The Influence of eWOM Communications in Consumer Review Websites: An Application of Online Social Network Framework

Dissertation

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By

Soyeon Kim, M.S.

Graduate Program in Human Ecology

The Ohio State University

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Dissertation Committee:

Jay Kandampully, Advisor

Anil Bilgihan

Leslie Stoel

Margaret Binkley
Abstract

As a form of electronic word-of-mouth (eWOM), online consumer reviews have attracted tremendous attention from researchers and practitioners. This research investigates how eWOM plays an important role in consumer review websites within hospitality and tourism services and how it affects the purchase decision-making process of consumers. The author examined the influence of eWOM communications in various online review websites based on the online social network framework by Brown, Boderick, and Lee (2007). Their framework postulates that individuals consider the websites to be primary “actors” and develop social relationships with the websites themselves rather than the other online participants. Drawing on the perspective of the consumer-website relationship, the current research proposes and empirically tests an integrative model of three social network constructs associated with the website (tie strength, homophily, and source credibility) and their relationship to consumers’ evaluations associated with attitudes and perceived influence of eWOM effectiveness. An online survey with a sample of 793 respondents drawn from a large Midwestern university was conducted to examine predictors and consequences of eWOM communications in consumer review platforms.

The results suggested that the social relationship constructs (homophily and tie strength) between a website and a consumer are important drivers of source credibility, which in turn influence attitude toward the reviews as well as the website. Moreover, the
attitudes formed through the perceptions of tie-strength, homophily and source credibility ultimately determines the influence of eWOM consumers’ purchase decisions. When consumers perceive higher tie strength, homophily, and source credibility associated with the reviews, they are more likely to have a favorable attitude toward the reviews as well as the review websites. An interesting finding was that attitude toward reviews does not directly influence eWOM effectiveness; however, it influences eWOM effectiveness indirectly through attitude toward the website.
Dedication

To my parents,

Daekwan Kim and Mihye Bae
Acknowledgments

I would like to gratefully and sincerely thank Dr. Jay Kandampully for his guidance, understanding, patience, and most importantly, his friendship during my graduate studies at The Ohio State University. His mentorship was paramount in providing well-rounded experience consistent with my long-term career goals. He encouraged me to not only grow as a researcher but also as an instructor and an independent thinker. I am sure many graduate students are not given the opportunity to develop their own individuality and self-sufficiency by being allowed to work with such independence. For everything you have done for me, Dr. Jay Kandampully, I thank you.

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concerns, and helping me to remember my true spirit. We dream together laugh together and worry together.

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Vita

August 19, 1981.............................. Born – Busan, Korea

2006........................................ B.A. Sookmyung Women’s University
Major: English Language and Literature
Minor: Hospitality and Tourism Management

2009........................................ M.S. Purdue University
Major: Hospitality and Tourism Management

2010........................................ Graduate School Fellowship
The Ohio State University

2011–2013................................. Graduate Teaching Assistant
Department of Consumer Sciences
The Ohio State University

2012........................................ Department of Consumer Sciences Graduate
Student Research Award

Publications

1. Kim, S (2013) “Cleveland Clinic” a case study accepted for publication in the book
   Service Management in Health and Wellness Services (ed) Kandampully, J., Kendall
   Hunt Publishing, USA.

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   130.


Fields of Study

Major Field: Human Ecology
Area of Specialization: Hospitality Management
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Chapter 1: Introduction

1.1. Overview

In recent years, social media websites, representing various forms of user-generated content (UGC) such as blogs, virtual communities, wikis, social networks, collaborative tagging, and media files shared on sites such as YouTube, have gained substantial popularity in online consumers’ use of the Internet (Gretzel, 2006; Kaplan & Haenlein, 2010). The importance of interpersonal communication through such social media websites in the consumer decision-making processes has been well documented in consumer behavior research, with numerous studies describing word-of-mouth (WOM) communication and its influence on consumers’ attitudes and behaviors (e.g., Bansal & Voyer, 2000; Gruen, Osmonbekov, & Czaplewski, 2006; Huang, Cai, Tsang, & Zhou, 2011; Litvin, Goldsmith, & Pan, 2008). Even in the era of mass communication and advertising, consumers are turning to online reviews in large numbers, and the reviews are having a considerable impact on purchase decisions (Jang, Prasad, & Ratchfod, 2012; Zhu & Zhang, 2010). According to a new survey from the research firm Dimensional Research, 90% of consumers who recalled reading online reviews claimed that the reviews directly influenced their decision to buy (Dimensional Research, 2013).
Interest in WOM communication has been revitalized in the area of marketing practice due to its role in the computer-mediated environment (eWOM or electronic word-of-mouth hereafter). Every day in such an environment, millions of individuals engage in the exchange of personal information and opinions. The advances in information technology and the increasing popularity of blogs, discussion boards, online rate-and-review websites, and other social media now enable thousands of consumers to post frequent reviews of products or services, which allows an increasing number of potential consumers to read before making purchase decisions (Brown et al., 2007; Khare, Labreque, & Asare, 2011). Furthermore, because intangible services cannot be evaluated before they are used, the purchase of services carries higher risk. Therefore, consumers consider the opinions of others an important source of the purchase decision (Bansal & Voyer, 2000; Harrison-Walker, 2001). For these reasons, it is important to understand what makes some online reviews more helpful and effective than others and more importantly to gain an understanding as to how these types of communications influence consumers’ attitudes and purchase decisions.

1.2. Problem Statement

This study identified two critical issues that should be considered with regards to the popularity of eWOM communication within various social media: (1) lack of social presence in social media websites (e.g., Brown, Broderick, & Lee, 2007; Steffes & Burgee, 2009) and (2) increasing concerns about source credibility of eWOM information (e.g., Dellarocas, 2003; Gretzel, 2006; Yoo & Getzel, 2008).
First, although previous research illustrates that social relationships and interpersonal influences are critical for the behavior and decision-making process of consumers (Brown & Reingen, 1987; Granovetter, 1983), research on the social effect of information effectiveness is scarce. Most eWOM studies ignore how social relationships are formed within the context of social networks and how this affects a consumer’s decision to purchase a product. Indeed, one of the most noticeable characteristics of online communications is that it is often one-directional. Most consumers are characterized as lurkers who read discussions and feedback but rarely or never participate (Heinonen, 2011; Rau, Gao, & Ding, 2008). For these reasons, despite the importance of the social aspects of online communication, the application of social network theories may not be entirely appropriate. Therefore, it is important for researchers and practitioners to understand online communication from a different perspective.

The second issue of interest relates to the credibility of eWOM information. Although there is increasing popularity among consumers, online reviews are often questioned as to their credibility. In eWOM, unlike traditional WOM from direct interpersonal sources, recommendations are typically from strangers in a text-based format. Because of this anonymity, consumers have difficulty in determining the reliability of the information (Chatterjee, 2001). A recent New York Times article (Streitfeld, 2012) suggested that online reviews are clearly popular and have been shown to have great impact on purchase decisions; however, trust in online review forums is questionable. For example, some online retailers hire people to write positive reviews for their own business and/or negative reviews for their rivals. Similarly, the 2010 Social
Shopping Study found that 57% of shoppers trust customer reviews as a valid source along with other corroborating information, but 35% question if they are biased or written by real customers (Brown et al., 2007).

The underlying reason for these two phenomena can be derived from the difference between traditional WOM and eWOM. Although the fundamental intentions are similar, there are also significant differences. While WOM disseminates via intimate conversations amongst friends, family, and other acquaintances, eWOM information posted to online review websites is typically from unknown individuals. Consequently, there is limited social interaction in an online environment and thus consumers are more skeptical about the credibility and reliability of the eWOM information from unknown sources (Brown et al., 2007; Heinonen, 2011).

In that sense, conceptualizations of online social networks proposed by Brown, Broderick, and Lee (2007) may provide a useful framework for an in-depth study of the effectiveness of eWOM communications in an online environment. From a series of in-depth interviews, their study found that individuals behave as if websites themselves are the primary “actors” within online social networks and that online communities act as a social proxy for individual interaction. In this context, the actors on online social networks are individuals who relate to websites rather than to other individuals because person-to-person contact is rare. Because each individual contributes and receives information, the website itself becomes the primary unit of relationship rather than the individual (Brown et al., 2007).
The present study employed this online social network perspective to examine three influences on the evaluation of marketing information that may explain how eWOM influences consumers’ attitude formation and decision-making: tie strength (i.e., intensity of a relationship between an individual and a website), homophily (i.e., the congruence between a user’s psychological attributes and website content), and source credibility (i.e., perceived reliability of the website and its users). It is imperative that marketers understand the eWOM influence, not only in terms of source credibility, but also in terms of the concepts of tie strength and homophily with regard to the websites. Given that credibility evaluations are made partly on the basis of social relationships with websites (Brown & Reingen, 1987; Brown et al., 2007), they appear to be particularly promising for enhancing the present understanding of eWOM behavior because these concepts address properties of social relations from which eWOM behavior arises.

1.3. Purpose of the Study

To maximize the effectiveness of eWOM communications, the relationship between this unique communication process and performance outcomes must be well understood. The main issues that must be addressed are what factors influence eWOM behavior on consumer review websites, and what the underlying processes of eWOM communications are in the new social medium. To answer these questions, this study adapted Brown et al.’s (2007) online social network framework that explains three key influences (tie strength, homophily, and source credibility) on the evaluation of eWOM information. Their study is very meaningful and was the first study to focus on social
networks from an online consumer communication perspective and integrates the consumer-brand relationship to the consumer-website relationship. However, additional study is required to empirically test their exploratory propositions and to draw general conclusions.

For these reasons, the primary objective of this study was to provide a theoretical understanding of consumers’ use of review websites as a vehicle for eWOM based on their relationship to the website. The author integrated research on social networks and drew from the consumer-brand relationship literature to predict what recommendations are effective in changing consumers’ attitudes and behaviors when the recommendations are from other people. Specifically, the present study attempted to propose and empirically test an integrative model to examine the relationships among three online social network variables (tie strength, homophily, and source credibility) and how they shape consumers’ attitudes toward the information posted on the website, and eWOM effectiveness on online consumer review sites. This study also considered managerial implications of how to develop an effective communication strategy based on the understanding of the consumer-website relationship. Accordingly, the main objectives of this study are:

(1) Conceptualize the consumer-website relationship and online social networks to understand social relationships among online consumer review websites
(2) Investigate interrelationships among tie strength, homophily, source credibility, attitude toward a website and eWOM information, and the effectiveness of eWOM

(3) Provide implications for hospitality and tourism marketers to effectively engage consumers through review systems by understanding the process of eWOM and its antecedents and outcomes

1.4. Significance of the Study

Previous research involving eWOM can be classified into three major categories. First, some authors have empirically examined the motivations of generating and seeking eWOM information from a consumer’s point of view (e.g., Henning-Thurau, Gwinner, Walsh, & Gremler, 2004; Phelps, Lewis, Mobilio, Perry, & Raman, 2004). A second stream of research has examined the outcomes of eWOM from a firm’s perspective, including product sales and positive brand images (e.g., Bone, 1995; Hung & Li, 2007). Finally, a third stream of research involves the effectiveness of eWOM based on the characteristics of the messages—such as message valence, length, and volume—from the content point of view (e.g., Park & Lee, 2009; Zhang, Ye, Law, & Lee, 2010).

Despite these previous studies, important gaps still remain in eWOM research. There has been surprisingly little empirical research that examines its “procedural” aspects and the effects of eWOM communications on the consumers’ purchase decisions. The underlying process and reasons why and how consumer reviews influence consumers’ attitude and behaviors have largely been ignored. This study has shown the
overall process of how consumers’ purchasing decisions are determined by their attitudes toward the overall evaluations concerning the website and the reviews on the website, including source credibility and the relationship between the consumer and the website.

By examining the process as to how eWOM communication influences consumers, this study contributes to the marketing literature in three significant ways. First, the present study employed an online social network perspective to examine three key social influences on the evaluation of eWOM information that may explain how this communication system influences consumer attitude formation and purchase decision-making: tie strength, homophily, and source credibility formed through the perceptions of tie strength and homophily. While the importance of eWOM on consumer decision-making has been well-established in academic literature, the impact of interpersonal and social relationship strength on eWOM behavior has drawn relatively less attention. Because eWOM is a social phenomenon, properties of social relations are likely to play a crucial role in eWOM behavior (Brown et al., 2007). This research suggests that consumers tend to build relationships with the website itself where the communication (information sharing) takes place, and that the information obtained from the website with strong tie strength and homophily are more influential in the evaluation of eWOM information.

Second, this study explores the concept of source credibility by understanding the website-consumer relationship. Previous research found that consumers’ perceptions concerning source credibility positively influenced consumers’ attitudes and intentions (e.g., Park & Lee, 2009; Wu & Wang, 2011). This concept is particularly important in
online communications. Because users who post reviews are usually anonymous and one-on-one interaction is rare in an online environment, the veracity of the provided information cannot be guaranteed. For example, some posted reviews may not be based on personal experience but instead may come from a biased source, such as individuals who are hired by the company. Although a few studies have demonstrated the importance of source credibility, they focus on the outcomes of such perceptions. There has not been an extensive examination of the process by which source credibility is formed and the antecedents that determine source credibility. This study seeks to identify social factors through which consumers’ credibility evaluations are made.

Lastly, the focus of this study is on “consumer review websites” exclusively within “the hospitality and tourism industries.” In a general context, eWOM has received a lot of attention from researchers and practitioners and is very popular among consumers. In contrast, consumer reviews have received little attention. Furthermore, there have been very few studies in the recent hospitality and tourism literature on the impact of online reviews. Hospitality and tourism products are a mixture of tangible goods and intangible services. They are often called experience goods in that their quality is often unknown prior to consumption (Mangold, Miller, & Brockway, 1999). Given that consumers rely on the opinions of others to reduce the uncertainty associated with their purchase of services, understanding eWOM in this particular context seems crucial for implementing effective communication strategies.
1.5. Definitions of Terms

Terms used in this study are defined as follows.

Attitude: An individual’s favorable or unfavorable evaluation of an object, person, issue, or behavior (Fishbein & Ajzen, 1975). In this dissertation, attitude is defined as a consumers’ overall evaluation of a website (attitude toward a website) and information (attitude toward information on the website).

Electronic Word-of-Mouth (eWOM): Informal communications used by consumers through Internet-based technology related to the usage or characteristics of particular goods and services, or their sellers (Litvin et al., 2008).

eWOM effectiveness: The extent to which a consumer’s intention to purchase is influenced by eWOM. In this study, eWOM effectiveness refers to the extent to which consumers’ intention is influenced by reviews on the review websites (Jeon & Park, 2003).

Homophily: The degree to which pairs of individuals who interact are similar in terms of certain attributes, such as age, sex, education, and social status (Rogers, 1983).
Online homophily: The congruence between a user’s psychological attributes and website content (Brown et al., 2007).

Online tie strength: The intensity of an interactive and personalized relationship between an individual and a website (Brown et al., 2007).

Social media: Internet-based content that encompasses media impressions created by consumers, typically informed by relevant experience, and archived or shared online for easy access by other impressionable consumers (Blackshaw, 2006; Xiang & Gretzel, 2010).

Social network: A social structure that consists of various links among and between individuals and organizations. These links are often based on social familiarity ranging from the level of nation, to casual friendship to familial bonds (Granovetter, 1983).

Source credibility: The perceived ability (expertise) or motivation of a message’s source to provide accurate and trustful information (trustworthiness) (Ohanian, 1990).

Tie strength: The potency of the bond between members of a network (Mittal, Huppertz, & Khare, 2008) and includes closeness, intimacy, support, and association (Frenzen & Davis, 1990).
Word-of-Mouth (WOM): Informal communication directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers (Westbrook, 1987); Oral, interpersonal communication between a perceived non-commercial communicator and a receiver concerning a brand, a product, or service offered for sale (Arndt, 1967).
Chapter 2: Literature Review

This chapter is composed of two parts that build the theoretical and conceptual underpinnings for this dissertation. The first section provides a comprehensive review of the theories and literature that supports the current research. More specifically, this section offers a review of eWOM literature and discusses social network theory, consumer-brand relationship theory, and their applications in marketing and consumer behavior research. The first section also discusses how these theories are used as a framework for this dissertation. The second section presents the formal hypotheses that are tested throughout the empirical portion of this dissertation.

2.1. Research Background

2.1.1. Word-of-Mouth (WOM) and Electronic Word-of-Mouth (eWOM)

There are many examples of companies attempting to harness the reputed power of WOM advertising in today’s media. Numerous managerial-oriented articles and books suggest ways of encouraging positive WOM, an indication of the importance of WOM to practitioners. WOM has been defined as “informal communications directed at other
consumers about the ownership, usage, or characteristics of particular goods and services
and/or their sellers” (Westbrook, 1987, p. 261). Similarly, Arndt (1967) defined WOM as
“oral, person-to-person communication between a perceived non-commercial
communicator and a receiver concerning a brand, a product, or a service offered for sale”
(p. 190). WOM is also known as “grassroots marketing” (Dye, 2000), “viral marketing”
(Kelly, 2000), or simply “buzz marketing” (Rosen, 2000). The basic idea behind WOM is
that information about products, services, stores, companies, brands, and so on can spread
from one consumer to another (Brown et al., 2005).

The importance of WOM and its powerful influence on consumer behavior have
been widely documented in the literature. In fact, consumers generally regard peers’
advice as more trustworthy and valuable than marketer-generated information (Harrison-
Walker, 2001; Herr, Kardes, & Kim, 1991). Studies examining the importance of WOM
have suggested that peers’ advice is a key factor in consumer decision-making processes,
and it has substantial influence on product evaluations and purchase decisions (e.g.,
Litvin et al., 2008; Park & Lee, 2009; Zhang, Craciun, & Shin, 2010). In a similar vein,
WOM has been shown to be more effective in certain situations than the traditional
marketing tools of personal selling and various types of advertising (Gruen,
Osmonbekov, & Czaplewski, 2006; Trusov, Bucklin, & Pauwels, 2009) because
information from personal sources is more credible than information from mass media or
marketing sources. Similarly, according to Gruen et al. (2006), Customer-to-Customer
(C2C) communication through WOM is more effective than the traditional marketing
tools of face-to-face sales and various types of advertising.
2.1.2. Difference Between WOM and eWOM

Although eWOM was derived from traditional WOM as an extended information source via the Internet, there are several generally agreed upon differences between traditional WOM and eWOM (see Table 2.1). Traditional WOM has limited social contact boundaries because its influence quickly diminishes over time and distance (Duan, Gu, & Whinston, 2008a). Prior to the Internet’s inception, a disseminator of WOM information would primarily impact a very limited circle of his or her local group of friends and family, with dispersion to a wider audience occurring only sporadically. However, eWOM has enabled information to reach a much wider audience because a single message can affect all visitors of a site. The impact of online reviews thus can reach far beyond a small circle of friends because consumers all over the world can access a review via the Internet.

Therefore, from the perspective of a company, marketers and managers have no direct control over what is being said about the company or about a product or how it is being said. WOM is predominantly private verbal communication between two parties who have no material interest in the product or company concerned. However, as the Internet is increasingly used for social interaction and as a source of market information, eWOM communication offers an opportunity for managers to address these challenges. eWOM presents greater control opportunities for marketers, such as transparency and access to reviews and customer evaluation (Litvin et al., 2008). As eWOM communications are prevalent on various online platforms, managers can now access,
search, and examine what is being said and how it is being articulated (Henning-Thurau et al., 2004).

Furthermore, advances in information technology and the increasing popularity of blogs, discussion boards, online rate-and-review websites, and other social media now enable thousands of consumers to post frequent reviews of products or services, which allows an increasing number of potential consumers to read the reviews prior to making purchase decisions (Brown et al., 2007; Khare, Labreque, & Asare, 2011). The other important difference between WOM and eWOM is that the information communicated by eWOM is oftentimes anonymous, unlike traditional WOM, which is usually between people who know each other (Hoffman & Novak, 1996). Table 2.1 summarizes the similarities and differences between traditional WOM and eWOM.
### Table 2.1. Similarities and Differences Between WOM and eWOM

<table>
<thead>
<tr>
<th></th>
<th>WOM</th>
<th>eWOM</th>
</tr>
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<tbody>
<tr>
<td><strong>Similarities</strong></td>
<td>· Interpersonal communication</td>
<td>· Through various online forms</td>
</tr>
<tr>
<td></td>
<td>· Influence decision-making</td>
<td>· Includes identified and unidentified sources</td>
</tr>
<tr>
<td></td>
<td>· Bidirectional and interactive</td>
<td>· Companies have more control over eWOM</td>
</tr>
<tr>
<td><strong>Differences</strong></td>
<td>Mode</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Usually spoken and written</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Person-to-person/face-to-face</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Identified sources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Companies have less control over WOM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Affected by geographic and time constraints</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· One-on-one or in a smaller group</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Limited receiver pool</td>
<td></td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>· No geographic or time constraints</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Can be one-to-many</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Larger receiver pool</td>
<td></td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>· Slow</td>
<td>· Fast</td>
</tr>
<tr>
<td><strong>Relationship</strong></td>
<td>· Know each other</td>
<td>· Generally anonymous</td>
</tr>
<tr>
<td>between sender</td>
<td></td>
<td>· Virtual social ties</td>
</tr>
<tr>
<td>and receiver</td>
<td>· Real social ties</td>
<td></td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>· Mostly linear</td>
<td>· Mostly non-linear</td>
</tr>
<tr>
<td><strong>Ease of</strong></td>
<td>· Difficult to transmit</td>
<td>· Easy to transmit/forward</td>
</tr>
<tr>
<td>transmission</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.3. Online Review as a Form of eWOM

eWOM encompasses a variety of media forms and types of websites, of which online consumer reviews are the most accessible and prevalent (Zhang et al., 2010). Amazon.com began offering consumers an option to post their comments about products on its website in 1995. Currently, Amazon.com has about 10 million consumer reviews on all its product categories, and these reviews are regarded as one of the most popular and successful features of Amazon (Chen & Xie, 2008).
Recent studies suggest that consumer reviews have become a determining factor in consumer purchase decisions and product sales. Along with the increased popularity and prevalence of eWOM, marketing literature confirms that consumers pay attention to online product reviews and act upon them to make purchasing decisions (Chatterjee, 2001; Chevalier & Maylin, 2006; Senecal & Nantel, 2004). There are several studies that focus on online consumer reviews. One study conducted by DoubleClick in 2007 found that eWOM plays an important role in the consumers purchase process for many types of product and for some goods such as electronics and home products. Product review websites outrank all other media in influencing consumer decisions. Bickart and Schindler (2001) found that participants who are exposed to online consumer reviews show more interest in the product than those who are exposed to a corporate webpage. Moreover, research in behavioral economics finds positive relationships between user-generated contents and product sales (Chevalier & Mayzlin, 2006; Duan et al., 2008b; Ye, Law, Gu, & Chen, 2009). In fact, several companies have recognized the inherent business opportunities of this phenomenon and are proactively attempting to induce consumers to “speak to the world” on online platforms about their products and services (Godes et al., 2005).

2.1.4. The Significance of eWOM in Hospitality and Tourism Services

Recent research in the service literature has demonstrated that WOM communication is particularly important to the marketing of services rather than tangible goods (Litvin et al., 2008; Money, Gilly, & Graham, 1998). The typical characteristics of
services—intangibility, the inseparability of production and consumption, non-standardization, and experience or credence based—force consumers to place greater reliance on the opinions of other consumers for evaluation prior to purchase or use. Because of their intangibility, services cannot always be seen, touched, or demonstrated prior to purchase.

Moreover, services are more difficult to evaluate than tangible goods partly because of the experiential nature of these services (Bansal & Voyer, 2000). Therefore, consumers are more likely to rely more on WOM communications and look for WOM information by other consumers to reduce their level of perceived risk and uncertainty that is often associated with service purchase decisions (Harrison-Walker, 2001; Mangold et al., 1999). Murray (1991) found that consumers have greater confidence in personal sources of information as well as greater pre-purchase preference of personal information sources when they buy service-related goods rather than tangible goods. Despite its significant role in service contexts, existing eWOM research in hospitality and tourism is limited to conceptual or descriptive rather than empirical. To our knowledge, empirical studies that focus on consumer review websites particularly in the hospitality and tourism sectors are lacking.

2.1.5. eWOM in Social Media Websites

The term “social media” can generally be understood as Internet-based content that encompasses media impressions created by consumers, is typically informed by relevant experience, and is archived or shared online for easy access by other
impressionable consumers (Blackshaw, 2006). This includes a variety of applications in the technical sense that allow consumers to post, tag, share, digg, blog, etc., on the Internet. The contents generated by social media include a variety of new and emerging sources of online information that are created, initiated, circulated, and used by consumers with the intent of educating each other about products, brands, services, and issues that are of common interest (Blackshaw & Nazzaro, 2006; Xiang & Gretzel, 2010).

Social media exists in a variety of forms and serves numerous purposes. User-generated content supported through social media is a mix of opinion, impressions, and sentiment. By applying a set of theories to the field of media research (social presence, media richness) and social processes (self-presentation, self-disclosure) Kaplan and Haenlein (2010) created a classification scheme for different social media types. According to their classification, there are six types of social media: collaborative projects (e.g., Wikipedia), blogs and microblogs (e.g., Twitter), content communities (e.g., YouTube), social networking sites (e.g., Facebook), virtual game worlds (e.g., World of Warcraft), and virtual social worlds (e.g. Second Life).

2.1.6. Research Context

eWOM communications can occur on various social media (Henning-Thurau et al., 2004). Social media includes web-based and mobile technologies used to turn communication into interactive dialogue. Kaplan and Haenlein (2010) define social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 that allows the creation and exchange of user-
generated content.” This study focuses on eWOM communications that take place on online consumer review websites, such as TripAdvisor, Yelp, and Urbanspoon.

The nature of consumer review websites can be classified into several types depending on the recommendation sources (Senecal & Nantel, 2004). First, online sellers invite users of their products to post personal evaluations of the products on the sellers’ websites. In recent years, an increasing number of online sellers (e.g., BevMo.com, BN.com, cduniverse.com, circuitcity.com, GameStop.com, half.com, goodguys.com, wine.com, anthropologie.com, shopbop.com) have begun offering consumer reviews along with their products. In addition, recommendation sources can be used and promoted by commercially linked third parties, mostly price comparison websites, such as pricegrabber.com. Lastly, there are some non-commercially linked third parties designed only for consumer reviews and opinion sharing rather than selling products. These websites are usually for product or merchant assessment. Examples of such websites include TripAdvisor.com and Urbanspoon.com.

While eWOM communication occurs in many forms, this study focuses on web-based consumer opinion platforms (consumer review websites) offered by independent third-party sources for several reasons. First, web-based opinion platforms are the most widely used of the existing eWOM formats (Henning-Thurau et al., 2004; Xiang & Gretzel, 2010). According to Henning-Thrau et al. (2004), approximately nine to ten million product or company-related comments from consumers are available to Internet users on such platforms. Second, eWOM communications articulated on web-based consumer review sites can be expected to have a stronger impact on consumers than other
types of eWOM in that they are easy to access and do not require sophisticated Internet-related knowledge (Henning-Thurau et al., 2004).

Furthermore, more independent websites such as non-commercially linked third party websites that facilitate consumers’ external search efforts by decreasing search costs are assumed to be preferred by consumers (Alba et al., 1997; Bakos, 1997; Lynch & Ariely, 2000). By providing more objective information and more alternatives from which to choose, independent websites are likely to be perceived as useful by consumers. In addition, prior research on Attribution Theory suggests that consumers discredit recommendations from endorsers if they suspect that the latter have incentives to recommend a product for review (Folkes, 1988; Mizerski, Golden, & Kernan, 1979).

According to the discounting principle of Attribution Theory (Kelley, 1973), which states that a communicator will be perceived as biased if the recipient can infer that the message is attributable to personal or situational causes, consumers would attribute more non-product related motivations (e.g., commissions on sales) to recommendation sources that are promoted by commercially linked third parties and sellers than independent third-party websites. Consequently consumers will follow product recommendations in greater proportion when seeking information on more independent websites. In addition, eWOM articulated on consumer review forums can be expected to have a stronger impact on consumers because they are relatively easy to operate and require less computer (Internet)-related knowledge on the part of the consumer (Dellarocas, 2003).
As previously discussed, this study also focused on the independent third-party review websites associated with hospitality and tourism products or services. For example, TripAdvisor (www.tripadvisor.com) is one of the largest online travel review platforms while Dine.com, Urbanspoon.com, and Yelp.com are the most used websites for restaurant reviews (Yoo & Gretzel, 2008). Although these websites are very popular in the hospitality and tourism sector, there has been limited research that investigates them. Given that hospitality and tourism products and services are considered to be experienced goods accompanied by higher risks and comprised of both tangible and intangible elements, consumer reviews are particularly important for these products and services (Harrison-Walker, 2001).

2.2. Theoretical Background

This study recognizes the gaps that exist in previous literature and attempts to investigate the effect of social and relational factors in determining eWOM effectiveness. Thus, this study was based on two different but interrelated theoretical frameworks to support the proposed arguments: Social Network Framework (Granovetter, 1983) and Consumer-Brand Relationship (Fournier, 1998). The application of these two theories to examine online social relationships in the context of consumer review websites is elaborated next.
2.2.1. Social Network Framework

According to Granovetter (1983), people are embedded in concrete, ongoing structures of social relations, and the extent of their embeddedness influences their individual behavior. Adopting a social network perspective is a suitable way to acquire an in-depth understanding of the convergence of various social media, consumer interactions, and resulting consumer decisions. A social network is defined as “a set of people, organizations, or other social entities, connected by a set of socially meaningful relationships” (Lea, Yu, Maguluru, & Nicholas, 2006, p. 121), in which members participate for a variety of reasons, ranging from socio psychological needs to more functionally oriented reasons, such as knowledge transfer. Any social situation can be described as consisting of at least two components: actors or agents (who make decisions and act) and relations (which are the interconnections between actors) (Knoke & Yang, 2008). The social network perspective assumes that (1) social networks influence individual attributes and actions (e.g., by exposure to information and ideas), and (2) in many cases, the relations are more important in explaining behavior than the attributes of the actors themselves.

As shown in Figure 2.1, a social network can be visualized as a web where direct or indirect social relationships surround the individuals. The circles represent individuals and the lines in between two circles represent the relationships. For example, individual A can have a direct relationship with individual B, and individual B can have a direct relationship with individual C. This results in individual A having an indirect relationship with individual C. Of course one individual can have multiple relationships, and if so, it
would result in more indirect relationships among his or her social network. Both direct and indirect relationships can enhance social integration to provide an individual with opportunities to engage with their counterparts in the network in social network ties (Brown et al., 2007; Lea et al., 2006).

Figure 2.1. Social Networks

Social networks can vary in terms of size and heterogeneity (Brown & Reingen, 1987; Garton, Haythornthwaite, & Wellman, 1997; Lea et al., 2007). Smaller and homogenous networks are characteristic of traditional social networks whereas larger social networks with more heterogeneity are a typical aspect of computer-mediated social networks. In traditional networks, partners are often close people (e.g., friends, family,
relatives, and neighbors), the control of the network exists locally and the interactions usually occur among those who physically live nearby. Therefore, the traditional social networks are often small in size, exhibiting homogeneity among members, and face-to-face meetings are available as shown in Figure 2.2.

![Figure 2.2. Traditional Social Network](image)

Due to technological advancement, Kimball and Rheingold (2000) indicated “social networks grow from personal interactions of humans over time, as well as from the technological infrastructure that connects those humans.” As shown in Figure 2.3, without physical boundaries of traditional social networks, the online social networks enhance benefits of traditional social networks across time and space. Members of online social networks are more heterogeneous in social characteristics and the network
structures are more complex because they are interconnected with many other networks. The different shades and shapes represent the different networks and the relationships among them.

Figure 2.3. Online Social Networks

Social network analysis has been used to study WOM behavior because its unit of analysis is the exchange of tangible and intangible resources between social actors (Bansal & Voyer, 2000; Brown & Reingen, 1987). In addition, it considers how exchanges between pairs build into networks (Wellman & Berkowitz, 1998). Each kind of resource exchange is considered as a part of a social exchange relationship, and
individuals who maintain this relationship are said to maintain a tie. Social network theorists hold that individual, group, and organizational behavior is affected more by the kinds of ties and networks in which actors are involved than by the individual attributes of the actors themselves (Haythornthwaite, 1999). While the power of WOM on consumer decision-making has been well developed in academic literature, how various relationships within the network influence WOM effectiveness has not been clearly understood.

Brown et al. (2007) argued that traditional network analysis approaches and theories may be inappropriate for describing eWOM behavior because they tend to focus on face-to-face interaction in which the communicators are in close proximity (Knapp & Daly, 2002). However, research that focuses on the social and emotional nature of computer-mediated communication suggests that individuals can create fully formed impressions of others based solely on the linguistic content of written electronic messages. Although in such networks social interaction is limited in the traditional sense, individuals still provide and receive information. The networks also provide social support in both specialized and broadly based relationships, and are becoming an important supplement to social and consumption behavior. To further examine this important area, their study proposed an online social network framework that will be discussed in the following sections.
2.2.2. Consumer-Brand Relationship

To better understand eWOM communication within the online social network previously mentioned, it is necessary to examine consumer-brand relationship theory. The development of consumer-brand relationship has been a focus of branding theory for several decades (e.g., Fournier, 1998; Franzen, 1999). Fournier (1998) extends the two-party social relationship metaphor to encompass consumers and brands. She develops a consumer-brand relationship proposition, including anthromorphizing the brand as an active relationship partner – at the level of consumers’ perceived experiences with their brands. According to her, the consumer and the brand or product can be treated as “partners” in a dyadic relationship that is assumed to be conceptually similar to the relationships established between two people. In many ways, people relate to brands as they relate to people. Considerable theoretical and empirical evidence suggests that individuals have an underlying need for an emotional bond with a product or a brand that will serve as a legitimate relationship partner once purchased.

The consumer-brand relationship is strengthened by the symbolism of certain brands. For instance, consumers often associate brand identities with human personality attributes; these in turn create the symbolic nature of the brand. This process has been called *animism* (Gilmore, 1919). Animism suggests that there exists a need by people to anthropomorphize objects to facilitate interactions with the nonmaterial world (Fournier, 1998; Gilmore, 1919). In other words, consumers assign human personality traits to inanimate objects, thereby associating brands with human characteristics (Aaker, 1997; Fournier, 1998). In addition, people will develop relationships with these brands. These
human personality traits provide symbolic meaning for the consumer who uses the personality as a cue and exploits the positive aspects to present a given image.

Accordingly, a brand with the “right” personality can result in consumers believing that the brand is relevant and that they should have positive attitudes toward a brand and maintain a relationship with it (Fournier, 1998).

Likewise, the formation of relationships within an online environment as part of a social network can be further understood by the application of consumer-brand relationship theories. The consumer-brand relationship can be applied to a consumer-website relationship in that the websites share the characteristics of being inanimate, nebulous constructions that offer a product or service for a company (Brown et al., 2007).

It is therefore logical to extend such concepts to the online consumer review website setting. Consumers relate to websites as if they are primary actors in the social network and seem to interact more commonly with websites and information, rather than with actual individuals.

According to Brown et al. (2007) there are numerous consumer-website relationships and they can be categorized into four types. First, consumers visit a certain website for a specific purpose to fulfill their informational needs. Through these “formal” and “functional” relationships, consumers seek information to facilitate a decision regarding a specific goal: purchase. Second, consumers sometimes engage in eWOM behavior not only when they had specific purchase needs, but also when they visit for the purpose of information browsing independent of specific purchase needs. This relationship is often characterized as “casual buddies” where the relationship is low in
intimacy but regularly reinforced (Brown et al., 2007; Fournier, 1998). Third, “committed partnership” can also be found when consumers have a higher degree of involvement and therefore are committed to the website. The final type of consumer-website relationship focuses on “social concern.” Although it is the least common theme, only a few consumers are motivated by a sense of fellowship and feel a duty to participate in the website conversation.

2.2.3. Application of Online Social Network to Consumer Review Websites

Consumer review websites, such as TripAdvisor and Yelp, can represent eWOM networks where individuals, with an interest in searching and purchasing products, exchange opinions on their purchasing experience. However, it can be argued that such platforms have limited social presence in the traditional WOM sense because consumers post reviews on the website and others only read the reviews without commenting on them. Therefore, little interaction actually occurs. Limited interactions do exist through rating the helpfulness or the posting comments. Therefore, the conceptualization of the website-consumer relationship may also be applicable to consumer review websites. In such a context, the actors using online social networks are individuals who relate to websites rather than other individuals because person-to-person contact is rare. Each person contributes and receives information posted on an individual basis, so the website becomes the primary unit of relationship rather than the individual. Therefore, adopting an online social network based on consumer-website relationship proposed by Brown et
al. (2007), this study focuses specifically on social networks formed through asynchronous communication via consumer opinion platforms.

A number of previous empirical studies have been conducted to examine the impact of eWOM. Benefits of eWOM communications have been well documented in previous literature, but social influence or relational aspects of such phenomena have largely been ignored (Brown et al., 2007; Chu & Kim, 2011). Recent research on interpersonal influence of eWOM, given the characteristics of eWOM compared to traditional face-to-face WOM, found that it has limitations in applying such relational constructs to the eWOM (Kumar & Benbasat, 2002). In particular, online review websites do not exhibit deep relationships among consumers (Brown et al., 2007). In that sense, application of website-consumer relationship and the conceptualization of an online social network framework would provide a deeper understanding of the eWOM process within the review websites.

2.3. Proposed Model and Hypotheses Development

This study proposed a conceptual model that integrates social network constructs identified in traditional WOM and their influence on various consumer responses, such as attitudes and purchase intentions. The theoretical foundations for this study are derived from marketing literature: Social Network Framework (Granovetter, 1983) and Consumer-Brand Relationship (Fournier, 1998). More specifically, this study extended the model of Brown et al.’s (2011)—which identifies the three key components of tie strength, homophily, and source credibility—to eWOM communications on consumer
review websites. A detailed explanation on each relational construct is summarized in Table 2.2.

<table>
<thead>
<tr>
<th></th>
<th>WOM</th>
<th>eWOM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tie Strength</strong></td>
<td>The intensity of a social relationship between pairs of individuals</td>
<td>The intensity of an interactive and personalized relationship between an individual and a website</td>
</tr>
<tr>
<td>Definition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>• Importance attached to social relation</td>
<td>• Online website reciprocity</td>
</tr>
<tr>
<td></td>
<td>• Frequency of social contact</td>
<td>• Emotional website closeness</td>
</tr>
<tr>
<td></td>
<td>• Type of social relation</td>
<td></td>
</tr>
<tr>
<td><strong>Homophily</strong></td>
<td>The degree to which pairs of individuals are similar in terms of certain attributes</td>
<td>The congruence between a user’s psychological attributes and website contents</td>
</tr>
<tr>
<td>Definition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>• Matched demographic/lifestyle attributes</td>
<td>• Shared group interests</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Shared mindset</td>
</tr>
<tr>
<td><strong>Source Credibility</strong></td>
<td>The perceived competence of the individual source providing information</td>
<td>The perceived competence of website and its membership</td>
</tr>
<tr>
<td>Definition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>• Source bias (trustworthiness)</td>
<td>• Site trustworthiness</td>
</tr>
<tr>
<td></td>
<td>• Source expertise</td>
<td>• Actor’s expertise</td>
</tr>
</tbody>
</table>

Table 2.2. A Comparison between Offline and Online Social Network Constructs (Adapted from Brown et al., 2007)
A basic assumption of this study is that perceptions about the information sources and the websites are necessary in shaping consumers’ attitudes and behavioral intentions. This dissertation proposes that the three key elements of online social network (tie strength, homophily, and source credibility) play an important role in shaping consumers’ attitudes toward the website and information sources and ultimately increase eWOM effectiveness. Table 2.3 summarizes the proposed hypotheses and Figure 2.4 provides a comprehensive illustration of the research model.

<table>
<thead>
<tr>
<th>H1a-b</th>
<th>Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of tie strength between the consumer and the website will lead to a positive attitude toward (a) eWOM information on the website and (b) the website.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2a-b</td>
<td>Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of homophily between the consumer and the website will lead to a positive attitude toward (a) eWOM information on the website and (b) the website.</td>
</tr>
<tr>
<td>H3a-b</td>
<td>Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of source credibility will lead to a positive attitude toward (a) eWOM information on the website and (b) the website.</td>
</tr>
<tr>
<td>H4</td>
<td>Among consumers who use eWOM to find a service provider, higher levels of tie strength between a website and a consumer will lead to a higher level of source credibility.</td>
</tr>
<tr>
<td>H5</td>
<td>Among consumers who use eWOM to find a service provider, higher levels of homophily between a website and a consumer will lead to a higher level of source credibility.</td>
</tr>
<tr>
<td>H6</td>
<td>Consumers’ attitude toward the eWOM information is positively related to their attitude toward the website.</td>
</tr>
<tr>
<td>H7</td>
<td>Consumers’ attitude toward the eWOM information is positively related to the influence of the eWOM on the their purchase decision.</td>
</tr>
<tr>
<td>H8</td>
<td>Consumers’ attitude toward the website is positively related to the influence of the eWOM on their purchase decision.</td>
</tr>
</tbody>
</table>

Table 2.3. Hypotheses of This Study
Figure 2.4. The Proposed Conceptual Model
2.3.1. Tie Strength

The first social network construct hypothesized to influence consumers’ attitudes is tie strength. Tie strength is defined as “the potency of the bond between members of a network” (Mittal et al., 2008, p.196) and includes closeness, intimacy, support, and association (Frenzen & Davis, 1990). Similarly, tie strength occurs through a combination of time, emotional intensity, intimacy (mutual confiding), and reciprocal services that characterize the tie between a sender and a receiver. The strength of the ties may range from strong/primary to weak/secondary depending on the number and types of resources exchanged, the frequency of these exchanges, and the intimacy of the exchanges. For instance, those with strong ties such as family and friends form stronger and closer relationships within an individual’s personal network and are able to provide material and emotional support (Chu & Kim, 2011; Goldenberg, Libai, & Muller, 2001; Pigg & Crank, 2004). Weak ties, on the other hand, are often among more distant and less personal social relationships composed of a wide set of acquaintances and colleagues with different cultural and social backgrounds (Goldenberg et al., 2001). Members within weak/secondary ties do not see each other and sometimes are complete strangers (Steffes & Burgee, 2009).

Similarly, all WOM communication occurs within a social setting can either be categorized according to the information seeker and source or represented by the construct tie strength (Bristor, 1990; Money et al., 1998). Past WOM research has found tie strength to be important for explaining consumers’ information seeking and the influence of WOM. For example, Brown and Rejngen (1987) suggest that individuals in
a strong tie relationship tend to interact more frequently and exchange more information, compared to those in a weak tie relationship (Brown & Reigngen, 1987). Empirical test results by Money (2004) also found that active information seeking is more likely to result from strong tie referral sources rather than weak ones. In addition, strong ties sources were perceived as more influential than weak tie sources.

According to the conceptualization of tie strength in online information exchanges by Brown et al. (2007), the idea of individual-to-individual social ties is less relevant in an online environment than in an offline one. Tie strength is developed between an information seeker and an information source in traditional WOM. However, in the Internet age, the information source is a website, not a known individual. Therefore, it can be reasoned that a consumer’s relationship to a website itself will have a greater influence on his or her attitudes than a relationship to other participants on the website. Consumers are more likely to use online review websites and reviews with which they have close relationships than those that are more distant. In light of the above explanation, the following hypotheses are proposed:

**H1a-b.** Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of tie strength between the consumer and the website will lead to a positive attitude (a) toward eWOM information on the website and (b) toward the website.
2.3.2. Homophily

Another promising construct capable of providing a conceptually enriched understanding of WOM behavior is homophily. Homophily is the degree to which individuals who interact with one another are similar in terms of certain attributes, such as age, sex, education, and social status (Rogers, 1983). Since homophilous individuals are more likely to interact with each other than heterophilous ones, homophilous ties may have a greater likelihood of being activated for WOM flow of information (Brown & Reignen, 1987).

In the context of consumer information exchange, it is perceived that ease of communication increases between similar individuals, and homophily can facilitate the flow of information for a consumer’s external searches (Price & Feick, 1984). For example, research has shown that homophilous consumers are more likely to provide personally relevant product information because individuals with similar lifestyles and social characteristics tend to have similar needs and wants in consumption (Chu & Kim, 2011). Hence, consumers tend to feel comfortable when interacting with others who are alike in demographic characteristics, such as social status and educational backgrounds (Rogers & Bhowmik, 1970). Consequently, a receiver’s perception of the degree of similarity influences the persuasive effect of a message on a receiver’s attitude and behavior (Rogers & Bhowmik, 1970).

Recent research by Brown et al. (2007) argues that homophily of an interpersonal relationship based on individual characteristics is not particularly relevant in an online context. Online homophily is almost entirely independent of interpersonal factors, such as
age and socio-economic class, which are traditionally associated with homophily. Instead, it is the notion of shared interests and mindset, evaluated at the level of the website, which drives online homophily. Based on the consumer-website relationship, consumers tend to affiliate with contents of a website rather than the individual users that actually provided the information.

Accordingly, it is expected that consumers who have strong homophily with a website will have positive attitudes towards the website in addition to the information on it. If the website provides information and content that matches the information seeker’s own characteristics and interests, they are likely to have a positive attitude toward the website and toward the showcased product. In short, they are more likely to buy it. Based on this rationale, the following hypotheses are proposed:

**H2a-b.** Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of homophily between the consumer and the website will lead to a positive attitude a) toward eWOM information on the website and b) toward the website.

2.3.3. Source Credibility

A wide range of research has shown that one of the critical factors that determine the effectiveness of eWOM is source credibility (e.g., Park & Lee, 2009; Wu & Wang, 2011). Source credibility is a term used to suggest that a communicator’s positive characteristics can enhance the value of information in a message, impacting the
receiver’s level of trust as well as his or her acceptance of the message (Dou, Walden, Lee, & Lee, 2012). Highly credible sources are believed to increase the acceptance of messages because of their association with favorable outcomes, such as being correct (Heesacker, Petty, & Cacioppo, 1983).

Source credibility is a higher-order construct that consists of two important concepts: website reputation (trustworthiness) and the expertise of the message sender. Perceived trustworthiness refers to the motivation for the source to communicate valid assertions. Consumers tend to perceive information on well-known websites as being more credible than unknown websites. Unlike conventional media, such as newspapers and magazines, consumers have instant access to an enormous amount of information on the Internet. With such a large number of websites available, consumers tend to seek credible information provided by well-established websites. Individuals utilize the website provider’s reputation in order to judge the credibility of information presented on the site (Choi & Rifon, 2002; Xie, Miao, Kuo, & Lee, 2011; Park & Lee, 2009).

In addition, consumer confidence originating from a credible website may affect the eWOM posted on the website (Park & Lee, 2009). Prior literature in advertising has shown that different media vehicles can generate different communication effects on the same audience with the same advertisement (Shamdasani, Stanaland, & Tan, 2001). The vehicle source moderates the impact of a message by influencing the confidence of the audience in the message endorsed by the source. When source credibility is perceived to be low, consumers tend to perceive more risks because they feel the information may be
incorrect and may lead to unintended consequences. However, when source credibility is perceived to be high, consumers are more confident and tend to trust the information.

The perceived expertise refers to the extent to which a source is considered capable of making valid assertions. Consumers are likely to believe information posted by those who have greater expertise or knowledge about a particular product. If a potential receiver of the eWOM information wishes to seek certain information, he or she would be more likely to seek eWOM information provided by someone perceived as an expert in the area in which the eWOM information is sought (Bansal & Voyer, 2000). Specifically, if the sender’s expertise is high, the receiver, in attempting to attain information via eWOM, will more actively seek information from those who are perceived to possess a high level of expertise. In turn, those perceptions would positively influence their attitude toward the website and the information. As such, perceived trustworthiness and expertise may be related to consumers’ perceptions of source credibility. Advertising and communication literature suggest that perceived trustworthiness is one of the dominant perceptual dimensions underlying consumer’s reactions to advertising in general (Bauer & Greyser, 1968). Ling and Liu (2008) also state that consumers not only rely on expert credibility to interpret a message, but also form their own attitude towards the advertisement and the brand.

One of the most reliable generalizations in communications research is that credible sources are more persuasive and have a stronger influence on consumers’ attitudes and behaviors. If a review is perceived to be written by an expert, then consumers are more likely to think of it favorably and use it to make their purchasing
decisions (Chaiken & Maheswaran, 1994; Dou et al., 2012; Petty, Cacioppo, & Goldman, 1981). It is expected that when consumers perceive reviews on websites as credible and reliable, they are likely to have a positive attitude toward the website as well as the reviews on the website. Thus, we hypothesize the following:

H3a-b. Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of source credibility will lead to a positive attitude (a) toward eWOM information on the website and (b) toward the website.

2.3.4. Relationships Among Tie Strength, Homophily, and Source Credibility

In a traditional WOM context, whether the sender of a message can be perceived as an expert (and therefore have high credibility) is determined from evaluating the knowledge that the person holds (Gotlieb & Sarel, 1991). However, in an online environment, such evaluations must be made from relatively impersonal text-based resource exchange provided by actors in the website network. Since reviews are usually published by unknown individuals as anonymous sources, knowledge of the individual’s attributes and background is unknown. Again, evaluations of information sources are based on factors specific to the online context, which in turn are strongly based on the website and content itself rather than the individual (Brown et al., 2007).

The current literature reports that stronger ties and homophily are the fundamental characteristics of online relationships, and evaluations by respondents of the credible
information bolster eWOM effectiveness (Brown et al., 2007; Chu & Kim, 2011; Steffes & Burgee, 2009). As such, credibility evaluations are influenced by the perceptions of the relationship with the website, expressed by tie strength and homophily. When individuals feel closely tied to a website because of shared common interests, they are likely to perceive the contents on the site as more credible. Moreover, homophilous sources of information are perceived as more credible than heterophilous ones, suggesting that a homophilous source is perceived as more influential (Brown & Reingen, 1987). The following hypotheses are therefore submitted:

**H4.** Among consumers who use eWOM to find a service provider, higher levels of tie strength between a website and a consumer will lead to a higher level of source credibility.

**H5.** Among consumers who use eWOM to find a service provider, higher levels of homophily between a website and a consumer will lead to a higher level of source credibility.

2.3.5. Consumers’ Attitudes and eWOM Effectiveness

Attitude is defined as an individual’s favorable or unfavorable evaluation of an object, person, issue, or behavior (Fishbein & Ajzen, 1975). Similarly, in communication studies, attitude refers to the receiver’s overall evaluation of a people, objects, and issues (Petty, Cacioppo, & Shumann, 1983). Attitudes are formed not only through direct
experiences, such as actual purchasing, but through indirect experiences, such as being exposed to various media sources—advertisements, eWOM, newspapers, magazines, etc. (MacKenzie, Lutz, & Belch, 1986; Suh & Yi, 2006). A widely accepted notion in consumer behavior studies is that consumers’ affective and cognitive reactions to this eWOM information presumably determine the relationship between eWOM evaluations and product evaluations (Harrison-Walker, 2001).

However, little empirical research is available on the interrelationships between reviews (content), websites (where the content is posted), and review effectiveness (purchase decisions). Since previous studies only tested one of these variables independent of the others, it is unclear whether the effect of contents on intentions is direct or mediated through the attitude toward a website. Although less attention has been paid to these relationships, there are reasons to believe that a positive attitude towards a review is an important antecedent to predicting attitudes towards a website and how this relationship ultimately influences purchase decisions.

Advertising research has long suggested that those who have more positive attitudes toward advertising are more likely to be persuaded by advertising (e.g., Mehta, 2000; Yang, 2003). According to this stream of research, positive attitudes toward advertisements are an early step on a hierarchy that leads to high-level effects such as purchase intention (Brown & Staymen, 1992; Mackenzie et al., 1986). More recent work has adapted this concept to measure attitude toward websites (Chen & Wells, 1999; Wu, 2005; Wu, Wei, & Chen, 2008). When consumers perceive the content of the website as being of a high quality, they are more likely to have a favorable attitude toward the
website and purchase from it. A website that contains favorable contents is likely to generate favorable attitudes towards it.

Likewise, if reviews are perceived to be credible because of high tie strength and homophily, consumers are more likely to think favorably of those reviews and the website. When the time comes to make a purchasing decision, consumers will include such reviews in their consideration. It seems reasonable to assume that attitudes toward eWOM information and the website are positively linked to the influence of eWOM on the receivers’ decision-making processes for purchases, which is represented as eWOM effectiveness in this study. Based on these arguments, the following hypotheses are proposed:

**H6.** Consumers’ attitude toward the eWOM information is positively related to their attitude toward the website.

**H7.** Consumers’ attitude toward the eWOM information on the website is positively related to the influence of eWOM on their purchase decision.

**H8.** Consumers’ attitude toward the website is positively related to the influence of the eWOM on their purchase decision.
Chapter 3: Methodology

In this chapter the research methodology used to explore the research objectives and the development and refinement are discussed. It is composed of three components: (1) measurement items, (2) data collection (pretest and main study), and (3) data analysis. In the first step of this research, initial measurement items were identified based on a thorough literature review. In the second step, a pretest was conducted to ensure the applicability and reliability of each scale (see Appendix A). On the basis of the pretest results, the adapted scales were critically reviewed for context in terms of their applicability and wording, and items were reformulated items as necessary. Eventually, the main study, which includes 793 respondents, was conducted to test the relationship among key constructs: tie strength, homophily, source credibility, attitude toward a website, attitude toward eWOM information, and effectiveness of eWOM. Information about participants’ recruitment and general procedures for collecting data are also presented.
3.1. Measurement Items

The proposed model includes six latent variables: (1) tie strength, (2) homophily, (3) source credibility, (4) attitude toward eWOM information, (5) attitude toward the website, and (6) eWOM effectiveness. After first specifying the domain of each construct, ad hoc scales were developed. Various measurement instruments were available for assessing all latent variables in the marketing literature. Because these scales have never been tested in the current context (i.e., online consumer review websites), different scales were first created for each construct. To maximize reliability and validity of the measures, these scales include items from a number of relevant studies rather than from a single study. The specific measurement items are discussed as follows and presented in Table 3.1:

*Tie strength.* The measurements for tie strength were adapted from previous studies and included three questions associated with the respondents’ social relationship with contacts, frequency of communication and duration, and the importance and closeness of the social relationship (Brown & Reingen 1987; Chu & Kim, 2011; Norman & Russell 2006; Reingen & Kernan 1986). The tie strength measurements consisted of three indicators: frequency of communication, importance, and closeness. Frequency of communication was measured using a 7-point Likert scale, with 1 = “never” and 7 = “very frequently”. Perceived importance and closeness were also measured on a 7-point Likert scale, ranging from 1 = “not at all important” to 7 = “very important”, and from 1 = “not at all close” to 7 = “very close”, respectively.
Homophily. Special attention was devoted to developing a measure for homophily because previous studies tended to employ “hard” criteria (such as age and gender in a traditional WOM setting), but did not include a scale for “softer” criteria (such as similarity in interests). In an effort to measure this construct, four questions were developed based on Brown et al.’s (2007) conceptualization of online homophily and its sub-dimensions and image congruence literature to measure similarities in images between products and users (Sirgy, Grewal, Mangleburg, Park, Chon, Claiborne, Johar, & Berkman, 1997). Four items developed to measure homophily, including “the interests expressed by the website are not consistent with my own interests,” and “the interests expressed by the website reflect my own interests.” All items were measured on a 7-point Likert scale that ranged from 1 = “strongly disagree” to 7 = “strongly agree”.

Source credibility. Following Ohanian (1990), this study measured the perceived trustworthiness and expertise of the endorser of the review website. The two components of source credibility (trustworthiness and perceived expertise) were assessed by using the 7-point semantic differential pairs proposed by Ohanian (1990). Although both components of source credibility were considered, the ultimate goal of using them was not to separate the dimensions as two different constructs but to measure diverse aspects of source credibility. Trustworthiness was measured by pairs of words, undependable-dependable, dishonest-honest, insincere-sincere, and untrustworthy-trustworthy. Expertise was measured by word pairs, “not an expert-expert”, “inexperienced-experienced”, “unknowledgeable-knowledgeable”, “unqualified-qualified”, and “unskilled-skilled”.

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Attitude toward the eWOM information. Participants’ attitude toward the reviews in general was measured by a five-item semantic differential scale extracted from the Reaction Profile of Wells et al.’s (1971). The Reaction Profile was used because it is one of the most widely accepted scales and has been used by many marketing researchers to measure consumers’ attitude toward communication messages (e.g., d’Astous & Seguin, 1999; Wells, 1964; Zinkhan & Fornell, 1985). Participants were asked to indicate their overall attitude toward the website and specifically the eWOM contained on the website using the following semantic pairs: unattractive-attractive, unappealing-appealing, unpleasant-pleasant, dull-dynamic, and not enjoyable-enjoyable.

Attitude toward the website. One of the outcome variables in this study was attitude toward the website and was operationalized using the attitude toward the site scale developed by Chen and Wells (1999). Sample items include “I would like to visit this website again in the future” and “I feel surfing this website is a good way for me to spend my time” All items were measured using a 7-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”).

eWOM effectiveness. The eWOM effectiveness was measured by employing two of the following statements adapted from Jeon and Park (2003) and modified to fit the research setting: (1) “I will refer to this eWOM information in a purchase (visitation) decision” and (2) “This eWOM information will crucially affect my purchase (visitation) decision”. These two items were measured using a 7-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”).
<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Type</th>
<th>Reference(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength (TS)</td>
<td>1. Approximately how frequently do you use this website?</td>
<td>7-point Likert scale</td>
<td>Brown et al. (2007); Norman &amp; Russell (2006)</td>
</tr>
<tr>
<td></td>
<td>2. Overall, how important is this website to you?</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3. Overall, how close do you feel to this website?</td>
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<tr>
<td>Homophily (HP)</td>
<td>In general, the interests expressed by the website</td>
<td>7-point Likert scale</td>
<td>Brown et al. (2007); Sirgy et al. (1997)</td>
</tr>
<tr>
<td></td>
<td>1. …. are not consistent with my own interests.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. …. reflect my own interests.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>3. …. are similar to my own interests.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. …. are different from my own interests.</td>
<td></td>
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<tr>
<td>Source credibility (SC)</td>
<td><strong>Trustfulness</strong></td>
<td>7-point semantic differential</td>
<td>Ohanian (1990)</td>
</tr>
<tr>
<td></td>
<td>1. Undependable – dependable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Dishonest – honest</td>
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<td></td>
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<tr>
<td></td>
<td>3. Insincere – sincere</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>4. Untrustworthy - trustworthy</td>
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<td></td>
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<tr>
<td></td>
<td><strong>Perceived expertise</strong></td>
<td></td>
<td></td>
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<td></td>
<td>5. Not an expert-expert</td>
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<td></td>
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<tr>
<td></td>
<td>6. Inexperienced-experienced</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>7. Unknowledgeable-knowledgeable</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>8. Unqualified-qualified</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>9. Unskilled-skilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward the eWOM information (AI)</td>
<td>1. Unattractive-attractive</td>
<td>7-point semantic differential</td>
<td>d’Astous &amp; Seguin (1999); Wells (1964)</td>
</tr>
<tr>
<td></td>
<td>2. Unappealing-appealing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Unpleasant-pleasant</td>
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<td></td>
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<tr>
<td></td>
<td>4. Dull-dynamic</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>5. Not enjoyable-enjoyable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward websites (AW)</td>
<td>1. I would like to visit this website again in the future.</td>
<td>7-point Likert scale</td>
<td>Batra and Ahtola (1990); Chen and Wells (1999).</td>
</tr>
<tr>
<td></td>
<td>2. I am satisfied with the service provided by this website.</td>
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<td></td>
<td>3. I feel surfing this website is a good way for me to spend my time.</td>
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<tr>
<td></td>
<td>4. Compared with other websites, I would rate this one as one of the best.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eWOM effectiveness (EF)</td>
<td>1. I refer to eWOM information in a purchase decision.</td>
<td>7-point Likert scale</td>
<td>Jeon and Park (2003)</td>
</tr>
<tr>
<td></td>
<td>2. This eWOM information has a great effect on my purchase decision.</td>
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</tr>
</tbody>
</table>

Table 3.1. Constructs and Initial Measurement Items
3.2. Composition of the Survey Questionnaire

To identify eligible respondents among the possible respondents contacted, a screening question was included at the beginning of the survey. The screening question asked respondents if they have previously used online review websites before. Only those respondents who answered in the affirmative were given the main survey questionnaire. The screening question allowed researchers to include only relevant answers from respondents’ actual experiences with the websites to be included.

A self-administered questionnaire was developed for the study that consisted of four sections: (1) online review website participation habits, such as frequency of visits per week or time spent on the site, (2) tie strength, homophily, and source credibility, (3) consumers’ attitudes toward the website itself as well as the information presented and eWOM effectiveness, and (4) demographic information of the participants.

The survey questionnaire began with an introductory statement that asked respondents to remember a time when they attempted to use online review websites. The first section of the questionnaire was designed to identify participants’ habits regarding Internet use, frequency of logging on to consumer review websites, and time spent on the websites. The basic information allowed further investigation into whether the results differ based on the frequency (or degree) of participation with these types of websites. Respondents were then given a list of consumer websites: Tripadvisor, Urbanspoon, Yelp, Lonely Planet, Zagat, Dine, Virtualtourist, and Travelpost. From these eight websites, respondents were asked to select one they used the most and answer questions based on the experience with the chosen website.
The second section of the questionnaire was designed to capture the aspects of social relationships formed on review websites. This section included measurements of three social relationship related variables: tie strength, homophily, and source credibility. In the third section, consumers’ attitudes and eWOM effectiveness were measured. More specifically, this section included to measure consumers’ overall attitudes toward the review website and their perceptions regarding the information contained on the website. The eWOM effectiveness was measured through its influence on consumers’ purchase decisions. In the last section of the questionnaire, demographic characteristics such as gender, age, educational level, income, and ethnicity were measured.

3.3. Data Collection

3.3.1. Pretest

Prior to the main study, quantitative and qualitative pretests were conducted. A qualitative pretest in the form of personal interviews was given to twenty respondents that consisted of faculty members and graduate students from the Department of Consumer Sciences at a Midwestern university in the United States. By choosing respondents that were relatively familiar with the subject matter, the clarity and quality of the questionnaire were able to be assessed, and comments and feedbacks were received for possible modifications for the questionnaire. Respondents were also asked to provide five online consumer review websites they used frequently or were somewhat familiar with. The purpose of these questions was to gather all the possible online consumer
review websites that were known to the respondents and to select the ones that were well known and most used for the main study.

As part of the quantitative pretest, the scales were tested for their reliability through assessing Cronbach’s alpha. An additional fifty participants were selected from graduate and undergraduate students in the Department of Consumer Sciences at a Midwestern university in the United States, who had visited consumer review websites. No incentives were offered to the participants. The first page of the survey questionnaire provided introductory information about the survey (e.g., the purpose of the study, description of procedure, the time expected). The following pages included survey questions and demographic information (see Appendix A).

Because the sample size (n = 50) was not large enough to conduct a factor analysis, Cronbach’s alpha coefficients were alternatively examined for each construct to assess the internal consistency of the measurement model. The measure of variables must be reliable in order to draw inferences from research (Nunnally, 1978). Cronbach’s alpha is the most widely used measure of internal reliability for measurement scales. The rationale is that if the set of items is supposed to measure a single latent construct, the total variability of these items should approximate the variability of the true score for the latent variable (Nunnally, 1978). The alpha reliability coefficient has a maximum value of 1, while it can be negative in presence of negative correlations for some of the items. If a scale is used to measure a construct and has an alpha value greater than 0.7, the scale is considered reliable in measuring the construct (Hair, Anderson, Tatham, & Black, 1998;
Nunnally, 1978). If the reliability is not acceptably high, the scale can be revised by altering or deleting items that score lower than a cut-off point (Hair et al., 1998).

3.3.2. Main Study

A Web-based self-administered questionnaire was employed for the main study. The survey questionnaire was administered through the web-based survey tool, Qualtrics (www.qualtrics.com). Qualtrics was used to develop the online survey questions and to collect responses. As opposed to a paper-based survey, a web-based survey was chosen for several reasons. First of all, online surveys can reach a greater number of participants in less time than other types of surveys. Second, online surveys offer access to a real-world population that may otherwise be difficult to contact. Finally, using a web-based survey is reasonable given that the typical mode of communication within online review websites is electronic in nature (Carlson, Suter, & Brown, 2008).

The main survey questionnaire used a random sample of 7,000 students, staff, and faculty members from a Midwestern university in the United States. In accordance with university policy, the Office of the University Registrar randomly selected 5,000 students from a list of undergraduate, graduate, and professional students attending the university. Additionally, the Office of Human Resources randomly selected 2,000 staff and faculty members. After an email list was obtained, an online survey invitation was sent which contained a link to the questionnaire (see Appendix B and Appendix C). A week later, a follow-up email was sent to each of the participants (see Appendix D). In the follow-up email, individuals who had already completed the survey were thanked,
and those who had not completed the survey were encouraged to do so. A link to an information page was provided in the email. From this page, willing participants were given a link to the actual questionnaire after having read to the provided information concerning study backgrounds and objectives.

As an incentive for participating, the respondents were offered an opportunity to win one of twenty $50 gift certificates from Amazon.com in return for their participation. A total of 920 questionnaires out of the 7,000 sent were obtained over a three-week period from late September to early October in 2012. After eliminating incomplete questionnaires and questionnaires that included significant outliers, a total of 793 questionnaires were remained and were used in this study.

3.4. Data Analyses

The main study adopted a three-stage approach. First, exploratory analysis including Exploratory Factor Analysis (EFA), descriptive statistics, and data preparation was used to profile the respondents in terms of their demographics and characteristics in using consumer review websites. Secondly, as the first part of the two-step approach recommended by Anderson and Gerbing (1988), a confirmatory factor analysis (CFA) with a maximum likelihood was used to estimate the measurement model. CFA determines whether the manifest variables reflected the hypothesized latent variables. Thirdly, as the second part of the two-step approach (Anderson & Gerbing, 1988), the Structural Equation Modeling (SEM) was estimated to examine the causal relationships among the hypothesized constructs. The rationale for this approach was that the precise
representation of the reliability of the indicators can be best achieved in two stages to avoid interaction of the measurement model and the structural model (Hair et al., 1998).

3.4.1. Stage 1 – Exploratory Analysis: Data Preparation

Items that measured the six constructs (i.e., tie strength, homophily, source credibility, attitude toward eWOM information, attitude toward a website, and eWOM effectiveness) were used for the Exploratory Factor Analysis (EFA: Principal Component Analysis). Since the measurement items used in this study had not been previously used in an online review website setting, preliminary psychometric analysis was performed on the scales using SPSS 19.0. The measurement items were checked to see if each of the items was able to be loaded on one factor for their respective constructs in an Exploratory Factor Analysis. EFA helps analyze the structure of the interrelationship among the items by defining sets of variables (factors) that are highly interrelated (Hair et al., 1998). Moreover, EFA provides insights into the structure of the measurement items and the proposed model by establishing the factors and indicators to be used.

Items were deleted when item-to-total correlations were below 0.50 (Doll & Torkzadeh, 1988), and when factor loadings were lower than 0.40. The item-to-total correlation measures the correlation between an item and its domain total score, and it is corrected for overlap by removing that item from the sum of the other items when computing the domain score. Items that do not significantly correlate to their own domain
total (item-to-total correlation corrected for overlap < 0.50) are considered for elimination (Doll & Torkzadeh, 1988).

3.4.2. Stage 2 – Measurement Model

3.4.2.1. Confirmatory Factor Analysis

The data were analyzed following Anderson and Gerbing’s (1988) two-step approach that utilizes both a measurement model and a subsequent structural model. The measurement model provides a link between measurement items (e.g., observed indicator variable) and the underlying constructs into their intended measure (e.g., unobserved latent variable) (Byrne, 2001). The purpose of the measurement model is twofold: 1) to specify the indicators for latent variables and 2) to assess the reliability and validity of latent variables for estimating causal relationships (Hair et al., 1998).

After exploratory examination to validate the measurement model by verifying the underlying structure of the constructs, CFA was performed on the scale that involved the measures retained for analysis. CFA provides a more rigorous and systematic test of factor structures than is possible within the framework of EFA (Bollen, 1989; Jöreskog & Sörbom, 1986). Because SEM requires well-specified measurement and conceptual models due to its theory-driven nature, CFA is primarily employed to test or confirm a pre-specified relationship between manifest variables and their corresponding latent constructs. In addition to assessing the validity of the measurements, internal consistency
measurements were calculated for each scale/construct with loadings obtained from the CFA.

3.4.2.2. Normality Assumptions

Confirmatory factor modeling makes a number of assumptions regarding the data. Multivariate normality is one of the major assumptions of confirmatory factor modeling (Hair et al., 1998; Kline, 1998). Since multivariate normality is difficult to test, it is recommended to initially test univariate normality among variables. In fact, establishing univariate normality among a collection of variates helps gain multivariate normality (Hair et al., 1998). Following this recommendation and remaining consistent with the practice of the previous research (e.g., Hier et al., 1998; Hu & Tsoukalas, 2003), univariate normality was assessed in this study.

As a test of univariate normality assumptions, skewness and kurtosis were examined (Curran, West, & Finch, 1996). Skewness is a measure of the lack of symmetry in a distribution. A normal distribution has zero skewness (Hair et al., 1998). Negative values of skewness indicate data skewed left and positive values of skewness indicate data skewed right. Data is considered to be extremely skewed if the value is larger than three (Kline, 1998). In addition to skewness used to describe the balance of the distribution, kurtosis was used to measure if the data was peaked or flat compared to a normal distribution. Values above or below zero denote departures from normality. A positive value of kurtosis indicates a sharp peak near the mean and long tails relative to the normal distribution, and a negative value of kurtosis means a flat top near the mean.
with short tails (Vogt, 1993). Kurtosis with a value below 10 is considered a normal distribution in terms of its peakedness (Kline, 1998).

3.4.2.3. Validity and Reliability Assessment

In addition to testing the assumption of normality, the reliability and validity of the model were also examined. For the scales, the internal consistency of multiple indicators for each construct was tested with Cronbach’s alpha. The coefficient alpha is a positive function of the average correlation between the items in a scale and the number of items in the scale. A cronbach’s alpha larger than 0.70 indicates internal consistency of the measures (Hair et al., 1998; Nunnally, 1978). The average variance extracted (AVE) in each construct was examined and a value larger than 0.50 indicated that the variance captured by the respective construct was larger than the variance due to measurement error (Fornell & Lacker, 1981).

Convergent validity represents how well items load onto their respective constructs, and can be assessed from the measurement model by examining whether each indicator’s maximum likelihood loadings on the underlying construct are significant (Anderson & Gerbing, 1998; Peter, 1981). In addition, discriminant validity assesses the degree to which the independent measurements diverge from other measurements of different constructs that they should theoretically be dissimilar to (Fornell & Lacker, 1981). For discriminant validity to be established, the correlation between two constructs must be less than the square root of the AVE (Bagozzi, Yi, & Phillips, 1991). Such
results suggest an item shares more common variance with its respective construct than any variance the construct shared with other constructs (Fornell & Lacker, 1981).

3.4.3. Stage 3 – Structural Model: Structural Equation Modeling (SEM)

The hypothesized path of the model was then tested through Structural Equation Modeling (SEM) with maximum likelihood (ML) estimation using AMOS 20.0. Because SEM examines the structure of interrelationships expressed in a series of equations, the technique can be thought of as a unique combination of factor analyses and multiple regression analyses (Hair et al., 1998; Kline, 1998). SEM is known by many names: covariance structure analysis, latent variable analysis, and is sometimes even just referred by the name of the specialized software package used (e.g., a LISREL or AMOS model). Although different methods can be used to test SEM, all structural equation models are distinguished by three characteristics: (1) estimation of multiple and interrelated dependent relationships; (2) representation of unobserved concepts in these relationships and correct for measurement error in the estimation process; and (3) definition of a model to explain the entire set of relationships (Hair et al., 1998).

SEM simultaneously estimates a series of separate, but interdependent, multiple regression equations by specifying the structural model used by the statistical program (Hair et al., 1998). SEM grows out of and serves purposes similar to multiple regression, but in a more powerful way that takes into account the modeling of interactions, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents, and one or more latent dependents with multiple indicators.
(Hair et al., 1998). One obvious reason why SEM has become an increasingly popular data analysis option is that it has a number of benefits. One feature is the ability to specify latent variable models that provide separate estimates of relations among latent constructs, their manifest indicators, and the relationships among constructs (Tomarken & Waller, 2005). It is commonly argued that by these means researchers can assess the psychometric properties of measures and estimate relations among constructs that are correlated for biases attributable to random error and construct-irrelevant variance (Bollen, 1989).

Another commonly acknowledged benefit is the ability of measures of global fit to provide a summary evaluation of complex models that involve a large number of linear equations (Tomarken & Willer, 2005). Most alternative approaches that might be used in place of SEM to test such models would provide only separate mini-tests of model components that are conducted on an equation-by-equation basis (Tomarken & Willer, 2005). Furthermore, researchers can comparatively evaluate the fit of alternative models that differ in complexity via nested chi-square tests and other means. In this regard, SEM supports the model comparison approach to data analysis (Judd, McClelland, & Culhane, 1995).

The structural model examined in this stage consisted of two parts. In the first part, the fit of the structural model was examined. The fit indices used were the same as those that were used to assess the measurement model’s fit. In the second part of this analysis stage, the hypotheses that were discussed in Chapter 2 were tested by examining
the size and the significance of the path estimates between the relevant constructs in the model.

Multiple indexes were used to assess the goodness of fit of the overall model. Measures of fit include the goodness-of-fit index (GFI), the adjusted goodness-of-fit (AGFI), the comparative fit index (CFI), the normed fit index (NFI), the root mean square of approximation (RMSEA), and the Tucker-Lewis coefficient (TLI)—also called the Bentler-Bonett non-normed fit index (NNFI). Values over 0.9 for the indexes GFI, AGFI, TLI, and NFI indicate reasonable fit (Jöreskog & Sörbom, 1986). The CFI is the least affected by sample size (Hu & Bentler, 1999) and values over 0.9 indicate a reasonable fit while values over 0.95 represent a good fit (Holmes-Smith, 2001). The RMSEA represents the discrepancy per degree of freedom, which is measured in terms of the population and not only in the sample used for estimation (Hair et al., 1998). As a general guideline, values between 0.00 and 0.05 indicate a close fit, values between 0.05 and 0.08 indicate reasonable fit, and values greater than 0.08 reflect a poor fit (Browne, 1993; Browne & Cudeck, 1989).

3.4.4. Supplementary Analyses

The last stage of data analysis involved the use of a series of One-way Analysis of Variance (ANOVA) tests to determine whether there were statistically significant differences in individuals’ responses to the tie strength, homophily, source credibility, attitude toward eWOM information, attitude toward the website, and eWOM effectiveness depending on key socio-demographic variables (i.e., gender, age, income,
education, and ethnicity) as well as the website used (i.e., travel-related vs. restaurant-related website). Tukey’s honestly significant difference (HSD) tests were used to compare means among groups where significant differences were found with the ANOVA.
Chapter 4: Results

This chapter describes the analyses used to test the conceptual model and reports the research results. This chapter consists of three sections. In the first section, the results of the pretest are reported. The purpose of the pretest was to select appropriate consumer review websites to use in the main study and to test reliabilities of the measurement items through checking Cronbach’s alpha. The main study was conducted after confirming the reliabilities of the measurement items. The second section examines preliminary analyses prior to hypotheses testing. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to evaluate the measurement model, including reliability and validity of the measures. The third section provides the results of the research hypotheses and the proposed model through Structural Equation Modeling (SEM).

This study was exempted by the Institutional Review Board at The Ohio State University (IRB protocol No. 2012E0337, see Appendix E).
4.1. Pretest

The primary objective of the pretest was to choose consumer review websites that are widely used and well known by possible respondents. The second objective of the pretest study was to clarify the terms and expressions used in the questionnaire. Twenty graduate students and faculty members reviewed the questionnaire for its clarity and coherence and provided five review websites that they use most often. Additionally, a sample of fifty graduate and undergraduate students enrolled in a Midwestern university completed the survey questionnaire, which allowed the reliability of the measures to be tested.

4.1.1. Questionnaire Assessment

With the pretest data, Cronbach’s alpha scores were calculated to assess the reliability of the measures. The results indicated good reliability for the six variables (i.e., tie strength, homophily, source credibility, attitude toward eWOM information, attitude toward the website, and eWOM effectiveness). A Cronbach’s alpha larger than 0.70 indicates internal consistency of the measures (Nunnally, 1978). The tie strength measure, consisting of three items, had an alpha value of 0.78. The homophily, consisting of three items, had an alpha value of 0.83. The source credibility measure, consisting of nine items, had an alpha value of 0.71. The attitude toward eWOM information, consisting of five items, had an alpha value of 0.84. The attitude toward the website, consisting of four items, had an alpha value of 0.93. Finally, the eWOM effectiveness measure, consisting of two items, had an alpha value of 0.93. Based on the suggested cutoff points, all
measures appeared to be good indicators for each construct. Therefore, all measurement items were included for the main study.

4.1.2. Review Website Selection

The respondents were asked to list five websites that they used the most and that they are the most familiar with. The objective of the pretest was to identify consumers’ use of consumer review websites and identify the most frequently used websites to be used in the main study. The pretest identified eight consumer review websites: TripAdvisor, Yelp, Urbanspoon, Zagat, Travelpost, Dine, Lonelyplanet, and Virtualtourist. Specifically, among twenty respondents, TripAdvisor was used by all twenty respondents, followed by Yelp (nineteen respondents), Urbanspoon (nineteen respondents), Lonelyplanet (eight respondents), Zagat (seven respondents), Dine (three respondents), Travelpost (two respondents), and Virtualtourist (two respondents). The examples of the websites that were not included in the main study, but mentioned by respondents in pretest were Kayak, Travel Channel, Gayot, and Fodors.

TripAdvisor, Yelp, and Urbanspoon were found to be the most frequently listed consumer review websites among the respondents. Even though each website represents a different topic and focus and has different features, they were a good representation of UGC platforms for restaurants, hotels, and travel destinations identified in previous research (e.g., Yoo & Gretzel, 2008). Table 4.1 shows the consumer review websites used in this study and a brief description of each website.
<table>
<thead>
<tr>
<th>Website (URL)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tripadvisor</td>
<td>Tripadvisor.com is a travel review website where consumers gather information (reviews) and opinions of travel-related content.</td>
</tr>
<tr>
<td>(<a href="http://www.tripadvisor.com">www.tripadvisor.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Yelp</td>
<td>Yelp.com provides online local search capacities for restaurants for visitors and residents. It provides consumer reviews and ratings along with addresses, phone numbers, hours, parking, and other relevant information for each restaurant that is listed.</td>
</tr>
<tr>
<td>(<a href="http://www.yelp.com">www.yelp.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Urbanspoon</td>
<td>Urbanspoon.com offers restaurant information and a recommendation service similar to that of Yelp. Users can read recommendations and reviews submitted by other users and critics.</td>
</tr>
<tr>
<td>(<a href="http://www.urbanspoon.com">www.urbanspoon.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Zagat</td>
<td>Zagat.com is published by the renowned Zagat Survey (a survey-based restaurant guide). The site offers rating and reviews for restaurants worldwide. It features menus, photos, virtual tours, updates on the latest openings and closings, and provides discussion boards.</td>
</tr>
<tr>
<td>(<a href="http://www.zagat.com">www.zagat.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Travelpost</td>
<td>Travelpost.com is a travel review site focused primarily on hotels and travel discussions.</td>
</tr>
<tr>
<td>(<a href="http://www.travelpost.com">www.travelpost.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Dine</td>
<td>Dine.com is one of the largest restaurant review websites. It is a resource of reviews and information about restaurants. Most reviews come from visitors to the site and not from paid reviewers. Consumers can participate in the website through various ways, such as searching for restaurants, browsing restaurants nearby, posting stories about the restaurants, and so on.</td>
</tr>
<tr>
<td>(<a href="http://www.dine.com">www.dine.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Lonelyplanet</td>
<td>Lonelyplanet.com includes blogs, a Facebook connect, a groups platform, the ability to rate and review tourist destinations and restaurants, and a trip planner tool.</td>
</tr>
<tr>
<td>(<a href="http://www.lonelyplanet.com">www.lonelyplanet.com</a>)</td>
<td></td>
</tr>
<tr>
<td>Virtualtourist</td>
<td>Virtualtourist.com is a worldwide travel community where travelers and locals share travel advice and experiences. It includes Travel tips, reviews, and photos from real people who have been there and done that.</td>
</tr>
<tr>
<td>(<a href="http://www.virtualtourist.com">www.virtualtourist.com</a>)</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1. Consumer Review Websites used in the Study
4.2. Main Study

4.2.1. Descriptive Statistics of the Sample

4.2.1.1. Demographic Profile of the Sample

Of the 7,000 surveys sent, 920 were completed and returned. The response rate was 13.14%. 100 questionnaires with significant incomplete answers and six with problematic outliers were discarded. Also twenty-one responses were rejected because of careless responding (more than twenty subsequent identical questionnaire answers). In the end, 793 questionnaires were determined usable and retained for further analyses.

Researchers should examine the possibility of nonresponse bias when the response rate of a study is less than 60% (Salant & Dillman, 1994). Moreover, a web-based survey is subject to a substantial potential of nonresponse error, despite the nature and the extent of bias appears to be case specific (Hwang & Fesenmaier, 2004). For these reasons, it is necessary to investigate potential nonresponse bias. Nonresponse bias was assessed to determine if those who were responded from those who did not. The nonresponse bias test is based on the idea that late respondents are more similar to non-respondents than early respondents (Armstrong & Overton, 1977). For the analysis, early respondents (first 10% of the sample to respond) were compared with late respondents (last 10% of the sample to respond) on key research variables. The averaged score from multiple items measuring each of the research variables were compared between the two groups (early respondents vs. late respondents). The p-values were less than 0.05,
indicating no statistically significant difference between the early respondents and the late respondents (see Appendix F). There was no evidence of nonresponse bias in that no significant differences in any of the variables were found.

Table 4.2 summarizes demographic information of the respondents. More than half of respondents (58.7%) were female and the majority of the respondents were between the ages of 19 and 34 (73.3%). A total of 44.1% of the respondents were college students, whereas 46.6% of the respondents were college graduate students or have attained a graduate degree. Regarding annual income, approximately 50% of the respondents earned $40,000 or less a year. Most respondents were Caucasian (70.9%), followed by Asian/Pacific Islander (16.1%), and African American (4.2%). Overall, the participants of the study were relatively younger and well educated compared to the general U.S. population. While the sampling frame was considered a convenience sample, their combined diversity was somewhat representative of the general online users in the U.S. identified in previous studies (e.g., Zichuhr & Smith, 2013).
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Categories</th>
<th>Frequency (n=793)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>321</td>
<td>40.5</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>456</td>
<td>58.7</td>
</tr>
<tr>
<td>Age</td>
<td>18</td>
<td>81</td>
<td>10.2</td>
</tr>
<tr>
<td></td>
<td>19-24</td>
<td>376</td>
<td>47.4</td>
</tr>
<tr>
<td></td>
<td>25-34</td>
<td>205</td>
<td>25.9</td>
</tr>
<tr>
<td></td>
<td>35-44</td>
<td>57</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>45-54</td>
<td>31</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>55-64</td>
<td>19</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>65 and over</td>
<td>8</td>
<td>1.0</td>
</tr>
<tr>
<td>Education</td>
<td>Some high school</td>
<td>4</td>
<td>.5</td>
</tr>
<tr>
<td></td>
<td>High school graduate</td>
<td>56</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>Technical school</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td></td>
<td>Some college</td>
<td>350</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td>College graduate</td>
<td>125</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>Graduate school</td>
<td>242</td>
<td>30.5</td>
</tr>
<tr>
<td>Income</td>
<td>Less than $25,000</td>
<td>312</td>
<td>39.3</td>
</tr>
<tr>
<td></td>
<td>$25,000 - $39,999</td>
<td>91</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>$40,000 - $59,999</td>
<td>71</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>$60,000 - $79,999</td>
<td>74</td>
<td>9.3</td>
</tr>
<tr>
<td></td>
<td>$80,000 - $99,999</td>
<td>58</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>$100,000 - $119,999</td>
<td>71</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>More than $120,000</td>
<td>83</td>
<td>10.5</td>
</tr>
<tr>
<td>Ethnic background</td>
<td>African American</td>
<td>33</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Caucasian</td>
<td>562</td>
<td>70.9</td>
</tr>
<tr>
<td></td>
<td>Hispanic/Latin American</td>
<td>25</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Native American</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>128</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>29</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Table 4.2. Sample Profile: Demographic Characteristics

4.2.1.2. Use of Online Review Website in General

Prior to testing the hypotheses, descriptive statistics were run to examine the general use of online review websites among the participants. Table 4.3 illustrates the
percentage and frequency of the use of the top eight websites by the respondents. Overall, the descriptive results provided an overview of the usage patterns of online review websites among participants of this study. Top online review websites used by participants were found to be Yelp (59%), followed by Urbanspoon (57%) and TripAdvisor (43%). In particular, Yelp was found to be the most popular online review website that contains service-related content with about 59% of the participants having used the website. The results indicated that respondents used restaurant-related review websites (e.g., Yelp and Urbanspoon) more often than the review websites that provided travel information (e.g., TripAdvisor and Travelpost). Regarding the frequency of website usage, the data indicated that most participants (96%) used the review websites more than once a month.

<table>
<thead>
<tr>
<th>Top online review websites</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tripadvisor</td>
<td>332</td>
<td>43%</td>
</tr>
<tr>
<td>Urbanspoon</td>
<td>434</td>
<td>57%</td>
</tr>
<tr>
<td>Virtualtourst</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>Yelp</td>
<td>454</td>
<td>59%</td>
</tr>
<tr>
<td>Dine</td>
<td>26</td>
<td>3%</td>
</tr>
<tr>
<td>Zagat</td>
<td>161</td>
<td>21%</td>
</tr>
<tr>
<td>Travelpost</td>
<td>27</td>
<td>4%</td>
</tr>
<tr>
<td>Lonelyplanet</td>
<td>89</td>
<td>12%</td>
</tr>
<tr>
<td>Others</td>
<td>175</td>
<td>23%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency to use the website</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than once a month</td>
<td>27</td>
<td>4%</td>
</tr>
<tr>
<td>Once a month</td>
<td>101</td>
<td>13%</td>
</tr>
<tr>
<td>2-5 times a month</td>
<td>223</td>
<td>30%</td>
</tr>
<tr>
<td>6-10 times a month</td>
<td>158</td>
<td>21%</td>
</tr>
<tr>
<td>11-15 times a month</td>
<td>84</td>
<td>11%</td>
</tr>
<tr>
<td>More than 16 times a month</td>
<td>159</td>
<td>21%</td>
</tr>
</tbody>
</table>

Table 4.3. General use of Online Review Websites
4.2.2. Preliminary Analysis of Measurement Items

Table 4.4 presents the means and standard deviations of each item in relation to the constructs of interests in this study: tie strength, homophily, source credibility, attitude toward eWOM information, attitude toward a website, and eWOM effectiveness. Two negatively worded items in the Homophily measure (HP1 and HP4) were reverse coded prior to analysis. The mean value of each item under tie strength was relatively low ranging from 2.94 to 3.78 on the 7-point scale. Respondents ranked the frequency to use the website more highly (3.78) than importance (3.56) and closeness (2.94) of the website. With regard to homophily, respondents answered “the interests of the website are consistent of my own interests” most highly. Related to two dimensions of source credibility, respondents rated trustfulness dimension more highly than perceived expertise dimension. The most highly expressed attitude toward the website was “I would like to visit this website in the future” (5.60). Attractive/unattractive was the most frequently expressed attitude toward eWOM information (5.16). Regarding eWOM effectiveness, two items were found to be similar with a mean value of 3.88 and 3.60, respectively.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ± SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tie strength</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximately how frequently do you use this website?</td>
<td>3.78 ± 1.77</td>
<td>.183</td>
<td>-9.30</td>
</tr>
<tr>
<td>Overall, how important is this website to you?</td>
<td>3.56 ± 1.85</td>
<td>.102</td>
<td>-1.137</td>
</tr>
<tr>
<td>Overall, how close do you feel to this website?</td>
<td>2.94 ± 1.77</td>
<td>.498</td>
<td>- .887</td>
</tr>
<tr>
<td><strong>Homophily</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, the interests of the website</td>
<td>5.25 ± 1.36</td>
<td>-1.253</td>
<td>1.062</td>
</tr>
<tr>
<td>..... are not consistent with my own interests.*</td>
<td>4.88 ± 1.12</td>
<td>-.559</td>
<td>.744</td>
</tr>
<tr>
<td>..... reflects my own interests.</td>
<td>5.35 ± 1.29</td>
<td>-1.382</td>
<td>.886</td>
</tr>
<tr>
<td>..... are similar to my own interests.</td>
<td>5.35 ± 1.29</td>
<td>-1.382</td>
<td>.886</td>
</tr>
<tr>
<td>..... are very different from my own interests.*</td>
<td>5.35 ± 1.29</td>
<td>-1.382</td>
<td>.886</td>
</tr>
<tr>
<td><strong>Source credibility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undependable – dependable</td>
<td>5.48 ± 1.17</td>
<td>- .816</td>
<td>.911</td>
</tr>
<tr>
<td>Dishonest – honest</td>
<td>5.26 ± 1.15</td>
<td>-.551</td>
<td>.581</td>
</tr>
<tr>
<td>Insincere – sincere</td>
<td>5.32 ± 1.11</td>
<td>-.722</td>
<td>.856</td>
</tr>
<tr>
<td>Untrustworthy - trustworthy</td>
<td>5.38 ± 1.16</td>
<td>-.721</td>
<td>.960</td>
</tr>
<tr>
<td>Not an expert-expert</td>
<td>4.03 ± 1.52</td>
<td>-.179</td>
<td>-.561</td>
</tr>
<tr>
<td>Inexperienced-experienced</td>
<td>4.83 ± 1.27</td>
<td>-.459</td>
<td>.255</td>
</tr>
<tr>
<td>Unknowledgeable-knowledgeable</td>
<td>4.98 ± 1.18</td>
<td>-.486</td>
<td>.450</td>
</tr>
<tr>
<td>Unqualified-qualified</td>
<td>4.58 ± 1.29</td>
<td>-.286</td>
<td>.204</td>
</tr>
<tr>
<td>Unskilled-skilled</td>
<td>4.49 ± 1.22</td>
<td>-.196</td>
<td>.437</td>
</tr>
<tr>
<td><strong>Attitude toward the eWOM information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unattractive-attractive</td>
<td>5.16 ± 1.12</td>
<td>-.636</td>
<td>.976</td>
</tr>
<tr>
<td>Unappealing-appealing</td>
<td>5.15 ± 1.15</td>
<td>-.671</td>
<td>1.031</td>
</tr>
<tr>
<td>Unpleasant-pleasant</td>
<td>5.06 ± 1.12</td>
<td>-.444</td>
<td>.668</td>
</tr>
<tr>
<td>Dull-dynamic</td>
<td>4.87 ± 1.22</td>
<td>-.254</td>
<td>.163</td>
</tr>
<tr>
<td>Not enjoyable-enjoyable</td>
<td>4.99 ± 1.14</td>
<td>-.373</td>
<td>.558</td>
</tr>
<tr>
<td><strong>Attitude toward websites</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would like to visit this website again in the future.</td>
<td>5.60 ± 1.45</td>
<td>-1.083</td>
<td>.905</td>
</tr>
<tr>
<td>I am satisfied with the service provided by this website.</td>
<td>5.53 ± 1.30</td>
<td>-.967</td>
<td>.932</td>
</tr>
<tr>
<td>I feel surfing this website is a good way for me to spend my time.</td>
<td>4.02 ± 1.79</td>
<td>-.100</td>
<td>-.930</td>
</tr>
<tr>
<td>Compared with other websites, I would rate this one as one of the best.</td>
<td>5.12 ± 1.16</td>
<td>-.465</td>
<td>.787</td>
</tr>
<tr>
<td><strong>eWOM effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I refer to eWOM information in a purchase decision.</td>
<td>3.88 ± 0.93</td>
<td>-1.134</td>
<td>1.663</td>
</tr>
<tr>
<td>This eWOM information has a great affect on my purchase decision.</td>
<td>3.60 ± 0.96</td>
<td>-.759</td>
<td>.543</td>
</tr>
</tbody>
</table>

* Reverse coding items

Table 4.4. Descriptive Statistics of Variables
4.2.3. Exploratory Factor Analysis

Prior to CFA, EFA with principle components extraction and varimax rotation was then undertaken to refine the scales by deleting items that (1) did not meaningfully load on the underlying constructs and (2) did not strongly correlate with other items measuring the same construct. In order to determine if the data was suitable for EFA, Kaiser-Myer-Olkin (KMO) and Bartlett’s Test of Sphericity were first performed. The KMO measure of sampling adequacy was 0.92, above the recommended value of 0.60. Bartlett’s Test of Sphericity was significant ($\chi^2 = 14,045.533$, $df = 210$, $p < 0.01$).

Principal Component extraction with Varimax rotation was applied to the scale. Varimax rotation is the most commonly used rotation method to maximize high correlations and minimize low, thereby making the clustering of variables more obvious and enhancing factor interpretation (Field, 2005). A minimum eigenvalue of 1.0 was used as a criterion to extract the number of factors. In exploratory analyses, factor loadings are generally considered to be meaningful when factor loadings exceed 0.40 (Hair et al., 1998). Therefore, only items loading greater than 0.40 on a single construct and with a minimum difference of 0.20 on the other constructs were included. After significantly low-loadings ($< 0.40$), high cross-loadings ($> 0.40$) or low communalities ($< 0.30$) were eliminated until a clean and rigid factor structure emerged.

It is suggested that a simple structure is desired for the scales and that only those items that clearly load on a single, appropriate factor in that parsimony should be retained. If an item (or items) fail to have a substantially high loading on any factor, it
can be deleted from the analysis and the factor analysis is computed on the remaining subset (Floyd & Widaman, 1995). Therefore, until a clear factor structure emerges, inappropriately loading items can be deleted and the analysis repeated (Hinkin, 1998). At this stage, four items (SC1, SC3, SC5, and SC9) in Source Credibility were deleted: SC1, SC3, and SC9 because of their cross-loadings and SC5 because of its low factor loading. Moreover, one item from Homophily (HP3) and one item from Attitude toward the Website (AW3) with loadings less than 0.40 were excluded. Table 4.5 shows the results of the exploratory factor analysis.

In conclusion, the factor analysis revealed a six-factor solution, as shown in Table 4.5. The six extracted factors explained approximately 81% of the total variance. All factors have relatively high factor loadings (> 0.60). These findings established the construct validity of the initially proposed framework and that interpretation of the six factors did not differ from the initial framework. Final measurement items retained for subsequent confirmatory factor analysis are presented in Table 4.6.
<table>
<thead>
<tr>
<th>Constructs</th>
<th>1</th>
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<th>3</th>
<th>4</th>
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<td></td>
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</tr>
<tr>
<td>information</td>
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<td></td>
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<td></td>
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<tr>
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<td>.829</td>
</tr>
<tr>
<td>EF2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.825</td>
</tr>
<tr>
<td>Cum pct</td>
<td>19.335</td>
<td>37.512</td>
<td>50.958</td>
<td>64.177</td>
<td>72.947</td>
<td>81.604</td>
</tr>
</tbody>
</table>

Note: Principal Component Analysis was used; Varimax rotation with Kaiser Normalization was used

Table 4.5. Exploratory Factor Analysis
<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Measurement Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td></td>
</tr>
<tr>
<td>TS1</td>
<td>1. Approximately how frequently do you use this website?</td>
</tr>
<tr>
<td>TS2</td>
<td>2. Overall, how important is this website to you?</td>
</tr>
<tr>
<td>TS3</td>
<td>3. Overall, how close do you feel to this website?</td>
</tr>
<tr>
<td>Homophily</td>
<td></td>
</tr>
<tr>
<td>HP1</td>
<td>In general, the interests of the website are not consistent with my own interests.</td>
</tr>
<tr>
<td>HP2</td>
<td>In general, the interests of the website are similar to my own interests.</td>
</tr>
<tr>
<td>HP4</td>
<td>In general, the interests of the website are very different from my own interests.</td>
</tr>
<tr>
<td>Source Credibility</td>
<td></td>
</tr>
<tr>
<td>SC2</td>
<td>Dishonest – honest</td>
</tr>
<tr>
<td>SC4</td>
<td>Untrustworthy – trustworthy</td>
</tr>
<tr>
<td>SC6</td>
<td>Inexperienced-experienced</td>
</tr>
<tr>
<td>SC7</td>
<td>Unknowledgeable-knowledgeable</td>
</tr>
<tr>
<td>SC8</td>
<td>Unqualified-qualified</td>
</tr>
<tr>
<td>Attitude toward</td>
<td></td>
</tr>
<tr>
<td>eWOM information</td>
<td></td>
</tr>
<tr>
<td>AI1</td>
<td>Unattractive-attractive</td>
</tr>
<tr>
<td>AI2</td>
<td>Unappealing-appealing</td>
</tr>
<tr>
<td>AI3</td>
<td>Unpleasant-pleasant</td>
</tr>
<tr>
<td>AI4</td>
<td>Dull-dynamic</td>
</tr>
<tr>
<td>AI5</td>
<td>Not enjoyable-enjoyable</td>
</tr>
<tr>
<td>Attitude toward</td>
<td></td>
</tr>
<tr>
<td>website</td>
<td></td>
</tr>
<tr>
<td>AW1</td>
<td>I would like to visit this website again in the future.</td>
</tr>
<tr>
<td>AW2</td>
<td>I am satisfied with the service provided by this website.</td>
</tr>
<tr>
<td>AW4</td>
<td>Compared with other websites, I would rate this one as one of the best.</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td></td>
</tr>
<tr>
<td>EF1</td>
<td>I refer to eWOM information in a purchase decision.</td>
</tr>
<tr>
<td>EF2</td>
<td>This eWOM information has a great affect on my purchase decision.</td>
</tr>
</tbody>
</table>

Table 4.6. Final Measurement Items
4.2.4. Measurement Model

4.2.4.1. Confirmatory Factor Analysis

Structural Equation Modeling (SEM) comprises two interrelated components: a measurement model and a structural model. In the first step of the tests for measurement invariance, Confirmatory Factor Analysis (CFA) using Maximum Likelihood estimation and missing values were imputed using the Expectation-Maximization (EM) algorithm imputation method to evaluate the measurement model and its structure. The EM algorithm is a procedure to obtain the maximum likelihood estimates of a model through two steps. The Expectation step finds the distribution for the missing data based on the known values for the observed variables and the current estimate of the parameters. The Maximization step replaces the missing data with the expected value. This imputation method is considered more popular and more sophisticated than other methods of handling missing data (Little & Rubin, 2002).

The chi-square statistic was significant ($\chi^2 = 618.525$, $df = 215$, $p < .01$), suggesting that the fit of the data to the hypothesized model was not entirely adequate. However, it has been widely suggested that the chi-square statistic tends to be heavily influenced by sample size (Byrne, 2001). Other indexes showed the model fit the data reasonably well [Comparative Fit Index (CFI) = 0.934, Normed Fit Index (NFI) = 0.921, Tucker Lewis Index (TLI) = 0.915, Incremental Fit Index (IFI) = 0.934, Root Mean Square Error Approximation (RMSEA) = 0.069].
Values larger than 0.9 for TLI, NFI, and IFI indicate a reasonable fit (Jöreskog & Sörbom, 1986). The CFI is the least affected by sample size (Hu & Bentler, 1999) and values larger than 0.9 indicate a reasonable fit while values larger than 0.95 represent a good fit (Holmes-Smith, 2001). The RMSEA represents the discrepancy per degree of freedom, measured in terms of the population, not only in terms of the sample used for estimation (Hair et al., 1998). As a general guideline, values between 0.00 and 0.05 indicate a close fit, values between 0.05 and 0.08 indicate reasonable fit, and values greater than 0.08 reflect a poor fit (Browne, 1993; Browne & Cudeck, 1989). Therefore, the measurement model was deemed satisfactory.

4.2.4.2. Normality Assumptions and Internal Consistency

*Normality*. The univariate normality test showed that the skewness and kurtosis values of each variable met the conventional criteria of normality suggested by Mardia (1970). More specifically, for all variables under the six main constructs, the value of skewness was lower than 3 and the value of kurtosis was lower than 10, ensuring the normality assumption of Confirmatory Factor Analysis (see Table 4.4). Moreover, all data variables were examined for outliers. While univariate outliers are characterized as cases with abnormally large standardized scores for continuous variables, multivariate outliers are characterized as cases with an unusual combination of scores on two or more variables, which may distort the statistics (Tabachnick & Fidell, 2001). Multivariate outliers can be detected through Mahalanobis Distance. This statistic measures the distance from the centroid (multidimensional equivalence of a mean) for a set of scores.
for each of the independent variables included in the analysis (Hair et al., 1998). Cases with a Mahalanobis distance value greater than 13.82 can be considered outliers (Tabachnick & Fidell, 2001). Overall, six multivariate outliers were detected from the Mahalanobis distance test and were discarded from further analyses.

**Internal Consistency.** Internal consistency refers to the degree of correlation between the items that form a scale (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). Tests of internal consistency were conducted to assess the reliability of the response items within each measure. As illustrated in Table 4.7, the level for internal consistency in each construct was acceptable. Cronbach’s alpha estimates ranged from 0.84 to 0.96, well above the recommended minimum threshold of 0.70 (Nunnally, 1978).

Other estimates of internal consistency were also computed. First, variance extracted estimates (Average Variance Extracted: AVE) were calculated, which assesses the amount of variance captured by a construct’s measure in relation to variance due to random measurement error. It has been suggested that a level of 0.05 or greater supports consistency among items in a scale (Fornell & Larcker, 1981). The AVEs ranged from a high of 0.81 for the homophily to a low of 0.68 for the source credibility construct. Thus, the AVEs exceeded the recommended level of 0.50 (Fornell & Larcker, 1981) and supported consistency among items within the scale (Anderson & Gerbing, 1988). In addition, an examination of the item-to-total correlations revealed a range from 0.70 to 0.91 (see Table 4.7). When considered together, the extracted variance, the item loadings, and the item-to-total correlations provide support for the internal consistency of the measurement model.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Standardized Factor Loadings</th>
<th>Item-total Correlations</th>
<th>Item Reliabilities</th>
<th>Composite Reliabilities</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie Strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>.81</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2</td>
<td>.92</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>T3</td>
<td>.87</td>
<td>.81</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Homophily</td>
<td></td>
<td>.97</td>
<td>.91</td>
<td>.81</td>
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</tr>
<tr>
<td>H1</td>
<td>.87</td>
<td>.78</td>
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<td></td>
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</tr>
<tr>
<td>H2</td>
<td>.82</td>
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<tr>
<td>H4</td>
<td>.99</td>
<td>.82</td>
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<td>Source Credibility</td>
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</tr>
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<td>S2</td>
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<td>.88</td>
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<td>.83</td>
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<td>E2</td>
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<td>.75</td>
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Table 4.7. Reliabilities and Confirmatory Factor Analysis Properties
4.2.4.3. Convergent Validity and Discriminant Validity

Convergent Validity. Convergent validity represents how well items load on their respective constructs, and is evaluated by examining the statistical significance as expressed by a t-value associated with each loading (Anderson & Gerbing, 1988; Campbell & Fiske, 1959). Table 4.8 shows that all factor loadings exceed 0.70 (Nunnally & Bernstein, 1994) and all were significant with t-values at an alpha level of 0.001. Moreover, convergent validity was achieved when AVE was greater than 0.50—in other words, when the variance explained by the latent variable was greater than the measurement error (Fornell & Larcker, 1981). As shown in Table 4.8, the AVE of each latent variable was greater than 0.50. Thus, the results indicated the convergent validity of the measures.

Discriminant Validity. Discriminant validity is inferred when the measure of each construct converges on its particular facet and is distinguished from the facets of other constructs (Churchill, 1979). By comparing the AVE with the squared correlation between a pair of constructs, discriminant validity was assessed. Discriminant validity is strongly inferred when AVE for each construct is greater than the squared correlations between a pair of constructs (Bagozzi, Yi, & Phillips, 1991; Fornell & Larcker, 1981). As Table 4.8 shows, the AVEs (the numbers in bold on the diagonal line) are greater than the squared correlation coefficient between factors (the numbers below the diagonal line). In other words, the AVEs, ranging from 0.68 to 0.80, exceeded all squared correlations of
each pair of constructs, ranging from 0.13 to 0.53. These results suggest that the six-factors were distinct and unidimensional. Therefore, discriminant validity was obtained.

When considered together, the findings supported the reliability and validity of the measurement model. Because the baseline model fit the data well, the next step was to estimate and test the structural equation model.

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<th></th>
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<th>HP</th>
<th>SC</th>
<th>AW</th>
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<td>.13</td>
<td>.68</td>
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<td></td>
</tr>
<tr>
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<td>.29</td>
<td>.77</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.26</td>
<td>.39</td>
<td>.53</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>.34</td>
<td>.23</td>
<td>.14</td>
<td>.51</td>
<td>.29</td>
<td>.75</td>
</tr>
</tbody>
</table>

Note: the numbers in bold on the diagonal line are the average variance extracted (AVE) by each construct; the numbers below these values are the squared correlation coefficients between the constructs.

Table 4.8. Discriminant Validity and Convergent Validity – AVE

4.2.5. Structural Model

Structural Equation Modeling (SEM) was performed to test the validity of the proposed model and the hypotheses. The model included six latent variables with twenty-one observed variables. Tie strength and homophily were exogenous latent variables. Source credibility, consumer attitude toward eWOM information, attitude toward the website, and eWOM effectiveness were four endogenous latent variables.
Before considering the structural links using SEM, the fit of the model was examined. The chi-square statistic indicated that the overall model did not fit the data well ($\chi^2 = 534.274$, $df = 178$, $p < 0.01$). Given the sensitivity of the chi-square statistic to the sample size (Bentler & Bonett, 1980; Hair et al., 1998), additional fit indices were also examined. Values greater than 0.9 on the four indexes NFI, TLI, CFI, and IFI indicated reasonable fit (Jöreskog & Sörbom, 1986). The RMSEA represents the discrepancy per degree of freedom, which is measured in terms of the population and not only based on the sample used for estimation (Hair et al., 1998). As a general guideline, values between 0.00 and 0.05 indicate a close fit, values between 0.05 and 0.08 indicate reasonable fit, and greater than 0.08 reflects a poor fit (Browne, 1993; Browne & Cudeck, 1989). All the fit indices indicated a good fit of the proposed structural equation model to the data (NFI = 0.923, TLI = 0.915, CFI = 0.935, IFI = 0.935, RMSEA = 0.063). Therefore, the results provided a good basis for testing the hypothesized paths.

4.2.6. Test of Hypotheses

The results of the standardized parameter estimates and $t$-values are presented in Table 4.9. Figure 4.1 presents the estimated model, illustrating the direction of and magnitude of the impact of the standardized path coefficients.
Among consumers who use eWOM to find a service provider on consumer review websites, higher level tie strength between the consumer and the website will lead to a positive attitude a) toward eWOM information on the website and b) toward the website.

Hypothesis 1a postulated that tie strength between a website and a consumer is positively related to attitude toward eWOM information on the website (path coefficient = 0.17, t = 5.29, p < 0.001). Likewise, Hypothesis 1b, which hypothesized a positive relationship between tie strength and attitude toward a website, was supported (path coefficient = 0.40, t = 13.24, p < 0.001). The results of the first two hypotheses demonstrated the importance of tie strength in shaping positive attitude toward both the website itself and the information on the website. In other words, when consumers feel the website is close to them, they are likely to have a favorable attitude toward the website as well as the reviews on the website.

Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of homophily between the consumer and the website will lead to a positive attitude a) toward eWOM information on the website and b) toward the website.

Hypothesis 2a, which hypothesized a positive relationship between homophily and consumer attitude toward eWOM information, was supported (path coefficient = 0.28, t = 8.96, p < 0.001). Similarly, Hypothesis 2b, which predicted a positive relationship
between homophily and consumer attitude toward a website, was supported (path coefficient = 0.23, t = 8.02, p < 0.001). The results showed a significant positive effect of homophily on consumer attitude toward the reviews on a website and the website itself. When consumers feel the interests of the website are close to their own, they are likely to have a positive attitude toward the website as well as the reviews on the website.

**H3a-b. Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of source credibility will lead to a positive attitude a) toward eWOM information on the website and b) toward the website.**

As expected in Hypothesis 3a, source credibility had a significant impact on attitude toward the information on the website (path coefficient = 0.48, t = 13.62, p < 0.001). Thus, Hypothesis 3b was supported. As predicted in Hypotheses 3b, source credibility (path coefficient = 0.08, t = 2.46, p < 0.05) significantly influenced attitude toward a website. This significant causality implied that consumers who perceive higher credibility with regard to the review website report more favorable attitude toward the website.

**H4. Among consumers who use eWOM to find a service provider, higher levels of tie strength between a website and a consumer will lead to a higher level of source credibility.**
Hypothesis 4, which predicted a positive relationship between tie strength and source credibility, was supported (path coefficient = 0.25, t = 6.67, p < 0.001). This result implies that tie strength is a strong predictor in determining credibility of sources.

**H5. Among consumers who use eWOM to find a service provider, higher levels of homophily between a website and a consumer will lead to a higher level of source credibility.**

Regarding the association between homophily and source credibility, the results showed a significant positive relationship between homophily and attitude toward eWOM information (path coefficient = 0.26, t = 7.25, p < 0.001), supporting Hypothesis 5.

**H6. Consumers’ attitude toward the eWOM information on a website is positively related to their attitude toward the website.**

Hypothesis 6 states that attitude toward the eWOM information is positively related to the influence of attitude toward a website. The results showed a significant positive effect of consumers’ attitude toward the eWOM information (reviews) on their attitude toward the website where the reviews are posted (path coefficient = 0.43, t = 11.41, p < 0.001). Therefore, hypothesis 6 was supported.
H7. Consumers’ attitude toward the eWOM information is positively related to the influence of the eWOM on their purchase decision.

Contrary to the predicted relationship, the result of the structural equation model indicated that there is no evidence of the expected positive relationship between attitude toward eWOM information and eWOM effectiveness; hence, Hypothesis 7 was not supported.

H8. Consumers’ attitude toward the website is positively related to the influence of the eWOM information on their purchase decision.

Hypothesis 8 predicted a direct and positive relationship between attitude toward the review website and eWOM effectiveness. The standardized path coefficient was significant (path coefficient = 0.70, t = 13.24, p < 0.001); thus providing support for Hypothesis 8.
<table>
<thead>
<tr>
<th>Hypothesized path</th>
<th>Standardized path coefficients</th>
<th>t-value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a: Tie strength → Attitude toward information</td>
<td>.17***</td>
<td>5.29</td>
<td>Supported</td>
</tr>
<tr>
<td>H1b: Tie strength → Attitude toward the website</td>
<td>.40***</td>
<td>13.24</td>
<td>Supported</td>
</tr>
<tr>
<td>H2a: Homophily → Attitude toward information</td>
<td>.28***</td>
<td>8.96</td>
<td>Supported</td>
</tr>
<tr>
<td>H2b: Homophily → Attitude toward the website</td>
<td>.23***</td>
<td>8.02</td>
<td>Supported</td>
</tr>
<tr>
<td>H3a: Source credibility → Attitude toward information</td>
<td>.48***</td>
<td>13.62</td>
<td>Supported</td>
</tr>
<tr>
<td>H3b: Source credibility → Attitude toward the website</td>
<td>.08*</td>
<td>2.46</td>
<td>Supported</td>
</tr>
<tr>
<td>H4: Tie strength → Source credibility</td>
<td>.25***</td>
<td>6.67</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: Homophily → Source credibility</td>
<td>.26***</td>
<td>7.25</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Attitude toward information → Attitude toward the website</td>
<td>.43***</td>
<td>11.41</td>
<td>Supported</td>
</tr>
<tr>
<td>H7: Attitude toward information → eWOM effectiveness</td>
<td>n/a</td>
<td>n/a</td>
<td>Not supported</td>
</tr>
<tr>
<td>H8: Attitude toward the website → eWOM effectiveness</td>
<td>.70***</td>
<td>13.24</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Goodness-of-fit statistics

\[ \chi^2 [\text{df} = 178] = 534.274, p = .000 \]
NFI = .923
TLI = .915
CFI = .935
IFI = .935
RMSEA = .063

Note: ***p < 0.001, **p < 0.01, *p < 0.05; n/a = Not Applicable; NFI = Normed Fit Index; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index; RMSEA = Root Mean Square Error of Approximation

Table 4.9. Structural Parameter Estimates
Figure 4.1. Structural Equation Model with Parameter Estimates
4.2.7. Supplementary Analyses

The final stage of data analysis involved the use of a series of One-way Analysis of Variance (ANOVA) tests to determine whether an individual’s responses to the tie strength, homophily, source credibility, attitude toward eWOM information, attitude toward the website, and eWOM effectiveness differed depending on key socio-demographic variables (i.e., gender, age, income, education, and ethnicity) as well as the website used (i.e., travel-related vs. restaurant-related website) by checking its significance with an $F$ statistic. Results are shown in Table 4.10 to Table 4.14. The tables show the means for each segment respectively. In cases where the ANOVA tests showed a significant group effect, Tukey’s HSD multiple comparisons test was run to determine which groups were significantly different and to see where those differences existed. Among the common post hoc procedures, Tukey’s method was selected for its broad applicability. Analyses revealed that there are statistically significant perception differences across different segments for some of the study variables.

*Gender.* One-way ANOVA was conducted to examine whether there was a difference in responses according to gender. The relationship between the gender of the respondents and their responses tie strength, homophily, source credibility, attitude toward information, attitude toward the website, and eWOM effectiveness is shown in Table 4.10. No significant mean differences were detected between males and females.
<table>
<thead>
<tr>
<th>Measures</th>
<th>Male (M ± S.D.)a</th>
<th>Female (M ± S.D.)a</th>
<th>f-valueb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>3.34 ± 1.65</td>
<td>3.48 ± 1.62</td>
<td>1.49</td>
</tr>
<tr>
<td>Homophily</td>
<td>4.45 ± 0.64</td>
<td>4.51 ± 0.66</td>
<td>2.06</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>4.56 ± 1.03</td>
<td>4.57 ± 1.14</td>
<td>0.02</td>
</tr>
<tr>
<td>Attitude toward info</td>
<td>4.95 ± 0.96</td>
<td>5.07 ± 1.03</td>
<td>2.94</td>
</tr>
<tr>
<td>Attitude toward site</td>
<td>5.33 ± 1.21</td>
<td>5.43 ± 1.18</td>
<td>1.47</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.72 ± 0.87</td>
<td>3.74 ± 0.88</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Note: *M ± S.D = Mean ± Standard Deviation; b***p < 0.001, **p < 0.01, * p < 0.05

Table 4.10. ANOVA Results for the Comparison of Male and Female Groups

*Ethnic Background.* The relationship between the ethnicity of the participants and the perceptions about eWOM communications is shown in Table 4.11. Since a majority of respondents (71%) were Caucasians, ethnic backgrounds other than Caucasians were combined in the same category and renamed to “Other.” Overall, higher scores on all the six variables were exhibited by Caucasian respondents, while the lower scores were exhibited by other respondents. Significant differences were found with four of the six variables, tie strength ($f = 51.15$, $p < 0.001$), source credibility ($f = 14.53$, $p < 0.001$), attitude toward information ($f = 9.90$, $p < 0.01$), and attitude toward the website ($f = 4.24$, $p < 0.05$). The results indicate that Caucasians are more likely than others to develop strong ties with the websites and to perceive more credibility regarding the reviews. Moreover, Caucasian respondents have more positive or stronger attitudes toward the reviews. The most prominent difference was found in tie strength, showing white respondents rated tie strength much higher (4.09) than other respondents (3.18).
<table>
<thead>
<tr>
<th>Measures</th>
<th>Caucasian (M ± S.D.) (a)</th>
<th>Others (M ± S.D.) (a)</th>
<th>f-value (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>4.09 ± 1.68</td>
<td>3.18 ± 1.54</td>
<td>51.15***</td>
</tr>
<tr>
<td>Homophily</td>
<td>4.45 ± 0.64</td>
<td>4.51 ± 0.66</td>
<td>0.02</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>4.56 ± 1.03</td>
<td>4.57 ± 1.14</td>
<td>14.53***</td>
</tr>
<tr>
<td>Attitude toward information</td>
<td>4.95 ± 0.96</td>
<td>5.07 ± 1.03</td>
<td>9.90**</td>
</tr>
<tr>
<td>Attitude toward a website</td>
<td>5.33 ± 1.21</td>
<td>5.43 ± 1.18</td>
<td>4.24*</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.72 ± 0.87</td>
<td>3.74 ± 0.88</td>
<td>3.87</td>
</tr>
</tbody>
</table>

Note: \(^a\)M ± S.D = Mean ± Standard Deviation; \(^b\)***p < 0.001, **p < 0.01, * p < 0.05

Table 4.11. ANOVA Results for the Comparison of Caucasian and Others

**Age.** To determine if age was related to a respondent’s perception about eWOM and a website, a one-way ANOVA test with Tukey’s HSD was conducted to determine which age groups significantly differed from each other regarding each measure. Due to the small number of respondents in several age groups, the respondents were grouped into three broad age categories: young (18 to 34), middle age (35 to 54), and older (55 and over). Overall, the mean scores indicated that respondents in the younger age group category reported significantly stronger perceptions in terms of all six variables. Specifically, the ANOVAs revealed that the age of respondents had a significant effect on homophily \((f = 5.21, p < 0.01)\), attitude toward a website \((f = 3.72, p < 0.05)\), and eWOM effectiveness \((f = 4.63, p < 0.05)\). Tukey’s multiple comparison method was then used to determine which age groups differed significantly from each other regarding each measure. According to the results, respondents in the young category age group rated homophily, attitude toward a website, and eWOM effectiveness significantly higher than those in the middle age and the older categories. In other words, younger respondents tended to feel the review website was emotionally close to themselves and had a positive
attitude toward the website. Moreover, their purchase decision was influenced by the reviews more than with older respondents.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Young (M ± S.D.)(^a)</th>
<th>Middle Age (M ± S.D.)(^a)</th>
<th>Older (M ± S.D.)(^a)</th>
<th>f-value(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>3.43 ± 1.65</td>
<td>3.54 ± 1.55</td>
<td>3.00 ± 1.50</td>
<td>1.13</td>
</tr>
<tr>
<td>Homophily</td>
<td>4.52 ± 0.64</td>
<td>4.39 ± 0.62</td>
<td>4.14 ± 0.97</td>
<td>5.21**</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>4.59 ± 1.07</td>
<td>4.49 ± 1.14</td>
<td>4.37 ± 1.54</td>
<td>0.72</td>
</tr>
<tr>
<td>Attitude toward information</td>
<td>5.06 ± 0.97</td>
<td>4.90 ± 1.04</td>
<td>4.63 ± 1.32</td>
<td>3.06</td>
</tr>
<tr>
<td>Attitude toward a website</td>
<td>5.42 ± 1.14</td>
<td>5.35 ± 1.30</td>
<td>4.79 ± 1.66</td>
<td>3.72*</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.78 ± 0.84</td>
<td>3.65 ± 0.92</td>
<td>3.27 ± 1.23</td>
<td>4.63*</td>
</tr>
</tbody>
</table>

Note: \(^a\)M ± S.D = Mean ± Standard Deviation; \(^b\)***p < .001, **p < .01, * p < .05

Table 4.12. ANOVA Results for the Comparison of Age Groups

**Educational Level.** The relationship between educational level of respondents and their perceptions of key research variables is shown in Table 4.13. The results revealed that between different educational levels there was a statistically significant variation in the mean responses in terms of tie strength, attitude toward the websites, and eWOM effectiveness. In other words, respondents in different education groups also differed in their responses for the attitude toward the websites (f = 6.62, p < 0.01), and in eWOM effectiveness (f = 10.20, p < 0.001). The results indicated that individuals with a higher education tended to have a more positive attitude toward the review websites. Furthermore, respondents with higher education were likely to be more strongly influenced by eWOM information (e.g., consumer reviews) than those with a lower education level.
### Table 4.13. ANOVA Results for the Comparison of Education Groups

<table>
<thead>
<tr>
<th>Measures</th>
<th>Less than Post-College (M ± S.D.)</th>
<th>Post-College (M ± S.D.)</th>
<th>f-value$^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>3.46 ± 1.63</td>
<td>3.12 ± 1.64</td>
<td>2.19</td>
</tr>
<tr>
<td>Homophily</td>
<td>4.02 ± 0.44</td>
<td>3.93 ± 0.42</td>
<td>1.97</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>4.92 ± 0.90</td>
<td>4.90 ± 1.23</td>
<td>0.03</td>
</tr>
<tr>
<td>Attitude toward information</td>
<td>5.04 ± 0.97</td>
<td>4.88 ± 1.17</td>
<td>1.27</td>
</tr>
<tr>
<td>Attitude toward a website</td>
<td>5.08 ± 1.13</td>
<td>4.64 ± 1.56</td>
<td>6.62**</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.77 ± 0.84</td>
<td>3.37 ± 1.09</td>
<td>10.20***</td>
</tr>
</tbody>
</table>

Note: $^a$M ± S.D = Mean ± Standard Deviation; $^b$***p < 0.001, **p < 0.01, * p < 0.05

*Website.* The results of ANOVA uncovered several statistically significant differences in respondents’ perceptions and attitudes with regard to travel-related websites and restaurant-related websites. In order to detect the possible differences, the responses were divided into travel-related and restaurant-related websites. Among eight websites used in the main study, Tripadvisor, Travelpost, Lonelyplanet, and Virtualtourist were categorized as travel-related websites; whereas Yelp, Urbanspoon, Zagat, and Dine were categorized as restaurant-related websites. Generally, respondents who use travel-related websites rated all the variables higher than those who use restaurant-related websites. However, the statistically significant difference was found only in source credibility. Respondents tend to perceive travel-related websites as being more credible than restaurant-related websites.
<table>
<thead>
<tr>
<th>Measures</th>
<th>Travel-related Websites (M ± S.D.)</th>
<th>Restaurant-related Websites (M ± S.D.)</th>
<th>f-value&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>3.78 ± 1.49</td>
<td>3.57 ± 1.44</td>
<td>21.58***</td>
</tr>
<tr>
<td>Homophily</td>
<td>3.58 ± 0.59</td>
<td>3.61 ± 0.51</td>
<td>0.32</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>5.39 ± 0.85</td>
<td>4.95 ± 0.85</td>
<td>21.58***</td>
</tr>
<tr>
<td>Attitude toward information</td>
<td>5.28 ± 0.99</td>
<td>5.12 ± 0.88</td>
<td>3.79</td>
</tr>
<tr>
<td>Attitude toward a website</td>
<td>5.71 ± 1.01</td>
<td>5.54 ± 0.99</td>
<td>2.76</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.94 ± 0.78</td>
<td>3.81 ± 0.79</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Note: M ± S.D = Mean ± Standard Deviation; ***p < 0.001, **p < 0.01, * p < 0.05

Table 4.14. ANOVA Results for the Comparison of Websites
Chapter 5: Discussions and Conclusions

The purpose of this study was to better understand the influence of consumers’ eWOM communications in online review websites on the consumers’ attitudes and purchase decisions from a relational view of consumer–website interactions. This influence was examined by applying the concept of online social networks with the website and the consumer interacting with each other. Specifically, this research attempted to propose and test interrelationships between social network constructs (tie strength, homophily), source credibility, consumer attitude toward eWOM information and websites, and eWOM effectiveness. How consumers’ perceptions about tie strength, homophily, and credibility with regard to a website influence their attitudes and intentions were investigated in the context of online review websites. This chapter summarizes the key findings and discusses implications from theoretical and managerial points of view. Also, limitations of the research and suggestions for future research are discussed. Table 5.1 summarizes the results of the tested hypotheses.
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1a</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of tie strength between the consumer and the website will lead to a positive attitude toward eWOM information on the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H1b</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of tie strength between the consumer and the website will lead to a positive attitude toward the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H2a</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of homophily between the consumer and the website will lead to a positive attitude toward eWOM information on the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H2b</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of homophily between the consumer and the website will lead to a positive attitude toward the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H3a</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of source credibility will lead to a positive attitude toward eWOM information on the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H3b</strong> Among consumers who use eWOM to find a service provider on consumer review websites, higher levels of source credibility will lead to a positive attitude toward the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H4</strong> Among consumers who use eWOM to find a service provider, higher levels of tie strength between a website and a consumer will lead to a perceived higher level of source credibility.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H5</strong> Among consumers who use eWOM to find a service provider, higher levels of homophily between a website and a consumer will lead to a perceived higher level of source credibility.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H6</strong> Consumers’ attitude toward the eWOM information is positively related to their attitude toward the website.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H7</strong> Consumers’ attitude toward the eWOM information is positively related to the influence of eWOM on their purchase decision.</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>H8</strong> Receivers’ attitude toward the website is positively related to the influence of the sender’s eWOM on the receiver’s purchase decision.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 5.1. Summary of Hypotheses Testing
5.1. Summary of Key Findings

This dissertation developed and tested an online social network model integrating key social constructs and their influence on consumers’ attitudes and intentions in consumer review websites. The test of the model revealed a number of interesting results, the most important of which was support for the online social network framework by Brown et al. (1997) that states consumers build relationships with online websites. As Brown et al. discovered from in-depth interviews, the perceptions of consumers concerning relationships with a website have a significant positive influence on their evaluations about the reviews. Without individual-to-individual interactions, consumers still develop various types of relationships within online review websites and the degree of these relationships strongly feeds into their evaluations of the reviews as well as purchase intentions.

With regard to the first social construct (tie strength), the results indicated that strong ties are perceived as a more influential source of information. eWOM information from strong tie sources were perceived as more influential in the decision-making process than information from weak social ties. In the context of website–consumer relationships, consumers appeared to use the websites as proxies for individuals. In this case, tie strength was developed between an information seeker and the website as an information source. When consumers have strong ties with a website, they are likely to have a positive attitude toward the website and the reviews on the website, and such attitudes will trigger their purchase intentions.
A second social construct investigated was homophily. Homophily is the degree to which consumers share the same interests with the contents of a website. In a traditional person-to-person WOM context, homophily can be defined as the degree to which the pair of individuals is similar in terms of age, gender, and social status. However, in an online environment where the personal information of each participant is typically unknown, consumers interact with the website more actively. The results indicated that consumers tend to evaluate homophilous websites and the reviews on such websites more favorably. Specifically, when the websites contain information that is consistent with and reflects a consumer’s own interests, the consumer is more likely to perceive higher homophily with the website. Homophily played a significant role in determining credibility perceptions and influencing eWOM effectiveness.

The social constructs studied are also associated with source credibility. As hypothesized, credibility was found to be a fundamental factor in the decision-making process that impacts an individual’s overall attitude toward a review website and eWOM information as well as an individual’s purchase intentions. Consumers seem to evaluate the credibility of a review in relation to the website it is sourced from and in relation to the information contributor. A closer match between an individual’s interests and those exhibited by the website resulted in stronger tie strength and homophily. Furthermore, tie strength and homophily evaluated at the level of the website can improve credibility perceptions, which in turn increases eWOM effectiveness. Consistent with previous research that addresses the role of relationship strength among individuals (e.g., Chu & Kim, 2011; Granovetter, 1973; Steffes & Burgee, 2009), this study confirms that tie
strength and homophily between a consumer and a website drive credibility perceptions and attitudes.

Contrary to what was originally proposed, no direct relationship between attitude toward eWOM information and eWOM effectiveness was found. This finding suggests that a direct relationship between attitude toward eWOM information and eWOM effectiveness does not exist, but an indirect relationship mediated through a website does. In other words, while consumer attitude towards reviews is related to their attitude towards a website, their attitude does not have a direct influence on eWOM effectiveness. Rather, a consumer’s attitude towards reviews indirectly influences their purchase decision through their attitude towards the website. Although this result was contrary to expectations, it highlights the importance of a website in evaluating eWOM information.

An alternative explanation to this result is that the consumption of services is experiential in nature (Grove & Fisk, 1992) because services involve a greater extent of customer interaction. Research suggests that the quality of service involves at least two unique components: one refers to technical outcomes delivered by a service and the other refers to the interaction process through which the outcome is delivered (Anderson et al., 1997; Brady & Cronin, 2001). For example, a consumer’s perceptions of banking services depend on a bank’s ability to manage a customer’s financial wealth, but also on the customer’s overall experience with employees, their ability to receive updated information, being informed of specific promotions, and so on. Perceptions of these experiences will have different meaning to each unique individual. Although the same
services are offered, they can be evaluated differently between individuals. Therefore, perceptions regarding reviews may not have direct impact on eWOM effectiveness.

Another alternative explanation can be derived from the critical role of the website. Consumers’ perceptions about the reviews affect their purchase intentions through their perceptions about the website. In fact, the online social network framework proposes that the actors in online social networks are individuals who relate to websites rather than to other individuals. Therefore, evaluations regarding eWOM information are often driven by the website as the primary unit of relationship rather than any independent knowledge of the source itself (Brown et al., 2007). Given that the social exchange occurs between a website and an individual, a consumer’s purchase intentions are influenced more by the evaluations of the review website than the reviews alone. A consumer who perceived the reviews favorably was more likely to perceive the website favorably as well, and their positive attitude toward the website reinforced greater purchase decisions.

Moreover, various motivations to search consumer reviews can explain this unexpected result. In the current research, eWOM effectiveness was measured by the extent with which a consumer’s purchase decision was influenced by the reviews on the website. However, for some consumers, information seeking is itself a source of hedonic pleasure (Mathwick & Rigdon, 2004). It is therefore possible that the influence of eWOM on purchase decision would be weaker for those who use the website for its own sake, not just for information they find or the items they purchase.
5.2. Implications

This study contributes to the eWOM literature and consumer behavior literature by revealing relationships between a consumer and a review website for evaluating eWOM effectiveness. Compared with previous eWOM studies, which are exclusively focused on the outcomes of eWOM communications and the characteristics of eWOM messages, this study examined the social influence of eWOM on consumers’ attitudes and intentions. In the following pages, specific theoretical and managerial implications drawn from the results are elaborated.

5.2.1. Theoretical Implications

The present study examined social-relationship factors that drive eWOM effectiveness in consumer review websites. The results have expanded prior research in several important ways. First, the results of this study provide evidence that the Online Social Network Framework (Brown et al., 2007) offers a valid approach to studying the phenomenon of eWOM communications. At the same time, this framework was extended from two different perspectives. On one hand, the Brown et al. (2007) study focused on conceptualization of the constructs and used qualitative interviews that required support from quantitative research to assess the range of suggested social network antecedents and the overall framework. While the Brown et al. (2007) study focused on the initial conceptualization of online social networks and the consumer–website relationship based on exploratory interview data, the present study used a confirmatory mode to empirically
test their exploratory conceptualization. On the other hand, the present study has linked online social networks to consumer review websites that were originally proposed in communities of consumption.

Second, and related to the first contribution, the present study explored whether certain social relationship variables can contribute to the understanding of eWOM information used for review websites. The traditional wisdom has been that the effectiveness of WOM primarily depends on the relationship between sender and receiver, which is very difficult for companies to control. However, according to the research model, consumers interact with the website rather than with other individuals. Based on the strong association between a consumer and a website (consumer–website relationship), this study contributed to the literature by the conceptualization and development of a measurement scale specifically designed to assess social relationship constructs within consumer review websites.

Third, by emphasizing the importance of social effect that determines eWOM effectiveness, the present study goes beyond previous eWOM literature that focuses on the outcomes or motivations of eWOM. As mentioned in Chapter 2, there are three streams of eWOM research: (1) motivation to seek and spread eWOM, (2) outcomes of eWOM from a firm’s perspective, and (3) characteristics of eWOM messages. Emerging literature on WOM communication primarily focuses on the individual rather than on interactions of exchange between consumers in online social networks. Although the research was valuable, it overlooked the social effect of eWOM that can exist even in an online environment. The present study confirms that certain social relationship variables
can contribute to our understanding of consumers’ eWOM information use in online review websites. Specifically, users who gain a higher level of social tie and homophily with the website will be more likely to have a positive attitude toward the website and the reviews. In turn, such positive attitudes determine eWOM effectiveness and consumers will therefore refer to the reviews when they must make purchase decisions.

The fourth contribution of the present research lies in understanding the issue of “source credibility” that has recently attracted tremendous attention in eWOM literature. Although increasing importance has been placed on source credibility in the process of a consumer’s online information search, little research has focused on the antecedents that determine perceptions of source credibility. Moreover, while credibility has become a major problem for social media platforms, the concept has not been given sufficient attention in an eWOM context. By investigating antecedents that drive high credibility and its outcomes, the present study helps address this gap in the literature by testing source credibility in the context of eWOM utilization for hospitality and travel services.

Fifth, the proposed model attempted to clarify the interrelationship among three variables: attitude toward eWOM information, attitude toward the website, and eWOM effectiveness. In advertising literature, it has long been suggested that the medium through which the advertising is published is an important factor for predicting advertising effectiveness (e.g., Dreze & Zyufryden, 2000). Although there have been numerous research attempts that have verified the direct relationship between perceptions of consumer reviews and previous purchase decisions, the present research extends the understanding of this relationship through the mediating role of attitude toward the
website. Attitude toward eWOM information did not have a direct relationship with eWOM effectiveness, but it exhibited an indirect relationship that was mediated through the attitude toward the website. This result provides evidence that consumers’ purchase decisions are influenced by reviews through their perceptions about the review websites, thereby suggesting the important role of the website.

Lastly, the present research focused particularly on consumer review websites for hospitality and tourism services. On one hand, the importance of eWOM on a consumer’s decision making process has received wide attention from researchers, consumer reviews—as one of the most rapidly growing forms of eWOM—has not received as much attention. Furthermore, while online reviews have mainly been investigated in business administration systems, little attention has been devoted to identifying consumers’ evaluation process. On the other hand, there have been very few studies in the recent hospitality and tourism literature on the impact of online reviews. By examining the process of how eWOM communications influence consumers when considering services, this research contributes to the hospitality and tourism literature that pertains to antecedents and outcomes of eWOM communication.

5.2.2. Managerial Implications

In recent years, many organizations have sought to embrace online review strategies and invite users to post personal product evaluations. An understanding of the customer’s motivational factors may enable marketers to emphasize appropriate cues in
the review website system and thereby maximize eWOM effectiveness. Even though marketers may not have control over eWOM communication to the same extent as other forms of marketing communication such as advertising and sampling, the need to understand the impact and manage eWOM still exists. Next, managerial implications and effective strategies to increase eWOM effectiveness are elaborated.

By identifying previously unexplored antecedents of eWOM evaluation, new territories are opened for designers and marketers of online review systems. A number of corporations have recently begun to explore the possibility of using social media to encourage relationship building with their consumers through forums for eWOM. For marketers, the findings of this research suggest that in an effort to increase eWOM effectiveness, an attempt should be made to explicitly focus on tie strength and homophily perceptions between the consumers and the website in their target audience. For companies to increase homophily and tie strength between a consumer and a website, it is important to identify a well-defined target market to direct marketing efforts. Identifying a target market is an essential step in the development of appropriate website functions, topics, promotions, and activities, that can specifically reflect their target consumers’ interests in a way that increases their perceived tie strength and homophily.

eWOM seems to be more effective when there is a close relationship and good rapport between a consumer and a website based on mutual interest. The results of this study indicate that a close relationship between a consumer and a website were the basis of consumers’ attitude and website usage. Specifically, the close relationship between the two enhanced a consumer’s perceived source credibility, attitudes, and ultimate purchase
decisions. The website’s ability to retain customers and prolong his or her duration of each stay is one of the key factors to retain the consumer–website relationship. Therefore, marketers should develop and promote a website to attract new customers and design a website to be user-friendly and promote customer retention.

Strategies can include customization and interactive features. These features may encourage visitors to build new kinds of relationships with the website, the sponsoring corporation, and other consumers. For example, TripAdvisor launched a new feature called “Traveler Network.” It allows users to add acquaintances to their travel maps by connecting to pre-existing sources (such as an email address). By using this feature, users can create a network of travelers who can provide their suggestions, reviews, and advice. Another example is with virtual social worlds (such as Second Life) where multiple players interact with each other through their avatars. The virtual worlds place user-generated content within a three-dimensional, experiential platform where the user has control and the ability to personalize their environment. This allows consumers to develop emotional and enduring relationships with the website and also with other members based on shared interests and reciprocity. Ultimately, these ongoing relationships would increase consumers’ perceptions about source credibility and the impact of eWOM information on their intentions.

In addition, the present study provides new insights into how eWOM information gains credibility. Recently, there have been an increasing number of discussions about the credibility of online reviews and how consumers are more concerned about their credibility. As a result, review websites are attempting to develop various methods to
verify and add credibility. Product reviews not only give consumers a voice, but assist manufacturers, brands and retailers to make better merchandising and marketing decisions. For reviews to be helpful to companies and consumers, marketers must consider how to effectively increase perceived credibility through managing tie strength and homophily perceptions held by consumers. Specifically, the present study’s social network perspective lends support to the idea that strong and positive consumer–website relationships help both parties benefit from reliable reviews. In other words, results of the present study demonstrate that the ideas of homophily and tie strength among online travel consumers can improve credibility perceptions. Therefore, it is imperative for the management of online review websites to highlight cues that give online users a sense of similarity with those who contribute reviews, comments, and other related contents on their platforms.

According to Ohanian (1990), consumers believe reviews that are posted by experts to be more credible than those posted by non-experts. Therefore, in addition to increasing homophily and tie strength, websites can create functions that improve credibility of reviews through including some reviews by experts or professionals. For example, Yelp has a reviewer credentialing program, where they formally certify certain reviewers who have written many reviews that Yelp has deemed helpful. These reviewers are marked as “elite” and readers can know a reviewer is marked as elite and also filter reviews to only view those by elite members. Additionally, websites can have separate fields that directly ask reviewers to identify pros and cons to make reviews more credible (Crowley & Hoyer, 1994). Therefore, consumers should be encouraged to list both pros
and cons for each product, as these reviews are helpful and may enhance the source reviews.

5.3. Limitations and Future Research

Although the present study presents some of the first research that examines the relationship between social factors in website–consumer bonds and eWOM communication in online review websites, there are some limitations that must be discussed. In addition, new directions for future studies will also be discussed.

A key limitation to the present study was the issue of applicability of the findings to the general population. This study used a sample of students, faculty, and staff in a Midwestern university in the United States does not realistically reflect the perceptions of the total population of online review website users. Because of the relatively homogenous characteristics of the sample, there may be concerns regarding potential projections of findings to the general population. As such, the results may not be applicable to service purchase contexts or other audiences. Also, the analyzed data is based on self-reported traits, attitudes, and perceptions, which inherently introduces error into the measurements.

Another limitation relates to the fact that a large portion of the student respondents can also bias results. There were several reasons why different numbers of students (5,000) and faculty/staff members (2,000) were recruited for the survey. First, because acquiring the email addresses of faculty and staff members was relatively difficult and required more complicated steps to obtain permission, the researcher
decided to include more student samples to increase the response rate. Second, the age range of all students is from 19 to 28. Although the perceptions of this age group may be unrepresentative of that held by the general population, the group represents typical online users identified in previous research (e.g., Zichuhr & Smith, 2013).

Another limitation of this study is that it focused only on hospitality- and tourism-related online review websites. An advantage of this research can be that previous studies tended to deal with consumer reviews for tangible goods rather than intangible services. However, this can also limit the ability of the results to be generalized. It may be useful to replicate this study in other industries with different contextual and competitive characteristics. Furthermore, it would be worthwhile to explore eWOM communications in a wider variety of UGC platforms other than online review websites, such as online communities and general social networking sites (e.g., Facebook and MySpace) as well as commercially oriented websites (e.g., Expedia, Orbitz, and Priceline). Given that most online review websites also launched mobile applications and their mobile operations have increased, eWOM communication in mobile platforms would be of interest.

The present study did not investigate several potential moderators of eWOM effects including consumer traits and situational factors. In terms of consumer characteristics, the present study considered consumers’ basic demographic characteristics, such as age, gender, education, and income, which can influence their attitudes and perceptions about a given eWOM. Future research can include other consumer characteristics. For example, previous consumer behavior research indicates cultural difference in responding to advertising messages or stimuli. That is, collectivist
cultures tend to perceive more risk in online shopping and thus rely more on online reviews rather than individualist shoppers. It is also possible that, compared to Westerners, Asians may be more influenced by tie strength and homophily because of their collectivist cultures (Hofstede, 1980). Also, source credibility becomes a more critical factor for Asian consumers’ decision-making because of their low uncertainty avoidance culture (Hofstede, 1980). For these reasons, it would be interesting to see if a consumer’s cultural background plays a role in determining the effect of online consumer reviews on purchase decision. Moreover, influence of eWOM reviews could differ depending on expertise and prior knowledge of consumers. Consumers who have expertise and knowledge concerning a certain product or service may be less influenced by consumer reviews than someone who knows little about the product or service.

It may also be argued that the influence of reviews on a consumer’s purchase decision may be different based on situational factors. As eWOM influences individual consumers differently, it also has different influences in different situations. For example, when consumers are under a time constraint and are in an uncertain situation, they are more likely to rely on eWOM information. Investigation of such moderating effects can have more meaningful implications for researchers and practitioners. It is recommended to increase focus on moderating effects in future research.

This study represents only a first step towards understanding credibility in the context of consumer reviews. Although the predictive power of the presented model is deemed sufficient, there are other potential variables that may be important in determining online consumers’ use of reviews in making their purchasing decisions. It is
hoped that future studies will explore additional factors to better explain the complex relationships among variables in our pursuit to understand online social relationships and the use of eWOM information.

From a methodological standpoint, future eWOM research would benefit from developing and validating a more robust measure of tie strength and homophily associated with consumer–website relationships. Although the measures have been validated from the pretest and the main study, the representative indicators that measure the facets of online tie strength and homophily must be replicated in order to be validated. Another important limitation of this study is its field study design. Future research may need to combine archival statistical data analysis, qualitative netnographic inquiry, and possible experimental testing to validate the findings and provide deeper insights.

In conclusion, given the limited amount of research that investigates online C2C communications and the increasing popularity of social media websites, there is an abundance of further research that can be pursued. The focus of the present study was to investigate how and to what extent customers’ perceptions of review websites affected their attitudes and behaviors. The present study examined how the social relationships between a customer and a website, tie-strength, homophily, and source credibility, impacted an individual’s evaluations about the website and the reviews on the website. These in turn influence attitudes and purchase decisions. Future research should identify the effectiveness of online reviews with integration of other theories and frameworks for a deeper understanding of eWOM communication process.
References


Kelly, E. (2000). This is one virus you want to spread. *Fortune*, November, 27, 297-300.


Appendix A: Pretest Questionnaire
CONSUMER REVIEW WEBSITE SURVEY

I am a PhD student in the Department of Consumer Sciences at the Ohio State University. We are currently conducting a study to understand your use of online review websites, such as tripadvisor.com, yelp.com, urbanspoon.com, etc. More specifically, the objective of this study is to examine your perception of online review websites, the information on these websites, and how these perceptions influence your purchase (visit) decisions.

The questionnaire should not take more than 15 minutes to complete. Involvement in this survey is entirely voluntary and you can skip any question that you are unwilling to answer. All the information you provide will be kept confidential and will be grouped with responses from other participants.

Thank you in advance for your participation and I truly appreciate your help.

Yours sincerely,

Soyeon Kim, M.S.
Doctoral Student
College of Education & Human Ecology
Department of Consumer Sciences
(765) 430-8142
kim.2923@osu.edu

Jay Kandampully, Ph.D.
Professor
College of Education & Human Ecology
Department of Consumer Sciences
(614) 688-4583
kamdampully.1@ehe.osu.edu
SECTION 1: WEBSITE EVALUATIONS

Please indicate the consumer review website that you have used most frequently.

__________________________

Instructions: Here, we are interested in your perceptions of the website that you selected above. Please read each question and circle on the answer that best reflects your behaviors and perceptions.

The following statements describe your perceived closeness to the website that you selected. Please read each statement and circle on the answer that best reflects your perceptions of the website.

1. How frequently have you used this website?
   Never 1 2 3 4 5 6 7 Very frequently

2. Overall, how important is this website to you?
   Not at all important 1 2 3 4 5 6 7 Very important

3. Overall, how close do you feel to this website?
   Not at all close 1 2 3 4 5 6 7 Very close

The following statements describe your perceived similarities and differences with the website that you selected. Please read each statement and circle on the answer that best reflects how you feel about the website.

1. In general, the interests expressed by the website are not consistent with my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

2. In general, the interests of the website reflect my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

3. In general, the interests of the website are similar to my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

4. In general, the interests of the website are very different from mine.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree
The following statements describe how much you believe the reviews on the website. Please read each statement and click on the answer that best reflects how you view the reliability or credibility of the website and information that it provides.

*Overall, the website you selected is*

- Undependable 1 2 3 4 5 6 7 Dependable
- Insincere 1 2 3 4 5 6 7 Sincere
- Untrustworthy 1 2 3 4 5 6 7 Trustworthy
- Dishonest 1 2 3 4 5 6 7 Honest

*Overall, the information sources on the website you selected are*

- Not an expert 1 2 3 4 5 6 7 Expert
- Inexperienced 1 2 3 4 5 6 7 Experienced
- Unknowledgeable 1 2 3 4 5 6 7 Knowledgeable
- Unqualified 1 2 3 4 5 6 7 Qualified
- Unskilled 1 2 3 4 5 6 7 Skilled

**SECTION 2: YOUR ATTITUDES TOWARD THE WEBSITE**

The following statements relate to your attitude toward the website that you selected. Please read each statement and circle on the answer best reflects your perceptions.

1. I would like to visit this website again in the future.
   - Definitely disagree 1 2 3 4 5 6 7 Definitely agree

2. I am satisfied with the service provided by this website.
   - Definitely disagree 1 2 3 4 5 6 7 Definitely agree

3. I feel surfing this website is a good way for me to spend my time.
   - Definitely disagree 1 2 3 4 5 6 7 Definitely agree

4. Compared with other websites, I would rate this one as
   - One of the worst 1 2 3 4 5 6 7 One of the best
The following statements related to your attitude toward the information on the website you selected. Please read each statement and click on the answer best reflects your feelings.

*Overall, I think the information (reviews) on the website*

| Unattractive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Attractive |
| Unappealing  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Appealing |
| Unpleasant   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Pleasant |
| Dull         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dynamic  |
| Not enjoyable| 1 | 2 | 3 | 4 | 5 | 6 | 7 | Enjoyable |

The following statements relate to your intentions after using the website you selected. Please read each statement and circle on the answer that best reflects your intentions after using the website.

1. I used the reviews on the website in making a purchase decision.
   - Strongly disagree 1 2 3 4 5 6 7 Strongly agree

2. The reviews on the website have a great effect on my purchase decision.
   - Not at all close 1 2 3 4 5 6 7 Very close

**SECTION 3: FINAL QUESTIONS ABOUT YOU**

*Instructions*: In this section we have some final questions about you. These questions will help us better understand customers’ demographic backgrounds. Please check on the answer that best applies.

1. What is your gender?
   - ☐ Male □ Female

2. In which of the following age brackets do you belong?
   - ☐ 18  ☐ 19-24  ☐ 25-34  ☐ 35-44
   - ☐ 45-54  ☐ 55-64  ☐ 65 and over
3. What is the highest level of education you have attained?

- Some high school
- Technical school
- College graduate
- High school graduate
- Some college
- Graduate school

4. Which of the following categories best describes your household income before taxes?

- Less than $25,000
- $25,000 - $39,999
- $40,000 - $59,999
- $60,000 - $79,999
- $80,000 - $99,999
- $100,000 - $119,999
- More than $120,000

5. Which of the following best describes your ethnicity?

- African American
- Hispanic/Latin American
- Native American
- Caucasian
- Asian or Pacific Islander
- Other: ______________
Appendix B: Invitation Email
Dear Survey Participants:

I am a PhD student in the Department of Consumer Sciences at the Ohio State University. We are currently conducting a study to understand your use of online review websites, such as tripadvisor.com, yelp.com, urbanspoon.com, etc. More specifically, the objective of this study is to examine your perception of online review websites, the information on these websites, and how these perceptions influence your purchase (visit) decisions.

The questionnaire should not take more than 15 minutes to complete. To access the questionnaire, click on the link provided below. Your involvement in this survey is entirely voluntary and you can skip any question that you are unwilling to answer. All the information you provide will be kept confidential and will be grouped with responses from other participants.

Follow this link to the Survey:
Take the Survey

Upon the completion of this survey, you will be entered for a chance to win 1 of 20 $50 Amazon.com gift certificate. The lucky winners will be notified via email. Please be assured that we will not use your information for any other purposes.

We will make every endeavor to ensure that no one, other than the researcher, is able to access your survey responses. However, please be aware that as with any online survey, there is always a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you.

If you have any questions about this study, or would like additional information to assist you in reaching a decision about participation, feel free to contact Soyeon Kim at kim.2923@osu.edu or 765-430-8142.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Thank you in advance for your participation and I truly appreciate your help.

Yours sincerely,

Soyeon Kim, M.S.
Doctoral Student
College of Education & Human Ecology
Department of Consumer Sciences
(765) 430-8142
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Jay Kandampully, Ph.D.
Professor
College of Education & Human Ecology
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kamdampully.1@ehe.osu.edu
Appendix C: Main Study Questionnaire
Online Consumer Review Website Evaluation Survey

SCREENING QUESTION

Have you ever used (visited) online consumer review websites? Examples of such websites are tripadvisor.com, dine.com, yelp.com, urbanspoon.com, zagat.com, lonelyplanet.com, travelpost.com, lonelyplanet.com, etc.

Yes _______  No _______

SECTION 1: YOUR EXPERIENCE WITH REVIEW WEBSITES

Instructions: We are interested in your use of consumer review websites that provide restaurant, hotel, and tourist information. Please click on the answer that best applies.

1. From the following list, please indicate the online consumer review websites that you have used. (Please choose all that apply.)

☐ tripadvisor.com  ☐ urbanspoon.com  ☐ virtualtourist.com
☐ Yelp.com  ☐ Dine.com  ☐ zagat.com
☐ travelpost.com  ☐ lonelyplanet.com  *other/s, please specify

2. Please indicate the site that you have used most frequently.

__________________________

3. Approximately, how long have you used the site you identified in Q2

_______ year(s) _______ month(s)

3. How often do you use the site that you ranked using most for Q2?

☐ Once a month  ☐ 2-5 times a month
☐ 6-10 times a month  ☐ 11-15 times a month
☐ 16 times or more per month
SECTION 2: WEBSITE EVALUATIONS

Instructions: Here, we are interested in your perceptions of the website that you selected above. Please read each question and click on the answer that best reflects your behaviors and perceptions.

The following statements describe your perceived closeness to the website that you selected. Please read each statement and click on the answer that best reflects your perceptions of the website.

1. How frequently have you used this website?
   Never 1 2 3 4 5 6 7 Very frequently

2. Overall, how important is this website to you?
   Not at all important 1 2 3 4 5 6 7 Very important

3. Overall, how close do you feel to this website?
   Not at all close 1 2 3 4 5 6 7 Very close

The following statements describe your perceived similarities and differences with the website that you selected. Please read each statement and click on the answer that best reflects how you feel about the website.

1. In general, the interests expressed by the website are not consistent with my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

2. In general, the interests of the website reflect my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

3. In general, the interests of the website are similar to my own interests.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

4. In general, the interests of the website are very different from mine.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

The following statements describe how much you believe the reviews on the website. Please read each statement and click on the answer that best reflects how you view the reliability or credibility of the website and information that it provides.
Overall, the website you selected is

<table>
<thead>
<tr>
<th>Undependable</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>7</th>
<th>Dependable</th>
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<td>Sincere</td>
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<td>Trustworthy</td>
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<td>Dishonest</td>
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<td>6</td>
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<td>Honest</td>
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Overall, the information sources on the website you selected are

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<th>Not an expert</th>
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<td>Skilled</td>
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SECTION 3: YOUR ATTITUDES TOWARD THE WEBSITE

The following statements relate to your attitude toward the website that you selected. Please read each statement and click on the answer best reflects your perceptions.

1. I would like to visit this website again in the future.
   Definitely disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely agree

2. I am satisfied with the service provided by this website.
   Definitely disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely agree

3. I feel surfing this website is a good way for me to spend my time.
   Definitely disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely agree

4. Compared with other websites, I would rate this one as
   One of the worst | 1 | 2 | 3 | 4 | 5 | 6 | 7 | One of the best

The following statements related to your attitude toward the information on the website you selected. Please read each statement and click on the answer best reflects your feelings.

Overall, I think the information (reviews) on the website
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<td>7</td>
<td>Attractive</td>
</tr>
<tr>
<td>Unappealing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Appealing</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Pleasant</td>
</tr>
<tr>
<td>Dull</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Dynamic</td>
</tr>
<tr>
<td>Not enjoyable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Enjoyable</td>
</tr>
</tbody>
</table>

The following statements relate to your intentions after using the website you selected. Please read each statement and click on the answer that best reflects your intentions after using the website.

1. I used the reviews on the website in making a purchase decision.
   - Strongly disagree 1 2 3 4 5 6 7
   - Strongly agree

2. The reviews on the website have a great effect on my purchase decision.
   - Not at all close 1 2 3 4 5 6 7
   - Very close

**SECTION 4: FINAL QUESTIONS ABOUT YOU**

**Instructions:** In this section we have some final questions about you. These questions will help us better understand customers’ demographic backgrounds. Please click on the answer that best applies.

1. What is your gender?
   - Male
   - Female

2. In which of the following age brackets do you belong?
   - 18
   - 19-24
   - 25-34
   - 35-44
   - 45-54
   - 55-64
   - 65 and over

3. What is the highest level of education you have attained?
   - Some high school
   - High school graduate
   - Technical school
   - Some college
   - College graduate
   - Graduate school
4. Which of the following categories best describes your household income before taxes?

- Less than $25,000
- $25,000 - $39,999
- $40,000 - $59,999
- $60,000 - $79,999
- $80,000 - $99,999
- $100,000 - $119,999
- More than $120,000

5. Which of the following best describes your ethnicity?

- African American
- Hispanic/Latin American
- Asian or Pacific Islander
- Native American
- Caucasian
- Other: ______________

Thank you for your time and cooperation!
Appendix D: Reminder Invitation Email
Dear Survey Participants:

My name is Soyeon Kim and I’m a doctoral candidate here at Ohio State. I wanted to write to remind you about the Consumer Review Website Survey that you have been selected to take part in. If you have not had a chance to take the survey yet, I would appreciate your reading the message below and completing the survey.

We are currently conducting a study to understand your use of online review websites, such as tripadvisor.com, yelp.com, urbanspoon.com, etc. More specifically, the objective of this study is to examine your perception of online review websites, the information on these websites, and how these perceptions influence your purchase (visit) decisions.

The questionnaire should not take more than 15 minutes to complete. To access the questionnaire, click on the link provided below. Your involvement in this survey is entirely voluntary and you can skip any question that you are unwilling to answer. All the information you provide will be kept confidential and will be grouped with responses from other participants.

Follow this link to the Survey:
Take the Survey

Upon the completion of this survey, you will be entered for a chance to win 1 of 20 $50 Amazon.com Gift Certificate. The lucky winners will be notified via email. Please be assured that we will not use your information for any other purposes.

We will make every endeavor to ensure that no one, other than the researcher, is able to access your survey responses. However, please be aware that as with any online survey, there is always a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you.

If you have any questions about this study, or would like additional information to assist you in reaching a decision about participation, feel free to contact Soyeon Kim at kim.2923@osu.edu or 765-430-8142. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251. Thank you in advance for your participation and I truly appreciate your help.

Yours sincerely,

Soyeon Kim, M.S.
Doctoral Student
College of Education & Human Ecology
Department of Consumer Sciences
(765) 430-8142
kim.2923@osu.edu

Jay Kandampully, Ph.D.
Professor
College of Education & Human Ecology
Department of Consumer Sciences
(614) 688-4583
kamdampully.1@ehe.osu.edu
Appendix E: Human Subject Exception Approval Form
Dear Investigators,

The Office of Responsible Research Practices has determined the above referenced project exempt from IRB review. Please note the following:

- Maintain a copy of this correspondence for your records.
- Only the OSU staff and students named on the application are approved as OSU investigators and/or key personnel for this study.
- No changes may be made to exempt research (e.g., personnel, recruitment procedures, advertisements, instruments, etc.). If changes are made, a new application for exemption must be submitted for review and approval prior to implementing the changes.
- Per university requirements, all research-related records (e.g., application materials, letters of support, signed consent forms, etc.) must be retained and available for audit for a period of at least three years after the research has ended.
- It is the responsibility of the investigators to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under The Ohio State University's OHRP Federal Assurance #0000374. All forms and procedures can be found on the OHRP website: www.oep.osu.edu

Please feel free to contact the Office of Responsible Research Practices with any questions or concerns.

Thanks,

[Signature]

**[Full Accreditation Seal]**
Appendix F: Results of Non-Response Bias Test
<table>
<thead>
<tr>
<th></th>
<th>Early respondents</th>
<th>Late respondents</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie strength</td>
<td>3.62 (1.53)</td>
<td>2.45 (1.48)</td>
<td>0.48</td>
<td>0.49</td>
</tr>
<tr>
<td>Homophily</td>
<td>3.99 (0.61)</td>
<td>3.98 (0.44)</td>
<td>0.03</td>
<td>0.87</td>
</tr>
<tr>
<td>Source credibility</td>
<td>4.97 (0.89)</td>
<td>4.80 (1.07)</td>
<td>1.27</td>
<td>0.26</td>
</tr>
<tr>
<td>Attitude toward eWOM information</td>
<td>5.07 (1.03)</td>
<td>4.86 (1.10)</td>
<td>1.61</td>
<td>0.21</td>
</tr>
<tr>
<td>Attitude toward a website</td>
<td>5.14 (1.20)</td>
<td>4.96 (1.29)</td>
<td>1.02</td>
<td>0.31</td>
</tr>
<tr>
<td>eWOM effectiveness</td>
<td>3.81 (0.80)</td>
<td>3.72 (0.93)</td>
<td>0.46</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviation