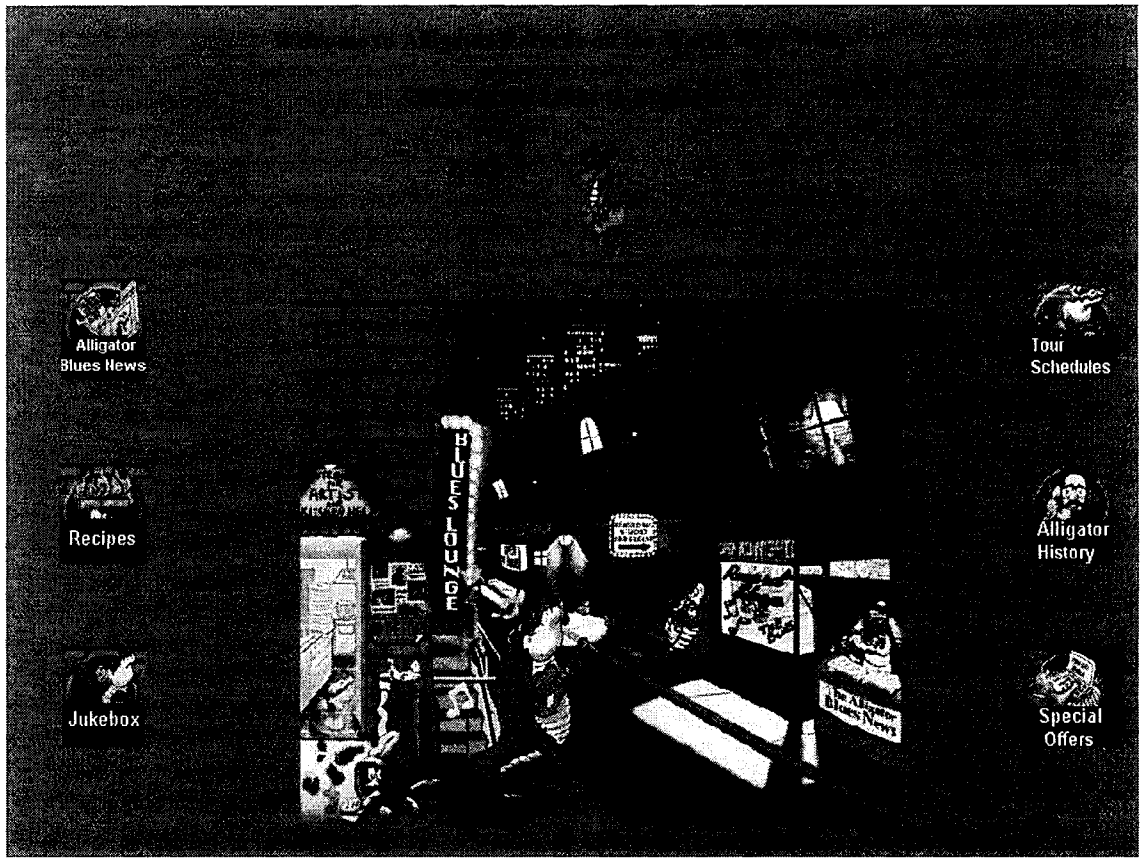

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Figure 6d: Illustration of Low Structural – Moderate Outcome Complexity Web Site

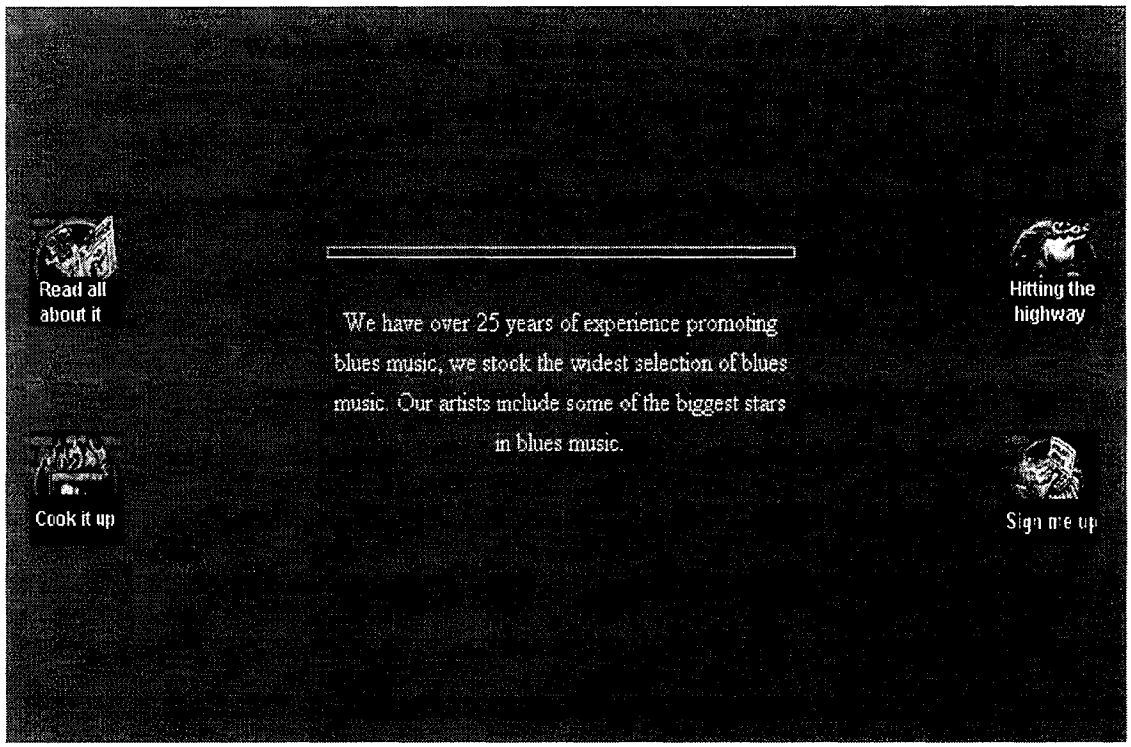

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Figure 7a: Moderating Role of Motives on A_{Site} (Study 2)

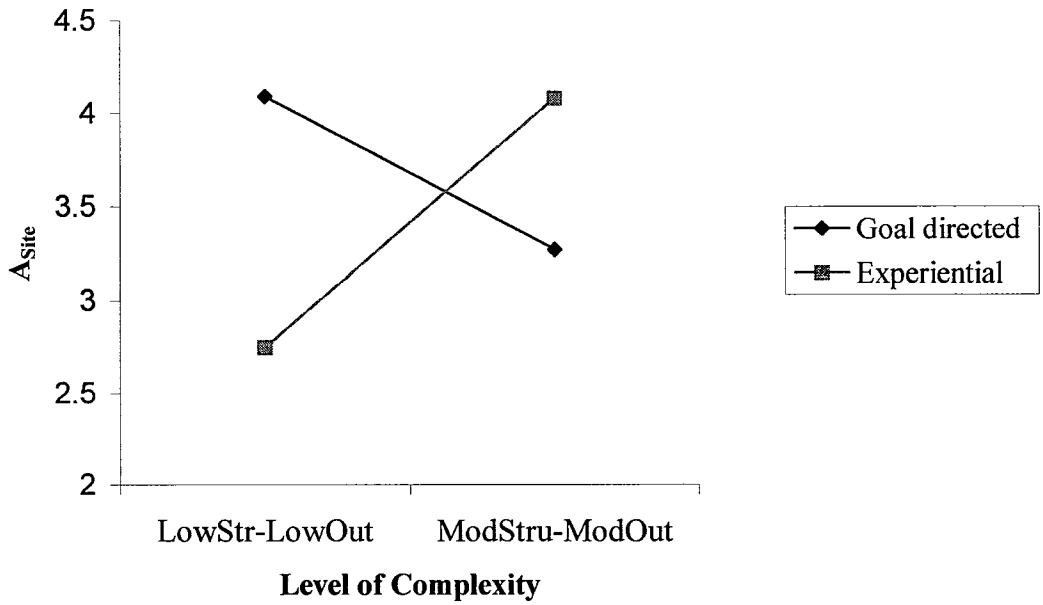

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Figure 7b: Moderating Role of Motives on A_{Brand} (Study 2)

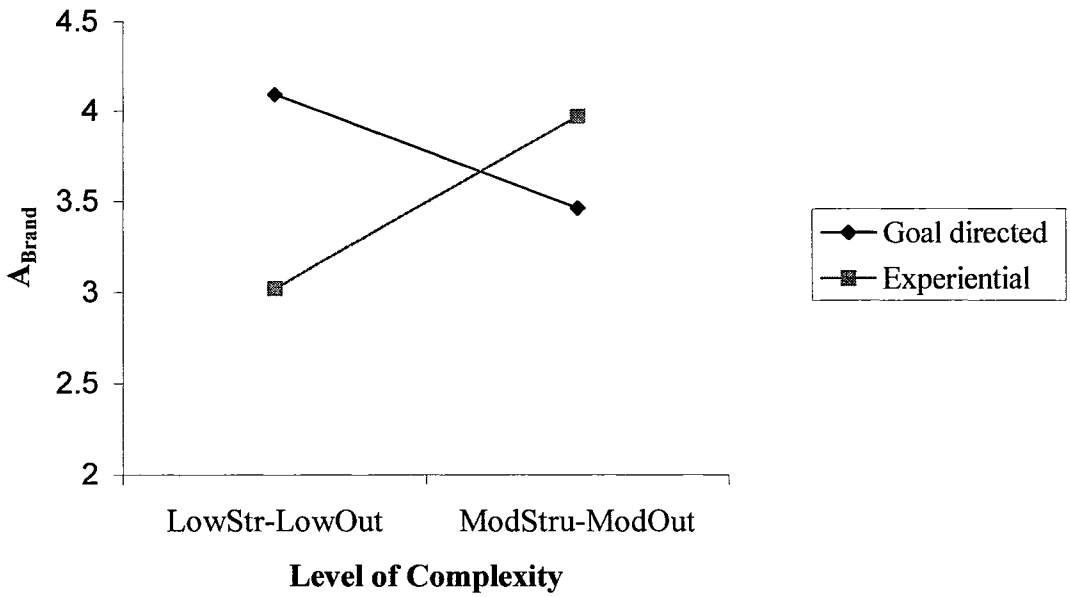

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Figure 8a: Main Effects on A_{Site} (Goal directed Motive)

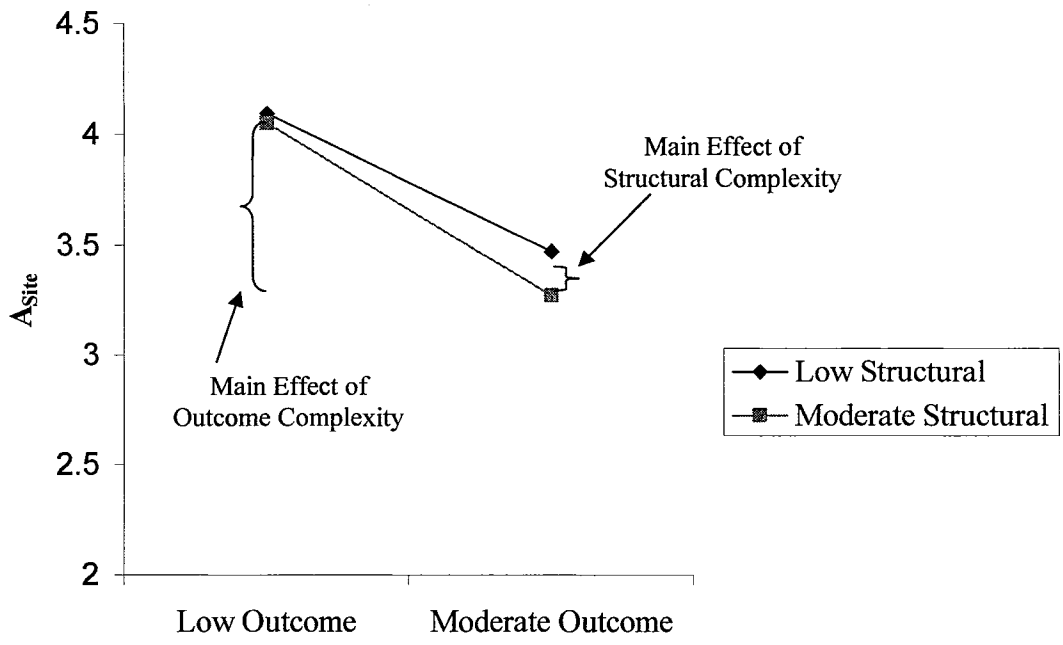

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Figure 8b: Main Effects on A_{Site} (Experiential Motive)

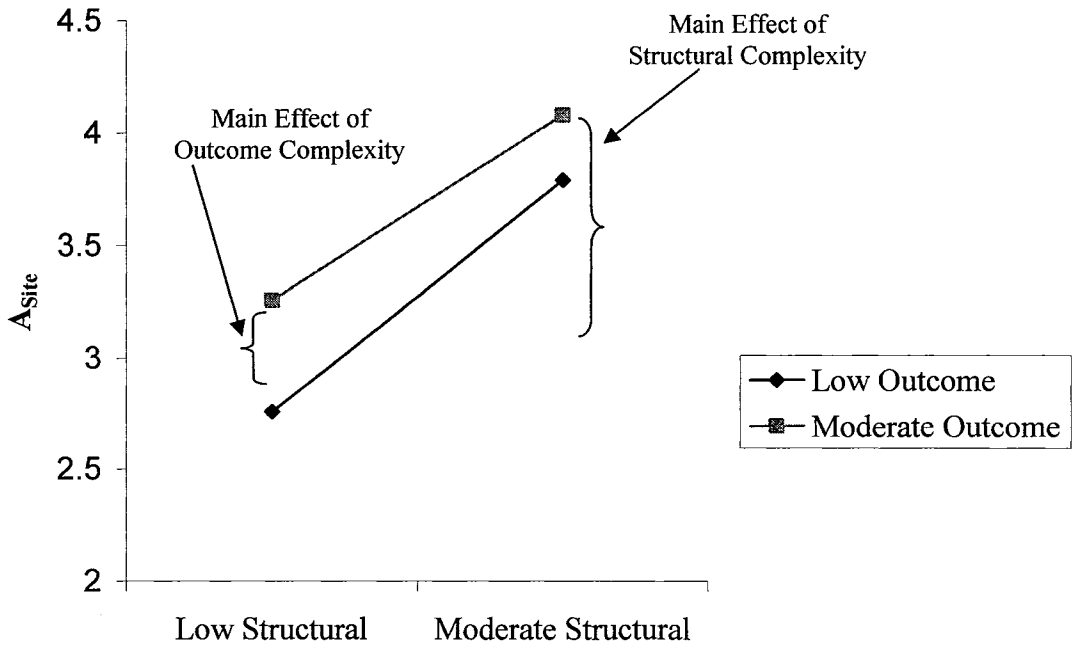

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Figure 9a: Main Effects on A_{Brand} (Goal directed Motive)

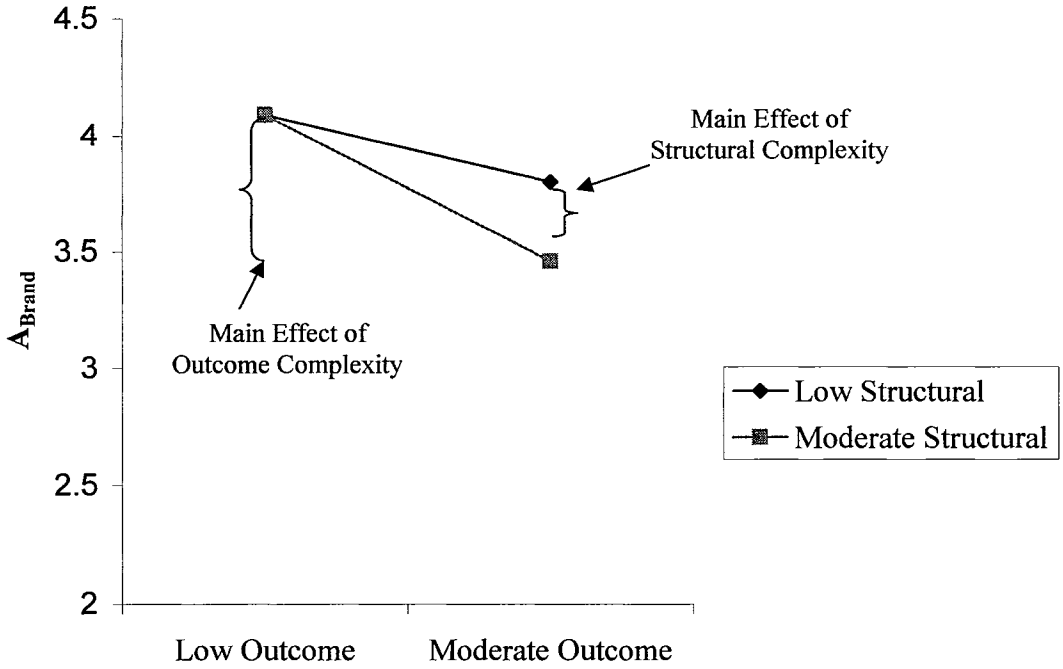

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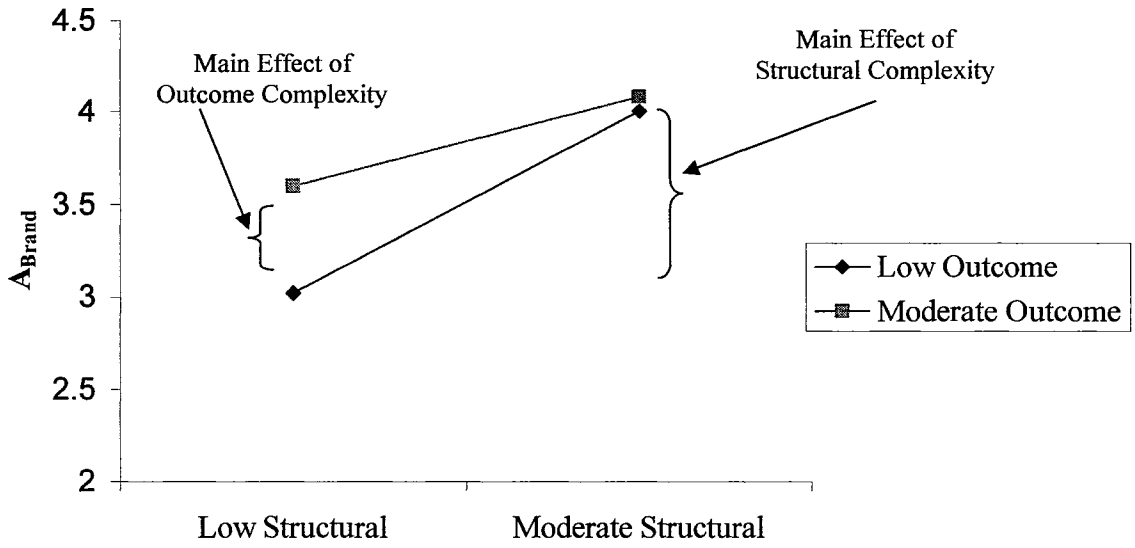
Figure 9b: Main Effects on A_{Brand} (Experiential Motive)



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APPENDIX

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Appendix A: Reliability Estimates of Key Measures (Study 1)

Reliability Estimates - Dependent Measures

Attitude Toward Web Site

Items	Mean	SD
Good—bad	3.67	2.10
Favorable --- unfavorable	3.95	2.14
Like --- dislike	3.73	2.03

Correlation Matrix

	WSATT1	WSATT2	WSATT3
WSATT1	1.0000		
WSATT2	.9112	1.0000	
WSATT3	.9090	.8829	1.0000

Alpha = .96

Attitude Toward Brand

Items	Mean	SD
Good-bad	3.78	1.79
Favorable-unfavorable	3.92	1.78
Like-dislike	3.98	2.08

Correlation Matrix

	BRATT1	BRATT2	BRATT3
BRATT1	1.0000		
BRATT2	.8836	1.0000	
BRATT3	.8297	.8085	1.0000

Alpha: .94

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Reliability Estimates – Manipulation check

Structural Complexity

Items	Mean	SD
Varied – Not varied	2.50	.96
Cluttered – Open	2.91	1.07
Dense - Sparse	2.88	1.20

Correlation Matrix

	OPENCLUT	DENSPARS	UNIFVAR
OPENCLUT	1.0000		
DENSPARS	.3940	1.0000	
UNIFVAR	.4935	.6601	1.0000

Alpha = .76

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Appendix B – Reliability Estimates of Key Measures (Study 2)

Reliability Estimates - Dependent Measures

Attitude Toward Web Site

Items	Mean	SD
The web site makes it easy for me to build a relationship with the company	4.32	1.48
I would like to visit this web site again in the future,	3.07	1.80
I am satisfied with the web site	3.78	1.62
I felt comfortable when I was at the web site	4.66	1.58
Browsing through this web site is a good way to spend my time	2.70	1.60
Compared with other web sites, I would rate this one as one of the best (worst)	3.47	1.35

Correlation Matrix

	ATTREL	ATTVISIT	ATTSAT	ATTCOMF	ATTTIME	BESTWORS
ATTREL	1.0000					
ATTVISIT	.4938	1.0000				
ATTSAT	.5915	.6523	1.0000			
ATTCOMF	.5733	.4149	.6182	1.0000		
ATTTIME	.4557	.7091	.6313	.5662	1.0000	
BESTWORS	.5404	.5483	.6540	.5945	.6119	1.0000

Alpha = .89

Attitude Toward Brand

Items	Mean	SD
Good-bad	4.06	1.24
Favorable-unfavorable	3.98	1.30
Like-dislike	4.06	1.35
Satisfactory-unsatisfactory	3.83	1.38

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Correlation Matrix

	ATTPROD1	ATTPROD2	ATTPROD3	ATTPROD4
ATTPROD1	1.0000			
ATTPROD2	.2505	1.0000		
ATTPROD3	.8197	.2952	1.0000	
ATTPROD4	.2840	.8260	.3051	1.0000

Alpha = .78

Reliability Estimates – Manipulation Checks

Motives

Items	Mean	SD
I had a distinct identifiable purpose while I was browsing the web site	3.88	1.79
I was looking up information to reach a specific end goal	4.13	2.07
I was reading the information at the web site to find answers to factual questions	4.26	1.99
I was clicking often and went to many different web pages (R)	3.33	2.00
I was just browsing for fun at the web site (R)	3.74	2.02
I was looking to be personally engaged at the web site (R)	3.38	1.92
I was reflecting upon my experiences of journeying through the web site (R)	2.93	1.61

Correlation Matrix

	GMAN1	GMAN2	GMAN3	GMAN4	GMAN5	GMAN6	GMAN7
GMAN1	1.0000						
GMAN2	.6182	1.0000					
GMAN3	.5656	.8085	1.0000				
GMAN4	.0587	.0523	.0661	1.0000			
GMAN5	.1228	-.0747	-.0692	.3331	1.0000		
GMAN6	.0654	.0302	-.0027	.3907	.5957	1.0000	
GMAN7	.2379	.1383	.2096	.3383	.4882	.5779	1.0000

Alpha = .71

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Structural Complexity

Items	Mean	SD
Amount of text	3.06	1.60
Amount of images	2.87	1.58
Number of icons to click on for information	2.58	1.38
Amount of animated images	2.54	1.54
Number of webpages at the web site	2.63	1.47

Correlation Matrix

	PERCSTR1	PERCSTR2	PERSTR3	PERCSTR4	PERCSTR5
PERCSTR1	1.0000				
PERCSTR2	.3840	1.0000			
PERSTR3	.3652	.7055	1.0000		
PERCSTR4	.2995	.7042	.7404	1.0000	
PERCSTR5	.4525	.6734	.7477	.5814	1.0000

Alpha = .86

Outcome Complexity

Items	Mean	SD
Clarity of icons used to browse the Alligator web site	2.76	1.62
Whether icons allow the individual to form expectations of where to go next	3.12	1.65

Correlation Matrix

	PEROUT1	PEROUT2
PEROUT1	1.000	
PEROUT2	.7820	1.0000

Alpha = .88

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Appendix C – Questionnaire (Study 1)

Instructions for Goal directed motive: Please spend about 10 minutes at the XXX website with the goal of efficiently finding something specific within the site. Begin by writing two questions you have for the web site in the space below. You may click on any area of the website that you wish. After you finish searching for the information on the website, please answer the questions regarding your thoughts and feelings about the website and your demographic information.

Thank you for your participation!

Questions for XXX web site:

1. _____

2. _____

Instructions for Experiential motive: Please spend about 10 minutes at the XXX website to have fun, looking at whatever you consider interesting and/or entertaining. You may click on any area of the website that you wish. After you finish searching for the information on the website, please answer the questions regarding your thoughts and feelings about a website.

Thank you for your participation!

Using the following scales, please rate your attitude towards the XXX web site:

Bad 1 2 3 4 5 6 7 Good

Unfavorable 1 2 3 4 5 6 7 Favorable

Dislike 1 2 3 4 5 6 7 Like

Using the following scales, please rate your attitude towards XXX as a company:

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Bad 1 2 3 4 5 6 7 Good

Unfavorable 1 2 3 4 5 6 7 Favorable

Dislike 1 2 3 4 5 6 7 Like

Using the following scales, please rate the extent to which the following adjectives describe the website at an overall level:

Not varied 1 2 3 4 5 6 7 Varied

Cluttered 1 2 3 4 5 6 7 Open

Dense 1 2 3 4 5 6 7 Sparse

Using the following scales, please rate your previous experience with the XXX website or the products served by XXX web site:

My knowledge of the product/s served by the XXX website is

Low 1 2 3 4 5 6 7 High

My knowledge of the XXX website is

Low 1 2 3 4 5 6 7 High

Please rate the site on the following criteria using a 1 to 7 scale (1 = poor on this dimension, 7 = terrific on this dimension).

Provides significant user interaction	1	2	3	4	5	6	7
Provides ease of navigation	1	2	3	4	5	6	7
Provides feedback mechanisms	1	2	3	4	5	6	7
Offers customization	1	2	3	4	5	6	7

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Provides relevant and understandable product information	1	2	3	4	5	6	7
Provides ease of use	1	2	3	4	5	6	7

Please rate how much you agree or disagree with the following statements

The website is entertaining

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

The website is enjoyable

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

The website is unattractive

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

The website is unappealing

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

The website is boring

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

How often do you use the World Wide Web?

____ zero hours per week
____ less than 4 hours per week
____ between 4 and 10 hours per week
____ more than 10 hours per week

When did you start using the web?

____ less than a year ago
____ over 1 year and upto 2 years ago
____ over 2 years and upto 3 years ago
____over 3 years ago

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When I think about my experience with the World Wide Web, I consider myself:

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

Please answer the following questions about yourself

Your gender: Male ------- Female -------

Your age:

Under 18 _____
18-24 _____
25-34 _____
35-44 _____
45-54 _____
55-64 _____
65+ _____

THANK YOU AGAIN FOR YOUR COOPERATION!

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Appendix D – Questionnaire (Study 2)

STUDENT WEB SITE SURVEY

Today you will spend few minutes looking at a section of an existing web site. Please remember it is not a complete web site so it may not have an extensive set of web pages. You will be asked some questions about the experience. Please turn the page now and read the instructions on the first page.

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Instructions for Goal directed Motive

The web site you are about to see is a section of an actual web site, *Alligatorrecords.com*. Your job is to navigate the site for about 7-10 minutes to find certain pieces of information that are in the web site. As you find these pieces of information, write them in the spaces provided below. Once you are done finding the specific information at the web site, you are required to complete the survey.

Please click on the link marked **Site XXX**. When you are in the web site *Alligatorrecords.com* click on the links in the web site to navigate. The links are on either side of the main center image. However, **do not** click on any buttons that are not within the web site.

1.In the news: Alligator Records has set a date in April to release Guitar Shorty's new record label. What is the release date?

---

2. How much alligator meat does the Alligator Sauce Piquante recipe require?

---

3. Guitar Shorty is on tour in August. What dates will he be on the road?

---

4. What user information is required to subscribe to the Alligator Club?

Instructions for Experiential Motive

The web site you are about to see is a section of an actual web site, *Alligatorrecords.com*. Please spend about 7-10 minutes browsing through the web site. Please have fun, and look at whatever you consider interesting and/or entertaining at the Alligator web site. Once you are done browsing through the web site, you are required to complete the survey.

Please click on the link marked **Site XXX**. When you are in the web site *Alligatorrecords.com* click on the links in the web site to navigate. The links are on either side of the main center image. However, **do not** click on any buttons that are not within the web site.

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The following items assess your general *favorability toward the web site* you just visited. Circle the number that best indicates how much you agree or disagree with each statement

	Strongly Disagree						Strongly agree
This web site makes it easy for me to build a relationship with the company, Alligator records	1	2	3	4	5	6	7
I would like to visit this web site again in the future	1	2	3	4	5	6	7
I am satisfied by this web site	1	2	3	4	5	6	7
I felt comfortable when I was at the web site	1	2	3	4	5	6	7
Browsing through this web site is a good way to spend my time	1	2	3	4	5	6	7
	One of the Worst						One of the Best
Compared with other web sites, I would rate this one as	1	2	3	4	5	6	7

Using the following scales, please rate your *attitude* towards the Alligatorrecords web site:

bad	1	2	3	4	5	6	7	good
unfavorable	1	2	3	4	5	6	7	favorable
dislike	1	2	3	4	5	6	7	like
not interesting	1	2	3	4	5	6	7	interesting
not enjoyable	1	2	3	4	5	6	7	enjoyable
unsatisfactory	1	2	3	4	5	6	7	satisfactory

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Using the following scales, please rate your *attitude* towards Alligator Records CDs and cassette tapes:

bad	1	2	3	4	5	6	7 good
unsatisfactory	1	2	3	4	5	6	7 satisfactory
unfavorable	1	2	3	4	5	6	7 favorable
dislike	1	2	3	4	5	6	7 like

Please indicate how much you agree or disagree with the following statements.

	Strongly disagree						Strongly agree
While I was at the Alligator web site I felt I was in the world created by the web site	1	2	3	4	5	6	7
While I was at the Alligator web site, I forgot that I was in the middle of a survey	1	2	3	4	5	6	7
While I was at the Alligator web site, my body was in the room, but my mind was in the the web site	1	2	3	4	5	6	7
The world generated by the Alligator web site seemed to me "somewhere I visited" rather than "something I saw"	1	2	3	4	5	6	7
I felt I was more in the world generated by Alligator web site than the real world	1	2	3	4	5	6	7
I forgot about the immediate surroundings when I was navigating through the web site	1	2	3	4	5	6	7
When I left the Alligator web site, I felt like I came back to the "real world" after a journey	1	2	3	4	5	6	7

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Using the following scale, please describe your experience while you were navigating through the Alligator web site

I was controlling my navigation experience at the web site	1	2	3	4	5	6	7 I was controlled
I decided on my own	1	2	3	4	5	6	7 I was influenced
I had complete autonomy	1	2	3	4	5	6	7 I was guided
I could do a lot to overcome any problem	1	2	3	4	5	6	7 There is very little I could do to overcome any problem

Using the scale (1= Not at all complex and 7= Very complex) please rate the extent to which each of the following features make the Alligator website *visually complex*.

	Not at all Complex						Very Complex
Amount of text	1	2	3	4	5	6	7
Amount of images	1	2	3	4	5	6	7
Number of *icons* to click on for information	1	2	3	4	5	6	7
Amount of animated images	1	2	3	4	5	6	7
Number of web pages at the website	1	2	3	4	5	6	7

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NOW PLEASE TURN TO THE HOMEPAGE OF THE WEB SITE TO ANSWER THE SET OF QUESTIONS ON THIS PAGE.

Please take a look at the icons on either side of the homepage of the Alligator site and list each of them in one of the appropriate columns below.

Simple Icons (The icons were straightforward and I could immediately form expectations of where it would take me)	**Moderately complex Icons** (The icons were not straightforward and I had to think a little before I could form expectations of where it would take me)
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

Using the scale (1= not at all complex and 7= very complex) please rate the extent to which each of the following features make the website *complex to navigate.*

	Not at all Complex						Very complex
Clarity of icons used to browse the Alligator web site	1	2	3	4	5	6	7
Whether icons allow the user to form expectations of where to go next	1	2	3	4	5	6	7

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When I was at the Alligator website.....

	Strongly disagree						Strongly agree
I had a distinct identifiable purpose while I was browsing the web site	1	2	3	4	5	6	7
I was looking up information to reach a specific end-goal	1	2	3	4	5	6	7
I was reading the product information to find answers to factual questions	1	2	3	4	5	6	7
I was clicking often and went to many different web pages	1	2	3	4	5	6	7
I was just browsing for fun at the web site	1	2	3	4	5	6	7
I was looking to be personally engaged by the site	1	2	3	4	5	6	7
I was reflecting upon my experiences of journeying through the site	1	2	3	4	5	6	7

When I was at the Alligatorrecords web site, I found my *task* at the web site.....

important	1	2	3	4	5	6	7	unimportant
irrelevant	1	2	3	4	5	6	7	relevant
meant a lot to me	1	2	3	4	5	6	7	meant nothing to me
mattered to me	1	2	3	4	5	6	7	did not matter to me
of no concern	1	2	3	4	5	6	7	of concern to me

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Please collect all your *thoughts* about the web site experience you just had. In your own words, could you please list these thoughts on this page.

In your own words, could you tell us what aspects of the web site made using it easier or more difficult to navigate. You may go back to the web site if you need to.

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Finally, please answer the following questions for classification purposes:

During an average week, I use the Internet:

[ ] zero hours per week
[ ] less than 4 hours per week
[ ] between 4 and 10 hours per week
[ ] more than 10 hours per week

Did you ever visit the Alligatorrecords web site before? Yes [ ] No [ ]

Did you hear about Alligatorrecords before you took this survey? Yes [ ] No [ ]

Please indicate your level of familiarity with blues music.

Unfamiliar 1 2 3 4 5 6 7 Familiar

Knowledgeable 1 2 3 4 5 6 7 Not knowledgeable

Please indicate how much you agree or disagree with the following statements, about yourself.

	Strongly disagree						Strongly agree
I would prefer complex to simple problems	1	2	3	4	5	6	7
I like situations that require a lot of problems	1	2	3	4	5	6	7
Thinking is not my idea of fun	1	2	3	4	5	6	7
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities	1	2	3	4	5	6	7
I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something	1	2	3	4	5	6	7
I find satisfaction in deliberating hard and for long hours	1	2	3	4	5	6	7

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I only think as hard as I have to	1	2	3	4	5	6	7
I prefer to think about small, daily projects to long-term ones	1	2	3	4	5	6	7
I like tasks that require little thought once I have learned them	1	2	3	4	5	6	7
The idea of relying on thought to make my way to the top appeals to me	1	2	3	4	5	6	7
I really enjoy a task that involves coming up with new solutions to problems	1	2	3	4	5	6	7
Learning new ways to think doesn't excite me very much.	1	2	3	4	5	6	7
I prefer life to be filled with puzzles that I must solve	1	2	3	4	5	6	7
The notion of thinking abstractly is appealing to me	1	2	3	4	5	6	7
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought	1	2	3	4	5	6	7
I feel relief rather than satisfaction after completing a task that requires a lot of mental effort	1	2	3	4	5	6	7
It's enough for me that something gets the job done: I don't care how or why it works	1	2	3	4	5	6	7
I usually end up deliberating about issues when they do not affect me personally	1	2	3	4	5	6	7

Male [ ] Female [ ]

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Your age:

[ ] Under 18
[ ] 18-24
[ ] 25-34
[ ] 35-44
[ ] 45-54
[ ] 55-64
[ ] 65+

Thank you for your participation today!

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