**Interactive Marketing Strategies: Improving Brand Messaging
Through Multi-Level Engagement Congruent to
Consumers' Cognitive Preferences**

by

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ABSTRACT

Since the advent of the Internet, companies have progressively sought to make full use of this tool in their marketing and consumer engagement endeavors. A recent trend is to increase consumer brand awareness through web-based Internet marketing campaigns. However, research assessing the effectiveness of these interactions in increasing consumer understanding of brand messaging is lacking. The purpose of this study was to create a model for understanding consumer message interactions and message interpretation in the context of an Internet marketing campaign centered on communicating messages of sustainability. This research was theoretically based on the Elaboration Likelihood Model (ELM) of attitude change established by Petty and Cacioppo (1981). This model states that people process messages in one of two ways: central or peripheral. Central processing involves deep message processing such as message deliberation, whereas, peripheral route processing is a cue-based approach to message processing. The specific objectives of this study were to: 1) discern important characteristics of sustainable products from a consumer perspective; 2) determine mechanisms of persuasion that evoke positive, lasting attitude shifts within the minds of consumers leading to behavioral change; and 3) determine the appropriate advertising strategy to utilize the identified persuasion cues.

To accomplish this, a research model was used that explored relationships between consumers' need for cognition, personal and social characteristics, motivations, message interaction, and message reception of both informational and transformational marketing messages. The study was concentrated in the textile industry and explored the consumer constituency of an international textile firm located in the Southeast United States. A two-sample survey method was used to collect the data, where a pre-test of junior and senior level interior design students was followed by a nation-wide sample of practicing interior designers and architects in the United States. Factor Analysis followed by Structural Equation Modeling was used to analyze the data. Through hypotheses testing it was determined that in the Southern and Western regions of the U.S., consumer understanding of informational and transformational marketing messages is related to their need for cognition and their motivation to seek sustainability-related information. It was revealed in this study that understanding consumer motivations to make sustainable consumptive choices is difficult at best, and there are significant gaps in current metrics for capturing this information. Findings also indicated a need for future research to better understand, classify and communicate with consumers about sustainability-related product information. In terms of the interactive website, this study showed that message interaction, as measured by click-through rate, was not related to message understanding and that perhaps new metrics are needed to assess message interactions in a web-based forum.

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LIST OF ABBREVIATIONS

CFA   Confirmatory Factor Analysis

CFI   Comparative Fit Index

ELM   Elaboration Likelihood Model

EPA   Environmental Protection Agency

LOHAS Lifestyle of Health and Sustainability

MW   Midwest

NE   Northeast

NFC   Need for Cognition

NFI   Normed Fit Index

INFO   Informational Ad Content

RMSEA Root Mean Square Error of Approximation

S   South

SEM   Structure Equation Modeling

TRANS Transformational Ad Content

UC   University of California

W   West

I. INTRODUCTION

"When one tugs at a single thing in nature, one finds it attached to the rest of the world."

–John Muir

During the Industrial Revolution the cradle-to-grave paradigm of product

consumption and use was established. This paradigm ensured that there was a constant

flow of products through the consumer-industrial complex. It also ensured that as

consumers used and disposed of products, there would be newer, faster, cheaper, and

shinier products ready to replace the old ones. Thomas Friedman described this

phenomenon with the term *creative destruction* (coined by Joseph Schumpeter (1942)),

which is defined as, "the perpetual cycle of destroying the old less efficient product or

service and replacing it with the new, more efficient ones" (Friedman, 2000, p. 11). This

concept is perpetuated by the built-in obsolesce designed into virtually every product on

the market today. Though established in the 1700s, this cradle-to-grave concept remains

as the predominant manufacturing and use philosophy. Now, more than two hundred

years after this manufacturing bedrock was laid, the world at large is beginning to grapple

with the consequences of such a decision.

Current Situation

Some corporations, architects, and designers are beginning to rethink the cradle-

to-grave design paradigm and are attempting to design products that once consumed, can

be broken down into original natural resources and/or component parts and then be

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retooled into first quality products. This concept, or design paradigm, is termed cradle-to-cradle and was popularized by a book by the same name by McDonough and Braungart (2002). These authors proposed that a cradle-to-cradle design paradigm should replace the current (and un-maintainable) cradle-to-grave theology. Evidence that the cradle-to-grave model is not sustainable is abundant and ranges from the existence of the Great Pacific Garbage Patch (National Oceanic and Atmospheric Administration, 2010) to the 2010 BP oil spill in the Gulf of Mexico (United States Environmental Protection Agency (U.S. EPA), 2010). These situations illustrate not only the massive issue at hand, but also show the dire consequences of doing business as usual. Ideally, these crade-to-grave models will be abandoned and replaced by cradle-to-cradle systems that will create a sustainable consumer-industrial complex where goals of eco-efficiency (i.e., doing less bad) are usurped by goals of sustainability and eco-effectiveness (i.e., giving back to the earth more than is taken from it) (McDonough & Braungart, 2002).

Consumers are also beginning to question their own traditional consumption patterns. Green purchases are no longer just linked to the avant-garde or "tree-huggers." Instead, sustainability is linked to the word smart and is becoming a part of American household vernacular. However, semantic trends continually shift. In 2007, a Google search of "sustainability + smart" revealed 5.6 million hits; in 2008, it revealed only 546,000 hits. The same search in 2009 revealed an increase to a 2.35 million hits. A simple illustration of a potential semantic shift from sustainability to another word is that a search for "green + smart" revealed 10.7 million hits. One year later, the same search surged to 35.6 million hits. This is shown in Table 1. Obviously, these Google searches are not rigorous enough evidence to substantiate the claim that there has been a semantic shift between the words 'sustainability' and 'green' between the years 2007 and 2009;

Table 1.1 *Search Terms and Results from Google.com by Calendar Year*

Search Terms	2007	2008	2009
Sustainability + Smart	5,600,000	546,000	2,350,000
Green + Smart	_____	10,700,000	35,600,000

however, this simple example may be indicative of a social trend worth investigating.
Part of this study is aimed at searching for the correct verbiage marketers need to use in
order to facilitate consumer understanding of sustainability. This observation is
particularly important because the term 'sustainability' has been defined as, "meeting the
needs of the present generation without compromising the ability of future generations to
meet their own needs" (Brundtland Report, 1987, p. 43) and is used by organizations
such as the U.S. EPA (2008). In contrast, the term 'green' is not a defined term, and only
vaguely implies something to do with the environment. This distinction is critical to
understanding the importance of messaging because if consumers are truly going to
support the sustainability movement, they must have a clear understanding of what the
movement encompasses. Because of the vagueness of the term 'green,' all too often this
term is abused and used in ways that not only are confusing to consumers, but can also be
used to mask products and processes in ways that are deceptive. The term greenwashing
describes this notion of deception and will be discussed further in Chapter II.

<div align="center">Statement of Problem</div>

Increasingly fast product lifecycles (defined as natural resource use through
product disposal) (Sustainable Products Corporation, 2009) are creating (and adding to)

mounting problems with landfills, depleted natural resources, industrial pollution, evidence of climate change, and the overarching and pending question of what to do with all of this stuff that we [as consumers] do not want, but do not know how to convert into something useful. With these problems, sustainable solutions must come quickly and must not only mitigate the problems at hand, but also begin addressing the clean up and repair necessitated by past practices. These solutions must also plan for the growth and prosperity of future generations of humanity. Tools such as the Kyoto Protocol are being globally implemented to address some of these issues (United Nations Framework Convention on Climate Change, 2010). However, instances like the 2010 BP oil spill in the Gulf of Mexico prove that there is still much work to be done to create a sustainable world.

<div align="center">Purpose of Research</div>

This research attempts to provide insight into the social trends occurring as the globalized world begins to answer the problems stemming from the massive production and consumption cycles of the Industrial Revolution. It is proposed that the current momentum towards sustainability is more than just a microcosmic blip on the world's radar, and is rather the beginning of a new societal paradigm shift of the same magnitude and scope of post cold war globalization. The work of Cohen, Comrov, & Hoffner (2005) shows the beginnings of this movement with their research examining the developing linkages between social and political protest campaigns, lifestyle reinventions, and public policy initiatives that are related to sustainability. Based on Rogers' Diffusion of Innovation model (1971), it is theorized here that the prior classification of sustainability-oriented consumers through Lifestyles of Heath and Sustainability (LOHAS) market segmentation (Howard, 2007) is but a piece of a much

larger and revolutionary consumer behavior trend. Though the LOHAS categorization

may have been valid in describing and predicting some early mover behavior in the

sustainability marketplace (Howard, 2007), this research proposes that the LOHAS model

is merely a social indicator of early adopters, and not a complete model for looking at the

broader spectrum of sustainability-minded consumers. Confirming this, Howard (2007)

states, "LOHAS consumers are predictors of future trends and cultural shifts." (p. 58).

This notion is also shown in the work of researchers such as McDonald and Oates (2006)

who showed that green consumer behavior cannot merely be explained by market

segmentation based on consumer demographics and/or socio-demographics. They also

stated, based on the work of Prakash (2002), that, "the anticipated surge in green

consumer behavior, predicted for the 1980s and 1990s, never really occurred, and that the

mass consumer market for green products has yet to develop." (McDonald & Oates,

2006, p. 157). Through an interview-based empirical study McDonald and Oates (2006)

found that consumers were inconsistent in identifying sustainable-activity based

perceptions (i.e., some consumers perceived recycling as a high effort that made little

difference in terms of sustainability, where as others identified it as a low effort activity

that made a big difference in terms of sustainability). These inconsistencies show that

there is still a significant place in the sustainability marketplace for marketers to guide

consumer perceptions of sustainable practices and to steer consumer mindsets with regard

to true sustainability behaviors that make a high impact in terms of the overall movement

towards a truly sustainable future.

<div align="center">Justification of Research</div>

In terms of understanding where sustainability stands with respect to corporations

and consumers, it is important to note that some corporations are embracing triple bottom

line metrics as a differentiation strategy. This method for measuring corporate functionality is through, "performance outcomes stemming from economic (sales increase, cost reduction, waste reduction, cycle reduction), social (social responsibility, ethics) and environmental (legal compliance, standards, codes, reduced impact) goals" (Solomon, Englis, & Englis, 2005, p. 1). This notion is based on the work of John Elkington and falls under the 'triple bottom line,' a term Elkington coined in 1994 to represent an accounting of human, environmental, and economic performance metrics (Elkington, 1994). A common rule of business (based on the company motto of McKinsey and Co.) is that "whatever gets measured, gets managed" (Perret, 2007, p. 269). Thus, corporations that use these triple bottom line performance outcomes, which are all related to aspects of sustainability, to quantify the success or failure of their corporate initiatives, will be able to meaningfully manage progress toward sustainability.

Though these triple bottom line measures may be well researched within sustainability-oriented corporations, it is unclear if these measured outcomes are being translated to consumers. While there are many consumer segmentation models that are employed to predict consumer behavior, such as the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986) and the Theory of Reasoned Action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), there is surprisingly little information available with respect to how consumers react in the marketplace to ideas and products related to sustainability. The applicable studies follow traditional lines of thought with respect to consumer segmentation (e.g., LOHAS), and filter their research results and conclusions through this lens with often "mixed and frequently contradictory results" (McDonald & Oates, 2006, p.157). Although this approach may have been appropriate in the past, the new shifts towards sustainability, which are gaining momentum all along the consumer-

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industrial complex, as well as in governmental and educational institutions, call for a much broader understanding of sustainability and an expanded view of consumers.

This research attempts to offer a basis for increased understanding of consumer behavior as it relates to sustainability and also begins to identify the marketing messages that must be relayed by corporations engaged in sustainable production in order to facilitate consumer investment in sustainable consumption. To accomplish this, the ELM was used to develop a conceptual model relating marketing messages about sustainability to consumer behaviors and attitude change. The interpretation of sustainability-oriented marketing measures was tied to consumer need for cognition as established by Cacioppo and Petty (1982) in order to more fully understand how need for cognition relates to the processing of sustainability information. Consumer need for cognition was measured by Puto and Wells' (1984) informational and transformational ad content scale that assesses consumer identification with ad components. Hypotheses related to sustainable marketing messages were tested from data gathered from a sample of consumers of an industrial carpeting company committed to sustainability.

Research Questions

The study utilized a pretest followed by a comprehensive national survey to address the following research questions:

1. Do consumers' motivation sources influence involvement with sustainability-related marketing messages?

2. Does level of involvement with sustainability-related marketing messages relate to the understanding of transformational and informational ad content?

3. Do consumers' personal and social characteristics influence motivation for receiving sustainability-related marketing messages?

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4. Do consumers' personal and social characteristics influence involvement with sustainability-related marketing messages?

5. Do consumers' personal and social characteristics influence understanding of transformational and informational ad content of sustainability-related marketing messages?

6. Does consumers' need for cognition influence motivation for receiving sustainability-related marketing messages?

7. Does consumers' need for cognition influence involvement with sustainability-related marketing messages?

8. Does consumers' need for cognition influence understanding of transformational and informational ad content of sustainability-related marketing messages?

9. Can traditional market segmentation practices be applied to consumers of sustainable goods, or are there other rubrics of classification that are more accurate?

Significance

With the recent explosion of green marketing, one might assume that marketers know a great deal about consumers of sustainable goods. However, when reviewing the marketing literature, one notices that there is a large gap in the knowledge in what marketers know about consumers' preferences related to sustainable messaging. Moreover, validated peer-reviewed research illustrates inconsistencies in consumer sustainability perceptions as shown by McDonald and Oates (2006). This study contributes to an expanded understanding of consumer knowledge, attitudes, and behaviors related to sustainable goods through a survey-based study utilizing the ELM.

Goals of this study included: 1) discerning important characteristics of sustainable products from a consumer perspective; 2) determining mechanisms of persuasion that evoke positive, lasting attitude shifts within the minds of consumers leading to behavioral change; and 3) determining the appropriate advertising strategy to utilize the identified persuasion cues. It is theorized that this information can then be funneled directly to industry, which in turn, may enable industry to provide the appropriate informational and transformational marketing messages to appeal to consumers' identified preferences. This, in turn, may help motivate consumers to be more committed to ideas, messages, and products related to sustainability. The significance of this study extends beyond the realm of marketing and adds to the increasing social and political commentary related to consumption and sustainability, but the ultimate goal is to contribute to the knowledge about the new sustainability consumer.

<div align="center">Definition of Terms</div>

<u>Click Through Rate</u> – In this study, click through rate is the number of times each consumer clicked on each page of an interactive website.

<u>Green Company</u> – A business that seeks to have closed-loop business practices that follow the cradle-to-cradle philosophy outlined by McDonough and Braungart (2002).

<u>Green Marketing</u> – Marketing campaigns and materials that indicate a company's involvement with sustainability or the environment.

<u>Green Revolution</u> – A concept implying a massive social/governmental/corporate movement towards sustainability and sustainability-minded behaviors, products, and policies.

<u>Greenwash</u> – A play on the term 'whitewash' that implies either a superficial quick fix to the extensive problems in the consumer-industrial complex or a marketing ploy aimed at

deceiving consumers into thinking they are purchasing sustainable goods or services, when in fact they are not.

Informational Advertisement – An advertisement "which provides consumers with factual, relevant brand data in a clear and logical manner such that they have greater confidence in their ability to assess the merits of buying the brand after having seen the advertisement." (Bearden, Netemeyer, & Mobley, 1993, p. 210). These ads focus "on providing meaningful facts to the consumer." (Cutler, Thomas, & Rao, 2000, p. 69).

Sustainability – Meeting the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report, 1987; U.S. EPA, 2008). In this research, this concept also implies equitable social practices.

Transformational Advertisement – An advertisement, "which associates the experience of using (consuming) the advertised brand with a unique set of psychological characteristics which would not typically be associated with the brand experience to the same degree without exposure to the advertisement." (Bearden, et al., 1993, p. 210). In doing this, transformational advertisements attempt "to move the consumer emotionally to a point of greater acceptance." (Cutler, et al., 2000, p. 69).

II. REVIEW OF LITERATURE

The social context, theoretical and conceptual frameworks, and research hypotheses are included in this chapter. To achieve the goals of this study (see pp. 9), a survey was used to understand consumer interpretations of an interactive marketing campaign for a sustainably-marketed product line from a leading textile company's commercial carpeting product segment. This research is broken down into two parts: a pre-test and a larger national survey. Because of the complex nature of information processing and attitude change, the theoretical model chosen for this study is ELM because it accounts for multiple pathways of thought and explains the implications of each.

Social Context

The following discussion traces the movement of sustainability in modern American culture and shows the growing social impetus for the adoption of sustainability practices across a broad spectrum of society. Post-Cold War globalization popularized sustainability dialogue, not only among designers, but also among individual consumers, educational institutions, governments, industries, and activist groups. Because globalization enables individuals to have a voice, and interact on the global playing field in the same manner that was previously only afforded to nation states and corporations (Friedman, 2000), these newly-empowered consumers are beginning to place demands of sustainability on many segments of society. Currently, nation states and corporations are working to formulate responses to these demands. For example, in 2001, the CEOs from

DuPont and Procter & Gamble collaborated to publish a report titled "Sustainability through the Market: Seven Keys to Success" (Young, 2005). These seven keys are:

1. Innovate

2. Practice eco-efficiency

3. Move from stakeholder dialogues to partnerships for progress

4. Provide and inform consumer choice

5. Improve market framework conditions

6. Establish the worth of the earth

7. Make the market work for everyone

These seven keys, "capture the essence of how a market can, and partially already does, encourage sustainability" (Young, 2005, p. 1443). Young notes that these keys must all be present and active for true sustainability and that none are sufficient to create a sustainable market alone. Many of these corporate ideals stem from corporate social responsibility initiatives, which as Friedman (2000) reports, are becoming increasingly more important to consumers. Nation-states are also responding. In 2009, the world is in the fourth year of the United Nations' Decade of Sustainability (2005-2015) which has implications related to sustainable development at the national, regional, and international levels (UN.org, 2009). There are also increasing initiatives from local, state, and federal governments that are helping to encourage corporations and citizens across the world to act in more sustainable ways. The scope of these initiatives range from increasing mileage rates and decreasing emissions in automobiles to global campaigns that unite nations in global climate change agreements (UN.org, 2009). Taken in part or as a whole, these regulations are moving individuals, corporations, and nation-states into a more sustainable world.

The responsibility to create a sustainable world falls also on the heads of everyday consumers. Reusswig (2005, p. 1) argues that:

> The 'big issues' of a Sustainability Transition—changing the energy system, reducing material throughput, changing urban structures, re-defining land use, facilitating the science-society-dialogue—are not only tasks for 'the' economy, technology, or policy. They translate into the fragmented micro-worlds of everyday life, have consequences for our [consumer's] consumption patterns and the lifestyles we're performing.

Furthermore, Young (2005) states that as corporations and governments move towards more sustainable practices, all the while encouraging consumers to do the same, that it is imperative to give consumers high quality, reliable, aesthetically pleasing, yet sustainable product choices. In preserving companies as well as economies, sustainability cannot compromise economic growth and corporate profitability. Instead, Young states that companies must, "encourage a trend towards consuming differently, and appreciate that choosing products on the basis of quality rather than quantity can enhance personal well-being" (2005, p. 1445). A recent experimentally based, product-labeling study by Hiscox and Smyth (2005), validated this assessment by Young (2005). The researchers found that consumers at a New York City based Carpet and Home Décor Store preferred to purchase more goods when these goods were labeled from sustainable sources (in this case, sources that used fair labor practices in producing candles and towels) relative to unlabeled versions of these same products. Interestingly, the consumers were willing to pay more (up to a 20% premium) for these fair-trade labeled goods within a certain price range.

As consumers become more aware of sustainability (through a growing social movement and the accompanying marketing messages), corporations must take heed and move their businesses to match consumer expectations. Friedman (2007) postulates that the movement towards a Green Revolution as opposed to a greenwash can only take place once consumers began placing sustainability demands on corporations and governments, with the idea that corporations and governments can either adapt to those demands, or die.

At the 2008 sustainability forum, *Focus the Nation*, Auburn University architect, Christopher Dagg, echoed the same prediction when giving the following example: when constructing a building, buyers do not come to the architect and builder after project completion and ask if the building is up to code; instead, they automatically assume that it is. The same expectation is predicted with sustainability. It is predicted that consumers will develop high expectations, and they will no longer assume that buildings are built in a sustainable manner; rather, they will demand that the building is, and will only do business with those who meet these expectations of sustainability (Dagg, 2008).

Further offering evidence for the presence of consumer desire for increased product expectations, the Mintel Report on Green Living (2006), a survey measuring the attitudes of 24,617 adults aged 18 years old and up towards recycling and social responsibility, found that 36% of their sample indicated that they would pay more for environmentally-friendly products, but only 12% said that they regularly bought environmentally-friendly products. These findings led the researchers to conclude that "when it comes to buying recycled and environmentally-friendly products, there is a disconnect between the responsibility and the actual behavior. . . [to] become a green consumer requires a financial commitment that most respondents appear unwilling to

make." (p. 100). However, more than a third of these same respondents favored, "government bans on products that pollute" (p. 101), which indicates that perhaps these consumers would purchase environmentally-friendly products if the responsibility fell on the government, rather than the consumer, to determine the product's environmental impact. On that point, there are several ways in which the government could achieve such a goal. One way would be to reduce the number of product choices to only those that are good for the environment. Another would be to build in price incentives to deter consumers from purchasing products that are not good for the environment. Either way, these consumers indicated that they have a preference for governmental control and regulation in this area. It is important to note that a major problem with deflecting control to national/regional governments is that these governments are interacting with a global marketplace which is much more difficult to control and regulate.

<center>*Sustainability in Higher Education*</center>

Anthony Cortese is considered by many to be the father of the higher education sustainability movement, and his work supports the idea that influencing students while they are in college is the place to truly make change for the future (Carlson, 2007). Since 1993, Cortese's organization, Second Nature, has worked with over, "500 colleges and universities to help make the principles of sustainability the foundation of all learning, practice, and collaboration with local communities." (Second Nature, 2008). When speaking of the role of higher education in the sustainability movement, Cortese put it best when he said:

> Higher education institutions bear a profound, moral responsibility to increase the
> awareness, knowledge, skills, and values needed to create a just and sustainable
> future. Higher education plays a critical but often overlooked role in making this

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vision a reality. It prepares most of the professionals who develop, lead, manage, teach, work in, and influence society's institutions (2003, p. 17).

Sustainability is becoming a strategic priority on college campuses in the United States. At Auburn University for instance, the President endorsed a new Sustainability Office on campus whose mission is, "To educate about sustainability, to promote sustainable practices both on and off campus, and to provide resources and support for people who wish to incorporate sustainable practices into their work and life." (Auburn University, 2008). The Auburn University Curriculum Committee also approved a new Sustainability Minor that became effective in Fall 2008, which enables students from across the University to educate themselves about sustainability. In 2008, the University's President signed the American College and University Presidents' Climate Commitment (Auburn University, 2008). In South Carolina, Clemson University, the Medical University of South Carolina, and the University of South Carolina started a Sustainable Universities Initiative with a mission to:

> Educate our students and citizens so that we can achieve this balance [between the economy, the environment, and social or community considerations]. It is much more than just a recycling program—it calls for profound changes in behavior and attitudes that reach into all facets of our daily lives. (Clemson University, 2008)

Other schools across the country are also placing a strategic emphasis on sustainability. For example, Yale University's president Richard C. Levin was recently quoted as saying, "As an institution, Yale is committed to becoming a model university that prepares its students for facing the pressing environmental conditions and taking a leadership role amongst higher education institutions to respond to the energy challenge." (Levin, 2010). University of California (UC) Davis recently released its Climate Action

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Plan and the university's website touts that UC Davis has a, "long-term commitment to environmental, economic, and social sustainability" (University of California, Davis, 2010). In 2010 the Princeton Review partnered with the U.S. Green Building Council to compile and publish the top green colleges. Among those in the top 15 are: Arizona State University (Tempe Campus), Colorado College, Georgia Institute of Technology, Harvard College, The Evergreen State College, Northeastern University, Yale University, and University of Washington. (Princeton Review, 2010). These schools represent both a broad range of higher education institutions and also show that sustainability is being addressed all across the country. This trend is important because the higher education system will provide the future corporate 'movers and shakers' who will influence sustainability trends for future generations.

These are just a few of the numerous examples of the myriad of higher education organizations that are taking a stance on sustainability. Initiatives such as these are key pieces of evidence to the case that sustainability is becoming more than just a buzzword or a "feel good" campaign that is short lived; rather, these initiatives illustrate that sustainability is a growing social movement that is being played out in our government, marketplace, and educational systems.

Corporate Sustainability Initiatives

Some large corporations, like Herman Miller, Inc. and Wal-Mart, are not waiting on governmental regulations to bring these green products to the marketplace, but instead are already moving towards making green purchases easier for the consumer. When Herman Miller Inc., made shifts in their company practices in the late 1980s and early 1990s to be more environmentally friendly, they did little advertising of the shift, because as Katherine Murtagh, their advertising account supervisor, put it, "They [Herman Miller

Inc.] don't think of it as something they need to promote. They firmly believe this is something that everyone will be doing in 20 years." (Dold, 1991, p. 7).

In 2005, Wal-Mart CEO H. Lee Scott, Jr. launched a corporate sustainability initiative, aimed at finding and using renewable energy sources, creating a zero waste system, and capitalizing on the sale and use of sustainable products (Gunther, 2006). The implementation of this initiative has massive implications for the sustainability movement. Friedman (2007) noted that if Wal-Mart was a country, it would be China's seventh or eighth largest trading partner, ahead of Canada. With China's reliance on American consumerism, through Wal-Mart's massive reliance on Chinese manufacturing, Wal-Mart can exercise tremendous sway on China's manufacturing policies and practices. Wal-Mart also has tremendous power within the United States. Currently, Wal-Mart is the largest publicly owned private user of electricity in the U.S. and also has the second largest fleet of trucks. (Gunther, 2006).

With Wal-Mart's new sustainability initiatives in place, there is little stopping the big box superstore from showing the world, not only its power in controlling entire economies, but also its ability to bring many sustainability initiatives to fruition. For example, when Coral Rose, a women's apparel buyer for Sam's Club, began purchasing organic cotton yoga suits, she noticed the rapid turnover and brought this to Scott's attention. This was during the pivotal period when Scott was formulating his sustainability plan for Wal-Mart. The result is that the organic cotton industry went from a global production of approximately 6.4 million metric tons to in 2006, to producing 8 million metric tons for Wal-Mart and Sam's Club alone (Gunther, 2006). Though the concept of organic cotton is not new and has been incorporated for a number of years in apparel products from such eco-conscious companies such as Patagonia, American

Apparel, and Lotus Organics, the wide scale incorporation of organic cotton across a broad consumer spectrum is new. Though companies like Patagonia, and others like them, initially supported the organic cotton industry, the industry's current major source of support and growth stems from recent acquisitions of organic cotton by Wal-Mart. It is estimated that Wal-Mart's decision to purchase organic cotton potentially eliminates millions of tons of pesticides and fertilizers from the environment. Wal-Mart is also in the unique position to influence suppliers all over the world due to its sheer size and clout (Gunther, 2006). The implications of Wal-Mart's decision to work towards more sustainable and eco-friendly business practices could potentially standardize sustainability practices across the globe. However, for the purposes of this research, it is primarily important to note that these effects exist and that, as was shown in the case of organic cotton, corporations like Wal-Mart can affect positive sustainability-oriented change on a global scale.

Sustainability and Marketing

Even though corporations like Herman Miller, Inc. and Wal-Mart are making genuine strides towards establishing sustainable models of corporate responsibility, there are hundreds of other companies that are filling consumer spaces with a cacophony of noise in the form of greenwashing and voodoo marketing. With this greenwash, there is currently little to no information about what consumers actually know about sustainability, much less what they expect from corporations that are touting these claims. Therefore, this study is designed to: 1) discover what consumers know and think of sustainability, 2) determine if traditional market segmentation techniques (e.g. LOHAS) apply to the market for sustainable goods, 3) discover what motivates consumers to seek information in order to be informed of sustainable corporate practices, and 4) determine

effective marketing messages to convey pertinent information about corporate sustainability practices.

It is theorized in this research, that with greenwashing, consumers are having a difficult time distinguishing truly sustainable products from those that are merely touted as green. It is also proposed that with all of this marketing rhetoric, consumers have a confused definition of what sustainability means. This lack of consumer understanding, coupled with the myriad of greenwashing campaigns is potentially brewing a perfect storm for disengaged consumers. In a theoretical sense, this very much mirrors ideas presented in signaling theory, which relates the symbolic communications about the 'greenness' of a product or service to the social benefits of a sustainable world (Bird & Smith, 2005). This management of consumer perception versus the actual substance of products and services speaks to the role of not only marketing ethics but also to the growing emphasis on corporate social responsibility mentioned previously.

This disengagement is not new. In fact, in 1990, a Task Force of the United States Attorneys General issued a Green Report containing findings and recommendations for responsible environmental advertising. This report stated:

> . . . if consumers began to feel that their genuine interest in the environment was being exploited, consumers would no longer seek out or demand products that are less damaging to the environment. If this were to occur, the environmental improvements that could be achieved by consumers purchasing more environmentally benign products would be lost (National Association of Attorneys-General, p. 6).

Furthermore, the EPA issued a statement:

If national consensus over the use of these [environmental] terms is not reached in the near future, we [as a society] face the danger of losing a valuable tool for educating the public and influencing the production and use of more environmentally oriented products. Consumers may come to distrust or ignore all environmental claims. (United States Environmental Protection Agency, 1991, p.10)

During the early 1990s, academicians also expressed these concerns about the communication of environmental messages. Mayer, Scammon, and Zick (1993) postulated that, "there is a real risk that vague or deceptive environmental claims may create distrust, cynicism, and alienation among consumers, with the result that a genuine opportunity will have been lost to harness consumer concern about the environment." (p. 698). Their research went on to find that respondents who did not find marketed environmental claims to be credible, were likely to discredit or disregard other sources of information pertaining to identification of environmentally friendly brands.

Part of the problem with environmental marketing is that often, advertised claims are difficult for consumers, even environmentally educated consumers, to evaluate (Kangun & Polonsky, 1995). For example, if a product is advertised as 'soft to the touch' a consumer can simply feel the product to assess the validity of the claim. However, if a product is advertised to be 'green' or 'ozone friendly' a typical consumer has little or no basis on which to determine the validity of the claim. Kangun and Polonsky (1995) explained an important aspect of this problem when they said, "even if a consumer understands a particular term like 'recycled', he or she may not be able to determine whether that characteristic is necessarily a beneficial attribute in the context of their own personal priorities or those of society." (p. 3). Cude's work (1991) illustrates that even in

the early 1990s a broad range of consumers exhibited understanding of environmental terms such as recyclable and biodegradable, but became significantly confused when the terms were applied within a specific context, such as describing how one type of recyclable plastic differs from another. Other researchers reported in the early 1990s that consumers did not understand environmental labeling and environmental marketing messages (Frankel, 1991) or felt that they were misleading (Davis, 1993).

Sadly, the waning of the green movement in the 1990s provided support for these statements and academic predictions about lack of consumer understanding of sustainability communication (Ottman, 1998). However, in recent years, it appears that consumers have had enough of what Ray Anderson (founder of Interface, Inc.) calls, the 'plundering of the earth' (Anderson, 1998). Although the full implications of the current wave of greenwashing are unknown, those truly concerned with sustainability and social responsibility are hopeful that consumers will not follow the trend of the 1990s and instead demand a systemic shift in the cradle-to-grave production and use paradigm. It is thought that if researchers can understand how sustainability messages are being interpreted, then they will be able to ascertain how the intended message can be best communicated. Thus, environmentally sustainable companies will be able to cut through the rhetoric and convey what it means to be a sustainable, restorative enterprise.

Theoretical Framework

The following section outlines the theoretical framework of this study. It begins with a discussion of the transference of meaning throughout a culture using the mechanism of consumption. This is followed by a discussion of the Rogers' (1971) diffusion of innovations model and the theories and practices of social marketing. The marriage of these ideas lead to an understanding of how sustainability trends are moving

through culture. The convergence of these theories sets the ground work for how sustainability ideas spread through influential members of society. This is followed by a discussion of traditional and more complex consumer decision making models, particularly the Elaboration Likelihood Model (ELM), which led to the development of the research model used in this study.

Consumption and Meaning

Given the massive emergence of sustainability ideas and sustainability-related marketing and products on the market today, it is important to understand how meaning is transferred within culture. McCracken (1986) showed movement of meaning from society to consumer goods through advertising and trend systems. Meaning then translated from consumer goods to the individual consumer through consumption rituals. It is proposed that through the conduit of advertising, sustainability will follow this movement of meaning, resulting in attitude changes toward products. The scope of this research project also attempts to follow this model through to the individual consumers by measuring consumer interpretation of transformational ad content.

Diffusion of Innovation

As previously stated, it is proposed that the LOHAS consumer is a signal of an early adopter behavior and is indicative of a larger social movement currently building support worldwide. That said, it is important to understand the Diffusion of Innovations Theory and what affects consumer acceptance of innovation, in this case, sustainably–minded products. Rogers (1971) Model of Innovation Adoption has five stages. These are:

1. Knowledge (consumer awareness of innovation)

2. Persuasion (consumer evaluates the positive or negative implications of the innovation)

3. Decision (consumer adopts or rejects the innovation)

4. Implementation (consumer uses the product)

5. Confirmation (consumer seeks decision reinforcement)

If the Diffusion of Innovations Theory and proposed idea is correct, then LOHASians represent innovators in the Diffusion of Innovations Model, which constitutes 2.5% of the population. They are followed by early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%) (Rogers, 1971) and are shown in Figure 2.1.
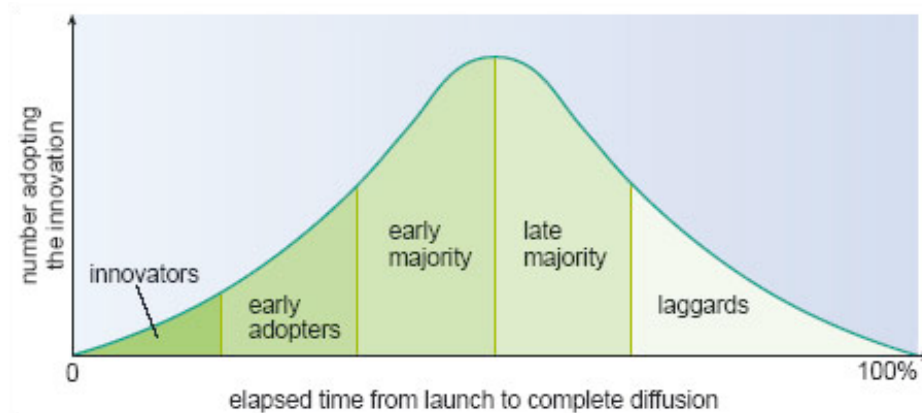
Figure 2.1. Rogers' Diffusion of Innovations Model (OpenLearn, 2009; Rogers, 1971).

The emphasis of this theory is a relational communication between influential members of society and the people who follow the innovators. Literature has shown that people follow opinion leaders as a result of two primary needs: 1) reducing personal uncertainty of new information, and 2) responding to social and peer pressures stemming from the observation of others adopting the innovation (Katz & Lazarfeld, 1955; Katz, Levin, &

Hamilton, 1963; Dearing, Maibach, & Buller, 2006). If this is indeed the case, then one can easily see how if the movement of sustainability truly is a growing trend, how it will quickly grow larger than LOHAS parameters, which traditionally define environmental consumers as "focused on health and fitness, the environment, personal development, sustainable living, and social justice" (LOHAS Online, 2009). Instead, this research expects to find a larger diversity in the type of consumers who are receptive to sustainability messaging. A Mintel Report on Green Living (2006) confirms this new and growing consumer expectation. The report stated that 35 million Americans regularly buy Green products—approximately 12% of the population, which placed the movement (in 2006) at the early adoption stage. It is theorized in this study that consumers interested in sustainability will follow the trends of the Diffusion of Innovations Model and that innovators, early adopters, and early majority in this field, will be motivated to obtain and process sustainability-related information. This leads to H1 below:

> *H1: Consumer motivation to seek information about sustainability is related to*
> *their willingness to interact with sustainability-oriented persuasion cues.*

<div align="center">

Social Marketing

</div>

When thinking of sustainability, social marketing is also beginning to play a much more important a role in not only the distribution of information, but also in the encouragement of sustainable behavior changes. Social marketing is defined as "a process of developing, distributing, and promoting products or services for the purpose of eliciting a behavior from members of a targeted population that is in their-or society's – best interests" (Dearing, et al., 2006, p. S13). Although a great deal of past literature utilizing social marketing dealt mostly with health-related issues (Rothschild, 1999;

Maibach, Rothschild, & Novelli, 2002; Weinreich, 1999), newer research is beginning to propose the use of social marketing when promoting sustainable consumer behaviors (McKenzie-Mohr & Smith, 1999; McKenzie-Mohr, 2000; Peattie & Peattie, 2009). McKenzie-Mohr notes that, "most programs promoting sustainable behavior have featured information-intensive campaigns that make little use of psychological knowledge. Community-based social marketing is an attractive alternative approach in which promoters identify the activity to be promoted and the barriers to this activity and then design a strategy to overcome these barriers, using psychological knowledge regarding behavior change." (McKenzie-Mohr, 2000, p. 531). This research is an attempt to extend the findings of McKenzie-Mohr and use psychological and marketing knowledge as a means to explore consumer perceptions and interpretations of a sustainably-focused ad campaign containing both informational and transformational ad content.

When thinking in terms of sustainability, adoption of green practices are in-line with the overall good of society. Sustainability benefits humanity in many ways including providing for an increased quality of life (access to nature, clean water, clean air, less reliance on non-renewable resources, etc.) and also in terms of fostering natural eco-systems. As a whole, it is imperative with the sustainability movement, that not only the ideas be moved through society, but that targeted 'first movers' be continually updated not only with new and innovative information but also the tools to evoke behavioral changes. Utilizing social marketing, which focuses on a transactional relationship between marketers (senders of products or information) and consumers (recipients or purchasers of products or information) allows researchers to look at consumer behavioral changes (Dearing, et al., 2006).

Convergence of Diffusion of Innovation and Social Marketing Theories and Practices

By combining the ideas of diffusion of innovation (relational interactions) with ideas of social marketing (transactional interactions) it is proposed that sustainability ideas can efficiently disseminate through society by targeting certain influential consumers, who possess relational influence over a broader spectrum of society. This follows the model of Dearing, et al. (2006), who used this convergence to encourage efficient promotion of physical activity programs. The general notion is that consumers will not only adopt the idea (based on the diffusion of innovation) but they will also implement behavioral changes (based on social marketing). Dearing, et al. (2006) note that for this convergence of tactics [diffusion of innovations and social marketing] to be successful it "requires an understanding of complex organizations and the functional roles played by different individuals in such organizations" (p. S11). Thus, the following hypothesis was developed in order to understand the relationships between individual preferences and personal/social characteristics of these potential consumer influencers/consumer leaders and their motivation, interaction, and interpretation of sustainability-related marketing messages:

> *H2: Consumers' personal/social characteristics will moderate the effects of:*
>
> > *(A) consumer motivation to seek message information.*
> >
> > *(B) consumer interaction with message delivery.*
> >
> > *(C) the message the consumer receives from the interactive marketing campaign.*

It is worth noting that in this study, it is assumed that product price and benefits are relatively equal across multiple brands and product lines and therefore, price signaling will not be used nor discussed in this dissertation project.

Consumer Decision Making Models

When considering products, there are several methods consumers follow when making decisions. One method is the traditional decision making model in which consumers recognize a problem, search for information, evaluate alternative solutions, choose a product, and finalize an outcome (Engel, Blackwell, & Miniard, 1990; Solomon & Rabolt, 2004). Feedback loops are also important in this model because experiences with quality may determine if the decision making model repeats, or if consumers skip steps. For example, if a consumer has a positive experience with one brand of toothpaste, the next time they are purchasing toothpaste, the consumer may not seek information or evaluate alternative tooth cleaning products, and instead may simply choose the same product they previously used. Environmental differences (culture, social class, family, situation, etc.) and individual differences (motivation, involvement, knowledge, attitudes, personality, etc.) also factor into both the problem recognition as well as information search (Engel, et al., 1990). Although this model is used fairly extensively in consumer research, there are other models that account for more complex decisions and outcomes. This expansion of complexity is often referred to as constructive processing, and implies that "consumers tailor their degree of cognitive "effort" to the task at hand." (Solomon & Rabolt, 2004, p. 354). In other words, consumers cognitively engage at varying levels depending on the situation. For some consumers, this level of cognitive engagement is more important than for other consumers. Need for cognition (NFC) relates to this cognitive differential and is a key part of this research effort. Although personal/social characteristics are already being addressed, NFC offers a potentially deeper understanding of consumer interaction and message understanding, and, thus, for the purposes of this research was separated and examined as an individual factor. This was

experimentally confirmed through the work of Cacioppo, Petty, Kao, and Rodriguez (1986) who showed that individuals with a high NFC had a tendency to show stronger linkages between attitudes and actual behaviors than did consumers with a low NFC. This, therefore, leads to the following hypothesis relating NFC to consumer motivation, interaction, and message reception:

H3: Consumers' Need for Cognition moderates the effects of:

(A) consumer motivation to seek message information.

(B) consumer interaction with message delivery.

(C) consumer message interpretation.

Also, given the complexity and potential overlap of consumer need for cognition and other personal/social characteristics, the following hypothesis is proposed to look at such relationships.

H4: Consumer need for cognition and consumer personal/social characteristics are highly correlated endogenous constructs.

Elaboration Likelihood Model (ELM)

Expanding the notion of consumer complexity in decision-making, ELM is a decision making model that accounts for the level of consumer elaboration in the decision. ELM was developed in order to explain involvement level and efficacy of persuasive communication on attitude change. "The basic tenant of ELM is that different methods of inducing persuasion may work best depending on whether the elaboration likelihood of the communication situation (i.e., the probability of message- or issue-relevant thought occurring) is high or low." (Petty, Cacioppo, & Schumann, 1983, p. 137). In other words, attitude and involvement are pre-decisional processes that act as mediators between one's values and one's behaviors (de Boer, Hoogland, & Boersema,

2007). In order to understand this model, it is important to first draw distinctions between attitudes, beliefs, values, and behaviors. For the purposes of this study, attitudes are the positive or negative feelings a consumer possesses relative to an issue, a person, or an object [i.e. a product]. Beliefs are ideas that consumers have about an issue, person, or object. These ideas and beliefs can be factual or opinion-based. Values are "criteria that enable people to guide selection and justification of actions" (de Boer, et al., 2007, p. 985; Schwartz, 1992). Behaviors, though linked to attitudes, beliefs, and values, are distinctly different because they are concrete actions, such as product purchase or response to an advertisement. In ELM, there are two distinct ways in which attitude change occurs: the central route and the peripheral route. The work of Cacioppo and Petty (1981) shows that the route evoked by a persuasion cue makes a difference in determining "how enduring the attitude change will be." (p. 36).

The central route "views attitude change as resulting from a person's diligent consideration of information that s/he feels is central to the true merits of a particular attitudinal position." (Petty, et al., 1983, p. 135). This route "emphasizes the information that a person has about the person, object, or issue under consideration." (Cacioppo & Petty, 1981, p. 36). There are four factors Petty, et al. (1983) identified which characterize whether the central route is being utilized. These are:

1. One's justification for maintaining a particular attitude
2. How one understands, learns, and stores issue and/or product relevant information
3. One's individual inclinations and responses toward external communication

4. One's individual inclination toward integrating issue and/or product

relevant information into their evaluation and/or behavior

Research shows that when consumers experience attitude change via the central route, the

change is relatively long lasting and can be used to predict behavior (Petty, et al., 1983;

Cialdini, Petty, & Cacioppo, 1981; Petty & Cacioppo, 1980). This is due to the fact that

when using the central route, "the attitude change is the result of a deep examination of

the argument and diligent consideration of the issue-relevant arguments." (Vidal, 1998, p.

2). This route to attitude change will most likely be used when one's involvement in the

topic is important. Also, going back to NFC, previous research has shown that consumers

with a high NFC "are more likely to think about and elaborate cognitively on issue-

relevant information when forming attitudes than are individuals low in NFC" (Cacioppo,

et al., 1986, p. 1032). Thus, NFC can be an important predictor, or cue, which marketers

can use in evaluating message interaction and message reception.

The alternative route used in attitude change is the peripheral route. This route is

characterized by attitude changes that result as a response to persuasion cues such as

consequences or rewards associated with the various cues or "because the person makes a

simple inference about the merits of the advocated position based on various simple cues

in the persuasion context (Petty, et al., 1983, p. 135." For example, a person might

develop a positive attitude toward a product if they saw it in a commercial that made

them laugh or if they perceived the source of the cue to be an expert. There are four

theoretical factors Petty, et al. (1983) identify that are emphasized in the peripheral route.

These are:

1. Whether or not one's attitude can be inferred by observing behavior

2. Whether or not the issue or advocacy falls within one's purview

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3. The existence of a transient situational factor related to adopting or rejecting a particular attitude

4. Evidence of classical conditioning of basic, but issue-related cues or some form of secondary cues (i.e., cool pictures, celebrity endorser, etc.)

When attitudes are changed via a peripheral route, the changes tend to be temporary and do not allow one to predict behavior. ELM predicts that this route of attitude change will occur if there is low elaboration (i.e., low involvement) behavior (Petty, et al., 1983; Cialdini, et al., 1981; Petty & Cacioppo, 1980). This leads to the following hypothesis related to consumer interaction and message processing:

H5: Consumer interaction with the marketing message is related to consumer

message interpretation.

The reason for using ELM as opposed to other theories of persuasion is that other models primarily account for either central or peripheral routes to attitude change, whereas, ELM accounts for both, using level of involvement as a moderator (Petty, et al., 1983). Research in social psychology also illustrates that different variables affect consumers' attitude changes depending on the level of involvement. For example, under conditions of high involvement, factors such as message quality, argumentation, or source credibility are important as the consumer uses complex information-processing in attitude change; whereas under conditions of low involvement variables such as attractiveness of sender, sender expertise, or presented consequences are more important persuasion cues (Petty, et al., 1983). The reason such understanding in the discrepancies of message response (high vs. low involvement) and message processing (central vs.

peripheral) are important in this research is that ELM provides the theoretical reasoning for using different types of advertising messages for different audiences.

ELM also explains how consumers react to different messages related to a company's advertising efforts and how message-processing congruence is necessary if one wishes to predict certain outcomes (i.e., attitude change). This idea of a continuum of characteristics of high versus low involvement on attitude change and decision-making is why a study looking at a myriad of consumer factors is necessary. The problem solving characteristics of limited versus extensive cognitive engagement are also shown and demonstrate the differences that lead consumers to choose either a peripheral route (routine and/or limited cognitive engagement) or a central route (extensive cognitive engagement) when processing advertising messages. In order to understand the implications of ELM, it is important to have an interpretable model of the flow of information and consumer decisions. Figure 2.2 illustrates Petty and Cacioppo's (1986) ELM model in a way that shows the conceptual movement of information and decisions.
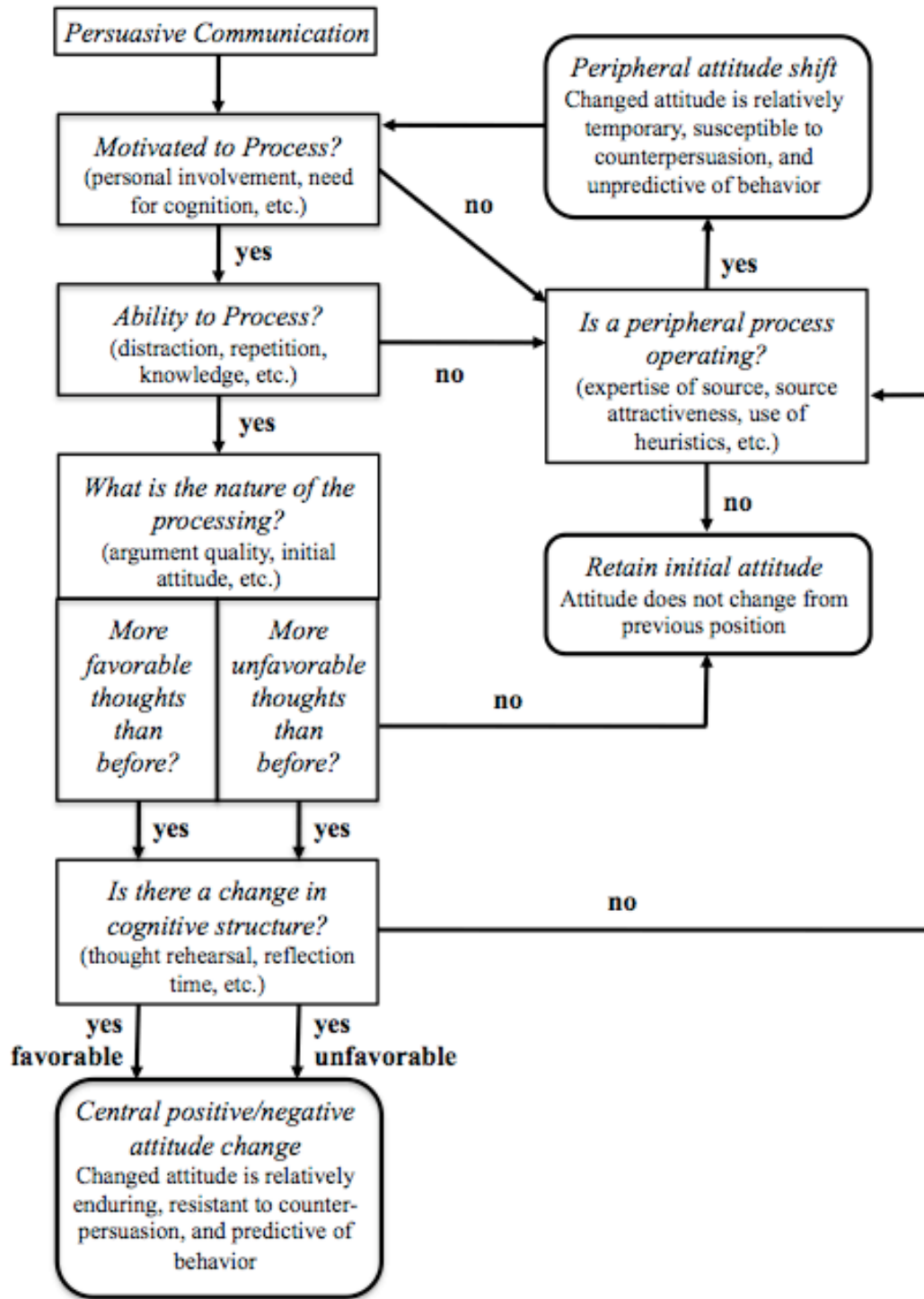
Figure 2.2. Illustration of ELM (Petty & Cacioppo, 1986; Petty & Wegener, 1999).

Research Model

Through a survey of literature related to consumer behavior and sustainability presented in this chapter, the following model illustrated in Figure 2.3 was developed to look at relationships between motivation for processing message information, interaction with the message, and message reception as moderated by need for cognition and personal/social characteristics such as job duties and geographic region.
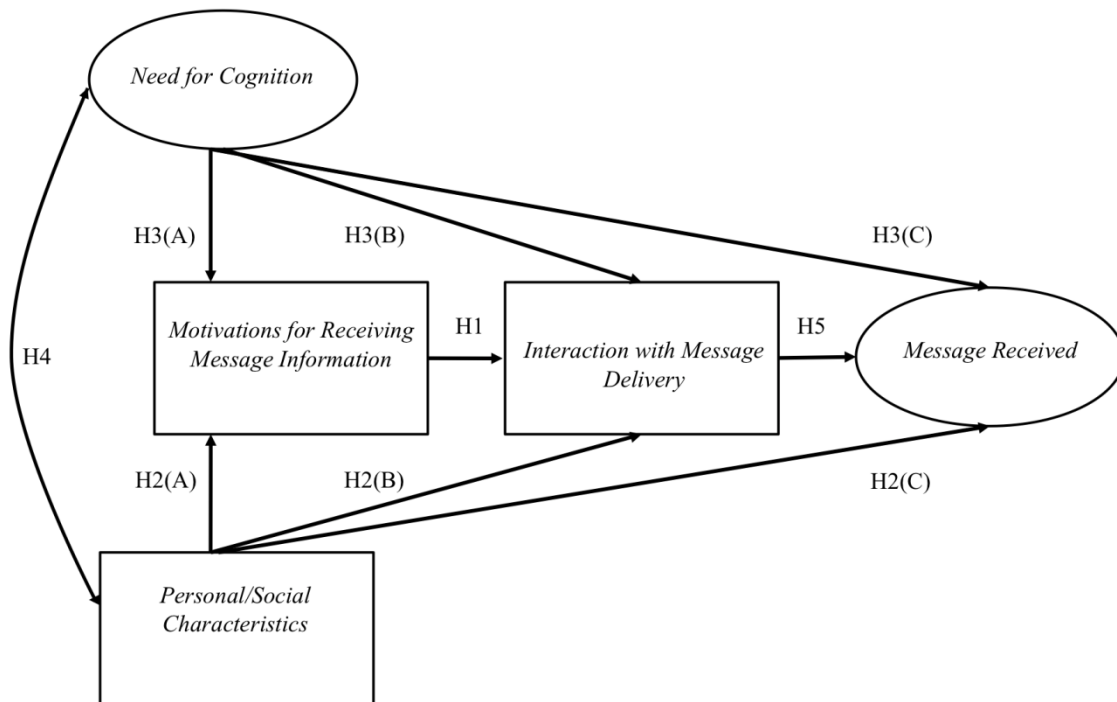
Figure 2.3. Research model for understanding consumer motivations, interactions, and reception of a sustainability-related marketing endeavor

In this study, the persuasion cue used was an interactive website related to a leading textile company's launch of a new sustainability-oriented commercial carpeting product. Product choice motives direct the processing route (central or peripheral) that will occur. Need for cognition, sustainability education, and personal and social

characteristics are measured to determine if there are any combination of values and/or characteristics which offer correlated information on processing route stemming from the sustainable persuasion cues.   Below is a summary of the hypotheses presented in this study:

H1: Consumers' motivation to seek information about sustainability is related to their willingness to interact with sustainability-oriented persuasion cues.

H2: Consumers' personal/social characteristics will moderate the effects of:

(A) consumer motivation to seek message information.

(B) consumer interaction with message delivery.

(C) the message the consumer receives from the interactive marketing campaign.

H3: Consumers' Need for Cognition moderates the effects of:

(A) consumer motivation to seek message information.

(B) consumer interaction with message delivery.

(C) consumer message interpretation.

H4: Consumer Need for Cognition and consumer personal/social characteristics are highly correlated endogenous constructs.

H5: Consumer interaction with the marketing message is related to consumer message interpretation.

Overall, it is predicted that consumers of the commercial carpeting products who are intimately involved with sustainability messaging of their company as a part of their job (and thus a high motivation for receiving the message information), will be more involved with the interactive website and will show a higher effect for persuasion cues which stimulate central route processing. In other words, sustainability-motivated

consumers will show high elaboration for marketing messages that incorporate sustainability. Conversely, it is predicted that consumers who have less involvement with sustainability as a part of their job (i.e., a low motivation) will show a higher initial effect for persuasion cues that stimulate peripheral route processing. In other words, consumers who are highly motivated to receive sustainability-related messages will gravitate most strongly towards and receive transformational marketing messages. Conversely, consumers who are not highly motivated to receive sustainability-related messages will gravitate more towards and receive informational marketing messages.

It is also thought that need for cognition, instead of being a primary motivator as presented in ELM (Petty & Wegener, 1999), will moderate these effects because in this study, the consumers' (practicing architects and interior designers) predicted behaviors (the purchase of commercial carpeting to meet client needs) are related solely to their job function, rather than personal preferences. In other words, work-related motivations (for example, a company initiative to be more sustainable) will correlate more directly to the model, than an individual's cognitive preferences because in this situation, the consumer is compensated for receiving sustainability-related messages and incorporating them into their work. Relating back to the work of Dearing, et al. (2006) and the convergence of diffusion of innovation and social marketing, job type and geographic region are measured in both an attempt to understand the individual's role in his/her corporate environment and within a geographic region, as well as to look for moderating effects of that role.

Specific details of this methodology are presented in Chapter 3. Results from these surveys along with analysis of model and hypotheses are presented in Chapter 4.

This is followed by a discussion of findings, conclusion, and implications for future

research presented in Chapter 5.

III. METHODOLOGY

This chapter elaborates upon the methodology used for this study as well as explains the sample selection, data collection and data analysis procedures. This research was designed to explore consumer interpretations of interactive sustainability messaging and to understand the relationships between NFC, personal/social characteristics, motivational drivers, message interaction, and message reception. In this research, a pretest to validate instrumentation was given to junior and senior interior design students at a large southeastern university. The pretest was followed by an expansive, national survey of interior designers and architects.

Research Design

Because the nature of this research was to understand message reception and determine potential predictive factors that affect message reception, a quantitatively based survey format was deemed most appropriate. The research model, shown in Figure 2.3, is theoretically grounded in the Elaboration Likelihood Model (ELM) (Petty, et al., 1983; Petty & Cacioppo, 1986; Petty & Wegener, 1999) and illustrates the relationships among the various measured factors. To test the hypotheses and research model, structural equation modeling with between groups analysis was used.

Sampling and Data Collection

Data were collected for both the pretest and main survey through both a voluntary, self-administered online questionnaire (see Appendix C and F for the pretest

and national questionnaire, respectively) as well as through an Internet tracking system (Eloqua) that monitored participant interactions with a web campaign. Each respondents' participation was married to his or her web-interaction so that message interaction could be compared to message interpretation. The intention of performing the pretest was to confirm the validity of the research scales and determine if the persuasion cues utilized in the advertising campaign evoked the predicted processing routes and evoked transformational thought processes. The pretest was conducted utilizing a convenience sample of junior and senior level interior design students at a Southeastern university. Justification for the pretest sample selection of upper level interior design students was based on observed trends in higher education and the work of Cortese (2003) related to sustainability and higher education. In exchange for their participation, the students were given extra credit for their junior or senior level design studio course (See Appendices A and B). These students were chosen because they are in training to be future decision influencers of commercial carpeting products. However, too few students opted to participate and thus, no meaningful data was gathered in this portion of the study.

The pretest was followed with a national survey of practicing architect and interior design customers from a major petroleum-based textile corporation that has an established reputation for sustainable activity. These customers were on the mailing list for the sustainability-oriented textile company and receive regular email communications from the corporation. Like the students, the respondents were asked to interact with the web-based marketing campaign and then respond to the survey questions. In exchange for their participation, participants were entered in a drawing to win a free product from the textile corporation. These consumers were chosen because they are representative of

professionals who specify a majority of the commercial carpeting products used in the U.S. and they comprise the target market of the interactive web-campaign studied.

Stimuli

In both the pretest and national survey, subjects were asked, via email (see Appendices A and D), to interact with a new website for a sustainability-focused product line for the textile company. There were several links in this email, one to an information letter about the study (See Appendices B and E), one to the survey (see Appendices C and F), and also one to the marketing campaign website. The website prompt used in this study contained four main components: an introduction to the new sustainability-focused product line that utilized cradle-to-cradle production techniques, a video telling the story of the sustainability-focused product line, a page of product pictures showing the actual product in its intended environment, and a page of product specifications. The click-through activity of each subject was measured via the Eloqua Customer Management System. In the same email where participants were prompted to view the website, they were also prompted to click on and complete the questionnaire related to their experiences with the website and its messages. Also included in this email was a link to an information page (see Appendix D for the information page), which described the nature of this research, provided background information on the nature of the survey, participant anonymity, and other information about the project. All three of these links (to the website, questionnaire, and information letter) were present in the original email.

Survey Instrument

Following website exposure, each subject was asked to complete a self-administered questionnaire about their NFC, their attitudes toward the sustainability

messages and the product presented, and their interpretation of the informational and

transformational messages presented in the website. To explore which methods of web

messaging are most effective for each different type of consumer, message interpretation

was then correlated to their NFC. Based on the review of literature related to the

convergence of Diffusion of Innovation and social marketing theories, organizational

information about the consumer's job title, organizational size, geographic location,

typical contract size, the carpeting needs of their typical contract, and other information

were collected in an attempt to more intimately understand the role of this consumer in

the decisional hierarchy of their organization as well as assess the source of their

sustainability motivations. Sustainability motivations were assessed from several

different perspectives through questions such as what level of focus their employer places

on sustainability in a 9 point Likert-type scale (9= Very Strong Focus, 1= Very Strong

Unfocused, 5 = Neither), the percentage (on a 10-point scale) of their work that stems

from Leadership in Energy and Environmental Design (LEED) projects, the percentage

(on a 10-point scale) of their client base that requires them to comply with LEED

standards, what/how are they motivated to learn about sustainability, and how/where they

receive training/learning about sustainability. Each of these motivational types was

collected to determine which type of motivation was most related to NFC, message

interaction, and message reception.

Need for Cognition

To measure NFC, participants' answered a web-adapted short form of Cacioppo

and Petty's (1982) original 34-item questionnaire. The 18-item short form follows the

questionnaire proposed in Cacioppo, Petty, and Kao (1984). Participants were asked to

indicate their level of agreement with statements following a 7-point Likert-type scale (7 = Strong Agreement, 1 = Strong Disagreement, 4 = Neither). Questions related to participant cognitive tendencies related to concepts such as deliberation, learning, problem solving, and thinking (See Appendices C and F). This well-established scale was chosen because reported α-coefficient estimates of internal consistency reliability were estimated at .90 (Bearden, et al., 1993) as well as the relevance of use of this scale in similar research. One poignant example of use is in a study by Haugtvedt, Petty, Cacioppo, and Steidley (1988) that showed strong correlation between consumer NFC and reliance on central or peripheral message information. Those with a high NFC focused more on, and were more influenced by, message quality whereas those with a low NFC were more likely to be influenced by endorser attractiveness. In this study it was predicted that NFC would correlate directly to consumers' interactions with the website (i.e., those consumers with a high NFC would interact more with the messages presented in the website than those with a lower NFC).

Message Interaction

Consumer interaction with the sustainability-oriented website was measured by the number of times each consumer clicked on each page of the interactive website. Total clicks were then summed to determine overall website interaction. This traditional method of measuring web-based advertising was chosen because it is relatively easy to measure and it is also a common measurement method used to understand consumer interest in the web-based advertising message (Klassen, 2009). However, the click-through method is by no means a flawless method, and has recently been the topic of much debate in the internet advertising arena (Marsh, 2010; Learmonth & Klaassen,

2009; Klassen, 2009; Moresco, 2008) where measurements such as time-based metrics and intricate web click stream metrics are being developed (Li, 2009).

Message Reception

To measure message reception, Puto and Wells' (1984) Informational and Transformational Ad Content scale was used. This scale is based on the idea that advertisements fall into one of four categories: "1) high transformation/low information, 2) low transformation/high information, 3) high transformation/high information, and 4) low transformation/low information" (Puto & Wells, 1984, p. 638). Puto and Wells distinguished the advertisements containing informational and transformational messages by describing them with the following characteristics. Ads high in information, "must reflect the following characteristics:

1. Present factual, relevant information about the brand.

2. Present information which is immediately and obviously important to the potential consumer.

3. Present data which the consumer accepts as being verifiable." (Puto & Wells, 1984, p. 638).

In contrast, advertisements deemed to be transformational, "must contain the following characteristics:

1. It must make the experience of using the product richer, warmer, more exciting, and/or more enjoyable, than that obtained solely from an objective description of the advertised brand.

2. It must connect the experience of the advertisement so tightly with the experience of using the brand that consumers cannot remember the brand without

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recalling the experience generated by the advertisement." (Puto & Wells, 1984, p. 638).

The reason it is important to measure consumer interpretation of ad content is because it allows marketers to determine whether the ad is appealing to the consumer's hedonic motivations (transformational), utilitarian motivations (informational), or both. At the time of Puto and Well's 1984 study, Hirschman and Holbrook (1982) had only recently proposed the notion of hedonic consumption and at the time it was thought that consumers achieved higher recall with informational advertising. However, newer research suggests that advertising effectiveness has more complex components and that those components are based on media and product type, as well as a consumer's cultural identity (Cutler, et al., 2000).

In 1987, Moriarty proposed an advertising classification system based on literal process appeals (informational advertising) and symbolic process appeals (transformational advertising). Within these categories Moriarty (1987) proposed four sub categories. Moriarty broke informational advertising into: Identification (brand and/or product identification), Description (brand/product features and attributes), Comparison (with another brand or product), and Demonstration (the use, application, and/or making of the product) and broke transformational advertising into: Association (with a lifestyle, user, or situation), Metaphor (allegorical or substitutive ad features), Storytelling (use of narrative), and Aesthetics (visual representations of the product as an item of beauty). When using Moriarty's classification system, Cutler, et al. (2000) found it necessary to add Before/After (a situational representation of before/after product use) as a sub-segment of the Comparison category. In their research, Cutler, et al. (2000) also

found that a majority of advertisements contained a mix of advertising appeals and that the more complex the media type, the more difficult it was to classify the advertisement according to Moriarty's schema. Because interactive, web-based marketing is arguably the most complex form of advertising in existence at this time, Moriarty's schema will be used to peripherally understand the consumer appeal, but will not be used to classify each segment of the marketing campaign. In other words, a simpler model will be used that focuses on classifying portions of the advertisement as either informative or transformative. Consumer interaction and interpretation of these messages will be linked to their demographic information in order to assess whether different types of consumers prefer one type of appeal over another. This will allow the textile manufacturer to be more specific and tailored in its advertising messages.

Pretest

The pre-test consisted of a student survey of Junior and Senior-level interior design students. A total of 48 students volunteered to participate in this study. Of those, only two completed the final survey following the first email prompt. Due to this low response, a reminder email was sent to the students, and an additional 12 completed the survey. Table 3.1 describes the survey email responses in further detail. Due to these small numbers, no meaningful analysis of the survey instrument was able to be determined.

National Survey

The larger professional survey was sent to professional architects and interior designers across the United States who opted in to the e-mail invitation to participate in this study, which was sent to the textile manufacturer's architect and interior designer

email lists. A total 30,537 emails were sent, 6579 of which were opened. This resulted in

531 completed surveys being collected. Table 3.1 shows the response rates of this survey

(as well as the student survey). The following chapter elaborates on the information

gathered in these surveys as well as an analysis of these findings.

Table 3.1 *Student and Professional Survey Response Rate Statistics*

Survey	Emails Sent	Emails Received	Emails Opened	Open Rate	Email Visitors	Click-through Rate	Form Submits	Response Rate Based on Emails Received	Response Rate Based on Emails Opened	Total Number of Surveys Collected
Student-Initial	48	46	22	47.83%	11	50.00%	2	4.34%	9.09%	2
Student-Reminder	46	46	14	30.43%	11	78.57%	8	17.39%	57.14%	12
Professional	30,537	30,048	6579	21.89%	2079	31.60%	465	1.55%	7.07%	531

Emails sent: Total number of emails sent to potential respondents

Emails received: Total number of emails sent minus the number of bounce backs

Emails opened: Total number of received emails that were opened

Email visitors: The number of email recipients who have clicked through to the website from links in the email . A recipient may be counted more than once if they have clicked through with different profiles (cookies)

Click-through Rate: Total number of email visitors divided by number of emails opened

Form Submits: The total number of forms submissions driven by the email. These are form submissions that occurred after a recipient clicked through on a link in the email.

Response Rate (received): Number of form submits divided by the number of emails received

Response Rate (opened): Number of form submits divided by the number of emails opened

Total number of surveys collected: Total number of surveys collected. This number differs than form submits because email forwards were not accounted for in the email success data.

IV. DATA PRESENTATION AND ANALYSIS

In this chapter, sample demographics for the national survey, reliability and validity checks for each measured construct, as well as analysis of fit and hypothesis testing for the proposed model (see Figure 2.3) are presented. Assessment of the strength and direction of hypothesized construct relationships in the proposed model are also included in this chapter.

Sample Description

The national sample was collected from the architect and interior designer consumer segment from the large textile-manufacturing firm. Sample demographics consisted of United States region (as segmented by state following the Census Bureau regional divisions (United States Census, 2010), customer type (as categorized by the textile-manufacturing firm), market segment (as categorized by the textile-manufacturing firm), and job type (researcher determined category based on self-reported job title). These data are shown in Table 4.1. The self-reported job titles are all listed in Appendix G, along with the researcher-determined category. For ambiguous job titles, the researcher traced the response back to the original company and determined from that, which category was the appropriate classification. An expert from the interior design industry was brought in to help with these assessments, particularly with the questionable cases. Because there was either large skewing and/or a large number of missing data points (see customer type, market segment, and job type), the only meaningful category that can be used in this study to understand the personal and social characteristics (as

shown in the Figure 2.3), was geographic region.

Table 4.1

Demographic Characteristics of National Sample

Categories	Category Characteristics		
U. S. Region	States in Region	*N*	*%*
1: Northeast	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, and Pennsylvania	77	15.2%
2: Midwest	Indiana, Illinois, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota	159	31.4%
3: South	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, Texas	146	28.8%
4: West	Arizona, Colorado, Idaho, New Mexico, Montana, Utah, Nevada, Wyoming, Alaska, California, Hawaii, Oregon, Washington	125	24.7%
	Total	507	100%
Customer Type*	Job Classification within Eloqua	*N*	*%*
Architect/ Designer	Internal Customer Classification	493	97.2%
Prospect	Internal Customer Classification	2	0.4%
End User	Internal Customer Classification	4	0.8%
Dealer	Internal Customer Classification	2	0.4%
	Total	501	98.8%

*Missing 6 cases (1.2% of total sample size)

Table 4.1 *Continued*

Market Segment**	US Market Segment Focus of Respondent's Company	*N*	*%*
Commercial Interiors	Internal Customer Classification	393	77.5%
Education	Internal Customer Classification	35	6.9%
Healthcare	Internal Customer Classification	9	1.8%
Student	Internal Customer Classification	17	3.4%
Retail	Internal Customer Classification	7	1.4%
Offices	Internal Customer Classification	12	2.4%
Hospitality	Internal Customer Classification	2	0.4%
Independent	Internal Customer Classification	2	0.4%
Government/ Institutional	Internal Customer Classification	5	1.0%
Residential	Internal Customer Classification	4	0.8%
Aligned	Internal Customer Classification	1	0.2%
A&D Only	Internal Customer Classification	1	0.2%
	Total	488	96.3%

Job Type***	Researcher Assigned Job Type Based on Self Reported Job Title	*N*	*%*
Architect	Researcher Classification	31	6.1%
Designer	Researcher Classification	198	39.1%
Business	Researcher Classification	67	13.2%
Librarian	Researcher Classification	7	1.4%
Other	Researcher Classification	21	4.1%
	Total	324	63.9%

**Missing 19 cases (3.7% of total sample size)
***Missing 183 cases (36.1% of total sample size)

Data Cleaning

Of the 531 surveys, 24 surveys were eliminated due to extreme cases of missing data (i.e., the respondent answered only one question but left the rest of the responses blank), leaving a total of 507. The remaining 507 survey responses were checked for outliers, and although several existed, comparison of the Mean for each measured construct to the 5% Trimmed Mean of that construct (a mean value calculated by removing the top and bottom 5% of cases), showed that these outliers were not severely influencing the Mean. Thus, these values were not excluded from the sample.

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Skewness and Kurtosis

Responses were also checked for skewness and kurtosis. These results for the

three endogenous variables (need for cognition, transformational message interpretation,

and informational message interpretation) are presented in Table 4.2. Note that NFC

refers to the Need for Cognition factor, TRANS refers to the transformational advertising

scale factor and INFO refers to the informational advertising scale factor. These

abbreviations will be carried throughout the remainder of this dissertation.

Table 4.2

Results from Tests for Skewness and Kurtosis

Factor	Mean	5% Trimmed Mean	Median	Skewness (SES = .108)	Kurtosis (SEK = .217)
NFC	5.6095 (σ = .75845)	5.6395	5.6667	-.704	.966
TRANS	5.1971 (σ = .78163)	5.2241	5.2857	-.462	.116
INFO	5.5504 (σ = .87522)	5.5847	5.6667	-.655	.583

For each factor the 5% trimmed mean was not significantly different than the

actual mean, giving justification for keeping the few outliers in the data. Skewness was

checked using Tabachnick and Fidell's (1996) equation for calculating the standard errors

of skewness (SES):

$$\sqrt{(6/N)}, \text{ (where } N=507)$$

According to Brown (1997) data with values of 2 SES or more are most likely

significantly skewed. These data are presented in Table 4.2. Though all of the data are

showing significant skewness, this is not necessarily a bad thing (Brown, 1996). It mainly

implies that for each of the factors, respondents answered on the higher end of the spectrum (i.e., most respondents showed a higher NFC and favorably interpreted both the informational and transformational messages of the marketing campaign.) That said, median scores are reported in addition to the mean, as well as attention paid to norm-referenced tests, where the skewness of the data can affect the test interpretation.

Kurtosis in the data refers to how peaked the data are relative to a normal distribution. Because all of factors had a positive kurtosis (shown in Table 4.2), it is noted to be potentially leptokurtic (too tall). Kurtosis was checked using Tabachnick and Fidell's (1996) equation for calculating the standard errors of kurtosis (SEK):

$$\sqrt{(24/N)}, \text{ (where } N\text{=507)}$$

According to Brown (1997) data with values of 2 SEK or more are most likely significantly peaked. The NFC and INFORM factors were the only factors to show potentially significant peaks and thus care was taken, by choosing a variety of fit metrics where the assumption of normality is not required or if it is (as in the case of χ^2) this measure is used but is also examined in conjunction with other fit metrics that are not as heavily affected by skweness or kurtosis.

Missing Data

The data were also checked to see if responses with missing data contained data that was missing completely at random (MCAR) using Little's MCAR test (Byrne, 2010). The result of this test using each factor (NFC, TRANS, INFORM) is shown in Table 4.3, along with the test result using all of the variables in the model. Because none of the test statistics were significant at the .05 level, the data was assumed to be MCAR (meaning

"the missingness is independent of both the unobserved values and the observed values of all other variables in the data" (Byrne, 2010, p. 354)).

Table 4.3

Results from Little's MCAR Test* for Assessing the Patterns of Incomplete Data

Test	χ^2	df	p
NFC	12.292	16	.724
TRANS	12.638	21	.921
INFO	4.162	7	.761
Total Model	569.550	528	.103

*Source: (Byrne, 2010)

Because the missing data are MCAR, any estimation (full information maximization likelihood (FIML) and expectation-maximization (EM)), imputation (single, regression, and pattern-matching) and/or deletion (pairwise and listwise) methods were justified (Garson, 2008; Howell, 2009; Byrne; 2010). The deletion methods were not chosen because 84 responses (16.57% of the total sample size) contained missing data and deletion of this many cases would lead to a significant loss of data. Imputation methods were not chosen because they are (along with the deletion methods) considered an ad hoc, indirect way to deal with missing data and are becoming increasingly unpopular in the literature (Howell, 2009; Byrne, 2010). Instead, it was decided best to rely on the direct maximum likelihood estimation method established by Arbuckle (1996). More specifically, the FIML method was chosen because not only are estimates closest to parameter values and asymptotically unbiased, but they are also acceptable for use with the AMOS software package used in this dissertation for SEM analysis (SPSS, 2007; Byrne, 2010). The only caveat is that the SRMR goodness of fit metric cannot be obtained because this measure cannot be calculated with missing data.

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Reliability and Unidimensionality Checks

The reliability of each scale was checked using Cronbach's alpha coefficient (Cronbach's α). This was followed by confirmatory factor analysis to check for the unidimensionality of each scale. Even though there is evidence in the literature to report that each construct is internally consistent and unidimensional (NFC [Cacioppo & Petty, 1982; Cacioppo, et al., 1984]; TRANS and INFORM [Puto & Wells, 1984]), Gardner (1995) argued that it is still important to report tests for both reliability and unidimensionality because in different populations, results may vary and constructs may display multi-dimensionality, even though they historically were unidimensional. When reporting Cronbach's α, there are varying reports on acceptable scores; the general rule is that the closer Cronbach's α is to 1, the greater the reliability of the scale (Gliem & Gliem, 2003). George and Mallery (2003) proposed Cronbach's α criterion as follows: "__>.9—Excellent, __>.8—Good, __>.7—Acceptable, __>.6—Questionable, __>.5— Poor, and __<.5—Unacceptable" (p.231). Others argue that if the Cronbach's α "is greater than or equal to .6 then the items are considered unidimensional and may be combined in an index or scale" (Garson, 2008, p. 4). The results from this test for reliability are shown in Table 4.4. As shown, the NFC and TRANS factors fell well within the acceptable cut-offs and INFO fell within the acceptable range. Confirmatory factor analysis (CFA) on each factor was then used to evaluate if any items needed to be eliminated to increase initial reliability as well as confirm unidimensionality. The results of each test are presented below in the following order: NFC, TRANS, then INFORM. These results are presented in Tables 4.4 through 4.7.

Table 4.4

Results from Tests for Internal Consistency

Test	Cronbach's α	N of Items
NFC	.848	18
TRANS	.897	15
INFO	.725	8

Table 4.5

Results from CFA Test for the NFC Construct (N = 507)

Need for Cognition

	Standardized Coefficients	
Item	Original Model	Modified Model
Q24: I enjoy a task that involves coming up with solutions to problems	.531	.530
Q25: I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought	.470	.467
*Q26: Learning new ways to think doesn't excite me very much	.500	.500
Q27: I usually end up deliberating about issues even when they do not affect me personally	.149	_____
*Q28: The idea of relying on thought to get my way to the top does not appeal to me	.509	.508
*Q29: The notion of thinking abstractly is not appealing to me	.565	.565
*Q30: I only think as hard as I have to	.625	.626
*Q31: I like tasks that require little thought once I've learned them	.491	.492
*Q32: I prefer to think about small daily projects to long-term ones	.478	.478
*Q33: I would rather do something that requires little thought than something that is sure to challenge my thinking abilities	.728	.729
*Q34: I find little satisfaction in deliberating hard and for long hours	.577	.576
*Q35: I don't like to have the responsibility of handling a situation that requires a lot of thinking	.801	.803
*Q36: I feel relief rather than satisfaction after completing a task that required a lot of mental effort	.565	.565
*Q37: Thinking is not my idea of fun	.773	.773
*Q38: I try to anticipate and avoid situations where there is a likely chance I'll have to think in depth about something	.733	.733

Table 4.5 *Continued*

Q39: I prefer my life to be filled with puzzles that I must solve	.479	.478
Q40: I would prefer complex to simple problems	.561	.560
*Q41: It's enough for me that something gets the job done; I don't care how or why it works	.431	.430

Note: * Indicates items that were reverse coded. Original Model Fit Indices: $\chi^2 = 556.395$, $df = 135$, $p = .000$; NFI = .825; CFI = .860; RMSEA = .079; Modified Model Fit Indices: $\chi^2 = 524.674$, $df = 119$, $p = .000$; NFI = .833; CFI = .864; RMSEA = .082

Through this series of tests for the NFC construct, it was revealed that question 27, "I end up deliberating about issues even when they do not affect me personally" only loaded .149 and explained only 2% of the variance in the model, where as all other factors loaded in the acceptable limits (greater than .4) (McCrae & Costa, 1987). Thus, because of the low convergent validity of this factor, it was eliminated and the model re-calculated without that item. This is presented under the "modified model" column of Table 4.5. This deletion increased the Cronbach's α to .896, a .048 increase. It is also important to note that the initial model did not pass the chi-squared goodness of fit test ($\chi^2 = 556.395$, $df = 135$, $p = .000$), however this test nearly always rejects for large sample sizes (Bentler & Bonnet, 1980; Jöreskog & Sörbom, 1993; Hooper, Coughlan, & Mullen, 2008; Kenny, 2010) and thus other model measures were considered more indicative of model fit and were used including the normed fit index (NFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Furthermore, it is important to note that model fit metrics for structural equation modeling (SEM) remains, "a highly contentious issue" (Savalei, 2010). RMSEA is at the top of the list of contentious metrics (Haduk & Glaser, 2000; Steiger, 2000; Marsh, Hau, & Grayson, 2005; Barrett, 2007; Savalei, 2010), but was included to be consistent with past publications in this field; thus, other fit metrics will hold more weight in researcher

decision-making throughout the rest of this dissertation. The incremental fit indices were less than .95 (NFI = .825; CFI = .860) indicating poor model fit (Hu & Bentler, 1999; Bentler, 1990; McDonald & Marsh 1990), however the RMSEA (.079) shows a good fit according to (MacCallum, Browne, & Sugawara, 1996), but not according to Hu and Bentler (1999) who set the upper limit of the construct at .06 or Steiger (2000) who places it at .07. Savalei (2010) argued that another traditional cutoff of ".05 is often too high for many realistic applications, such as when factor loadings are low to moderate size" (p. 2). That said, the RMSEA metric will be reported here but not viewed as the primary fit metric for this study. It is important to note however, that once question 27 was removed from the model, the incremental fit indices improved slightly (NFI = .833, CFI = .864).

As previously stated, each item making up the transformational advertising construct (TRANS) from the informational and transformational ad content scale was analyzed through CFA. These results are presented in Table 4.6 and are followed by a discussion of model fit. It is important to keep in mind that the Cronbach's α for this construct was calculated to be .897, which is well within acceptable limits for combining the items into an index (George & Mallery, 2003; Garson, 2008).

Table 4.6

Results from CFA Test of TRANS Construct (N = 507)

Transformational Ad Content		
	Standardized Coefficients	
Item	Original Model	Modified Model
Q2:I would like to have an expertise like the one presented on the website	.546	.545
*Q3: The website did not seem to be speaking directly to me	.526	.495
Q5: While I interacted with this website, I thought how (this brand) might be useful to me	.486	.458
Q7: This website is meaningful to me	.775	.744
Q9: (This brand) fits my lifestyle very well	.644	.652
Q10: I could really relate to this website	.826	.819
Q11: Using (this brand) makes me feel good about myself	.624	.625
*Q13: It's hard to give a specific reason, but somehow (this brand) is not really for me	.506	.518
*Q14: This website did not really hold my attention	.728	.717
*Q16: If I could change my lifestyle, I would make it less like the people who use (this brand)	.393	_____
Q17: When I think of (this brand), I think of this website	.496	.509
Q18: I felt as though I were right there in the website, experiencing the same thing	.683	.683
*Q20: This website did not remind me of any experiences or feelings I've had in my own life	.548	.535
Q22: It is the kind of website that keeps running through your head after you've seen it	.680	.685
Q23: It's hard to put into words, but this commercial leaves me with a good feeling about using (this brand)	.693	.708

Note: * Indicates items that were reverse coded. Original Model Fit Indices: χ^2 = 578.994, df = 90, p = .000; NFI = .817; CFI = .840; RMSEA = .104; Modified Model Fit Indices: χ^2 = 509.271, df = 77, p = .000; NFI = .832; CFI = .852; RMSEA = .105

Item 16, "If I could change my lifestyle, I would make it less like the people who use (this brand)" was the only item that did not load well, i.e., .393, and only explained 15% of the variance in the model. Since, all other items loaded within acceptable limits, this item was removed and the Cronbach's α and CFA were recalculated. The deletion of

question 16 changed the Cronbach's α from .896 to .899. It is important to note that neither model passed the chi-squared goodness of fit test (original: $\chi^2 = 578.994$, $df = 90$, $p = .000$; modified: ($\chi^2 = 509.271$, $df = 77$, $p = .000$), but again, this test nearly always rejects for large sample sizes (Bentler & Bonnet, 1980; Jöreskog & Sörbom, 1993; Hooper, et al., 2008). Incremental fit indices in the original model, NFI (.817) and CFI (.840) both showed less than desirable fit for the original model. RMSEA shifted slightly between the two models, from .104 to .105, both showing a poor fit. Once question 16 was deleted, fit measures shifted slightly, but still showed poor fit. The results from the modified model are as follows: NFI (.832), CFI (.852), RMSEA (.105). Much like the NFC construct, the strong evidence provided by Cronbach's α, but poor evidence of fit from the CFA, led the researcher to parcel the data as discussed below instead of creating a singular index.

Each item of the 8-questions making up the informational advertising construct (INFO) of the informational and transformational ad content scale was analyzed through CFA. Table 4.7 shows both the original and modified model for the INFO construct. All factor's loaded at an acceptable level for the informational construct (INFO) except for question 15, "This website reminded me of some important facts about (this brand) which I already knew" which only explained 8% of the variance in the model. Thus, this item was thus not included in the remaining analysis. Recalling that the Cronbach's α for this construct was .725, once item 15 was deleted, this fit measure shifted to, .734 and is well within the acceptable limits for combining the items into a single scale. However, when considering the chi-squared goodness of fit test (original: $\chi^2 = 127.960$, $df = 20$, $p = .000$; modified: $\chi^2 = 58.652$, $df = 14$, $p = .000$) poor model fit was observed. Incremental fit

Table 4.7

Results from CFA Test of INFO Construct (N = 507)

Informational Ad Content		
	Standardized Coefficients	
Question	Original Model	Modified Model
Q1: I Learned something from this website that I didn't know before about (this brand)	.426	.454
*Q4: There is nothing special about (this brand) that makes it different from others	.493	.476
*Q6: The website did not teach me what to look for when buying (this product)	.495	.490
Q8: This website is very informative	.747	.755
Q12: If they had to, the company could provide evidence to support the claims made on this website	.437	.419
Q15: This website reminded me of some important facts about (this brand) which I already knew	.277	_____
Q19: I can now accurately compare (this brand) with other competing brands on matters that are important to me	.602	.609
*Q21: I would have less confidence in using (this brand) now than before I saw this website	.534	.523

Note: * Indicates items that were reverse coded. Original Model Fit Indices: $\chi^2 = 127.960$, $df = 20$, $p = .000$; NFI = .820; CFI = .840; RMSEA = .103; Modified Model Fit Indices: $\chi^2 = 58.652$, $df = 14$, $p = .000$; NFI = .904; CFI = .924; RMSEA = .079

indices improved slightly between the two tests (original: NFI = .820, CFI = .840; modified: NFI = .904, CFI= .924) but failed to reach the .95 acceptable fit cut off (Hu & Bentler, 1999; Bentler, 1990; McDonald & Marsh 1990). RMSEA metrics also improved slightly from .103 to .079 between the original and modified model. The .079 measure shows a good fit according to (MacCallum, et al., 1996), but, like the NFC construct, does not show good model fit according to Hu and Bentler (1999) who set the upper limit of the construct at .06 or Steiger (2000) who places it at .07. Similarly to the other measured constructs, because the INFO construct showed an acceptable Cronbach's α of

.734, but showed poor fit according to accepted CFA goodness of fit metrics, it was

decided to parcel the data as discussed below.

Data Parceling

Because Cronbach's α for each construct indicated that the data could be

combined in an index (Garson, 2008), but there was conflicting data in terms of the CFA

models, the data were parceled instead of creating an index. For each construct the

remaining items that all loaded within acceptable limits were parceled into manifest

variables using a random assignment method presented in Little, Cunningham, Shahar,

and Widaman (2002). In this method, items within each factor were randomly assigned

without replacement to one of four parcels each for both NFC and TRANS, and one of

three parcels for INFO. For NFC the 17 items were grouped into three groups of four and

one group of five. Because of this uneven group configuration, parcels were created by

averaging the randomly sorted items together. This was done instead of summing the

items them to create a scale for each parcel. NFC 1 consisted of questions 25, 33, 34, and

36, NFC 2 consisted of questions 26, 30, 39, and 41, NFC 3 consisted of questions 24,

28, 35, and 40, and NFC 4 consisted of questions 29, 31, 32, 37, & 38. This method was

chosen because it met the requirement that each of the items contained roughly equal

factor variance and represented responses to the same questionnaire on a common scale

(Little, et al., 2002). Results from NFC CFA with the parceled data revealed good model

fit with all factors loading at the .79 level or above (see Table 4.8). Model fit metrics

were also greatly improved through the parceling method. Chi-squared test showed a

good fit ($\chi^2 = 10.621$, $df = 2$, $p = .005$) and both incremental fit indices were well above

.95 (NFI = .991, CFI = .992). However, RMSEA was above .05 and indicated a poor fit

(RMSEA = .092). Again, the RMSEA measurement for model fit has come under recent criticism and, therefore, is not viewed as a strong reason to reject the model (Savalei, 2010).

Table 4.8

Results from CFA Test of NFC Parceled Construct (N = 507)

Standardized Regression Weights	
Parcel	Estimates
NFC 1	.823
NFC 2	.779
NFC 3	.883
NFC 4	.809

Note: Model Fit Indices: χ^2 = 10.621, *df* = 2, *p* = .005; NFI = .991; CFI = .992; RMSEA = .092

For the TRANS construct, the remaining 14 times were treated in the same manner as the NFC scale items and were randomly parceled into four manifest variables (three groups of four and one group of three) using the random assignment method and same logic pertaining to the items containing roughly equal factor variance and possessing a common scale from Little, et al. (2002). TRANS 1 consisted of questions 2, 3, 16, and 20, TRANS 2 consisted of questions 9, 10, 17, and 23, TRANS 3 consisted of questions 5, 7, 11, and 14, and TRANS 4 consisted of questions 13, 18, and 22. CFA analysis on the parceled data is shown in Table 4.9.

Results from TRANS CFA with the parceled data revealed good model fit with all factors loading at the .74 level or above (see Table 4.9). Model fit metrics were also greatly improved through the parceling method. Chi-squared test showed a good fit (χ^2 = 12.337, *df* = 2, *p* = .002) and both incremental fit indices were well above .95 (NFI = .990, CFI = .992). However, RMSEA was above .05 and indicated a poor fit (RMSEA =

.101), but this did not concern the researcher since the other metrics offered strong

evidence for acceptable model fit.

Table 4.9

Results from CFA Test of TRANS Parceled Construct (N = 507)

Standardized Regression Weights	
Parcel	Estimates
TRANS 1	.746
TRANS 2	.882
TRANS 3	.873
TRANS 4	.827

Note: Model Fit Indices: $\chi^2 = 12.337$, $df = 2$, $p = .002$; NFI = .990; CFI = .992; RMSEA = .101

For the INFO construct, the remaining 7 times were treated in the same manner as

the NFC and TRANS scale items except that for INFO the items were only parceled into

three manifest variables (two groups of two and one group of three) using the random

assignment method and same logic pertaining to the items containing roughly equal

factor variance and possessing a common scale from Little, et al. (2002). INFO 1

consisted of questions 1 and 7, INFO 2 consisted of questions 4 and 6, and INFO 3

consisted of questions 8, 12, and 21. CFA analysis on the parceled data is shown in Table

4.10.

Results from INFO CFA with the parceled data revealed fair model fit with all

factors loading at the .62 level or above (see Table 4.10). Model fit metrics were also

greatly improved through the parceling method. Chi-squared test showed a good fit ($\chi^2 =$

0.000, $df = 0$, $p = $ —) and both incremental fit indices were well above .95 (NFI = 1.000,

CFI = 1.000). However, RMSEA was above .302 and indicated a poor fit, but this did not

concern the researcher because of the contentious nature of the RMSEA metric and the

fact that the other fit metrics offered strong evidence for acceptable model fit.

Table 4.10

Results from CFA Test of INFO Parceled Construct (N = 507)

Standardized Regression Weights	
Parcel	Estimates
INFO 1	.656
INFO 2	.627
INFO 3	.745

Note: Model Fit Indices: χ^2 = .000, *df* = 0, *p* = —; NFI = 1.000; CFI = 1.000; RMSEA = .302

Once construct reliability and validity were established, CFA analysis was

performed on all of the factors together to see if any of the factors were highly correlated.

This model is shown in Figure 4.1. Note that each parceled variable loaded at the *p* <

.001 significance level. The Chi square test (χ^2 = 93.274, *df* = 41, *p* = .000) did not

indicate good fit of the model, but the incremental fit indices (NFI = .970, CFI = .983)

and RMSEA (.050) did indicate acceptable fit. Through this test, it was revealed that the

TRANS and INFO are highly correlated (.94). This indicated that this advertisement was

high in both informational and transformational content. Further investigation revealed

that there was too much overlap in the web prompt used in this study and thus it is

suspected that subjects had difficulty cognitively distinguishing between informational

prompts and transformational prompts. When the original scale was examined it was

noted that when used in past research, prompts were either purely informational or purely

transformational television or print ads (Puto & Wells, 1984). The mixed media format

of the web proved high in both informational and transformational ad content. Because

the message reception of both types of messages were important to the textile company, it was decided to create two simultaneous models, one which examined the proposed model as it related to informational ad content and another which examined the model as it related to transformational ad content. The remainder of this dissertation will show results broken down in this manner with step wise analysis for the TRANS model followed by the same analysis for the INFO model.

$\chi^2 = 93.274$, $df = 41$, $p = .000$
NFI = .970
CFI = .983
RMSEA = .050
$* = p < .001$
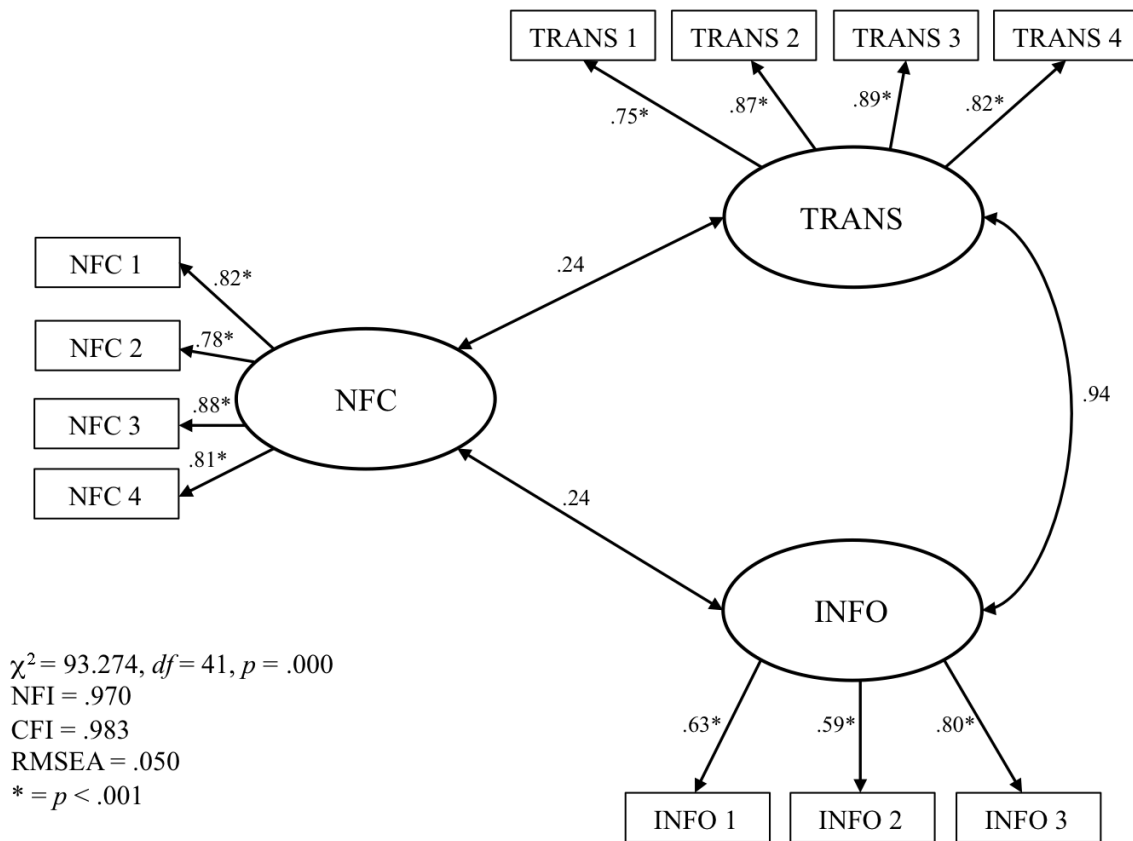
Figure 4.1. The parceled-indicator CFA model for NFC, TRANS, and INFO with standardized coefficients.

Equivalence Testing

As Table 4.1 shows, the only demographic information that is useful and

preserves the largest sample size is geographic region. That said, this characteristic was

used to divide the sample in to four regional groups: Northeast (NE), Midwest (MW),

South (S), and West (W). Although there are multiple methods for testing for invariance

(Vandenberg & Lance, 2000), Byrne (2004) illustrated a clear method of testing for both

configural and metric invariance using a series of CFA tests that progressively constrain

the model in a step-wise fashion. In the Byrne method the unconstrained model is

compared to the fully constrained model, factor-by-factor constrained models, and, if

necessary, item-by-item constrained models (2004). Although this method does not

account for the order in which the researcher chooses to constrain the model in the

various steps, there does not currently exist any literature to direct such practices.

Because the remainder of this dissertation will break apart the TRANS and INFO

constructs, total model CFA tests were performed on the split models to reestablish

model fit prior to equivalence testing. Table 4.11 shows the results from this series of

tests for the NFC/TRANS model and Table 4.12 shows results from this series of tests for

the NFC/INFO model.

Model Assessment for NFC/TRANS

The Total Model CFA for the NFC/TRANS constructs showed a good fit

according to the incremental fit indices, but fell just above the .05 upper limit for

RMSEA (NFI = .980, CFI = .988, RMSEA = .056). Chi-squared (χ^2=48.769, df = 19, $p <$

.001) showed a poor fit, but again this metric generally fails to hold up with samples over

200 (Kenny, 2010). For clarification purposes, this new model is shown in Figure 4.2

below. As expected, these fit indices indicate that the hypothesized two-factor model of TRANS and NFC represent a fairly reasonable fit for all of the data.

Figure 4.2. The parceled-indicator CFA model for NFC and TRANS with standardized coefficients.

The sample was then segmented into the 4 regional groups to test for invariance across the four regional groups. The 4-group unconstrained model (Model 1) is the baseline for which all of the other subsequent tests were compared. The metrics used to compare the tests were the chi-squared and *df* following Byrne's (2004) method. For the unconstrained model, these values were χ^2 = 134.649, with 76 *df*. Other goodness-of-fit metrics showed a good fit for this model, which tested for configural invariance, with the incremental fit indices falling either close to or above the .95 cutoff (NFI = .947, CFI = .975) and RMSEA was below the .05 mark (RMSEA = .032). Next, metric invariance was tested by comparing the unconstrained model to a fully constrained model (Model 2)

and then to factor-constrained models (Models 3 and 4). Noting that the fully constrained

model (Model 2) constrained equal all factor loadings, variances, and covariances, plus

error covariances whereas in the factor-constrained models (Models 3 and 4) only the

noted factor was constrained as equal across groups. Because the constrained models

(Models 2, 3, and 4) were nested within the hypothesized model (Model 1) a chi-square

difference test, shown in the table as $\Delta\chi^2$ and Δdf, was used (Byrne, 2004). This

comparison showed no significant difference (at the $p \le .05$ level) for any of the

constrained models, thus indicating that the equality constraints held true across the four

groups and requirements for metric invariance were met. Because of this, item-by-item

invariance testing was deemed unnecessary.

Table 4.11

Goodness-of-fit Statistics for Tests of Invariance for the NFC and TRANS Constructs: A

Summary

Model Description	Groups	Comparative Model	χ^2	df	$\Delta\chi^2$	Δdf	p
Total Model	___	___	48.769	19	___	___	___
Model 1: Hypothesized model	NE, MW, S & W	___	134.649	76	___	___	___
Model 2:Fully constrained	NE, MW, S & W	Model 1	159.017	94	24.368	18	*ns*
Model 3: NFC constrained	NE, MW, S & W	Model 1	143.408	85	8.759	11	*ns*
Model 4: TRANS constrained	NE, MW, S & W	Model 1	150.232	85	15.583	11	*ns*

Notes: $\Delta\chi^2 = \left| \text{Model 1 } \Delta\chi^2 - \text{Model x } \Delta\chi^2 \right|$; $\Delta df = \left| \text{Model 1 } \Delta df - \text{Model x } \Delta df \right|$; p = comparative model significance; *ns* = not significant; Goodness-of-fit metrics: Total Model: NFI = .980, CFI = .988, RMSEA = .056; Model 1: NFI = .947, CFI = .975, RMSEA = .032; Model 2: NFI = .937, CFI = .973, RMSEA = .037; Model 3: NFI = .943, CFI = .976, RMSEA = .037; Model 4: NFI = .941, CFI = .973, RMSEA = .039

Model Assessment for NFC/INFO

The Total Model CFA for the NFC/INFO constructs showed a good fit according to the incremental fit indices, but fell just above the .05 upper limit for RMSEA (NFI = .978, CFI = .987, RMSEA = .053). Chi-squared (χ^2=31.601, df = 13, p = .003) showed a poor fit. Much like the NFC/TRANS model, the other fit indices indicate that the hypothesized two-factor model represents a fairly reasonable fit for all of the data. Mirroring the NFC/TRANS model, this new model is shown in Figure 4.3.
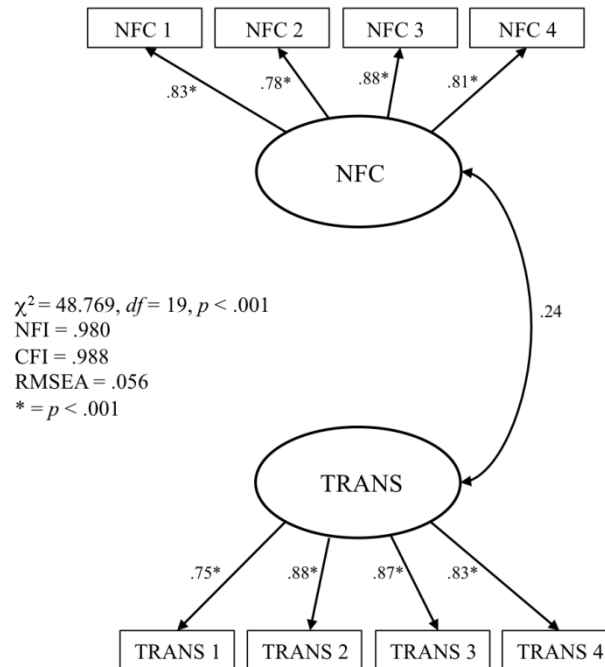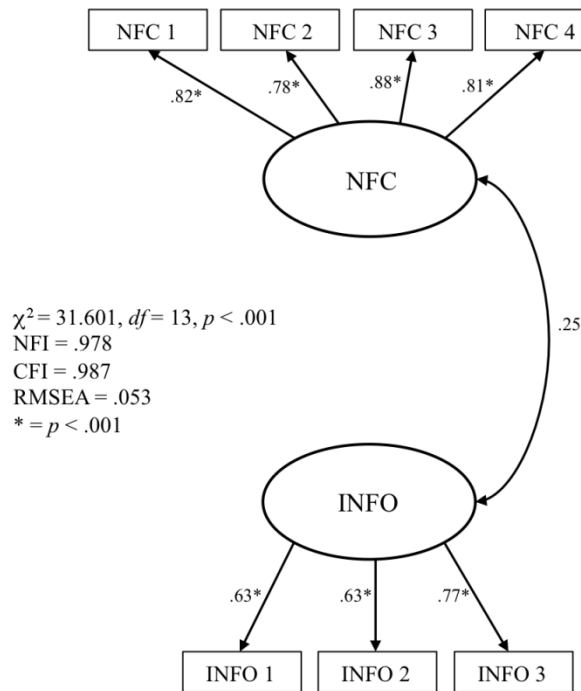

Figure 4.3. The parceled-indicator CFA model for NFC and INFO with standardized coefficients.

Like the NFC/TRANS model, the sample was then segmented into the 4 regional groups to test for invariance across the four groups. The 4-group unconstrained model (Model 1) is the baseline for which all of the other subsequent tests were compared. For the

unconstrained model, these values were $\chi^2 = 71.006$, with 52 df. Other goodness-of-fit

metrics showed a good fit for this model, which tested for configural invariance, with the

incremental fit indices falling either close to or above the .95 cutoff (NFI = .954, CFI =

.987) and RMSEA was below the .05 mark (RMSEA = .027). Mirroring the

NFC/TRANS tests for invariance, this unconstrained model was then compared to a fully

constrained model (Model 2) and then to factor-constrained models (Models 3 and 4).

Table 4.12

Goodness-of-fit Statistics for Tests of Invariance for the NFC and INFO Constructs: A

Summary

Model Description	Groups	Comparative Model	χ^2	df	$\Delta\chi^2$	Δdf	p
Total Model	___	___	31.601	13	___	___	___
Model 1: Hypothesized model	NE, MW, S & W	___	71.006	52	___	___	___
Model 2:Fully constrained model	NE, MW, S & W	Model 1	90.913	67	19.907	15	*ns*
Model 3: NFC constrained	NE, MW, S & W	Model 1	79.748	61	8.742	9	*ns*
Model 4: INFO constrained	NE, MW, S & W	Model 1	82.114	58	11.108	6	*ns*

Notes: $\Delta\chi^2 = |$ Model 1 $\Delta\chi^2 -$ Model x $\Delta\chi^2 |$; $\Delta df = |$ Model 1 $\Delta df -$ Model x $\Delta df |$; p = comparative model significance; *ns* = not significant; Goodness-of-fit metrics: Total Model: NFI = .978, CFI = .987, RMSEA = .053; Model 1: NFI = .954, CFI = .987 RMSEA = .027; Model 2: NFI = .941, CFI = .983, RMSEA = .027; Model 3: NFI = .948, CFI = .987, RMSEA = .025; Model 4: NFI = .946, CFI = .983, RMSEA = .029

This comparison showed no significant difference (at the $p \le .05$ level) for any of the

constrained models, thus indicating that the equality constraints held true across the four

groups and requirements for metric invariance were met. Because of this, item-by-item

invariance testing was deemed unnecessary. Because tests for invariance at the factor level for both models (NFC/TRANS and NFC/INFO) were statistically insignificant at the $p < .01$ significance level, item-by-item invariance tests were unnecessary.

Non-scaled Model Factors

The following sections contain data collection and analysis from the non-scaled components of this study. These include message interaction and several different types of motivation measures. Each non-scaled factor was collected based on simple counts, each of which is described below.

Message Interaction

Message interaction was assessed through the Eloqua Customer Management System by measuring respondent click through rates on each page of the interactive website. Click through rate measures were the only method available to the researcher due to the measurement capabilities of Eloqua. However, at the time of data collection (November 2008), click through rate was a standard (but contestable) metric for assessing consumer message interaction (Shen, 2002; Burns & Lutz, 2006) and was historically used to price advertisement value and success (Shen, 2002). Thus this method was deemed acceptable for measuring respondent interaction with the message delivery.

Motivation Measures

Although according to the ELM, cognition is considered an intrinsic motivational factor (Petty, et al., 1983; Cialdini, et al., 1981; Petty & Cacioppo, 1980; Cacioppo, et al., 1986), the model also indicates that there are other motivational factors that can influence one's involvement with the persuasive communication method (Petty & Wegener, 1999).

In this study several other mechanisms for measuring motivation were used in an attempt to identify some of these other factors.

Sustainability Learning Motivators (Motivation 1)

Because at the time of this study, scale development of sustainability motivation metrics was in its infancy, several different measurement techniques were used to assess respondent motivation to learn about or pursue sustainability information. One technique employed was to ask respondents to pick as many motivators that applied to them among a list of both external and internal motivators. This list can be seen in Appendix F (Question 50). Table 4.13 shows the classification of each choice as either external or internal. No respondents entered a response for (g) other; thus, this was omitted from the table and all subsequent analysis.

Table 4.13

Classification of Sustainability Learning Motivators

Internal	External	Neutral
(c) I am genuinely interested in learning about sustainability (e) I seek out information with respect to sustainability in my free time	(a) My boss requires me to learn about sustainability; (b) My clients require me to learn about sustainability; (d) I seek out information with respect to sustainability when my job requires it (f) I only learn about sustainability at work	(h) I do not know about sustainability

The study was designed for respondents to pick as many or as few responses (although they were required to pick at least one response) that they felt applied to them. However, a glitch in the Eloqua system only allowed for respondents to pick up to two

choices for this question. This issue was not discovered until after all of the data were collected. Coding for this question was based on the rubric shown in Table 4.14.

Table 4.14

Coding Scheme for Sustainability Learning Motivators

Number of External Motivators Chosen	Number of Internal Motivators Chosen	Coding Scheme
0	2	5 – Internally Motivated
0	1	4 – Slightly Internally Motivated
1	1	3 – Both Internally and Externally Motivated
1	0	2 – Slightly Externally Motivated
2	0	1 – Externally Motivated

Sustainability Information Sources (Motivation 2)

In addition to learning motivators, sustainability information source was also collected to assess motivation. This count was centered on the number of sources respondents seek when learning about sustainability (see question 49 in Appendix F) with logic based on social cognition theory (Bandura, 1986; Bandura, 1997) that the more sources a person used, the higher their motivation to learn about sustainability. This theory is also related to one's personal qualities, which is why this study attempts to link need for cognition and personal/social characteristics to motivation to seek out sustainability-related information. Respondents were asked to check all sources that applied to them and a simple count of number of sources was used to assess their motivation using the logic that the higher the number of sources one used, the higher the motivation to seek out sustainability related information. Respondents did not have the

same issue as with the previous question and were allowed, as designed, to pick as many or as few choices as they wished.

Employer Focus on Sustainability (Motivation 3)

The third type of motivation examined was the effect of company (i.e., employer) focus on sustainability as a mediating effect between need for cognition, message interaction, and message reception. Employer sustainability focus was measured on a 9-point Likert-type scale ranging from 1 = very strong unfocused to 9 = very strong focused (on sustainability) (see question 44 in Appendix F). Subsequent SEM analysis will use each of these three measures of motivation separately to compare the various measurement techniques.

<div align="center">Hypothesis Testing Results</div>

For clarification purposes, the hypothesis and research model are re-printed below for ease in interpreting the analyses that follow:

H1: Consumers' motivation to seek information about sustainability is related to their willingness to interact with sustainability-oriented persuasion cues.

H2: Consumers' personal/social characteristics will moderate the effects of:

(A) consumer motivation to seek message information.

(B) consumer interaction with message delivery.

(C) the message the consumer receives from the interactive marketing campaign.

H3: Consumers' Need for Cognition moderates the effects of:

(A) consumer motivation to seek message information.

(B) consumer interaction with message delivery.

(C) consumer message interpretation.

H4: Consumer Need for Cognition and consumer personal/social characteristics are highly correlated endogenous constructs.

H5: Consumer interaction with the marketing message is related to consumer message interpretation.

Figure 4.4. Research model for understanding consumer motivations, interactions, and reception of a sustainability-related marketing endeavor.

Single-Group SEM

To begin, a series of single group SEM analyses (one for NFC/TRANS and one for NFC/INFO) with maximum likelihood estimation were performed to test all hypotheses. Note that this excludes the moderating effect of geographic region (H2 and H4). For the motivation factor, separate models were created to test the two different

counts: Sustainability Learning Motivators and Sustainability Information Sources. For the remainder of this dissertation, Sustainability Learning Motivators will be referred to as Motivation 1 and Sustainability Information Sources will be referred to as Motivation 2. For models related to the transformational advertising construct, the models consist of one latent endogenous variable (TRANS), one latent exogenous variable (NFC), and ten observed variables (all endogenous). For models related to the informational advertising construct, the models consist of one latent endogenous variable (INFO), one latent exogenous variable (NFC), and nine observed variables (all endogenous). For both models, all unobserved variables were exogenous except for the message TRANS and INFO variables.

TRANS/NFC and Motivation 1 Model

The first single-group SEM performed tested Motivation 1 and Message Interaction in the NFC/TRANS Model. This is shown in Figure 4.5. Fit indices other than chi-squared ($\chi^2 = 67.363$, *df* = 32, *p* =.000) from this model yielded consistent results that showed good fit (NFI = .972, CFI = .985, RMSEA = .047).

Regression coefficients indicated that respondents' Need for Cognition ($\beta^* = .24$, *p* < .001) positively influenced transformational message reception and was the only significant relationship (at the .05 level (two-tailed)) observed in the model. Given these results, H3(C) was the only validated hypothesis, with H3(A), H3(B), H1, and H5 all showing insignificant results at the p = .05 level. Thus, neither motivation 1, nor message interaction had any significant mediating effect between respondents' preferred cognition patterns and their interpretation of the transformational ad content.

χ² = 67.363, *df* = 32, *p* = .000
NFI = .972
CFI = .985
RMSEA = .047
* = *p* < .001

Need for Cognition

.04   .02   .24*

Motivation 1   -.02   Interaction with Message Delivery   -.09   Transformational Message Received
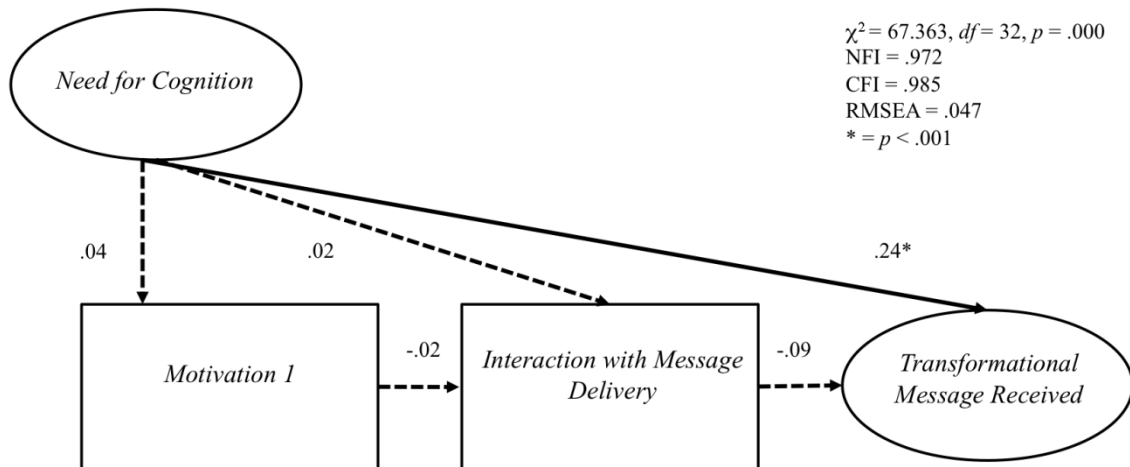
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.5. Single-group SEM model for the effect of motivation 1 and message interaction as mediators between NFC and TRANS message reception with standardized coefficients.

Table 4.15

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.5

HP	Path	Est.	S.E.	*p*
H3(A)	NFC → Motivation 1	.066	.071	.355
H3(B)	NFC → Message Interaction	.140	.384	.716
H3(C)	NFC → Transformational Message Reception	.208	.043	***
H1	Motivation 1 → Message Interaction	-.091	.240	.704
H5	Message Interaction → Transformational Message Reception	-.009	.005	.060

Note: *** = p < .000

TRANS/NFC and Motivation 2 Model

The second single-group SEM performed tested Motivation 2 and Message Interaction in the NFC/TRANS Model. This is shown in Figure 4.6. Fit indices other

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than chi-squared (χ^2 = 56.621, df = 32, p =.002) from this model yielded consistent

results that showed good fit (NFI = .976, CFI = .988, RMSEA = .041).

Again, regression coefficients indicated that respondents' Need for Cognition (β^* = .24, $p < .001$) positively influenced transformational message reception and was the only significant relationship observed in the model. Given these results, H3(C) was the only validated hypothesis, with H3(A), H3(B), H1, and H5 all showing insignificant results at the p = .05 level. Thus, neither motivation 2, nor message interaction had any significant mediating effect between respondents' preferred cognition patterns and their interpretation of the transformational ad content.
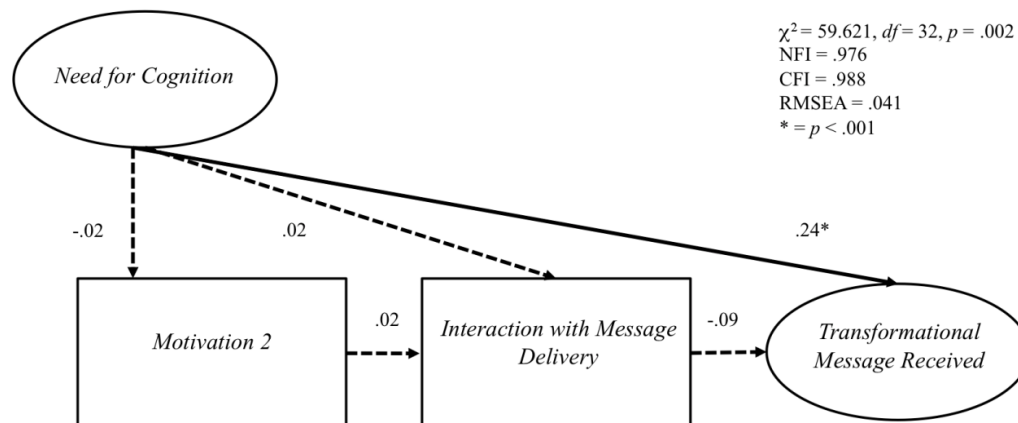
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.6. Single-group SEM model for the effect of motivation 2 and message interaction as mediators between NFC and TRANS message reception with standardized coefficients.

Table 4.16

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.6

HP	Path	Est.	S.E.	*p*
H3(A)	NFC → Motivation 2	-.021	.061	.729
H3(B)	NFC → Message Interaction	.137	.384	.721
H3(C)	NFC → Transformational Message Reception	.208	.043	***
H1	Motivation 2 → Message Interaction	-.123	.278	.659
H5	Message Interaction → Transformational Message Reception	-.009	.005	.060

Note: *** = p < .000

TRANS/NFC and Motivation 3 Model

The third single-group SEM performed tested Motivation 3 and Message Interaction in the NFC/TRANS Model. This is shown in Figure 4.7. Fit indices other than chi-squared (χ^2 = 71.402, *df* = 32, *p* =.000) from this model yielded consistent results that showed good fit (NFI = .971, CFI = .984, RMSEA = .049).

Yet again, regression coefficients indicated that respondents' Need for Cognition (β* = .24, *p* < .001) positively influenced transformational message reception and was the only significant relationship observed in the model. Given these results, H3(C) was the only validated hypothesis, with H3(A), H3(B), H1, and H5 all showing insignificant results at the p = .05 level. Thus, neither motivation 3, nor message interaction had any significant mediating effect between respondents' preferred cognition patterns or their interpretation of the transformational ad content.

$\chi^2 = 71.402, df = 32, p = .000$
NFI = .971
CFI = .984
RMSEA = .049
* = $p < .001$
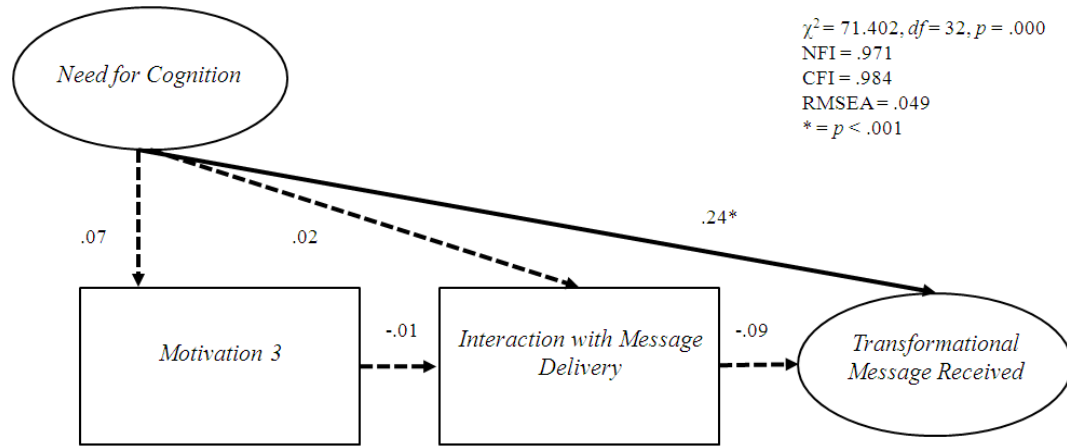
Figure 4.7. Single-group SEM model for the effect of motivation 3 and message interaction as mediators between NFC and TRANS message reception with standardized coefficients.

Table 4.17

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.7

HP	Path	Est.	S.E.	p
H3(A)	NFC → Motivation 3	.121	.086	.161
H3(B)	NFC → Message Interaction	.142	.385	.712
H3(C)	NFC → Transformational Message Reception	.209	.043	***
H1	Motivation 3 → Message Interaction	-.058	.198	.770
H5	Message Interaction → Transformational Message Reception	-.009	.005	.060

Note: *** = $p < .000$

INFO/NFC and Motivation 1 Model

The second set of single-group SEM tests performed looked at respondent understanding of informational ad content. The first SEM in this series tested Motivation 1 and Message Interaction in the NFC/INFO Model. This is shown in Figure 4.8. Fit

indices other than chi-squared (χ^2 = 45.361, *df* = 24, *p* =.005) from this model yielded

consistent results that showed good fit (NFI = .969, CFI = .985, RMSEA = .042).Again,

regression coefficients indicated that respondents' Need for Cognition (β^* = .25, *p* <

.001) positively influenced informational message reception and was the only significant

relationship observed in the model. Given these results, H3(C) was the only validated

hypothesis, with H3(A), H3(B), H1, and H5 all showing insignificant results at the p =

.05 level. Thus, neither motivation 1, nor message interaction had any significant

mediating effect between respondents' preferred cognition patterns and their

interpretation of the informational ad content.
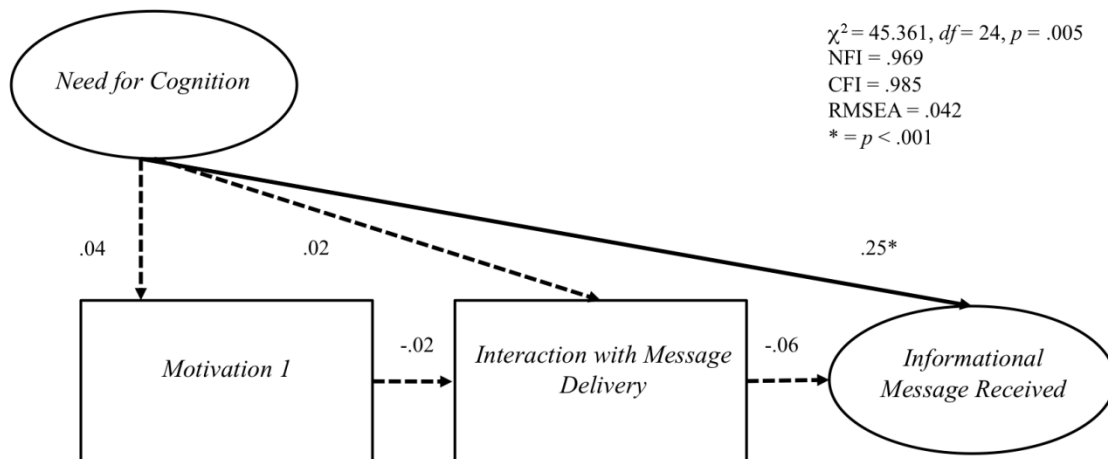
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.8. Single-group SEM model for the effect of motivation 1 and message

interaction as mediators between NFC and INFO message reception with standardized

coefficients.

Table 4.18

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.8

HP	Path	Est.	S.E.	p
H3(A)	NFC → Motivation 1	.064	.071	.371
H3(B)	NFC → Message Interaction	.140	.385	.715
H3(C)	NFC → Informational Message Reception	.214	.048	***
H1	Motivation 1 → Message Interaction	-.091	.240	.704
H5	Message Interaction → Informational Message Reception	-.007	.005	.227

Note: *** = p < .000

INFO/NFC and Motivation 2 Model

The second single-group SEM performed tested Motivation 2 and Message

Interaction in the NFC/INFO Model. This is shown in Figure 4.9. Fit indices other than

chi-squared (χ^2 = 42.727, *df* = 24, *p* =.011) from this model yielded consistent results that

showed good fit (NFI = .971, CFI = .987, RMSEA = .039).

$\chi^2 = 42.727, df = 24, p = .011$
NFI = .971
CFI = .987
RMSEA = .039
* = p < .001
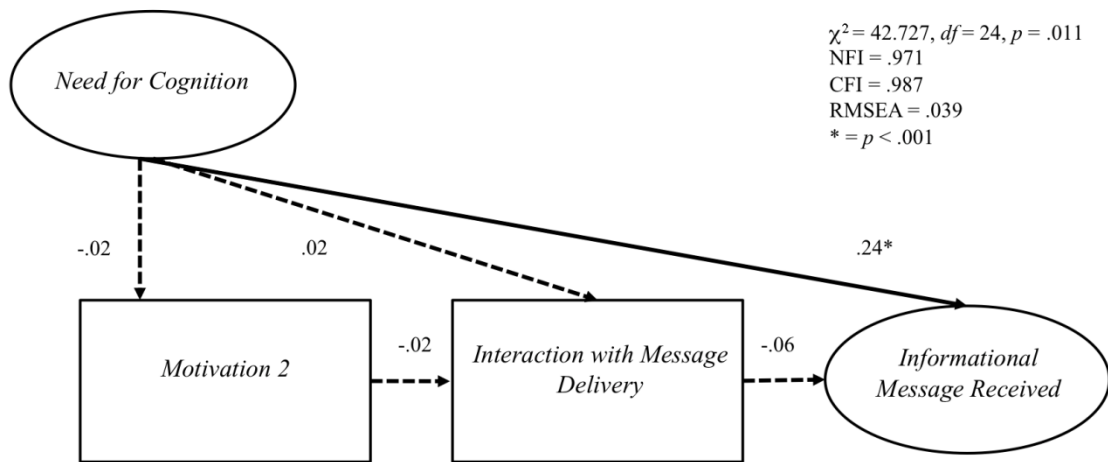
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.9. Single-group SEM model for the effect of motivation 2 and message

interaction as mediators between NFC and INFO message reception with standardized

coefficients.

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As expected, regression coefficients indicated that respondents' Need for Cognition ($\beta^* = .24$, $p < .001$) positively influenced informational message reception and was the only significant relationship observed in the model. Given these results, H3(C) was the only validated hypothesis, with H3(A), H3(B), H1, and H5 all showing insignificant results at the $p = .05$ level. Thus, neither motivation 2, nor message interaction had any significant mediating effect between respondents' preferred cognition patterns and their interpretation of the informational ad content.

Table 4.19

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.9

HP	Path	Est.	S.E.	p
H3(A)	NFC → Motivation 2	-.022	.062	.721
H3(B)	NFC → Message Interaction	.138	.385	.720
H3(C)	NFC → Informational Message Reception	.214	.048	***
H1	Motivation 2 → Message Interaction	-.123	.278	.659
H5	Message Interaction → Informational Message Reception	-.007	.005	.227

Note: *** = p < .000

INFO/NFC and Motivation 3 Model

The third single-group SEM performed tested Motivation 3 and Message Interaction in the NFC/INFO Model. This is shown in Figure 4.10. Fit indices other than chi-squared ($\chi^2 = 48.030$, $df = 24$, $p = .003$) from this model yielded consistent results that showed good fit (NFI = .968, CFI = .983, RMSEA = .044).

As shown in all of the other models, regression coefficients indicated that respondents' Need for Cognition ($\beta^* = .25$, $p < .001$) positively influenced informational

message reception and was the only significant relationship observed in the model.

Given these results, H3(C) was the only validated hypothesis, with H3(A), H3(B), H1,

and H5 all showing insignificant results at the p = .05 level. Thus, neither motivation 3,

nor message interaction had any significant mediating effect between respondents'

preferred cognition patterns and their interpretation of the informational ad content.

$\chi^2 = 48.030, df = 24, p = .003$
NFI = .968
CFI = .983
RMSEA = .044
$* = p < .001$

Figure 4.10. Single-group SEM Model for the effect of motivation 3 and message

interaction as mediators between NFC and INFO message reception with standardized

coefficients.

Table 4.20

Unstandardized Parameter Estimates for the Single-Group SEM Model in Figure 4.10

HP	Path	Est.	S.E.	p
H3(A)	NFC → Motivation 3	.119	.086	.170
H3(B)	NFC → Message Interaction	.143	.385	.711
H3(C)	NFC → Informational Message Reception	.215	.048	***
H1	Motivation 3 → Message Interaction	-.058	.198	.770
H5	Message Interaction → Informational Message Reception	-.007	.005	.226

Note: *** = p < .000

Further Single-Group SEM Analysis

Results from the previous series of single-group SEM analyses provided insight into the lack of observed mediation effects provided by motivation variables on respondents' interaction with the messages. This led, in all cases, to the rejection of hypothesis (H1) that consumers' motivation to seek information about sustainability is related to their willingness to interact with sustainability-oriented persuasion cues. The results also indicated that consumers' need for cognition was not related to consumer motivation to seek message information (H3(A)) or consumer interaction with message delivery (H3(B)). However, each model did indicate that consumers' need for cognition did significantly relate to their understanding of both the transformational and informational ad content (H3(C)). And finally, the results from this series of SEM analysis also showed that consumer interaction with the marketing message was not related to consumer message interpretation of either the transformational or informational ad content (H5).

Given that no significant relationships could be attributed to message interaction, this factor was removed and the direct mediating effects of each motivation factor were examined. These relationships are presented in Figures 4.11 through 4.16 below. Note that each model showed good fit across both incremental fit indices and RMSEA. These fit metrics are included in each figure.
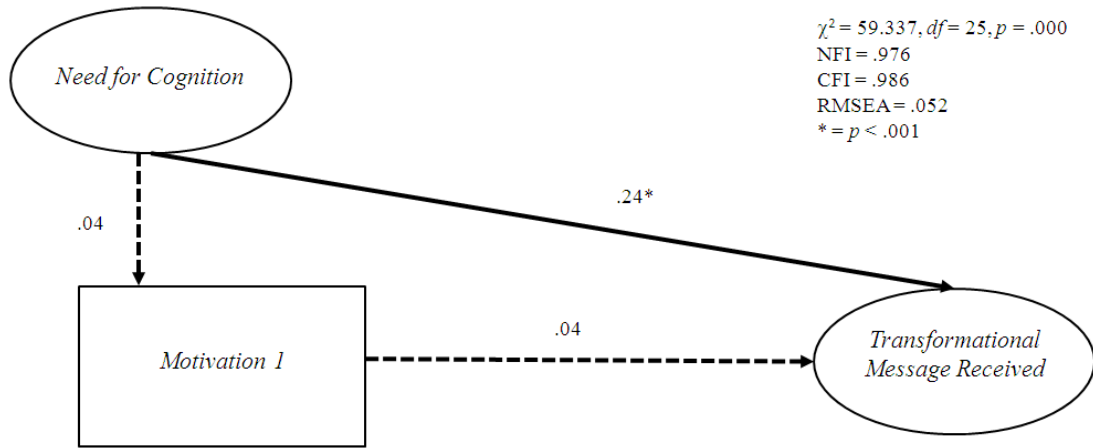
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.11. Single-group SEM model for the effect of motivation 1 as a mediator

between NFC and TRANS message reception with standardized coefficients.
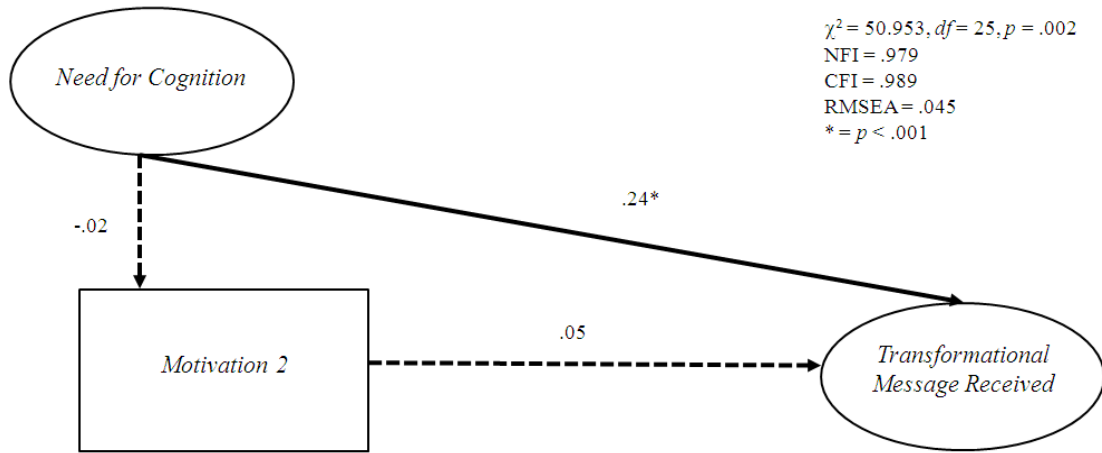
Note: Dashed lines indicate non-significant relationships at the p = .05 level

Figure 4.12. Single-group SEM model for the effect of motivation 2 as a mediator

between NFC and TRANS message reception with standardized coefficients.
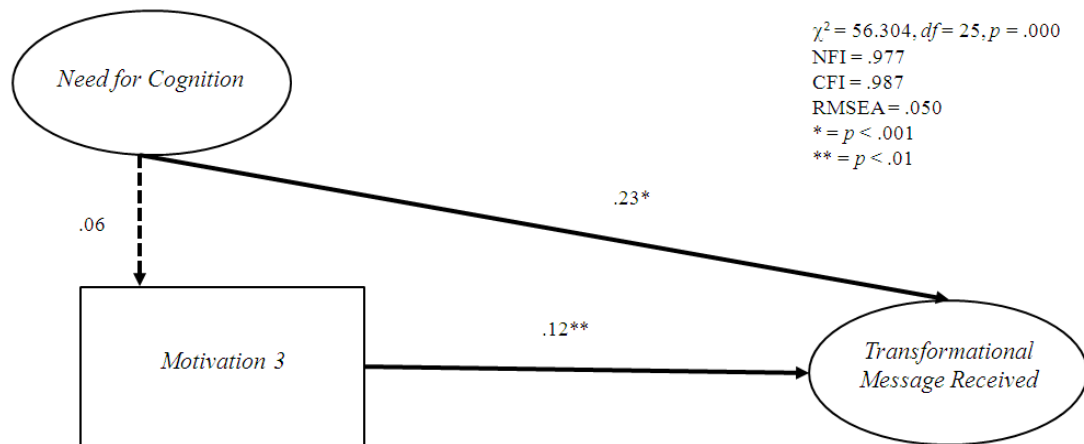
Note: Dashed lines indicate non-significant relationships at the p = .05 level

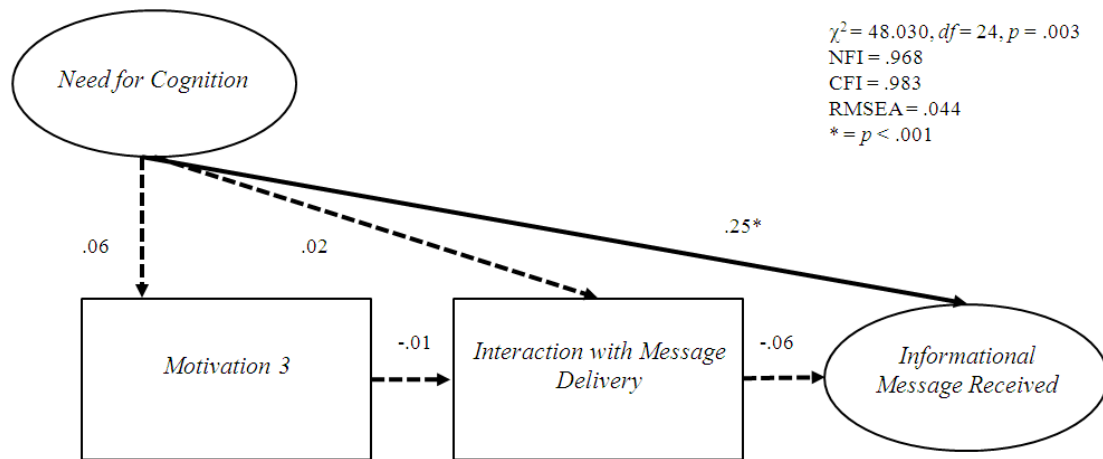*Figure 4.13.* Single-group SEM model for the effect of motivation 3 as a mediator between NFC and TRANS message reception with standardized coefficients.

The results shown in Figures 4.11 and 4.12 mirror results from the previous SEM tests. However, Figure 4.13 deviates from the original findings and suggests that there is a significant relationship between employer focus on sustainability and respondents' understanding of the transformational marketing message. Regression coefficients indicated that respondents' company's focus on sustainability ($\beta^* = .12$, $p = .006$) was positively related to respondent interpretation of the transformational message. However, regression coefficients showed that company focus on sustainability was not related to NFC ($\beta^* = .06$, $p = .184$). Thus, although related to the model, company focus on sustainability was not a mediator variable between NFC and TRANS.

$\chi^2 = 39.916, df = 18, p = .002$
NFI = .973
CFI = .985
RMSEA = .049
* = $p < .001$

Need for Cognition

.25*

.04

Motivation 1

-.02

Informational
Message Received
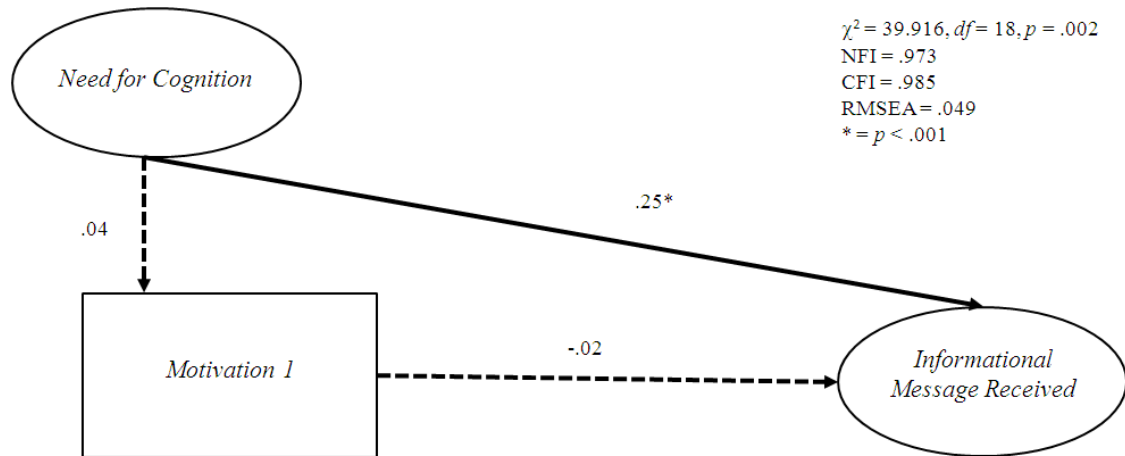
Figure 4.14. Single-group SEM model for the effect of motivation 1 as a mediator

between NFC and INFO message reception with standardized coefficients.

$\chi^2 = 36.343, df = 18, p = .006$
NFI = .975
CFI = .987
RMSEA = .045
* = $p < .001$

Need for Cognition

.25*

-.02

Motivation 2

.05

Informational
Message Received
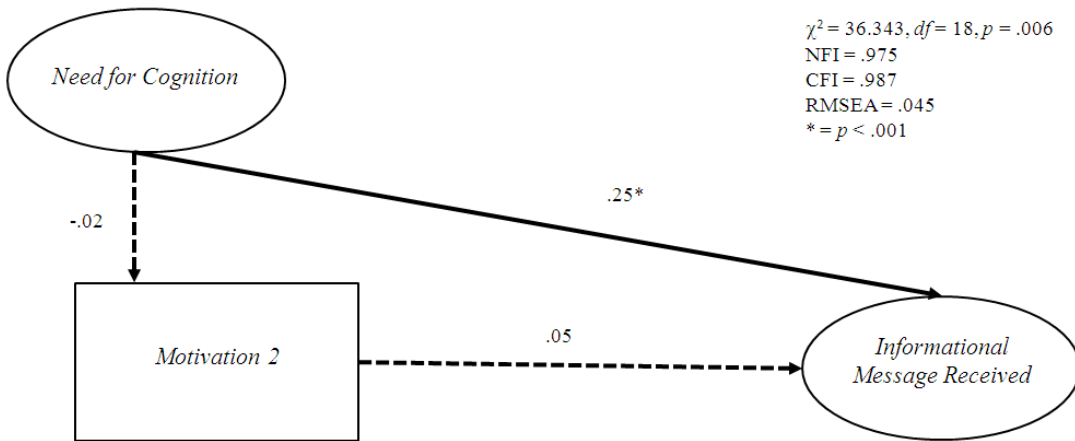
Figure 4.15. Single-group SEM model for the effect of motivation 2 as a mediator

between NFC and INFO message reception with standardized coefficients.

$\chi^2 = 38.843, df = 18, p = .003$
NFI = .974
CFI = .986
RMSEA = .048
* = $p < .001$
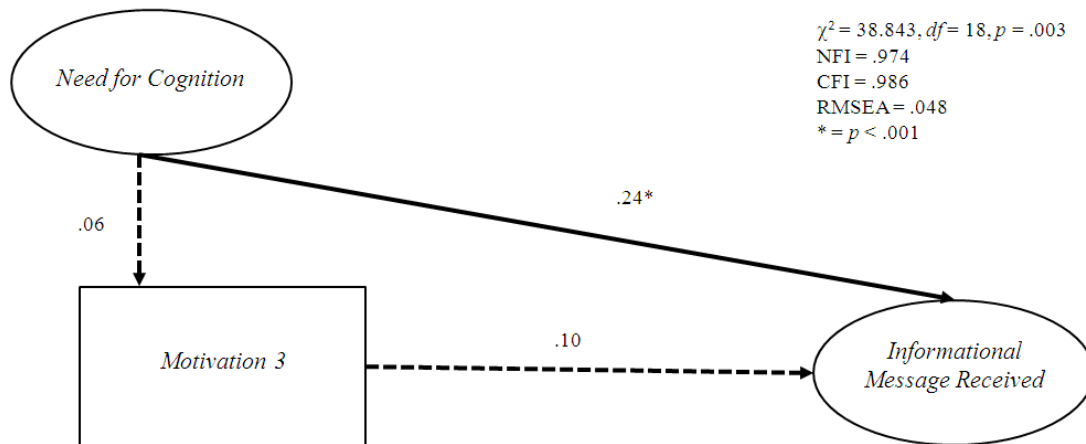
Figure 4.16. Single-group SEM model for the effect of motivation 3 as a mediator between NFC and INFO message reception with standardized coefficients.

Unlike the transformational message reception model, regression coefficients indicated that respondents' employers' focus on sustainability was not related to either respondent need for cognition ($\beta^* = .06, p = .185$) or interpretation of the informational message ($\beta^* = .10, p = .059$). Thus, these findings mirror the prior findings of the SEM tests of informational ad content.

Multiple-Group SEM

Multiple-group SEM analysis was performed to assess the role of personal/social characteristics on the hypothesized model (H2 (A, B, and C) and H4). As previously mentioned, geographic region was the only characteristic collected that was able to be utilized due to the high level of skewing and/or missing values of the other assessed characteristics. Data were divided into four groups according to US Region: Northeast (NE), Midwest (MW), South (S), and West (W). Results from these tests are presented in the following pages.

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These results shown in Table 4.21 indicate that geographic region does appear to have a relationship to one's need for cognition (H4) and subsequent marketing message interpretation. Particularly of interest are the observed relationships NFC → TRANS and NFC → INFO, which were only observed in the South and West, while the other two observed regions (Northeast and Midwest) showed no significant relationships in the models among any of the observed factors. Although region is shown to have some relationship, the nature of this research design does not allow broader conclusions across generalized populations, nor postulation about causality of direct effects among the variables.

Because there was no significant effect for message interaction across any of the models, this factor was removed completely. Also, because there did not appear to be any moderating effects of the motivation factors, but some significant relationships were observed between motivation factors and message interpretation in the last set of single-group SEM tests, direct effects of motivation 1, motivation 2, and motivation 3 across the groups was assessed (See Table 4.22). It is important to note that NFC was included in the calculation of these models because it showed significant effect on message reception, however, these relationships were not included in Table 4.22 because these relationships were reported several times in the preceding tables and figures. Fit metrics for each model are included at the end of the table and it is important to note that there were mixed results for model fit. Across all models NFI fell just below the .95 cutoff, while CFI and RMSEA measures showed good model fit. Chi-square goodness of fit metrics are also included, but much like all of the other models in this study, this test showed poor model fit, which is most likely due to the large sample size.

Table 4.21

Regression Coefficients and Unstandardized Parameter Estimates for the Multiple-Group

SEM Tests for Effect of Geographic Region on the Hypothesized Model

HP	Region	Path	β*	Est.	S.E.	*p*
H2(A)	H3(A)-NE	NFC → Motivation 1	.119	.160	.160	.315
	H3(A)-MW	NFC → Motivation 1	.021	.033	.132	.806
	H3(A)-S	NFC → Motivation 1	.014	.022	.140	.876
	H3(A)-W	NFC → Motivation 1	.051	.074	.137	.588
	H3(A)-NE	NFC → Motivation 2	-.184	-.248	.159	.120
	H3(A)-MW	NFC → Motivation 2	.134	.173	.109	.114
	H3(A)-S	NFC → Motivation 2	-.093	-.113	.107	.292
	H3(A)-W	NFC → Motivation 2	.002	.003	.128	.980
	H3(A)-NE	NFC → Motivation 3	-.036	-.055	.184	.765
	H3(A)-MW	NFC → Motivation 3	.110	.195	.149	.192
	H3(A)-S	NFC → Motivation 3	.058	.114	.173	.511
	H3(A)-W	NFC → Motivation 3	.107	.202	.178	.255
H2(B)	H3(B)-NE	NFC → Message Interaction	-.069	-.611	1.059	.564
	H3(B)-MW	NFC → Message Interaction	-.055	-.437	.670	.515
	H3(B)-S	NFC → Message Interaction	.154	1.073	.612	.080
	H3(B)-W	NFC → Message Interaction	.009	.084	.837	.920
H2(C)	H3(C)-NE	NFC → TRANS	.063	.061	.115	.598
	H3(C)-MW	NFC → TRANS	.106	.092	.078	.239
	H3(C)-S	NFC → TRANS	.343	.259	.073	***
	H3(C)-W	NFC → TRANS	.419	.374	.088	***
	H3(C)-NE	NFC → INFO	.154	.134	.119	.262
	H3(C)-MW	NFC → INFO	.055	.056	.105	.598
	H3(C)-S	NFC → INFO	.294	.273	.096	***.004***
	H3(C)-W	NFC → INFO	.505	.332	.082	***

Note: *** = p < .000; Model fit for Motivation 1 H2(a), H2(B), & H3(C-TRANS): (χ^2 = 188.148, *df* = 128, *p* =.000 NFI = .928, CFI = .975, RMSEA = .031); Model fit for Motivation 2 H2(a): (χ^2 = 192.005, *df* = 128, *p* =.000 NFI = .927, CFI = .973, RMSEA = .032);Model fit for Motivation 3 H2(a): (χ^2 = 194.885, *df* = 132, *p* =.000 NFI = .925, CFI = .974, RMSEA = .031); Model fit for H3(C-INFO) (χ^2 = 120.920, *df* = 96, *p* =.044, NFI = .924, CFI = .982, RMSEA = .023)

Table 4.22

Standardized and Unstandardized Parameter Estimates for Multi-group SEM Tests for

Direct Effects of Motivation on Message Reception

Region	Path	β*	Est.	S.E.	p
NE	Motivation 1 → TRANS	.047	.034	.119	.553
MW	Motivation 1 → TRANS	.063	.035	.047	.452
S	Motivation 1 → TRANS	.111	.053	.040	.178
W	Motivation 1 → TRANS	-.105	-.064	.054	.230
NE	Motivation 2 →TRANS	.052	.037	.085	.664
MW	Motivation 2 →TRANS	.045	.030	.057	.596
S	Motivation 2 →TRANS	.190	.119	.052	*.021*
W	Motivation 2 →TRANS	-.156	-.102	.056	.071
NE	Motivation 3 →TRANS	.123	.077	.073	.293
MW	Motivation 3 →TRANS	.125	.062	.041	.136
S	Motivation 3 →TRANS	.109	.042	.032	.187
W	Motivation 3 →TRANS	.191	.089	.041	*.030*
NE	Motivation 1 → INFO	.210	.065	.058	.267
MW	Motivation 1 → INFO	-.077	-.050	.064	.433
S	Motivation 1 → INFO	.016	.009	.054	.866
W	Motivation 1 → INFO	-.021	-.009	.050	.853
NE	Motivation 2 → INFO	-.019	-.010	.061	.870
MW	Motivation 2 → INFO	.105	.082	.078	.289
S	Motivation 2 → INFO	.210	.166	.076	*.029*
W	Motivation 2 → INFO	-.201	-.095	.046	*.040*
NE	Motivation 3 → INFO	-.058	-.027	.052	.599
MW	Motivation 3 → INFO	.179	.104	.058	.076
S	Motivation 3 → INFO	.157	.075	.045	.097
W	Motivation 3 → INFO	.084	.029	.035	.415

Note: Model fit for Motivation 1 (TRANS): (χ^2 = 162.274, *df* = 104, *p* =.000, NFI = .937, CFI = .976, RMSEA = .033); Motivation 2 (TRANS): (χ^2 = 167.616, *df* = 104, *p* =.000, NFI = .935, CFI = .973, RMSEA = .035); Model fit for Motivation 3(TRANS):(χ^2 = 162.602, *df* = 104, *p* =.000, NFI = .937, CFI = .976, RMSEA = .033); Model fit for Motivation 1 (INFO): (χ^2 = 102.627, *df* = 76, *p* =.023, NFI = .935, CFI = .981, RMSEA = .026); Motivation 2 (INFO): (χ^2 = 95.678, *df* = 76, *p* =.063, NFI = .939, CFI = .986, RMSEA = .023); Model fit for Motivation 3(INFO)(χ^2 = 98.881, *df* = 76, *p* =.040, NFI = .937, CFI = .984, RMSEA = .024)

This series of tests revealed that the observed relationship between Motivation 3 (employer sustainability focus) and understanding of transformational ad content (Figure 4.13) only holds up in Western Region. Interestingly though, this series of tests revealed previously unknown relationships between Motivation 2 (sustainability information sources) and understanding of both informational and transformational ad content in the South, and understanding of informational ad content in the West. This provides further evidence supporting H4 and H2 (A, B, & C) that there do exist regionalized discrepancies between need for cognition, motivation, and message reception.

V. DISCUSSION AND CONCLUSIONS

The purpose of this research was to understand and quantify relationships between consumers' personal and social characteristics, their motivations to seek out information pertaining to sustainability, their interactions with an interactive sustainability-oriented marketing campaign, and the messages they took away from that experience. In this chapter, a summary and discussion of these findings are presented along with theoretical and managerial implications. In addition to these conclusions, limitations and recommendations for future research are presented.

Discussion

This research supports the concept that measuring and understanding consumer motivations and message interactions are complex and difficult at best. The results showed that traditional methods of assessing consumer interactions with web-based messaging (i.e., click through rate) had no bearing on understanding which messages consumers were interpreting nor why they were motivated to interact with the message. The results also showed that consumer geographic location may have something to do with their willingness to receive sustainability messages, but further research is needed to assess the validity and potential causality of these observed relationships.

Going back to the original research questions (presented in Table 5.1 alongside their corresponding hypotheses tested in this study) a summary of research findings are presented and are followed by a detailed discussion of research findings.

Table 5.1

Summary of Research Findings

	Research Question	H	Research Result
1	Do consumers' motivation sources influence involvement with sustainability-related marketing messages?	H1	The data did not indicate a relationship.
2	Does level of involvement with sustainability-related marketing messages relate to the understanding of transformational and informational ad content?	H5	The data did not indicate a relationship.
3	Do consumers' personal and social characteristics influence motivation for receiving sustainability-related marketing messages?	H2(A)	The data indicated that there are some relationships between personal and social characteristics and motivation.
4	Do consumers' personal and social characteristics influence involvement with sustainability-related marketing messages?	H2(B)	The data did not indicate a relationship.
5	Do consumers' personal and social characteristics influence understanding of transformational and informational ad content of sustainability-related marketing messages?	H2(C)	The data indicated that there are some relationships between personal and social characteristics and message reception.
6	Does consumers' need for cognition influence motivation for receiving sustainability-related marketing messages?	H3(A)	The data did not indicate a relationship.
7	Does consumers' need for cognition influence involvement with sustainability-related marketing messages?	H3(B)	The data did not indicate a relationship.
8	Does consumers' need for cognition influence understanding of transformational and informational ad content of sustainability-related marketing messages?	H3(C)	The data indicated that there are some relationships between NFC and message reception.
9	Can traditional market segmentation practices be applied to consumers of sustainable goods, or are there other rubrics of classification that are more accurate?	H4	The data indicated that other rubrics of consumer classification may be more accurate but this question was only partially explored in this research.

Consumer Motivation

This study used three different metrics for assessing consumer motivation: 1) sustainability-learning motivators (both internal and external), 2) number of sources consumers use to obtain information about sustainability, and 3) employer focus on sustainability. Although these metrics are in their infancy, they are a good starting point for future scale development work and provided some insight as to regional differences within the sample. This was particularly true for number of information sources and for employer focus on sustainability (see Table 4.22), which showed significant relationships to consumer understanding of both informational and transformational marketing messages in some of the geographical regions. However, in no case did consumer motivation appear to be a mediator variable between NFC or message interaction and message reception.

In the Southern region, sustainability information sources showed a significant effect on understanding of both informational and transformational marketing messages, whereas it only showed a significant effect on the understanding of informational messages for the Western group. The Northeastern and Midwestern regions did not show any relationships. Because this research was not experimentally based causality cannot be assumed in any of the observed relationships, however, this does pose some interesting questions for future researchers to discover. It is not too preposterous to speculate that in the Southern and Western regions of the US there are different cultural and personal drivers to obtain and retain sustainability information.

Need for Cognition

Single-group SEM revealed that consumer NFC showed significant effect on message interpretation of both informational and transformational marketing messages. Multiple-group SEM revealed that these relationships were only significant in the Western and Southern regions. Much like the findings related to the other motivation metrics, causality cannot be assumed in these observed relationships, but further research might reveal why need for cognition shows a significant relationship to message interpretation in the West and South, whereas in the other regions there does not appear to be any relationship between these two factors.

Message Interaction

In this study consumer interaction was measured by click-through rate and proved to be un-related to motivation, need for cognition, or message interpretation. Although this was a disappointment to the researcher, these findings actually align with the findings of current researchers in the field of online marketing interactions. Lipsman (2008) showed that click through rate, although an industry standard (Shen, 2002; Joachims, Granka, Pan, Hembrooke, & Gay, 2005; Burns & Lutz, 2006; Richardson, Dominowska, & Ragno, 2007; Mahdian & Tomak, 2008), does not accurately capture a consumers' intake of marketing messages. New research by Archak, Mirrokni, and Muthukrishnan (2010) and the media and consumer marketing agencies Starcom USA, Tacoda, and comScore (Lipsman, 2008) shows that click through rate is a faulty metric and that more advanced and intricate ways to measure consumers' web interactions are needed. However, at the time of data collection, these tools were not developed and/or not

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available to be used, thus click through rate was the only method available for tracking consumer message interaction.

Personal/Social Characteristics

The primary method for gathering the personal and social characteristics of respondents relied on the database information from the company, yet in a large number of cases, this information proved to be inconclusive because it either revealed an oversimplification of the nature of the individual consumers, or it was incomplete in capturing information from all respondents. Although the regional classification was a simplification of the data in that state-by-state information was available, the sample size did not accommodate this intricacy of detail and a regionalized segmentation needed to be used. That said, although regional geography appeared to be related to the hypothesized model, the researcher thinks that other, more descriptive characteristics could have been more revealing in terms of the research model.

Message Interpretation

Results showed that respondents across all regions indicated high understanding of both the transformational and informational marketing messages presented in this web campaign. High correlation between these two constructs in the modeling (see Figure 4.1) indicated that each type of understanding needed to be handled separately when looking at the research model. Upon separation, transformational marketing messages proved to have stronger relationships to consumers' need for cognition as well as to the motivation factors than informational message understanding. This is shown in Tables 4.21 and 4.22 as well as Figures 4.13 and 4.16.

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Theoretical Implications

The modeling in this study was theoretically grounded in McCracken's (1986) Consumption and Meaning Model which showed that meaning moves through society through traceable consumption patterns, Rogers' (1971) Diffusion of Innovations Model which showed movement of ideas through groups within a society, and social marketing theories and practices. There was also strong theoretical basis in Elaboration Likelihood Model (Petty, et al., 1983), which states that consumers who are motivated to process message information will engage with the message at a higher cognitive level than consumers who are less motivated to receive the message (Petty, et al., 1983; de Boer, et al., 2007). Although the findings of this study contradicted ELM in that consumer motivation and interaction with the message did not appear to affect message reception (with the exception of motivation 3 affecting TRANS message reception (Figure 4.12)), the study also showed that perhaps some of these constructs were not measured effectively. Future work needs to be done using more elaborate measurement tools for assessing consumer interaction with multimedia websites.

Additionally, motivational scales for assessing consumer motivation to purchase sustainable products as a function of their job need to be developed in order to more adequately assess the application of these theories to actual practice. Moisander (2007) echoes this finding with research revealing not only the motivational complexity of green consumption, but also makes an argument for the diversity of consumers who make green consumption choices. For example, Moisander (2007) argues that one consumer might be motivated by his or her love for nature, whereas another consumer might be motivated by his or her perceived moral obligation to protect all living things. This aligns with the

earlier argument that modern consumers have moved beyond LOHAS characterization and that green consumers are now much more complex. This notion also speaks to why traditional market segmentation practices for consumers of sustainable goods are difficult to interpret. These difficulties, due to the observed complexity of motivations driving consumers to make green consumptive choices, are also expected to prompt researchers to seek other rubrics of classification. That is why the H4 only partially addressed the nineth research question presented in this study.

Moisander (2007) also presents the notion that although individual green consumption choices are good, a majority of waste and pollution are produced on a larger scale by corporations and thus future work should be targeted at both corporate social responsibility and also government policy. These sentiments are echoed by other researchers (Auld, 2001; Casimir & Dutilh, 2003; Collins, 2004) and are precisely where this study is beginning to make headway in the literature. By looking at individuals making green choices on behalf of their employer and as a part of their job function, this study begins to not only show the same findings of motivational complexity, but also reveals gaps in current metrics for capturing this complex information.

<center>Managerial Implications</center>

This study revealed a need to not only evaluate consumer classification systems (see Table 4.1), but also showed a need for the development of a new metric for understanding consumer web-based interactions. Click through rate was shown to reveal little to nothing about consumer message interpretation and reception. According to the findings of this study, click through rate was not only a poor measurement, but also revealed nothing about why or how consumers are interacting and understanding the

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messages from this web-campaign. Given that this is the only metric provided by the Eloqua email system, this information measurement tool should be either a) refined to include more intricate understanding of consumer message interaction and/or b) disregarded altogether as erroneous information. In addition, this research suggests that it is not prudent to base business costing or other decisions around this metric.

This study also revealed that consumers in different regions appear to receive and retain informational and transformational messages differently. However, the transformational messages appeared to be more congruent with consumer NFC and motivation factors, thus it may be more effective in terms of marketing costs and time to focus more on transformative marketing messages. However, if this is to be done effectively, all of these transformative messages must be consistent and congruent to the consumer's cognitive and motivational preferences.

In terms of consumer segmentation and classification, this study revealed that perhaps this corporation is too broad in classifying their customer base and is not capitalizing on a deeper understanding of each customer's role within the organization as suggested by Dearing, et al. (2006). For example, when using the internal customer classification system established by the corporation, one can see on Table 4.1 a great skewing of the data that does not reveal much information (if any) about the true nature of the consumers or their role within the organization. This lack of knowledge prevents the corporation from utilizing key members within the targeted organization because those key members have not been identified. Also, by not having a working and accurate knowledge of one's consumers and their role within their (the consumers') organization, prevents the corporation from capitalizing on the convergence of the diffusion of

innovation and social marketing theories and practices. However, when classifying consumers based on their job type, a greater spread was achieved as well as a deeper level of consumer function within the organization. Dearing, et al. (2006) claim that this deeper understanding is essential if the convergence of diffusion of innovations and social marketing is to be effective within a population.

<center>Limitations</center>

Because of the nature of this study and the unique access granted to the corporation's customer database, there were significant limitations related to the stimuli and data collection. The researcher had little control over the actual development of the interactive marketing campaign and only served as a consultant during the development of the website. Also, because of the nature of this relationship, only one version of the website and survey were utilized, thus order bias in both information presented and in survey measurements were not controlled.

There was also an issue with response rate for the student survey that prevented the researcher from testing the survey instrument. This was promulgated by timing constraints due to corporate email plans. The survey went to both the students and the national sample within a week of each other and these emails were sandwiched between the email release of important corporate marketing messages. Thus, this small window of opportunity needed to be used, otherwise the survey collection would be delayed several months. Given this timing, there was not an opportunity to address the initial lack of sufficient student responses and an adequate pre-test was not obtained.

Website interaction was also a metric that limited the ability of the researcher to reach understanding regarding this consumer group. The Eloqua email system used

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tracked consumer interaction with the website by measuring the number of times a

consumer clicked on a particular page (i.e., the click through rate). This measurement,

however, has been shown in recent literature (Archak, et al., 2010; Lipsman, 2008) to not

be indicative of consumer engagement with the website or its marketing messages. The

researcher did not have the technological abilities to assess consumer interaction in a

different way, and thus findings were limited by the use of this metric. Another limitation

of the Eloqua system is that it allowed respondents to skip questions without providing a

response. This is the most probable reason for the high percentage of missing data.

Future studies using this system should build in a restriction such that respondents must

provide a response for each question before being allowed to submit their final survey.

This study was also limited by the lack of established metrics for measuring

consumer motivation to seek sustainability information with respect to sustainable

purchases. All established metrics at the time the data were collected were only focused

on personal consumption (such as household energy use) (Gatersleben, Steg, & Vlek,

2002) and did not capture the current trends in corporate sustainability behaviors or the

sophistication of triple-bottom line analysis. The existing scales could be compared to

early scales measuring computer efficacy. These computer scales were established in a

time period when computers were highly complex machines that were not user friendly,

required a high level of programming expertise, and were intimidating to the average

user. These scales simply do not apply at a time when computers are ubiquitous, user

friendly, and culturally relevant. At the time of data collection, primary metrics within the

sustainability field were centered around motivations for sustainable food choices (de

Boer, et al., 2007; Hoogland, de Boer, & Boersema, 2006), or tourism (Kim, Borges, &

Chon, 2005). Because this dissertation study did not encompass scale development, basic counts were used to assess consumer motivations. A more sophisticated scale may have revealed more elaborate relationships between consumer motivations, their NFC and their understanding of marketing messages. Such scale developments are suggested in the literature (Diamond, 2005; Lambin, 2005; Thøgersen, 2005) but are not fully developed.

It is also important when considering these findings to remember that all respondents were current customers of the textile firm who opted into the corporation's mailing list. That said, these respondents have already shown their interest in this corporations' marketing messages. Thus there may have already been established bias toward the corporation that affected consumer responses related to their understanding of the transformational and informational marketing messages. Perhaps a future study with a national sample of consumers who did not have a well-established, prior relationship with this corporation would be more indicative of the theoretically based model presented in this dissertation study.

Recommendations for Future Research

When assessing motivations for sustainable behavior, established metrics assessing consumer leanings toward sustainability were not used because they focused on consumer willingness to engage in sustainable behaviors such as recycling and water conservation (McKenzie-Mohr, 2000), but did not address the motivation behind those behaviors or offer explanation for encompassing more modern issues under the sustainability umbrella such as motivation to seek employment within a green industry. These scales also appeared to be irrelevant in current research because they focused more on individual sustainability efforts such as home composting and water conservation

(McKenzie-Mohr, 2000), but not on an individual's capacity to influence larger organizational-level changes such as those related to this study (i.e., a designer's ability to allocate millions of dollars for sustainable textile products on a major construction project). This notion mirrors current work with technology in that previous work assessing consumer willingness to use computers (at a time when computers were a new consumer good and required a lot of coding and technical competencies) does not really apply to modern consumers who have been using user-friendly computers for many years. It is postulated that motivations for sustainable behaviors could be related to the same behaviors that drive healthy living in that sustainable living is generally better for one's health as well as the overall health of the planet. Future research in scale development could begin by looking into the historical precedent established in health and behavior literature.

As previously stated in the limitations section, scale development work around consumer motivations to purchase sustainable products should be performed. Future research should also test and see if perhaps there should be different scales for motivations related to purchases at one's workplace versus purchases in one's personal purchases. In this study, for example, although some respondents may have indicated high internal motivation to make sustainable purchase decisions, if such decisions were not supported by their employer, they may be less inclined to think about sustainability at their workplace. It would also be interesting to account for feedback loops and their effects on consumer sustainability motivations in varying interaction and purchase situation scenarios.

This research also revealed a large gap in the measurement of message interaction. Future research should perhaps focus on enhancing message interaction metrics to more adequately reflect consumer message involvement. This notion stems from the idea that time spent on a website (message involvement) might capture more information than click through rate. At the minimum, future work should be expanded to assess the most appropriate and most accurate method of measuring either consumers' involvement or interaction with a web-based message and their subsequent take away from that involvement or interaction.

REFERENCES

Anderson, R. C. (1998). *Toward a sustainable enterprise: The Interface model; Mid-course correction*. White River Junction: Chelsea Green Publishing Company.

Ajzen, I., & Fishhbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G.A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 243-277). Mahwah, NJ: Erlbaum.

Archak, N., Mirrokni, V. S., & Muthukrishnan, S. (2010). Mining advertiser-specific user behavior using ad factors. In Michael Rappa, Paul Jones, Juliana Freire, Soumen Chakrabarti (Eds.), International World Wide Web Conference: Proceedings of the 19th international conference on World Wide Web (pp. 31-40). Raleigh, NC: ACM Portal.

Auburn University. (2008). *Sustainability Initiative Mission Statement*. Retrieved April 6, 2008 from http://www.auburn.edu/projects/sustainability/

Auld, J. W. (2001). Consumers, cars and communities: The challenge of sustainability. *International Journal of Consumer Studies*, *25*, 228-237.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.

Barrett, P. (2007). Structural Equation Modeling: Adjudging model fit. *Personality and Individual Differences*, *42*(5), 815-824.

Bearden, W. O., Netemeyer, R. G., & Mobley, M. F. (1993). *Handbook of Marketing Scales*. Newberry Park, CA: Sage Publications.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238-246.

Bentler, P. M., & Bonnett, D. C. (1980). Significance tests and goodness of fit in the analysis of covariance structures, *Psychological Bulletin*, *88*(3), 588-606.

Bird, R. B., & Smith, E. A. (2005). Signaling theory, strategic interaction, and symbolic capital. *Current Anthropology*, *46*(2). 221-248.

Brown, J.D. (1996). *Testing in language programs*. Upper Saddle River, NJ: Prentice Hall.

Brown, J. D. (1997, April). Questions and answers about language testing statistics: Skewness and kurtosis. *JALT Testing and Evaluation SIG Newsletter*, *1*(1) 20-23, Retrieved May 10, 2010 from http://www.jalt.org/test/PDF/Brown1.pdf

Bruntland, G. (ed) (1987). *Our Common Future: The World Commission on Environment and Development*. Oxford: Oxford University Press.

Burns, K. S., & Lutz, R. J. (2006). The function of format: Consumer responses to six on-line advertising formats. *Journal of Advertising*, *35*(1), 53-63.

Byrne, B. M. (2004). Testing for multigroup invariance using AMOS Graphics: A road less traveled. *Structural Equation Modeling*, *11*(2), 272-300.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York, NY: Taylor & Francis.

Cacioppo, J. T., & Petty, R. E. (1981). Social psychological procedures for cognitive

    response assessment. In T. Merluzzi, C. Glass, & M. Genest (Ed.), *Cognitive*

    assessment (pp. 309-342). New York, NY: Guilford Press.

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and*

    Social Psychology, *42*(1), 116-131.

Cacioppo, J. T., Petty, R. E, & Kao, C. F. (1984). The efficient assessment of need for

    cognition. *Journal of Personality Assessment*, *48*(3), 306-307.

Cacioppo, J. T., Petty, R. E., Kao, C. F., & Rodriguez, R. (1986). Central and peripheral

    routes to persuasion: An individual difference perspective. *Journal of Personality*

    and Social Psychology, *51*(5), 1032-1043.

Cacioppo, J. T., Petty, R. E., & Schumann, D. (1983). Central and peripheral routes to

    advertising effectiveness: The moderating role of involvement. *Journal of*

    Consumer Research, *10*, 135-146.

Carlson, S. (2007, June 15). Climate for change. *Chronicle of Higher Education*, *53*(41),

    A5.

Casimir, G. & Dutilh, C. (2003). Sustainability: A gender studies perspective.

    International Journal of Consumer Studies, *27*, 316-325.

Cialdini, R. B., Petty, R. E., & Cacioppo, J. T. (1981). Attitude and attitude change.

    Annual Review of Psychology, *32*, 357-404.

Clemson University. (2008). *Sustainable Universities Initiative*. Retrieved April 6, 2008

    from http://www.lib.clemson.edu/fs/archive/GrubbArchives/FSRetreat

    /susbrochure.htm

Cohen, M. J., Comrov, A., & Hoffner, B. (2005). The new politics of consumption:

    Promoting sustainability in the American marketplace. *Sustainability: Science,*

    Practice, & Policy, *1*(1). 58-76.

Collins, A. J. (2004). Can we learn to live differently? Lessons from going for green: A

    case study of Merthyl Tydfil (South Wales). *International Journal of Consumer*

    Studies, *28*, 202-211.

Cortese, A (2003). The critical role of higher education in creating a sustainable future.

    Planning for Higher Education, 30 (3), 15-22.

Cude, B. J. (1991, November 13). Comments prepared for the U.S. Environmental

    Protection Agency hearings on the use of the terms recycled and recyclable and

    the recycling emblem in environmental marketing claims, Washington, D.C.

Cutler, B. D., Thomas, E. G., & Rao, S. R. (2000). Informational/transformational

    advertising: Differences in usage across media types, product categories, and

    national cultures. *Journal of International Consumer Marketing*, *12*(3), 69-83.

Dagg, C. (2008, January 30). *Architecture and Sustainability*. Presented at a Focus the

    Nation event at Auburn University.

Davis, J. J. (1993). Strategies for environmental advertising, *The Journal of Consumer*

    Marketing, *10*(2), 10-14.

Dearing, J. W., Maibach, E. W., & Buller, D. B. (2006). A convergent diffusion and

    social marketing approach for disseminating proven approaches to physical

    activity promotion. *American Journal of Preventive Medicine*, *31*(4), 11-23.

de Boer, J., Hoogland, C. T., & Boersema, J. J. (2007). Towards more sustainable food

    choices: Value priorities and motivational orientations. *Food Quality and*

    Preference, *18*, 985-996.

Diamond, J. (2005). *Collapse: How societies choose to fail or succeed*. New York, NY: Viking.

Dold, C. (1991, October 28). With the current credibility crisis, experts urge a low profile on environmental PR efforts. *Advertising Age*, 7.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, *36*(2), 90-101.

Engel, J. F., Blackwell, R. D., & Miniard, P.W. (1990). *Consumer behavior* (6th ed.). Orlando, FL: The Dryden Press.

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

Frankel, C. (1991). The environment and economic globalization. In M. Weinstein (Ed.), *Globalization: What's New* (pp. 1-37).

Friedman, T. L. (2000). *The Lexus and the olive tree*. New York, NY: Anchor Books.

Friedman, T. L. (2007, October 2). *Thomas L. Friedman*. Presented at a Littleton-Franklin Lectures in Science and Humanities event at Auburn University.

Gardner, P. L. (1995). Measuring attitudes to science: Unidimensionality and internal consistency revisited. *Research in Science Education*, *25*(3), 283-289.

Garson, G. D. (2008). *Data imputation for missing values*. Retrieved March 31, 2010, from North Carolina State University, Quantitative Research in Public Administration Web site: http://faculty.chass.ncsu.edu/garson/PA765/missing.htm

Gatersleben, B., Steg, L, & Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior*, *34*(3), 335-362.

George, D. & Mallery, P. (2003) *SPSS for Windows step by step: A simple guide and reference, 11.0 update* (4th ed.) Boston, MA: Allyn and Bacon.

Gliem, J. A. & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education* (pp. 82-88). Columbus, OH: The Ohio State University.

Gunther, M. (2006, July 27). The green machine [Electronic Version]. *Fortune Magazine*.

Haugtvedt, C., Petty, R. E., Cacioppo, J. T., & Steidley, T. (1988). Personality and ad effectiveness: Exploring the utility of need for cognition. *Advances in Consumer Research*, *15*, 209-212.

Hayduk, L. A., & Glaser, D. N. (2000). Jiving' the four-step, waltzing around factor analysis, and other serious fun. *Structural Equation Modeling: A Multidisciplinary Journal*, *7*(1), 1-35.

Hirschman, E. C. & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of Marketing*, *46*(3), 92-101.

Hiscox, M. J., & Smyth, N. F. B. (November 2005). Is there consumer demand for improved labor standards? Evidence from field experiments in social product labeling. Working Paper, Department of Government, Harvard University.

Hoogland, C. T., de Boer, J., & Boersema, J. J. (2006). Food and sustainability: Do consumers recognize, understand and value on-package information on production standards? *Appetite*, *49*, 47-57.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural Equation Modeling:

Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, *6*(1), 53-60.

Howard, B. (2007). LOHAS consumers are taking the world by storm. *Total Health*, *29*(3), 58.

Howell, D. C. (2009). *Treatment of missing data*. Retrieved March 31, 2010 from The University of Vermont, Psychology Department Web site: http://www.uvm.edu/ ~dhowell/ StatPages/More_Stuff/Missing_Data/Missing.html

Hu, L. T. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1-55.

Joachims, T., Granka, L., Pan, B., Hembrooke, H., & Gay, G. (2005). Accurately interpreting clickthrough data as implicit feedback. Baeza-Yates, R. A., Ziviani, N., Marchionini, G., Moffat, A., Tait, J. (Eds.), Proceedings of the 28th Annual International Conference on Research and Development in Information Retrieval (pp. 154-161). Salvador, Brazil: Universität Trier.

Jöreskog, K. G. & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Chicago, IL: Scientific Software International.

Kangun, N. & Polonsky, M. J. (1995). Regulation of environmental marketing claims: A comparative perspective. *International Journal of Advertising*, *14*(1), 1-24.

Katz, E. & Lazarfeld, P. F. (1955). *Personal influence: The part played by people in the flow of mass communications*. Glencoe, IL: Free Press.

Katz, E., Levin, M. L., & Hamilton, H. (1963). Traditions of research on the diffusion of innovation, *American Sociology Review*, *28*, 237-252.

Kenny, D. A. (2010). Measuring model fit. Retrieved May 17, 2010 from the University

of Connecticut, Data Analysis Training Institute Director's Web site:

http://davidakenny.net/cm/fit.htm

Kim, H., Borges, M., & Chon, J. (2005). Impacts of environmental values on tourism

motivation: The case of FICA, Brazil. *Tourism Management*, *27*(5), 957-967.

Klaassen, A. (2009). Why time spent on websites can be just as important as views.

Advertising Age, *80*(29), 17.

Lambin, E. F. (2005). Conditions for sustainability of human-environment systems:

Information, motivation, and capacity. *Global Environmental Change*, 15, 177-

180.

Learmonth, M., & Klaassen, A. (2009). Taking online-ad measurement beyond the click.

Advertising Age, *80*(18), 3-4.

Levin, R. C. (2010). Letter from the president. Retrieved on July 17, 2010 from

http://sustainability.yale.edu/president

Li, H. (2009). Mining top-k maximal reference sequences from streaming web click-

sequences with a dampened sliding window. *Expert Systems with Applications*,

36(8), 11304-11311.

Lipsman, A. (February 12, 2008). "New study shows that heavy clickers distort reality of

display advertising click-through metrics". Press release. Retrieved June 10, 2010

from http://www.comscore.com/Press_Events/Press_Releases/2008/02/

Display_Ad_Click-Through_Behavior

Little, T. D., Cunningham, W. A., Shahar, G. & Widaman, K. F. (2002). To parcel or not

to parcel: Exploring the question, weighing the merits. *Structural Equation*

Modeling, *9*, 151-173.

LOHAS Online (2009). LOHAS Online: Lifestyles of health and sustainability. Retrieved

    May 19, 2009, from http://www.lohas.com/

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and

    determination of sample size for covariance structure modeling. *Psychological*

    Methods, *1*(2), 130-149.

Mahdian, M. & Tomak, K. (2008). Pay-per-action model for on-line advertising.

    International Journal of Electronic Commerce, *13*(2), 113-128.

Maibach, E. W., Rothschild, M. L., & Novelli, W. D. (2002). Health behavior and health

    education: Theory, research and practice. In K. Glanz, B.K. Rimer, & F.M. Lewis

    (Eds.), *Social marketing* (pp. 437-461). San Francisco, CA: Jossey-Bass.

Marsh, H.W., Hau, K. T., & Grayson, D. (2005). Goodness of fit evaluation in structural

    equation modeling. In A. Madeu-Olivares & J. McCardle (Eds.), *Contemporary*

    Psychometrics. Mahwah, NJ: Erlbaum.

Marsh, P. (2010). Worst practices in internet advertising. *Information Today*, *27*(3), 18-

    19.

Mayer, R. N., Scammon, D. L., & Zick, C. D. (1993). Poisoning the well: Do

    environmental claims strain consumer credulity? *Advances in Consumer*

    Research, *20*(1), 698-703.

McCracken, G. (1986). Culture and consumption: A theoretical account of the structure

    and movement of the cultural meaning of consumer goods. *Journal of Consumer*

    Research, *13*, 71-84.

McCrae, R. R., & Costa, Jr., P. T. (1987). Validation of the five-factor model of

    personality across instruments and observers. *Journal of Personality and Social*

    Psychology, *52*(1), 81-90.

McDonald, S. & Oates, C. (2006). Sustainability: Consumer perceptions and marketing

strategies. *Business Strategy and the Environment*, *15*, 157-170.

McDonald, R. P. & Marsh, H. W. (1990). Choosing a multivariate model:

Noncentrality and goodness of fit. *Psychological Bulletin*, *107*(2), 247-255.

McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make

things*. New York, NY: North Point Press.

McKenzie-Mohr, D. & Smith, W. (1999). *Fostering Sustainable Behavior: An

Introduction to Community-Based Social Marketing*. Gabriola Island, British

Columbia: New Society Publishers.

McKenzie-Mohr, D. (2000). Promoting sustainable behavior: An introduction to

community-based social marketing. *Journal of Social Issues*, *56*(3), 543-554.

Mintel. (2006). Green Living-US-September 2006. Retrieved November 19, 2007

from Mintel Reports database.

Moisander, J. (2007). Motivational complexity of green consumerism. *International

Journal of Consumer Studies*, *31*, 404-409.

Moresco, J. (2008, February 13). Ad click-through rates deceive marketers. *Red Herring*,

2.

Moriarty, S. E., (1987). A content analysis of visuals used in print media advertising,

Journalism Quarterly, *64*(1), 550-554.

National Association of Attorneys-General (November, 1990). The Green Report:

Findings and preliminary recommendations for responsible environmental

advertising.

National Oceanic and Atmospheric Administration. (2010). Marine Debris Program. U.S.

Department of Commerce, Retrieved July 23, 2010, from

http://marinedebris.noaa.gov/info/patch.html

OpenLearn (2009). Invention and innovation: An Introduction. Retrieved October 11,

2009 from http://openlearn.open.ac.uk/mod/resource/view.php?id=254169

Ottman, J. A. (1998). *Green marketing: Opportunity for innovation* (2nd ed.). Chicago,

IL: NTC Business Books.

Peattie, K. & Peattie, S. (2009). Social marketing: A pathway to consumption reduction?

Journal of Business Research, *62*(2), 260-268.

Perret, G. (2007). *Commander in Chief: How Truman, Johnson, and Bush turned a*

presidential power into a threat to America's future. New York, NY: Farrar,

Straus, and Giroux.

Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and*

contemporary approaches. Dubuque, IA: Brown.

Petty, R. E., & Cacioppo, J .T. (1980). Effects of issue involvement on attitudes in an

advertising context. In G. Gorn & M. Goldberg (Eds.), *Proceedings of the*

Division 23 Program. Montreal, Canada: Division 23 of the American

Psychological Association.

Petty, R., Cacioppo, J. T., & Schumann, D. (1983). Central and peripheral routes to

advertising effectiveness: The moderating role of involvement. *Journal of*

Consumer Research, *10* (2), 135-146.

Petty, R. E., Cacioppo, J. T. (1986) The elaboration likelihood model of persuasion. In L.

Berkowitz (Ed.), *Advances in experimental social psychology* (Vol 19, pp. 123-

205). New York, NY: Academic Press.

Petty, R. E. & Wegener, D. T. (1999). The elaboration likelihood model: Current status

and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in
social psychology* (pp. 41-72). New York, NY: Guilford.

Prakash A. (2002). Green marketing, public policy and managerial strategies. *Business
Strategy and the Environment, 11,* 285–297.

Princeton Review, (2010). Green honor roll. Retrieved July 17, 2010 from
http://www.princetonreview.com/green-honor-roll.aspx

Puto, C. P., & Wells, W. D. (1984). Informational and transformational advertising: The
differential effects of time. In T. C. Kinnear (Ed.), *Advances in Consumer
Research: Vol. 11* (pp. 638-643). Provo, UT: Association for Consumer Research.

Reusswig, F. (2005, June). *Consumption and lifestyle changes: Why they are essential
for the Sustainability Transition*. Presentation abstract from a talk given at the
Center for International Development at Harvard University occasional speaker
series on research topics in sustainable development, Cambridge, MA.

Richardson, M., Dominowska, E., & Ragno, R. (2007, January) Predicting clicks:
estimating the click-through rate for new ads. In *Proceedings of the 16th
International World Wide Web Conference* (pp. 521-529). New York, NY: ACM
Press.

Rogers, E. M. (1971). *Communication of Innovations*. New York, NY: Free Press.

Rothschild, M. L. (1999). Carrots, sticks, and promises: A conceptual framework for the
management of public health and social issues behaviors. *Journal of Marketing*,
63(4), 24-37.

Savalei, V. (2010). The relationship between RMSEA and model misspecification in
CFA models. Manuscript under review.

Schumpeter, J. A. (1942). *Capitalism, Socialism and Democracy*. New York, NY: Taylor

& Francis.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical

advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in

experimental social psychology* (pp. 1-65). San Diego, CA: Academic Press.

Second Nature. (2008). Second Nature . . . Retrieved April 11, 2008, from

http://www.secondnature.org/

Shen, F. (2002). Banner advertisement pricing, measurement, and pretesting practices:

Perspectives from interactive agencies. *Journal of Advertising*, *31*(3), 59-67.

Solomon, M., Englis, B., & Englis, P. (2005). *Strategic sustainability and the triple

bottom line*. Retrieved October 25, 2007 from the National Textile Center

University Research Consortium Web site: http://www.ntcresearch.org/

projectapp/?project=S06-AC01

Solomon, M. R. & Rabolt, N. (2004). *Consumer behavior in fashion*. Upper Saddle

River, NJ: Prentice Hall.

SPSS Inc. (2007). SPSS missing value analysis^{TM} 16.0. SPSS Inc., Chicago, IL.

Steiger, J. H. (2000). Point estimation, hypothesis testing, and interval estimation using

RMSEA: Some comments and a reply to Hayduk and Glaser. *Structural Equation

Modeling: A Multidisciplinary Journal*, *7*(2), 149-162.

Sustainable Products Corporation. (2009). What are sustainable products? Retrieved

March 21, 2009 from: http://www.sustainableproducts.com/susproddef.html

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New

York, NY: Harper Collins.

Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable

lifestyles? *Journal of Consumer Policy*, *28*(2), 143-177.

UN.org (2009). UN Department of Economic and Social Affairs; Division for

Sustainable Development. Retrieved October 11, 2009, from

http://www.un.org/esa/dsd/index.shtml

United Nations Framework Convention on Climate Change. (2010). Essential

Background. Retrieved July 20, 2010 from http://unfcc.int/essential_

background/items/2877.php

United States Census (January, 2010). Census Regions and Divisions of the United

States. Retrieved January 2, 2010 from http://www.census.gov/geo/us_regdiv.pdf

United States Environmental Protection Agency. (1991, October 2). *Guidance for the*

use of the terms "recycled" and "recyclable and the recycling emblem in

environmental marketing claims; Notice of public meeting. (*Federal Register*, *56*,

No. 191, pp. 49992-50000). Washington, DC: Environmental Protection Agency.

United States Environmental Protection Agency. (2008). Sustainability. *U.S.*

Environmental Protection Agency, Retrieved January 5, 2008, from

http://www.epa.gov/sustainability/

United States Environmental Protection Agency. (2010). EPA response to BP spill in the

Gulf of Mexico. *U.S. Environmental Protection Agency*, Retrieved July 23, 2010,

from http://www.epa.gov/BPSpill/

University of California, Davis Campus. (2010). Sustainable 2nd Century. Retrieved July

16, 2010, from http://sustainability.ucdavis.edu/

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement

invariance literature: Suggestions, practices, and recommendations for

organizational research. *Organizational Research Methods*, *3*(1), 4-70.

Vidal, J. (1998). Elaboration Likelihood Model. Retrieved April 19, 2008, from

http://www.ciadvertising.org/studies/student/98_spring/theory/elm.html

Weinreich, N. K. (1999*). Hands-on social marketing: A step-by-step guide*. Thousand

Oaks, CA: Sage Publications, Inc.

Young, R. (2005). Sustainability: From rhetoric to reality through markets. *Journal of*

Cleaner Production, 14, 1443-1447.

APPENDIX A

STUDENT EMAIL PROMPT

Does this website make you a believer?

Hi, my name is Mary Katherine Brock, but most people call me Katie. I am currently

finishing my Ph.D. at Auburn University. I have a strong passion for sustainability and

am excited to be working with ████████ on my dissertation project. My focus has

been on the development of effective strategies for interactive marketing, and

████████ has allowed me to create a survey based on their recent ████████

campaign. By participating in this study, you are helping me to finish my Ph.D. and move

me one step closer to my dream of being a professor. To thank you for your willingness

to be a part of this project, *you will receive extra credit for your interior design studio*

course.

APPENDIX B

STUDENT INFORMATION LETTER

AUBURN UNIVERSITY COLLEGE OF HUMAN SCIENCES
DEPARTMENT OF CONSUMER AFFAIRS
308 SPIDLE HALL
AUBURN, AL. 36849
334-844-4084

INFORMATION LETTER
for a Research Study entitled
"DEVELOPING EFFECTIVE STRATEGIES FOR INTERACTIVE MARKETING"

You are invited to participate in a research study to raise awareness in sustainability through an interactive marketing campaign. The study is being conducted by Mary Katherine Brock, Graduate Student in Consumer Affairs, under the direction of Dr. Carol Warfield, Professor and Department Head, in the Auburn University Department of Consumer Affairs. You were selected as a possible participant because you are enrolled in an interior design junior or senior level course and are age 19 or older.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to view a new interactive marketing campaign for a sustainability-oriented company. You will then be asked to complete an online survey related to your experiences with the website as well as to your attitudes and perceptions about sustainability and your preferred method of receiving marketing information. Your total time commitment will be approximately 15 minutes.

Are there any risks or discomforts? This survey is completely anonymous and there are no risks of a breach of confidentiality. The researcher will only be able to access the data you provide and will have no method to link your responses to your identity.

Are there any benefits to yourself or others? If you participate in this study, you can expect to gain insight into the roles designers play in relation to how the products they use can either enhance or deplete natural resources in the environment. You will also receive information about options on what can be done to reduce the negative impacts. You will also have the satisfaction of contributing data and information to the further understanding of sustainability and the preservation of natural resources.

Will you receive compensation for participating? To thank you for your time you will be eligible for extra credit in CAHS XXXX-XXX. To receive this extra credit, there will be a page at the end of the study that you can print out and give to your instructor as proof of your participation.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as you have not clicked the 'submit' button. Due to the anonymous nature of this study, once your data has been submitted, it will be unidentifiable and can thus not be withdrawn. Your decision about whether or not to participate or stop participating will not jeopardize your future relations with Auburn

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University, and the Department of Consumer Affairs.

Your privacy will be protected. Any information obtained in connection with this study will remain anonymous. Information obtained through your participation may be used to fulfill an education requirement, published in a professional journal, and/or a presentation at a professional meeting.

If you have questions about this study, please ask them now or contact Mary Katherine Brock at brockmk@auburn.edu or Dr. Carol Warfield at warficl@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or email at hsubjec@auburn.edu or IRBChair@auburn.edu.

If you are under the age of 19, please exit the website and do not complete the survey.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE "SUBMIT" BUTTON TO ACCESS THE SURVEY.

YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Sincerely,

Mary Katherine Brock
November 19, 2008

APPENDIX C

STUDENT SURVEY

Survey Questionnaire (Phase I)

Please enter the code number assigned by your professor: _____ .

Welcome to this survey! Please complete this questionnaire as accurately as possible.

If you are younger than 19, please **click here to exit.**

1. Before you answer this questionnaire, please click on the following link:
███████████████████████ **and explore the website provided.**

2. THE FOLLOWING QUESTIONS PERTAIN TO YOU AND YOUR ATTITUDES AND PERCEPTIONS ABOUT THE WEBSITE CONTENT AND YOUR INTERACTION WITH IT. PLEASE CHECK THE NUMBER THAT BEST INDICATES YOUR AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

Strong Agreement	Moderate Agreement	Slight Agreement	Neither Agreement nor Disagreement	Slight Disagreement	Moderate Disagreement	Strong Disagreement
7	6	5	4	3	2	1

1. I learned something from this website that I didn't know before about (this brand).
2. I would like to have an expertise like the one presented on the website.
3. The website did not seem to be speaking directly to me.
4. There is nothing special about (this brand) that makes it different from others.
5. While I interacted with this website, I thought how (this brand) might be useful to me.
6. The website did not teach me what to look for when buying (this product).
7. This website is meaningful to me.
8. This website is very informative.
9. (This brand) fits my lifestyle very well.
10. I could really relate to this website.
11. Using (this brand) makes me feel good about myself.
12. If they had to, the company could provide evidence to support the claims made on this website.
13. It's hard to give a specific reason, but somehow (this brand) is not really for me.
14. This website did not really hold my attention.
15. This website reminded me of some important facts about (this brand) which I already knew.
16. If I could change my lifestyle, I would make it less like the people who use (this brand).
17. When I think of (this brand), I think of this website.
18. I felt as though I were right there in the website, experiencing the same thing.
19. I can now accurately compare (this brand) with other competing brands on matters that are important to me.

20. This website did not remind me of any experiences or feelings I've had in my own life.
21. I would have less confidence in using (this brand) now than before I saw this website.
22. It is the kind of website that keeps running through your head after you've seen it.
23. It's hard to put into words, but this commercial leaves me with a good feeling about using (this brand).

3. THE FOLLOWING QUESTIONS PERTAIN TO YOUR PREFERENCES FOR PROCESSING INFORMATION. PLEASE ANSWER THESE QUESTIONS IN TERMS OF HOW MUCH YOU ARE IN AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS AS THEY APPLY TO YOU. PLEASE CHECK THE NUMBER THAT BEST INDICATES YOUR AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

Strong Agreement	Moderate Agreement	Slight Agreement	Neither Agreement nor Disagreement	Slight Disagreement	Moderate Disagreement	Strong Disagreement
7	6	5	4	3	2	1

24. I really enjoy a task that involves coming up with solutions to problems.
25. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
26. Learning new ways to think doesn't excite me very much.
27. I usually end up deliberating about issues even when they do not affect me personally.
28. The idea of relying on thought to get my way to the top does not appeal to me.
29. The notion of thinking abstractly is not appealing to me.
30. I only think as hard as I have to.
31. I like tasks that require little thought once I've learned them.
32. I prefer to think about small daily projects to long-term ones.
33. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
34. I find little satisfaction in deliberating hard and for long hours.
35. I don't like to have the responsibility of handling a situation that requires a lot of thinking.
36. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
37. Thinking is not my idea of fun.
38. I try to anticipate and avoid situations where there is a likely chance I'll have to think in depth about something.
39. I prefer my life to be filled with puzzles that I must solve.
40. I would prefer complex to simple problems.
41. It's enough for me that something gets the job done; I don't care how or why it works.

4. THE FOLLOWING QUESTIONS PERTAIN TO YOU AND YOUR FUTURE CAREER PLANS. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

42. What is the main focus of your career aspirations?
    a. Commercial
    b. Residential
    c. Hospitality
    d. Health care
    e. City Planning
    f. Engineering
    g. Other (please list) _____

43. Does your academic program have a focus on sustainability?

Very Strong Focus	Strong Focus	Moderate Focus	Slight Focus	Neither Focus nor Unfocused	Slight Unfocused	Moderate Unfocused	Strong Unfocused	Very Strong Unfocused
4	3	2	1	0	-1	-2	-3	-4

44. What percentage of your academic projects involve LEED certification?

   *USE 10-PT SCALE (I.E.0-10%, 11-20%, ETC)

45. What type of training/learning you have had related to sustainability (check all that apply).
    a. On the job
    b. Seminar
    c. College course(s)
    d. Read online
    e. Read a book about sustainability
    f. Read a magazine about sustainability
    g. Learned from a friend
    h. Learned from a family member
    i. Learned from a classmate
    j. Saw an advertisement
    k. Saw a "green" tv show
    l. Other (please describe) _____
    m. I have not had any learning/training with respect to sustainability

46. Do any of the following apply to you and your learning of sustainability. (check all that apply)

a. My teacher requires me to learn about sustainability
b. I am genuinely interested in learning about sustainability
c. I seek out information with respect to sustainability when school requires it
d. I seek out information with respect to sustainability in my free time
e. I only learn about sustainability at school
f. Other (please describe) _____
g. I do not know about sustainability

Please re-enter the code number assigned by your professor: _____.

Thank you for participating in this study.

Please print this page and turn it in to your professor to receive extra credit for your participation in this study.

APPENDIX D

NATIONAL SURVEY EMAIL PROMPT

Does this website make you a believer?

Hi, my name is Mary Katherine Brock, but most people call me Katie. I am currently

finishing my Ph.D. at Auburn University. I have a strong passion for sustainability and

am excited to be working with ██████████ on my dissertation project. My focus has

been on the development of effective strategies for interactive marketing, and

██████████ has allowed me to create a survey based on their recent ██████████

campaign. By participating in this study, you are helping me to finish my Ph.D. and move

me one step closer to my dream of being a professor. To thank you for your willingness

to be a part of this project, ***completing the survey enters you into a drawing for a chance***

to win a custom ██████ ***rug.***

APPENDIX E

NATIONAL SURVEY INFORMATION LETTER

AUBURN UNIVERSITY COLLEGE OF HUMAN SCIENCES
DEPARTMENT OF CONSUMER AFFAIRS
308 SPIDLE HALL
AUBURN, AL. 36849
334-844-4084

INFORMATION LETTER
for a Research Study entitled
"DEVELOPING EFFECTIVE STRATEGIES FOR INTERACTIVE MARKETING"

You are invited to participate in a research study to raise awareness in sustainability through an interactive marketing campaign. The study is being conducted by Mary Katherine Brock, Graduate Student in Consumer Affairs, under the direction of Dr. Carol Warfield, Professor and Department Head, in the Auburn University Department of Consumer Affairs. You were selected as a possible participant because you are a practicing Architect or Interior Designer.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to view a new interactive marketing campaign for ▇▇▇▇▇▇▇▇▇. You will then be asked to complete an online survey related to your experiences with the website as well as to your attitudes and perceptions about sustainability and your preferred method of receiving marketing information. Your total time commitment will be approximately 15 minutes.

Are there any risks or discomforts? This survey is completely anonymous and there are no risks of a breach of confidentiality. The researcher will only be able to access the data you provide and will have no method to link your responses to your identity.

Are there any benefits to yourself or others? If you participate in this study, you can expect to gain insight into the roles designers play in relation to how the products they use can either enhance or deplete natural resources in the environment. In addition, you will receive information about options on what can be done to reduce the negative impacts. You will also have the satisfaction of contributing data and information to the further understanding of sustainability and the preservation of natural resources.

Will you receive compensation for participating? To thank you for your time you will be eligible to enter a drawing for a custom ▇▇▇▇▇▇ rug. To participate in this drawing, there will be a page at the end of the study where you can enter your email address. Your participation in the drawing is completely voluntary and if you choose to participate, your email address will be collected in a separate file and will not be linked to your survey responses.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as you have not clicked the 'submit' button. Due to the anonymous nature of this study, once your data has been submitted, it will be

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unidentifiable and can thus not be withdrawn. Your decision about whether or not to participate or stop participating will not jeopardize your future relations with Auburn University, the Department of Consumer Affairs nor ▇▇▇▇▇▇▇.

Your privacy will be protected. Any information obtained in connection with this study will remain anonymous. Information obtained through your participation may be used to fulfill an education requirement, published in a professional journal, and/or a presentation at a professional meeting.

If you have questions about this study, please ask them now by contacting Mary Katherine Brock at brockmk@auburn.edu or Dr. Carol Warfield at warficl@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or email at hsubjec@auburn.edu or IRBChair@auburn.edu.

If you are under the age of 19, please exit the website and do not complete the survey.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE "SUBMIT" BUTTON TO ACCESS THE SURVEY.

YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Sincerely,

Mary Katherine Brock
November 19, 2008

The Auburn University Institutional Review Board has approved this document for use
From November 5, 2008 to November 4, 2009.
Protocol #08-262 EX 0811

APPENDIX F

NATIONAL SURVEY

Survey

Welcome to this survey! Please complete this questionnaire as accurately as possible. If you are younger than 19, please **click here to exit.**

1. Before you answer this questionnaire, please click on the following link: ███████████████████████████████ **and explore the website provided.**

2. THE FOLLOWING QUESTIONS PERTAIN TO YOU AND YOUR ATTITUDES AND PERCEPTIONS ABOUT THE WEBSITE CONTENT AND YOUR INTERACTION WITH IT. PLEASE CHECK THE NUMBER THAT BEST INDICATES YOUR AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

Strong Agreement	Moderate Agreement	Slight Agreement	Neither Agreement nor Disagreement	Slight Disagreement	Moderate Disagreement	Strong Disagreement
7	6	5	4	3	2	1

1. I learned something from this website that I didn't know before about (this brand).
2. I would like to have an expertise like the one presented on the website.
3. The website did not seem to be speaking directly to me.
4. There is nothing special about (this brand) that makes it different from others.
5. While I interacted with this website, I thought how (this brand) might be useful to me.
6. The website did not teach me what to look for when buying (this product).
7. This website is meaningful to me.
8. This website is very informative.
9. (This brand) fits my lifestyle very well.
10. I could really relate to this website.
11. Using (this brand) makes me feel good about myself.
12. If they had to, the company could provide evidence to support the claims made on this website.
13. It's hard to give a specific reason, but somehow (this brand) is not really for me.
14. This website did not really hold my attention.
15. This website reminded me of some important facts about (this brand) which I already knew.
16. If I could change my lifestyle, I would make it less like the people who use (this brand).
17. When I think of (this brand), I think of this website.
18. I felt as though I were right there in the website, experiencing the same thing.
19. I can now accurately compare (this brand) with other competing brands on matters that are important to me.
20. This website did not remind me of any experiences or feelings I've had in my own life.
21. I would have less confidence in using (this brand) now than before I saw this website.
22. It is the kind of website that keeps running through your head after you've seen it.

23. It's hard to put into words, but this commercial leaves me with a good feeling about using (this brand).

3. THE FOLLOWING QUESTIONS PERTAIN TO YOUR PREFERENCES FOR PROCESSING INFORMATION. PLEASE ANSWER THESE QUESTIONS IN TERMS OF HOW MUCH YOU ARE IN AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS AS THEY APPLY TO YOU. PLEASE CHECK THE NUMBER THAT BEST INDICATES YOUR AGREEMENT OR DISAGREEMENT WITH THE FOLLOWING STATEMENTS. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

Strong Agreement	Moderate Agreement	Slight Agreement	Neither Agreement nor Disagreement	Slight Disagreement	Moderate Disagreement	Strong Disagreement
7	6	5	4	3	2	1

24. I really enjoy a task that involves coming up with solutions to problems.
25. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
26. Learning new ways to think doesn't excite me very much.
27. I usually end up deliberating about issues even when they do not affect me personally.
28. The idea of relying on thought to get my way to the top does not appeal to me.
29. The notion of thinking abstractly is not appealing to me.
30. I only think as hard as I have to.
31. I like tasks that require little thought once I've learned them.
32. I prefer to think about small daily projects to long-term ones.
33. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
34. I find little satisfaction in deliberating hard and for long hours.
35. I don't like to have the responsibility of handling a situation that requires a lot of thinking.
36. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
37. Thinking is not my idea of fun.
38. I try to anticipate and avoid situations where there is a likely chance I'll have to think in depth about something.
39. I prefer my life to be filled with puzzles that I must solve.
40. I would prefer complex to simple problems.
41. It's enough for me that something gets the job done; I don't care how or why it works.

4. THE FOLLOWING QUESTIONS PERTAIN TO YOU AND YOUR COMPANY. PLEASE ANSWER THESE QUESTIONS AS ACCURATELY AS POSSIBLE.

42. What is the main focus of your company?
   h. Commercial
   i. Residential
   j. Hospitality
   k. Health care
   l. City Planning
   m. Engineering
   n. Other (please list) _____

43. If your company has a written mission statement, please write it in the space below:

44. Does your company have a focus on sustainability? To what degree does your company focus on sustainability?

Very Strong Focus	Strong Focus	Moderate Focus	Slight Focus	Neither Focus nor Unfocused	Slight Unfocused	Moderate Unfocused	Strong Unfocused	Very Strong Unfocused
4	3	2	1	0	-1	-2	-3	-4

45. What is the average project bid for your company?

   a. 0-$599,999
   b. $600,000-$999,999
   c. $1,00,000-1,999,999
   d. $2,000,000-2,999,999
   e. $3,000,000-3,999,999
   f. $4,000,000-5,999,999
   g. $5,000,000+

46. What percentage of your average project bid is spent to satisfy client carpeting needs?

     a. 0-10%
     b. 11-20%
     c. 21-30%
     d. 31-40%
     e. 41-50%
     f. 51-60%
     g. 61-70%
     h. 71-80%
     i. 81-90%
     j. 91-100%

47. What percentage of your projects stem from projects involving LEED certification?

     a. 0-10%
     b. 11-20%
     c. 21-30%
     d. 31-40%
     e. 41-50%
     f. 51-60%
     g. 61-70%
     h. 71-80%
     i. 81-90%
     j. 91-100%

48. What percentage of your client base requires you to comply with LEED standards?

     a. 0-10%
     b. 11-20%
     c. 21-30%
     d. 31-40%
     e. 41-50%
     f. 51-60%
     g. 61-70%
     h. 71-80%
     i. 81-90%
     j. 91-100%

49. What type of training/learning you have had related to sustainability (check all that apply).
   n. On the job
   o. Seminar
   p. College course(s)
   q. Read online
   r. Read a book about sustainability
   s. Read a magazine about sustainability
   t. Learned from a friend
   u. Learned from a family member
   v. Learned from a colleague
   w. Saw an advertisement
   x. Saw a "green" tv show
   y. Other (please describe) _____
   z. I have not had any learning/training with respect to sustainability

50. Do any of the following apply to you and your learning of sustainability. (check all that apply)
   h. My boss requires me to learn about sustainability
   i. My clients require me to learn about sustainability
   j. I am genuinely interested in learning about sustainability
   k. I seek out information with respect to sustainability when my job requires it
   l. I seek out information with respect to sustainability in my free time
   m. I only learn about sustainability at work
   n. Other (please describe) _____
   o. I do not know about sustainability

THANK YOU FOR COMPLETING THIS SURVEY.
Please enter your email address below to register yourself for a ▮▮▮▮▮▮▮ Rug. Your participation in this drawing is completely voluntary and if you choose to participate, your email will be collected in a separate file and will not be linked to your survey response. Your participation decision will not affect, in any way, your relationship with Auburn University, the Department of Consumer Affairs, or ▮▮▮▮▮▮▮▮▮▮.

Email Address : _____

Thank you for participating in this study.

APPENDIX G

JOB CLASSIFICATION SYSTEM

Table 6.1

Job Classification System

Job Category	Job Title
Architect	Architect LEED Accredited Professional, Architect, Architect (Senior Associate), Architect/Owner, Architect (Principal), Architectural Designer, Architectural Intern, Graduate Architect, Intern Architect, Project Architect, Project Manager/Intern Architect, Senior Project Architect, & Senior Interior Architectural Projects
Designer	Architect & Interior Designer, Associate Senior Interior Designer, Architectural Interior Designer, Design, Design Consultant, Design Manager, Designer, Designer Intern, Designer Healthcare, Designer/Resource Coordinator, Designer/President, Director of Interior Design, Director of Architectural Interiors, Director of Design, Director of Interiors, Facility Designer, Industrial Designer, Interior Design Associate, Interior Design Coordinator, Interior Designer, Interior Designer (Facilities Management), Interior Designer/Instructor, Interiors, Interiors Manager, Junior Designer, LEED Interior Designer, Manager Interior Design, Owner/Designer, Partner Interior Designer, Principal/Designer, Project Manager/Interior Designer, Project Design Manager, Project Designer, Registered Interior Designer, Senior Interior Designer, Senior Interior Designer/NCIDQ, Senior Interior Project Designer, Space Planner, Senior Designer, & Senior Graphic Designer
Business	Account Executive, Account Manager, Administrative Assistant, Architectural Representative, Assistant Director of Design Services, Associate, Associate Director of Real Estate, Associate Principal, Associate Vice President, CEO, Client Manager, Commercial Manager, Construction Manager, Construction Services, Development Manager, Director Guest House & Services, Estimator, Facilities Manager, Facilities Planner, Facility Integration, Head of Education Studio, Manager, Manager of Special Projects, Office Construction Coordinator, Office Planning Coordinator, Owner, Owner Agent, Partner, President, Principal, Project Manger, Project Coordinator, Project Executive, Project Manager, Project Manager/LEED AP, Project Specialist, Property Manager, RA/LEED AP/MBA, Regional HR Director, Sales, Senior Associate, Senior Project Manager, Senior Associate, Supervisor, Vice President, Vice President of Office Facilities, & Vice President of Operations
Librarian	Architectural Librarian, Librarian, Materials Librarian, Research Assistant, Resource Librarian, Resource Specialist, & Specification Consultant