

Kristiina Herold

**IMPACT OF WORD-OF-MOUTH ON CONSUMER  
DECISION-MAKING: AN INFORMATION  
PROCESSING PERSPECTIVE IN THE CONTEXT OF  
A HIGH-INVOLVEMENT SERVICE**

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# **Abstract**

**Kristiina Herold**

## **Impact of Word-of-Mouth on consumer decision-making: An information processing perspective in the context of a high-involvement service**

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This doctoral study conducts an empirical analysis of the impact of Word-of-Mouth (WOM) on marketing-relevant outcomes such as attitudes and consumer choice, during a high-involvement and complex service decision. Due to its importance to decision-making, WOM has attracted interest from academia and practitioners for decades. Consumers are known to discuss products and services with one another. These discussions help consumers to form an evaluative opinion, as WOM reduces perceived risk, simplifies complexity, and increases the confidence of consumers in decision-making. These discussions are also highly impactful as WOM is a trustworthy source of information, since it is independent from the company or brand.

In responding to the calls for more research on what happens after WOM information is received, and how it affects marketing-relevant outcomes, this dissertation extends prior WOM literature by investigating how consumers process information in a high-involvement service domain, in particular higher-education. Further, the dissertation studies how the form of WOM influences consumer choice. The research contributes to WOM and services marketing literature by developing and empirically testing a framework for information processing and studying the long-term effects of WOM.

The results of the dissertation are presented in five research publications. The publications are based on longitudinal data. The research leads to the development of a proposed theoretical framework for the processing of WOM, based on theories from social psychology. The framework is specifically focused on service decisions, as it takes into account evaluation difficulty through the complex nature of choice criteria associated with service purchase decisions. Further, other gaps in current WOM literature are taken into account by, for example, examining how the source of WOM and service values affects the processing mechanism.

The research also provides implications for managers aiming to trigger favorable WOM through marketing efforts, such as advertising and testimonials. The results provide

suggestions on how to design these marketing efforts by taking into account the mechanism through which information is processed, or the form of social influence.

Keywords: Word-of-Mouth, consumer behavior, high-involvement service, social influence

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Helsinki, October 2015

Kristiina Herold

*To my family in Finland, South-Africa, and Sweden*



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## List of publications

The dissertation consists of the introductory part, which provides an overview of the dissertation and the following publications. The publications included in the dissertation are summarizing the contribution of the author of this dissertation. All publications were written in cooperation with other co-authors. However, the author of the dissertation was the first and corresponding author in four cases.

### PUBLICATION I

Evolahti, R., Herold, K., and Sundqvist, S. (2011). International Students' Personal Values, Educational Motives and University Choice Criteria. Proceedings of the ANZMAC Conference, 28<sup>th</sup> -30<sup>th</sup> December, Perth, Australia.

The author was partly responsible for the development of the theoretical framework of the study, setting the research questions, and discussion of the implications.

### PUBLICATION II

Herold, K., Tarkiainen, A., and Sundqvist, S. (2013). The Impact of Word-of-Mouth on Attitude Formation: an Information Processing Perspective. Proceedings of the American Marketing Association Winter Marketing Educators' Conference, 15<sup>th</sup>-17<sup>th</sup> February, Las Vegas, NV, US. *(This article is revised and further submitted)*

The author was mainly responsible for the collection of the data, development of the theoretical framework of the study, setting the research questions, and discussion of the implications.

### PUBLICATION III

Herold, K., Sipilä, J., Tarkiainen, A. and Sundqvist, S. (2015). How Service Values Influence the Processing of Word-of-Mouth in the Evaluation of Credence Beliefs. *(This article is submitted)*

The author was responsible for the development of the research plan, collection and analysis of the data, and writing most of the manuscript.

### PUBLICATION IV

Herold, K., Tarkiainen, A., and Sundqvist, S. (2016). How the Source of Word-of-Mouth Influences Information Processing in the Formation of Brand Attitudes. Forthcoming in *Journal of Marketing for Higher Education*, 26(1).

The author was mainly responsible for the development of the research plan, data collection, development of the theoretical framework of the study, setting of the hypothesis, data analysis, and reporting of the results and implications of the study.

## PUBLICATION V

Herold, K., Sipilä, J., Tarkiainen, A., and Sundqvist, S. (2014) Facts or Opinions - Which Make a Difference? Word-of-Mouth and Attitude Change in a High-involvement Service Context. Proceedings of the ANZMAC Conference, 1<sup>st</sup>-3<sup>rd</sup> December, Brisbane, Australia. *(This article is revised and further submitted)*

The author was mainly responsible for the development of the research plan, data collection, setting of the hypothesis, data analysis, and reporting of the results and implications of the study.

## 1 Introduction

Consumers are known to discuss products, brands, and experiences with each other (Berger, 2013). These discussions are probably the most prevalent element of consumer behavior (Burnkrant & Cousineau, 1975). In marketing, these discussions are known as Word-of-Mouth (WOM), and refer to “any information about the target object or brand transferred from one individual to another” (Brown, Barry, Dacin & Gunst, 2005, p. 125). As WOM has an impact on decision-making, it has been of interest to academia and practitioners for decades (East, Hammond & Lomax, 2008; Liu, 2006; Sweeney, Soutar & Mazzarol, 2012). In fact, previous research suggests that WOM is the primary factor behind 20 to 50 percent of all purchasing decisions (Boughin, Doogan & Vetvik, 2010), and is more impactful than advertising (East et al., 2005).

The importance of WOM is further highlighted in the services domain (Mangold, Miller & Brockway, 1999; Murray, 1991; Sweeney, Soutar & Mazzarol 2008), since services (compared to goods) are more difficult to evaluate prior to purchase given that they are intangible, heterogeneous, and perishable in nature (Murray, 1992). Further, when a decision is important to consumers, they rely on WOM for information, as it is perceived as a trustworthy source of information that reduces risk, simplifies complexity, and increases the confidence of consumers in decision-making (Berger, 2014). Thus, high-involvement services provide an interesting context to study WOM. Therefore, this dissertation will take part in the discussion concerning the impact of WOM on consumer evaluation during a high-involvement decision, namely regarding international Master’s level education.

Even though WOM has been of interest to academia and practitioners, there are still many gaps in the current literature related to WOM. For example, research on the receiver side has been conducted to a lesser extent (Sweeney, Soutar & Mazzarol, 2008), which may be partly due to the difficulty in studying received WOM. According to East and Uncles (2008), this difficulty arises from the informal, unplanned, and unpredictable nature of WOM, which also makes managing WOM a complex issue. Prior research on WOM effectiveness has generally focused on source, message, and receiver characteristics (e.g., Bansal & Voyer, 2000; Gilly, Graham, Wolfenbarger & Yale, 1998). This line of research has provided important insight into the influence of WOM and its boundary conditions; however, for WOM to have an impact on marketing-relevant outcomes, the manner in which consumers use WOM in decision-making must be understood as well (Yang, 2012). As important information processing mechanisms occur prior to marketing-relevant outcomes, their understanding brings new insights into consumer behavior (Plassmann, Venkatraman, Huettel & Yoon, 2015). Thus, focusing on the processing of WOM information may provide an interesting perspective not only to understanding how the receivers of WOM make use of the information in decision-making, but also to understanding the long-term effects of the information on marketing-relevant outcomes (Petty, Wheeler & Tormala, 2013).

For a marketer, the understanding of information processing is relevant for designing marketing campaigns that aim to trigger WOM of their brand, since some evaluations may require a mere positive statement of the brand (which is rather simple to process), whereas others may need higher levels of WOM activity and details in order to form a veridical attitude. For academics, understanding the process through which information is utilized provides new insights into the phenomena of WOM. The different mechanisms of information processing have been acknowledged in the WOM literature (Voyer & Ranaweera, 2015; Van Hoye & Lievens, 2005) but not empirically verified, especially in a services domain, in which complex information is associated with the evaluation and thus provides an interesting context.

In the study, a theoretical model was developed to understand how consumers' process WOM information in forming marketing-relevant outcomes, such as attitude formation and change in a high involvement service context. The aim of the model was to contribute to both WOM and services marketing literature. In addition, managerial guidelines for designing marketing campaigns for WOM are provided.

## 1.1 Background

Due to its importance to decision-making, WOM has attracted interest from academia and practitioners for decades (e.g., East, Hammond & Lomax, 2008; Liu, 2006; Sweeney et al., 2012). The fields of marketing and social psychology have researched WOM and they form the background to this dissertation. The impact of WOM on a multitude of marketing-related outcomes such as attitudes, purchase intentions, and choice behavior is well known from prior research (Berger, 2014). This line of research has highlighted important variables for increasing the effectiveness of WOM, for example, source characteristics such as source expertise and tie strength (e.g., Bansal & Voyer, 2000; Gilly et al., 1998; Voyer & Ranaweera, 2015; Wangenheim & Bayón, 2004), message characteristics such as valence and richness of the message (Eisend, 2013; Laczniak, DeCarlo & Ramaswami, 2001; Sweeney et al., 2012; Sweeney, Soutar & Mazzarol, 2014), and situational characteristics such as involvement with the purchase (Voyer & Ranaweera, 2015; Wangenheim & Bayón, 2007). Further, consumers who actively seek WOM or, in other words, who engage in a process of vigorously seeking and ultimately obtaining information are more affected by WOM (Bansal & Voyer, 2000), especially during high-risk decisions (Fang, Lin, Liu & Lin, 2011).

However, there have also been some varying results and boundary conditions found in this line of research, which suggests that there are underlying information processes that affect the impact of WOM on marketing-relevant outcomes. For example, Charlett, Garland, and Marr (1995) found that WOM impacted consumer attitudes and purchase probability to the same extent regardless of WOM valence (i.e., how positive or negative WOM is). Moreover, East et al. (2008) reported that positive WOM was more influential on brand choice than negative WOM, and found some evidence that actively

sought WOM was more influential in the case of positive as opposed to negative WOM. As a more recent example, Jun, Cha, and Aggarwal (2011) noted that source characteristics' source expertise and tie strength mattered in the impact of WOM only when the information was tensile as opposed to more specific in details.

Thus, more research is needed to investigate what happens after WOM information has been received and how it affects marketing-relevant outcomes such as attitudes and purchase intentions (Martin, 2014; Martin & Lueg, 2013; Yang et al., 2012). This knowledge provides insights into the likelihood of WOM effectiveness, and thus leads to a better understanding of the impact of WOM on decision-making (Marting & Lueg, 2013). Perceived information diagnosticity has been a central construct in prior literature focusing on the processing of WOM, since "perceived diagnosticity determines the likelihood of information utilization" (Herr, Kardes & Kim, 1991, p. 457). Diagnosticity is a broad cognitive concept (Feldman & Lynch, 1988; Lynch, 2006) that refers to the perceived relevance or usefulness of the information related to decision-making (Ahluwalia, Unnava & Burnkrant, 2001). Thus, information diagnosticity represents a relatively thoughtful, cognitive, and deliberate manner of information processing, and from this viewpoint, WOM is effective if it is perceived relevant and useful for the decision.

Mangold et al. (1999) highlights the receivers' felt need for information and advice as the most frequent trigger of WOM in the services domain. However, WOM is not necessarily always perceived as diagnostic even though the receiver is in need of information, as some details may be processed more as simple cues of information, as suggested by Voyer and Ranaweera (2015). For example, on some occasions, the evaluation of a brand may consist of difficult and complex choice criteria such as advanced technical details, which the consumer may not be able to evaluate but are relevant criteria for decision-making. In this case, diagnostic information, may become less relevant since the consumer is not able to process the central arguments in the information but still wants to form an opinion of the brand. Additionally, on some occasions, the discussions may be about irrelevant issues for the decision maker as they may concern issues relating to the decision but not about the reasons as to why the decision maker is actually making the choice, also known as service values. Thus, the discussion may be perceived as less diagnostic. Further, certain sources of WOM may not provide the most diagnostic information, which is rich in facts and arguments; nevertheless, the support and approval of these social sources may be important for the decision maker. On these occasions (i.e., the complex nature of choice criteria, service values, the source of WOM) consumers may, for example, focus more on the general tone of the discussions, try to understand whether the sources' views are positive about the issues, and not perceive the information as diagnostic. Therefore, an interesting question can be raised regarding the processing of WOM: is only diagnostic information utilized, or might there be other forms of WOM additionally relevant for decision-making?

There have been some suggestions based on significant findings that WOM might have other less cognitive forms of impact. For example, Voyer and Ranaweera (2015) proposed that the closeness of the sender and receiver (i.e., tie strength) could be considered as a simple cue of information, since their results implied that the closeness of the source weakens the effect of product involvement on WOM influence. Further, with similar results concerning source credibility, Van Hoyer and Lievens (2005) suggest that future research could study the elaboration likelihood model (ELM) and WOM, which according to the authors, may provide more insight in order to understand the different information processing mechanisms of WOM (Van Hoyer & Lievens, 2005).

In the persuasion literature, deriving from social psychology, this variety of different information processing mechanisms has been acknowledged by dual-processing models of influence such as the ELM (Petty & Cacioppo, 1986). The models have acknowledged that there are two distinct processing routes through which information is used in decision-making. These two routes differ in the extent of cognitive processing of information, that is, the level of analysis of the information for its central merits (Petty, 1994). An additional literature stream, also arising from social psychology, is social influence literature. Social influence literature has also raised the issues of two distinct forms of influence: informational and normative (Deutsch & Gerard, 1955). Informational influence is based on information and facts, thus focusing more on the message. Normative social influence, in turn, implies conformation with the expectations of a social source and is responsive to the source's preferences and values (Kaplan, 1989). Both persuasion and social influence literature streams may provide interesting theoretical frameworks for understanding how the receiver uses WOM in decision-making, as the central construct arising from WOM literature, perceived diagnosticity, can be seen to have many similarities with these theories. First, with cognitive processing arising from persuasion literature and, second, with informational influence arising from social influence literature. As both forms of influence (Wangenheim & Bayón, 2004) and information processing routes are suggested to appear in WOM discussions (Voyer & Ranaweera, 2015), understanding the role of the less cognitive processing mechanisms, in addition to information diagnosticity, may provide insights into WOM literature.

Therefore, since extant research on WOM has acknowledged the relevance of perceived diagnosticity, and thus the more thoughtful processing of WOM, this research will aim to additionally understand how the more simple processing mechanisms operate during a high-involvement service decision. The ELM will form the theoretical perspective of this study and additionally will apply social influence theories to provide a broader perspective on the underlying mechanisms of information processing. Thus, by focusing on the receiver of WOM during a high-involvement service decision, taking a longitudinal perspective, this study aims to contribute to the understanding of the processing of WOM. Taken together, the usage of WOM will be addressed through its impact on beliefs, attitude formation, attitude change, and consumer choice, thus aiming to narrow the gap of what happens after WOM is received and positioning this study at

the intersection of WOM, services marketing, social influence, and persuasion literature streams. Figure 1 presents the positioning of the dissertation in relevant literature fields and central concepts arising from each intersection.

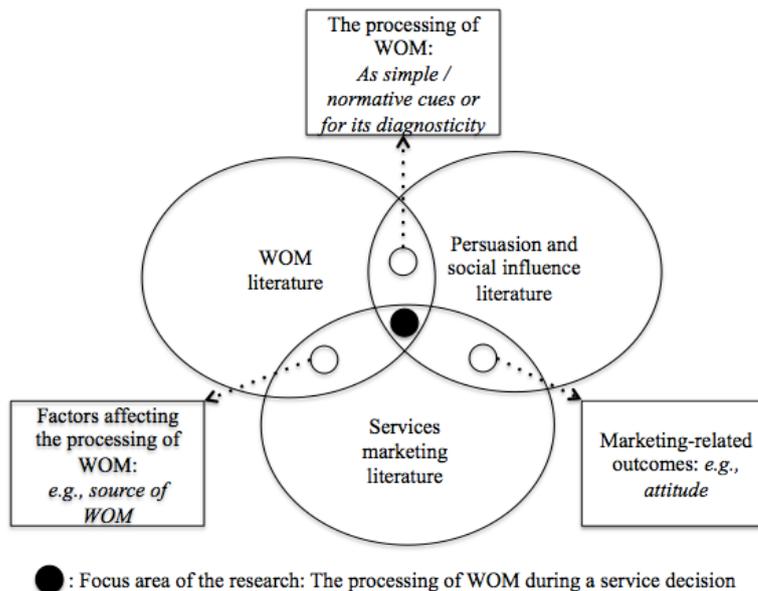


Figure 1: Positioning of the study within the literature

## 1.2 Research objectives

### 1.2.1 Research gap addressed by the dissertation

Prior research on WOM has provided important findings related to the role of the perceived diagnosticity of WOM information in attitude formation and consumer decision-making (Bone, 1995; Herr et al., 1991; Van Hove & Lievens, 2005). It is noted that diagnosticity is a cognitive concept that affects consumer behavior, as it provides insights into the probability that information will be used in decision-making (Herr et al., 1991). WOM has been stated to be diagnostic by nature (Mangold et al., 1999); however, prior research has also suggested that WOM may have other, more simple forms of influence (Voyer & Ranaweera, 2015; Van Hove & Lievens, 2005).

Thus, when it comes to understanding how WOM is processed, not only its diagnosticity but also less cognitive processing routes and forms of WOM may provide interesting insights into the impact of WOM on marketing-related outcomes. Less cognitive processing of information, such as information processed as simple cues or

heuristics, is important to understand, since its impact on attitude strength differs from information processed through a more cognitive route (Petty et al., 2013). Strong attitudes are those that are persistent over time and thus understanding attitude formation and change is interesting for researchers and practitioners. Therefore, the processes by which WOM impacts attitude formation is important to understand not only for the initial effects in attitude formation but also because these processes help to clarify the long-term consequences of WOM and the behavioral processes of WOM.

However, prior research addressing the impact of WOM in a high-involvement service context has not identified the different processing mechanisms underlying decision-making. The services context also affects the processing routes of WOM, due to the complex nature of choice criteria. Indeed prior research has acknowledged this complexity in consumer choice of services (Murray, 1991) and their effect on the impact of WOM (Lim and Chung, 2011), but understanding how the processing of WOM information is affected by this complexity and adaptation of dual-processing models of persuasion and different forms of WOM has been done to a lesser extent.

All this suggests that the extant literature on WOM identifies the importance of the diagnosticity of WOM and its relevance in consumer decision-making, which is emphasized when considering services. However, it leaves different processing mechanisms, especially the more simple and less cognitive ones yet unexplored. Thus, following the lead of social psychology and incorporating a theoretical background from social psychology with prior literature in WOM and services marketing domains, the present study's author (and the fellow researchers) engaged in an investigation of the current state of how WOM is processed by consumers using an information diagnosticity perspective.

First, a gap in current knowledge was identified in the processing of WOM through dual-processing models of persuasion. The more cognitive processing of WOM is well acknowledged through prior research focusing on WOM diagnosticity. These studies have mainly focused on the accessibility-diagnosticity framework (Bone, 1995; Herr et al., 1991; Van Hove & Lievens, 2005) and provided novel insights into how consumers process WOM. Correspondingly, this research will focus on the diagnosticity of WOM information, but with a similar approach as to Andrews (2013), thus leaving out the accessibility of information from memory. However, the less thoughtful information processing mechanisms derived from the ELM and social influence theories will be taken into account. With the direction of these theories, the aim is to understand the manner in which the nature of choice criteria and service values affect how consumers utilize WOM information.

Second, deriving from social influence literature, two forms of social influences have been identified to affect consumer behavior (normative and informational). Prior research has noted that both forms of influence are highly relevant in complex and high-involvement choices. Additionally, prior research has acknowledged that different social sources (e.g., family, friends) appear to differ in the underlying motivational

effect, or form, of social influence (Childers & Rao, 1992). Further, the very source itself is also noted in WOM literature as an avenue of future research (Chen, 2008; Berger, 2014; Zhao & Xie, 2011). While informational influence has a close resemblance to information diagnosticity, studying normative WOM influence in parallel with WOM information diagnosticity, taking into account the source of WOM, will provide further insights into how consumers process WOM.

Third, in addition to the mechanisms of information processing and forms of WOM, this study will take a longitudinal perspective to consumer decision-making and investigate the forms of WOM in two distinct phases, evaluation and choice. Berger (2014) calls for more attention to the behavioral processes of WOM, and since information processing is generally seen as a dynamic process that evolves over time as more information is acquired (Briñol & Petty, 2012), it is essential to understand how WOM affects consumer behavior from an attitude change perspective. Further, the different forms of social influences, informational and normative, are suggested to have distinct impacts on consumer choice (Kaplan, 1989). Therefore, taking an attitude change perspective, and understanding the impact of normative and informational (diagnosticity) influences, will provide further evidence of the behavioral mechanisms underlying WOM.

Even though the extant literature has recognized the importance of different processing mechanisms (Voyer & Ranaweera, 2015; Van Hove & Lievens, 2005) affecting the impact of WOM in attitude formation and attitude change, there is an empirical gap in terms of the studies focusing on these processing mechanisms and different forms of social influence in a high-involvement service context. Thus, investigating different forms of WOM and processing mechanisms operating in parallel, taking higher education (HE) as a specific high-involvement service context, creates a relevant research frontier and addresses theoretical and empirical gaps in the existing knowledge on WOM.

### 1.2.2 Scope and objectives of the study

Research on WOM has been active for many decades, and interest in the phenomenon is growing due to its importance in consumer behavior. Still, there are many research questions yet to be answered creating gaps in knowledge regarding what happens after WOM is received (Martin, 2014; Martin & Lueg, 2013; Yang et al., 2012), the sources of WOM (Berger, 2014; Zhao & Xie, 2011), and the underlying behavioral mechanisms of WOM (Berger, 2014). Thus, the dissertation is focused on two research objectives that constitute the contribution of the study to existing knowledge:

1. To theorize how consumers process WOM information in decision-making
2. To theorize how the service context influences the processing of WOM information

The study addresses the following research question: How is WOM information processed in a high-involvement service environment?

The following sub-questions help to provide the answers to the main research question, through the five research papers included in the structure of the dissertation:

1. How do international HE applicants evaluate institutions? (Publication I)
2. How to conceptualize the processing of WOM information? (Publication II)
3. How do service values affect information processing routes? (Publication III)
4. How does the source of WOM affect the processing of WOM information? (Publication IV)
5. How do the forms of WOM impact consumer choice behavior from an attitude change perspective? (Publication V)

The research process of the dissertation follows four steps. First, the decision-making process of an international HE applicant is presented. Second, an analysis of the existing literature at the intersection between WOM and the ELM is conducted. Based on the results, a conceptual framework is developed for the processing of WOM information. Third, an analysis of the existing literature at the intersection between WOM and different forms of social influences is conducted. Fourth, a synthesis of the theoretical perspectives (ELM and social influences) is presented through the nature of choice criteria, service values, source effects, and behavioral process of WOM.

The study makes theoretical contributions within the field of WOM by addressing the study objectives and providing managerial implications. From a theoretical perspective, the dissertation advances the understanding by forming a conceptual framework of the processing of WOM information and providing insights into how consumers process WOM during a high-involvement decision. From a practical point of view, the study provides insights into the formation of attitudes and long-term effects of WOM, thus helping marketers in designing more effective WOM campaigns. The author believes that the study could be a step towards a deeper understanding of how consumers make use of WOM information in decision-making, and consequently towards revealing what happens after WOM has been received. Figure 2 outlines the positioning of the publications within the theoretical framework of this dissertation.

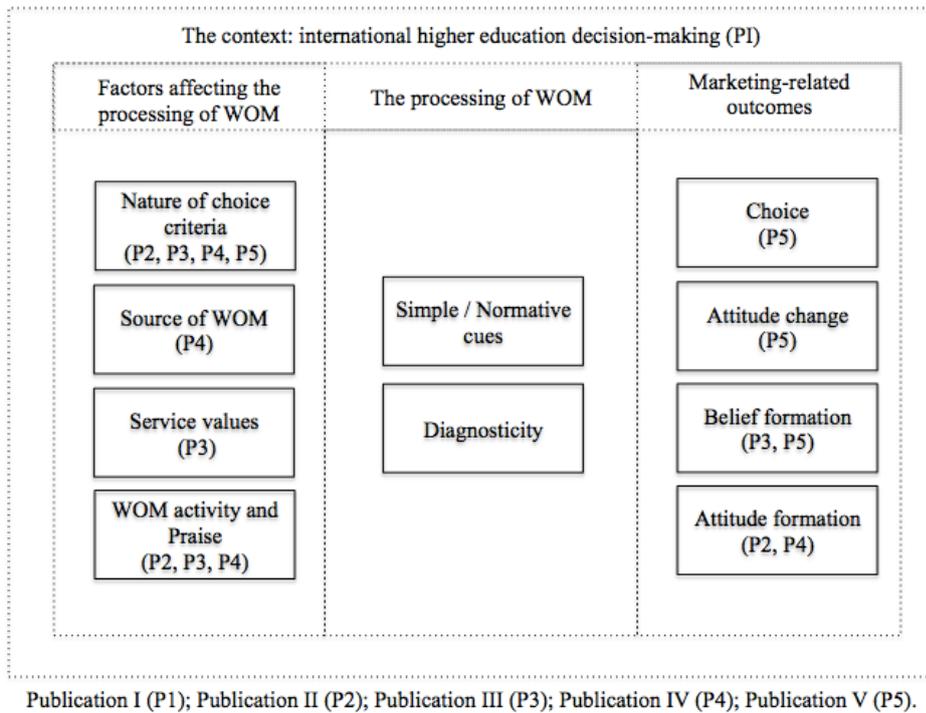


Figure 2: Positioning of the publications within the framework

### 1.3 Structure

The first chapter of the Introduction of the dissertation provides a background to the study and introduces the research objectives and context of the study. The second chapter starts with the theoretical foundations of information processing and social influences and presents a conceptual model of the processing of WOM information. Additionally, it presents a synthesis of the theoretical applications for the processing of WOM information by contextualizing the framework to services marketing through the nature of choice criteria and then providing models for how service values and the source of WOM affect this conceptualization. Finally, the chapter provides a model of the behavioral mechanisms of WOM through an attitude change and consumer choice perspective. The third chapter summarizes the methodological issues of the study and describes the research design and data collection applied. The fourth chapter describes the objectives and results of the publications included. The final chapter concludes by answering the research question of the study and providing a description of the dissertation’s contribution to the existing body of knowledge. Table 1 provides a description of the publications included in the dissertation.

Table 1: Research questions, objectives, and publications

Research Sub-Questions	Objective	Publication Title	Research Method and Data
<b>Research sub-question 1:</b> How do international HE applicants evaluate institutions?	To provide understanding to the decision making process of a higher education applicant by examining values, motives and choice criteria.	International Students' Personal Values, Educational Motives and University Choice Criteria	SEM with LISREL software. Survey data from 80 respondents collected after to a high-involvement service choice.
<b>Research sub-question 2:</b> How to conceptualize the processing of WOM information?	To provide a conceptual framework for the processing of WOM information during a high-involvement service decision.	The Impact of Word-of-Mouth on Attitude Formation: An Information Processing Perspective	SEM with LISREL software. Survey data from 378 respondents collected prior to a high-involvement service choice.
<b>Research sub-question 3:</b> How do service values affect information processing routes?	To study how service values impact the processing of WOM information in the formation of credence beliefs.	How Service Values Influence the Processing of Word-of-Mouth in the Evaluation of Credence Beliefs	SEM with LISREL software. Survey data from 378 respondents collected prior to a high-involvement service choice.
<b>Research sub-question 4:</b> How does the source of WOM affect the processing of WOM information?	Provide insight on how the actual source of WOM affects the information processing routes, by focusing on the form of the social influence.	How the Source of Word-of-Mouth Influences Information Processing in the Formation of Brand Attitudes	SEM with LISREL software. Survey data from three different sources of WOM: family (837 responses), the expert/teacher (537 responses), and friends (952 responses)
<b>Research sub-question 5:</b> How do the forms of WOM impact consumer choice behavior from an attitude change perspective?	To understand, through evaluation difficulty, how different forms of WOM affect attitude change and subsequent choice behavior in a high-involvement service context.	Facts or Approval - Which Make a Difference? Word-of-Mouth and Attitude Change in a High-Involvement Service Context	Longitudinal data analyzed with SEM (LISREL software). Survey data from 149 respondents collected in two phases of the decision making process.

## 1.4 Definitions of the key concepts

### 1.4.1 Word-of-Mouth

There is some variety in how WOM is defined and conceptualized in the literature. It is referred to as “informal communications between consumers concerning the ownership, usage or characteristics of particular goods, services and/or their sellers” (De Matos & Rossi, 2008, p. 578), and in its broadest sense includes “any information about the target object or brand transferred from one individual to another” (Brown et al., 2005, p.

125). Others have approached WOM as a likelihood of recommendation (Hartline & Jones, 1996). However, Mangold et al. (1999) found that the receivers' felt need for information and advice is the most frequent trigger of WOM in service purchase decisions, which suggests the receivers tend to actively seek for WOM and bring the topic up by themselves (Berger, 2014). This implies that WOM is more of a discussion, which can include casual conversations and in-depth information sharing initiated by the "receiver" of WOM. Therefore, this study approaches WOM from the more broad definition and adopts the view that WOM discussions can include any information about the target service transferred from one individual to another. In the services context Harrison-Walker (2001) developed a two-dimensional conceptualization of WOM, consisting of WOM praise (referring to the level of favorableness of the message) and WOM activity (referring to the amount of WOM, and the detail and quantity of the information). The author believes that this conceptualization is sufficient to capture the phenomenon of WOM; therefore, it is adopted herein. Further, this dissertation focuses on the impact of WOM on marketing-related outcomes. The impact of WOM refers to the effect of WOM on subsequent variables (Sweeney et al., 2014) such as attitudes and consumer choice.

#### 1.4.2 Attitude

Attitudes refer to "the general and relatively enduring evaluations people have of all kinds of objects, including products, brands, ads, and ideas" (Horcajo, Briñol & Petty, 2010, p. 239). The importance of attitudes is acknowledged in marketing literature due to their central role in behavioral outcomes, such as purchase intention (e.g., Martin & Lueg, 2013; Sundaram & Webster, 1999) and probability of purchase (e.g., Charlett et al., 1995). Therefore, the process of attitude formation has gained the interest of marketing researchers and practitioners aiming to persuade favorable consumer attitudes (Argyriou & Melewar, 2011). Additionally, Kumar (2015) raised the importance of consumer attitudes in marketing research and emphasized that marketers should identify, manage, and understand consumer attitudes. A brand attitude is the overall evaluation of the brand and forms the basis of consumer behavior such as brand choice (Keller, 1993). Further, prior research has noted that in consumer behavior research it is typically assumed that WOM functions through attitude change (Wangenheim & Bayón, 2007), this view is also adopted in the dual-processing models of persuasion (Briñol & Petty, 2012). Therefore, in this dissertation, the processing of WOM and its impact on attitudes is studied from a broad perspective, taking into account the formation of brand attitudes and beliefs. Additionally, attitude change and consumer choice are assessed. Understanding how WOM impacts the extent of positive brand attitudes and changes them will provide a broader perspective of the processing of WOM in decision-making.

### 1.4.3 Information diagnosticity

Information diagnosticity refers to the perceived relevance or usefulness of information related to evaluation and decision-making (Ahluwalia et al., 2001) and is a broad cognitive concept (Lynch, 2006). Information is perceived as diagnostic if it supports the consumer to assign a product or service to a cognitive category (i.e., low vs. high quality) (Mangold et al., 1999), and will be used in decision-making if it is perceived to be more diagnostic than other pieces of information (Feldman & Lynch, 1988), thus reflecting a more cognitive evaluation of information. In this dissertation, the focus is on the perceived diagnosticity of external information rather than on information that is stored in memory (see also Andrews, 2013).

### 1.4.4 Forms of WOM

Deutsch and Gerard (1955) originally divided social influences into two distinct forms: normative and informative. Normative influence implies conformation with the expectations of a social source (Deutsch & Gerard, 1955) and is responsive to that source's preferences and values (Kaplan, 1989). Normative influence is less informational in nature, but provides other types of cues of information, which are more simple to process. Accordingly, normative influence has been associated with less cognitive effort than informational influence (Kaplan, 1989). Informational influence refers to the acceptance of information received from a social source as evidence about reality, and is therefore based more heavily on facts (Deutsch & Gerard, 1955).

## 1.5 Research context: HE applicants' decision-making

The globally increasing competition for students, faculty and research financing (Durvasula, Lysonski & Madhavi, 2011) has aroused interest in HE among many in academia (e.g., Binsardi & Ekwulugo, 2003; Mazzarol & Soutar, 2002). HE is described as intangible and high-involvement in nature (Cubillo-Pinilla Zuniga, Losantos & Sanchez, 2009) and is perceived as an investment service (Soutar & Turner, 2002). The decision-making process of an HE applicant is complex and consists of multiple stages (Chapman, 1986). Chapman (1986) was one of the first researchers to apply buying-behavior theory to the educational context, proposing a five-phase model describing how applicants search for information and make their final choice. In his study Chapman (1986, p.1) proposed the pre-purchase distinction of the search and choice stages, defining the former as "searching for the attribute values which characterize colleges", which ends with the application decision, and the latter as choosing a university from among those that have offered the applicant a place. In this dissertation Publications I, II, III, and IV focus on the search stage, and Publication V focuses on both search and choice stages.

Service attributes also known, as choice criteria, are the desired outcomes from the product or service, which consumers use to evaluate and compare different brands to

one another (Engel, Blackwell & Miniard, 1986). In HE research, there exists rich evidence that applicants have several choice criteria, which further increases the complexity of evaluation (e.g., Cubillo-Pinilla et al., 2009; Joseph & Joseph, 1998; Kallio, 1995; Maringe, 2006; Soutar & Turner, 2002). Typical choice criteria identified by previous research include tuition fees and other costs, reasonable entry requirements, academic reputation of the university and country, good career prospects, campus atmosphere, friends' choice of university, and family opinion. Among the most important criteria in the evaluation of an institution, also known as "pull" factors, are reputation, career prospects, and academic value (e.g., Mazarrol & Soutar, 2002, Soutar & Turner, 2002).

Further, service values have been shown to impact HE students' behavior and provide insights into what is driving students or applicants towards a choice (Durvasula et al., 2011; Lages & Fernandes, 2005). Durvasula et al. (2011) identified three dimensions of personal (service) values related to HE: peaceful life (SVPL), social recognition (SVSR), and social integration (SVSI). SVPL applies when consumers experience the service as supporting pleasurable living, tranquility, security and/or harmony SVSI relates to the potential of the service to facilitate the development of stronger and better relationships both professionally and socially, thus fostering SVSI (Lages & Fernandes, 2005). Finally, SVSR relates to the individual's perception of how the service fosters respect from others and status improvement (Lages & Fernandes, 2005).

Further, relating to WOM, in the HE setting, external sources can influence an applicants' university selection, one of them being significant people such as the prospective students' family, friends, and high school personnel (Chapman, 1981). These people can operate in three ways: their comments can shape the expectations the prospective student will have of the HE institution, they may also offer direct advice on which HE institution the prospective student should choose, and their friends' choice of HE institution may affect their own choices (Chapman, 1981). Binsardi and Ekwulugo (2003) found that the four most important sources in attracting international degree students are alumni networks, friends, relatives, and local universities and colleges. Additionally, Johnston (2010) studied the influence of information sources on HE applicants' choice and came to the conclusion that friends and family members (especially parents) were the most influential sources of information in university choice. Kallio (1995) found that the effect of parents on university selection is felt especially important in the application (search) stage.

Thus, prior research on HE has highlighted the high-involvement nature of the decision-making process and identified the relevant choice criteria, service values, and the focal sources of WOM. Therefore, as HE is a complex service, it is interesting to study the processing of WOM information.



## 2 Theoretical points of departure

As the main objective of this study is to understand how WOM information is processed in decision-making the ELM provides a good point of departure. The ELM provides insights into the underlying mechanism of information processing, but also brings forth postulates, which answer why certain processing mechanisms occur. Thus, the objectives and scope of the study motivated the choice of this theoretical view. Additionally, in order to answer the sub-questions in more detail, theories from social influence and services marketing literature streams are also applied. The main rationale for choosing these theories is that they offer additional insight into why certain mechanisms occur after receiving WOM and into the behavioral mechanisms of WOM in the services domain. Further, their utilization in combination to analyze the impact of WOM has been done to a lesser extent. Thus, new insights may be gained by incorporating theories from the persuasion and social influences literature streams to gain a deeper understanding of WOM. The ELM and forms of social influences are discussed in the following section, and based on these theories two frameworks for the processing of WOM are presented. Additionally, a synthesis of the services marketing context and of the central theories provides insights into why certain processing routes of WOM occur.

### 2.1 The processing of WOM information

#### 2.1.1 ELM

ELM is a dual-processing theory of influence. The key notion in the dual-processing theories is that some processes of attitude formation and attitude change require relatively high amounts of cognitive effort, whereas other processes require relatively little cognitive effort (Petty et al., 2013). The ELM was originally developed to understand why some attitude changes endured over time, whereas others are more persistent, and it is based on the premise that the extent of thinking about a persuasive message determines attitude persistence (Briñol & Petty, 2012). Elaboration, the focal concept in the model, refers to the amount of thinking and is determined by the motivation and ability of the consumer to process information (Rucker & Petty, 2006). It is assumed that consumers generally want to understand information and develop accurate views of the world, thus highlighting the more cognitive processing of information (Petty, 1994). However, if either the motivation or ability to process information is lower, then less cognitive mechanism may be used for information processing. A central assumption is that the same variable (e.g., praise or activity) can have different effects on attitudes, depending on the situation and context (Petty et al., 2013).

In the ELM, information processing occurs through two separate routes: the central and the peripheral. The central route is related to high levels of elaboration in which the

receiver focuses on the central merits of issue-relevant information (Petty et al., 2013). When information is mainly processed through the central route, attitude formation and change result from extensive thinking of information related to the evaluative topic (Briñol & Petty, 2012). When consumers effortfully scrutinize available information, with high levels of ability and motivation to do so, they will form a strong and reasoned (but not necessarily unbiased) attitude (Petty et al., 2013). Thus, attitudes formed through the central route are more stable and predictive of behavior (Petty, 1994). The peripheral route, on the other hand, requires less elaboration, and simple cues or heuristics can change attitudes (Rucker & Petty, 2006). In this route, attitudes can be affected without extensive issue-relevant thinking or relevant arguments. Thus, the receiver does not deliberately process the information for its central merits (Petty, 1994). Attitudes that are changed by information processed through the peripheral route are suggested to be weaker and thus more susceptible to change (Petty et al., 2013). Generally, when the decision is of high personal relevance to the consumer (e.g., HE), information is processed through the central route, but if either the ability or motivation to process the information is decreased, peripheral route processing may occur in parallel to the central route (Petty, 1994).

Another aspect of the ELM is the multiple roles of variables postulate, meaning that the same variable such as activity and praise can affect attitudes for different reasons in different ways (Rucker & Petty, 2006). The process through which a certain variable will affect persuasion depends on the level of elaboration and the context (Petty, 1994). It could, for example, serve as an argument or a simple cue or affect the receiver's thoughts through the amount, valence, or degree of attitude confidence (Rucker & Petty, 2006). Simple mechanisms are at play when the level of elaboration is low, because consumers do not analyze the information for its relevance and do not require extensive cognitive effort, and thus the mere level of positivity can affect attitudes. When the level of elaboration is high, on the other hand, consumers who are highly motivated and have the ability to process it carefully analyze all the information (Rucker & Petty, 2006).

An enhanced understanding of the cognitive information processing through perceived information diagnosticity will facilitate the assessment of whether a consumer processes WOM information as an argument (central route) or as a simple cue (peripheral route). As discussed in the previous section, the ELM holds that any piece of information can be processed as a simple cue or an argument, and that this implies that the impact of information (such as WOM) will have a direct effect on dependent variables (such as attitude) under certain conditions and be mediated under other conditions (Fabrigar, Porter & Norris, 2010). Thus, focusing on how perceived information diagnosticity acts as a mediator, depicting the process mechanism between WOM information and consumer attitudes will provide some insight into this issue. Figure 3 represents the conceptual model for the processing of WOM information. If the consumer perceives WOM as diagnostic, he or she has invested cognitive effort into the evaluation and has processed the information through the central route ( $a + b$ ). If WOM directly affects attitudes, the information is processed as a simple cue, thus not investing cognitive

efforts of its relevance and usefulness, and therefore referring to the peripheral route (c). Additionally, both processing routes can be activated simultaneously, occurring in parallel processing of information (c', a + b).

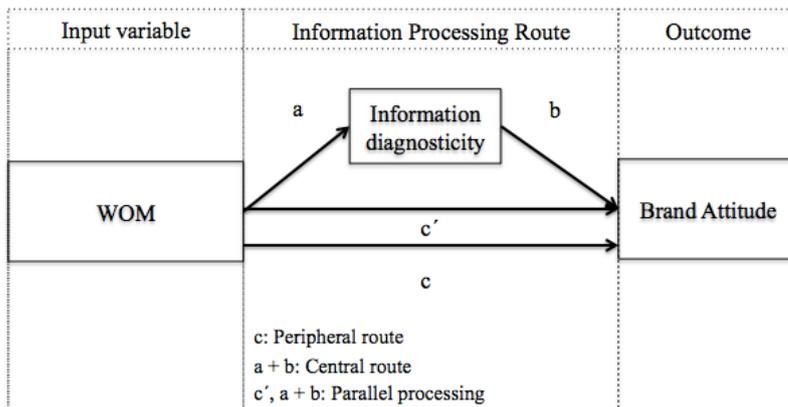


Figure 3: Conceptual framework for processing WOM information

Since the ELM holds that any variable can be processed as a simple cue or an argument depending on different circumstances (Petty, 1994), this perspective should still be explored in the WOM domain, and the conceptual framework presented in Figure 1 may provide a good tool for this. However, there are also other forms of WOM (normative and information) identified in the social influence literature that may provide additional insights and are thus presented in the following section.

2.1.2 Forms of social influences

The social influence literature has found distinct forms of these influences that affect the impactfulness of social others. Various theories of social influence, such as the social power theory (French & Raven, 1959) and the reference group framework (Bearden & Etzel, 1982), identify these types and suggest ways of assessing how and why such influences affect consumer behavior. What these distinct theories have broadly in common is the ability to divide social influences into two categories, the informative and the normative (Kaplan, 1989), as Deutsch and Gerard (1955) originally proposed. Informational influence refers to the acceptance of information received from a social source as evidence about reality and is therefore based more on facts and arguments (Deutsch & Gerard, 1955). Such an influence operates through the process of internalization, which occurs if it serves a problem-solving purpose or is agreeable to the consumer (Kelman, 1961). Normative social influence, in turn, implies conformation with the expectations of a social source (Deutsch & Gerard, 1955) and is responsive to that source’s preferences and values (Kaplan, 1989). This influence operates through identification or compliance with the source (Kelman, 1961). Identification is associated with satisfying and self-defining relationships with the social

source. Compliance, in turn, occurs because the consumer hopes to attract a favorable reaction from the social source (Kelman, 1961).

Both normative and informational influences have been identified in complex and high-involvement consumer decisions (Lord et al., 2001), and the strength of WOM is suggested to depend on the level of both forms of influence (Wangenheim & Bayón, 2004). However, the normative form of influence has attracted less attention in the WOM literature, especially with regards to high-involvement service choice. Normative influence has been described as highly impactful on consumer choice especially when the evaluation is public or visible to others (Kaplan, 1989) and is highly impactful in changing behavior (Nolan, Schultz, Cialdini, Goldstein & Griskevicius, 2008).

In the electronic WOM domain (eWOM), certain variables such as argument quality and type of reviews are considered to reflect central route processing. Other variables such as source credibility and number of reviews are suggested to reflect peripheral processing. (For an extensive review on the topic, please see Cheung and Thadani, 2012.) Since the ELM holds that any variable can be processed as a simple cue or an argument depending on different circumstances (Petty, 1994), this perspective should be explored in the WOM domain, and the conceptual framework presented in Figure 3 may provide a good tool for this. However, there are also other forms of WOM (normative and information) identified in the social influence literature, and the processing of these different forms is more understood and can be treated more similarly in prior eWOM studies as a direct relationship of these influences and the marketing-relevant outcome. Figure 4 represents the conceptual model for the different types of WOM influencing brand attitudes.

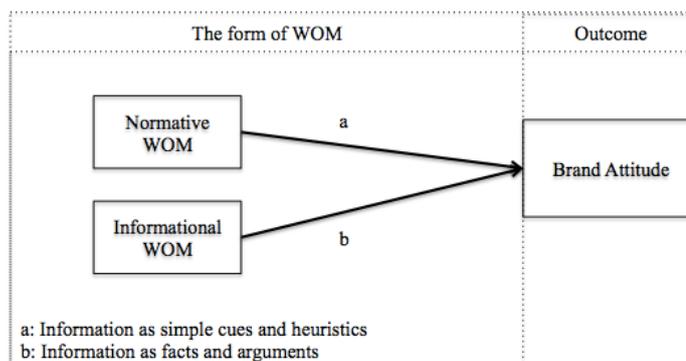


Figure 4: Conceptual framework for the forms of WOM

## 2.2 Theoretical approaches to WOM utilization—A synthesis

A multi-theoretical view on information processing is presented to provide more insights into the usage of WOM. The two theoretical approaches are synthesized here in

terms of four issues: first, a deeper understanding of how the nature of choice criteria impacts information processing routes is presented. Second, the impact of service values on the processing of WOM is assessed. Third, a framework of how different sources of WOM affect the formation of brand attitudes is created. Finally, the impact of different forms of WOM on attitude change is evaluated.

### **2.2.1 The nature of choice criteria**

Prior research has shown that, regardless of the type of service, consumers use similar choice criteria in the evaluation of a service, which vary in terms of evaluation difficulty (Parasuraman, Zeithaml & Berry, 1985). The evaluation of services can be approached through the search-experience-credence (SEC) framework (Parasuraman et al., 1985). The SEC framework categorizes choice criteria on three distinct levels (credence, search, and experience). Nelson (1970) originally developed the search-experience goods framework, which Darby and Karni (1973) extended with credence goods. More recently all products and services are seen to contain a combination of search, experience and credence criteria (Alba et al., 1997). It is easy for the consumer to evaluate search criteria, such as the price and color, prior to purchase, whereas experience criteria are more difficult because they involve usage-related experiences (such as the atmosphere at a restaurant or the tastiness of food) (Nelson, 1970), and thus are more subjective in nature. Credence criteria, such as the health effects of vitamins, may be difficult to verify even after purchase and are highly abstract in nature (Darby & Karni, 1973). Therefore, when consumers are evaluating services, they may be experiencing difficulties in evaluating credence and experience criteria than when evaluating search criteria. Thus, the processing route of WOM information may also vary depending on the complexity arising from the criteria associated with services.

According to the ELM, in some situations, the peripheral route may affect attitudes when the level of elaboration is high. Weakening the motivation to process information, or the ability to evaluate its central merits, may result in higher levels of peripheral route processing (Petty, 1994). Consumers seem to be motivated to process issue-relevant information in evaluating high-involvement services, but as noted previously, the criteria may be difficult to evaluate, and thus the ability to do so may vary depending on what is being evaluated. Consumers must have the resources and the capacity to understand and process the information in order to be able to fully evaluate its central merits (Rucker & Petty, 2006). The way the message is presented may negatively affect this ability. It may pass too quickly, for example, or be perceived as ambiguous (Petty, 1994). Hence, the nature of choice criteria is suggested to have a central role in understanding why information is processed through a certain route in the formation of attitudes, especially in the service context, given the high incidence of complex criteria.

Various models of brand attitudes have been proposed in the literature, of which a multiattribute approach has been widely accepted (Keller, 1993). In this approach, “brand attitudes are viewed as a function of the associated attributes and benefits that are salient for the brand” (Keller, 1993, p. 4). The multiattribute approach seems

appropriate for the HE context to conceptualize brand attitudes, since prior research has identified the choice criteria applicants use to evaluate and compare HE institutions (e.g., Cubillo-Pinilla et al., 2009; Joseph & Joseph, 1998; Maringe, 2006; Mazzarol & Soutar, 2002; Soutar & Turner, 2002). Further, prior research on WOM has noted that positive WOM tends to be more effective when considering credence than search criteria (Lim & Chung, 2011), but what remains unclear is how WOM information is processed in the formation of the choice criteria. Given the increased complexity in evaluating experience and credence criteria, the consumer may be forced to process simple cues due to the ambiguity or difficulty of the information. Consumers who assume that they cannot form a veridical attitude based on the information, but who are highly motivated to process it, can according to Petty (1994) either delay their decision or generate their own relevant information. If the consumer cannot delay the decision and is unable to generate information, he/she may rely on accessible simple cues in order to form an evaluative attitude (Petty, 1994). Therefore, it is suggested that peripheral processing of WOM information as simple cues and heuristics will increase and the evaluation will become more difficult. Figure 5 outlines this theorizing and adapts it to the conceptual framework of the processing of WOM information.

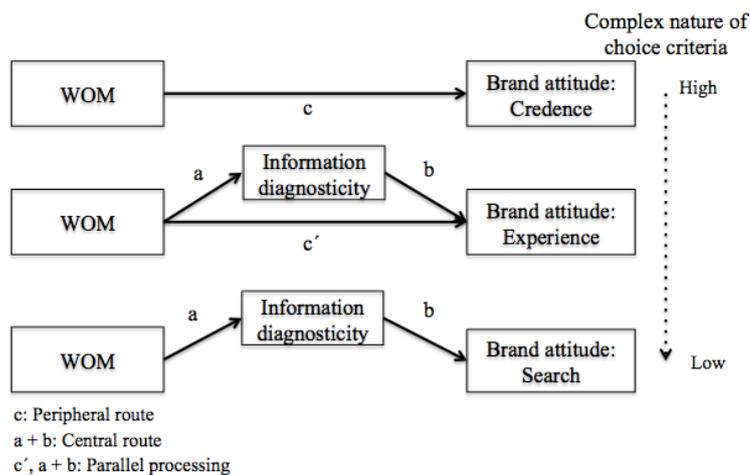


Figure 5: Nature of choice criteria and WOM processing

### 2.2.2 Service Values in information processing

Service values have been defined as the “customer’s overall assessment of the use of a service based on the perception of what is achieved in terms of his own personal values” (Lages & Fernandes, 2005, p. 1564). Personal values are perceived as the most abstract form of individual knowledge, and as guiding principles of behavior in terms of determining what the consumer considers important (Kahle, 1983; Rokeach, 1973). They have been described as highly abstract cognitions (Kropp, Lavack & Silvera, 2005), and as mental representations of needs, which could be understood as intrinsic and stable beliefs (Lages & Fernandes, 2005). Consumers are known to develop abstract

classifications of things in order to facilitate information processing, and communication is most effective when it supports such classification (Kahle, 1984). One reason for this is that consumers rarely choose a product or service solely on the basis of its functionality (Kahle & Kennedy, 1989). One of the most influential variables motivating consumers to think about specific communication is its perceived personal relevance or importance (Ajzen, Brown, and Rosenthal, 1996).

Previous studies on values and consumer susceptibility to social influences (i.e., WOM) such as Hoffman and Broekhuizen (2009) and Kropp et al. (2005) tend to categorize values broadly as internal, external, and fun/excitement-related. Internal values, such as self-fulfillment and self-respect, are less dependent on social others, whereas external values relate more closely to the opinion of others, such as being well respected, secure, and fulfilled in one's relationships (Homer & Kahle, 1988). Thus, the fulfillment of external values may be more dependent on others (Batra, Homer & Kahle, 2001). This distinction is highly relevant in the WOM context given the evidence that external values positively influence susceptibility to social influences (i.e., WOM) (Hoffman & Broekhuizen, 2009). Given that values are context-specific, and that Durvasula et al. (2011) studied service values in the HE domain, it can be argued that the influential values (presented previously in this dissertation: SVPL, SVSI, SVSR) represent more external values in that all three are mainly dependent on people other than the applicant.

However, even if these three dimensions of service values tend to represent external values, they differ in their underlying orientation. SVPL operates on a self-oriented level, whereas SVSI and SVSR are more socially oriented (Durvasula et al., 2011). According to Batra et al. (2001), security could be conceived of as an internal value, even if its fulfillment does not depend solely on the consumer. They use peace of mind as an example, which may relate to an external threat, or to an internal state of mind; thus, SVPL could be said to have an internal origin even if it is generally perceived as an external value (Batra et al., 2001). Given the differences in the underlying orientation between the service-value dimensions, it is likely that their impact on the processing of WOM may vary, since internal and external values are suggested to have opposite effects on consumers' tendency to use social influences (i.e. WOM) in their evaluation. Figure 6 represents the conceptual framework for how service values impact the processing of WOM in the formation of a credence criteria-based belief.

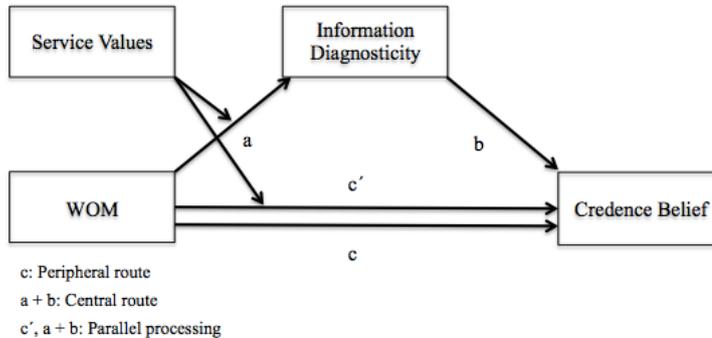


Figure 6: Service values and WOM processing

### 2.2.3 The source of WOM in information processing

According to previous research on information processing, informational influence is associated with processing via the central route in that it is based more on facts, and therefore reflects the cognitive evaluation of the information (Kaplan, 1989). Further, peripheral route processing is suggested to be associated with normative social influence, since the information utilized is more based more on values and mainly convey the sender's opinion (Kaplan, 1989). In the latter case, the impact of the source relates more strongly to the source than to the information or its factual content (Kaplan, 1989). For example, a university applicant may discuss the choice of institution with his or her family. The family might give detailed information about the university, but still the applicant may focus on, for example, the general tone (valence) of the discussions, mainly seeking approval and thus processing the information more as simple cues. On the other hand, the same applicant may have a similar discussion with a teacher from a previous school, focusing more strongly on the information; here, the approval of the teacher may not be as relevant as parental approval, and thus the information will be processed for its factual value. This distinction stems from differences in the type of social influence a source conveys, some being more strongly related to normative influence (Goodrich & Mangleburg, 2010), others to informational influence (Childers & Rao, 1992), and still others to a mixture of both (Lord et al., 2001), resulting in parallel processing of WOM.

Goodrich and Mangleburg (2010) studied parental and peer influences in young consumers' purchasing behavior. They found that parental social power over the choice of products was mainly coercive, referent or legitimate, based on social power theory (French & Raven, 1959). Coercive power is used to threaten "non-compliers" with negative consequences, referent power reflects the receiver's need to identify with the sender, and legitimate power reflects the sender's right or authority to impose behavioral requirements on the receiver (Raven, 2008). Thus, what these social powers have in common is the notion that social influence comes from the perceived qualities

of the source and is not reflective of the message, and thus could be seen as a form of normative influence (Kaplan, 1989). Childers and Rao (1992) also investigated familiar and peer-based reference groups, and found that when consumers were considering purchasing more luxury products, the strongest peer influence was informational rather than utilitarian or value-expressive (i.e., normative). The same effect occurred for specific brand decisions among consumers (Childers & Rao, 1992). As there are some references to combined normative and informative influence when the source is a friend, it is suggested that both forms of WOM influences may be active through this source. Further, according to the social power theory, informational influence generates two separate forms of social power: expert and informational power (Raven, 2008). Expert power reflects the receiver’s belief that the source is knowledgeable and has some superior insight into the topic at hand, whereas informational power leads to cognitive change, meaning the giver of the information argues and explains certain points to the receiver (Raven, 2008). Wilson and Sherrell (1993) find that source expertise tends to have a strong effect on persuasion and attitudes, suggesting that this could be attributable to the cognitive nature of the shared information. Thus, this would suggest that information from the teacher source is mainly processed through the central route.

Therefore, combining the ELM and forms of social influence as a theoretical perspective, this dissertation will provide a more detailed approach to understanding how the very source of WOM may affect the processing of WOM for its diagnostic properties. Figure 7 depicts information processing routes and the forms of social influences.

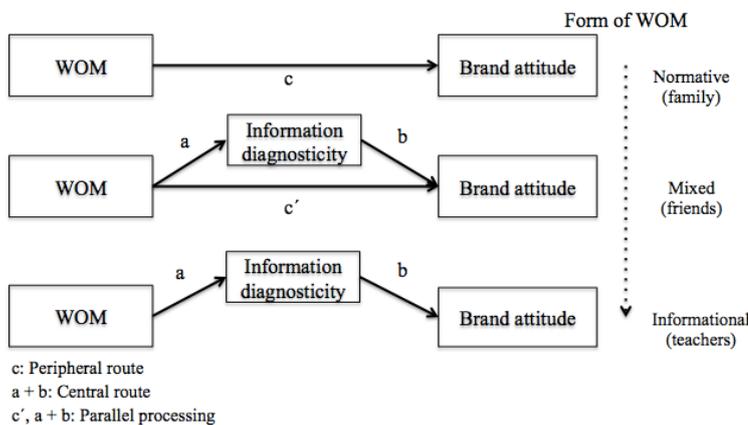


Figure 7: The source of WOM and WOM processing

### 2.2.4 Behavioral outcomes of WOM

When a HE applicant makes a choice to study abroad, he/she faces an important choice and invests in his/her future. Even though HE may be consumed privately, the choice is

public, as it is discussed extensively with family and friends (Binsardi & Ekwulugo, 2003; Kallio, 1995). Kaplan (1989) argues that when a choice is public, normative influence may be more effective than informative influence on choice, suggesting that the normative form of WOM may have a stronger impact on HE applicants' choice than informational WOM in later phases of decision-making.

Further, as stated previously, the ELM assumes that attitudes formed through the central route are generally more persistent over time (Rucker & Petty, 2006). In the context of HE, applicants are highly involved with the choice and tend to process information extensively (Chapman, 1986), it is therefore suggested that they are likely to process information through the central route as much as their ability enables. Since search criteria-based attitudes are simple to evaluate, this research suggests that the search-based attitude dimension is already formed mainly through the central route in previous phases of the decision-making process. Thus, due to the stability of attitudes formed through the central route, a change in the search-based dimension may be marginal, and the effect of change is thus smaller on consumer choice. Additionally, the credence-based attitude dimension may be more susceptible to change than the search-based dimension, due to the increased amount of peripheral processing of WOM arising from the difficulty of evaluating credence-based attitudes. Attitudes formed through the peripheral route are acknowledged to be more susceptible to change, because they are not as accessible and are more uncertain than attitudes processed through the central route (Petty & Briñol, 2012).

Since, normative influence was reflecting more peripheral processing, and the role of normative influence is suggested to be stronger in the final stages, it is an interesting setting for understanding the underlying behavioral mechanisms of WOM. Figure 8 depicts information processing routes and the forms of social influences affecting attitude change and consumer choice.

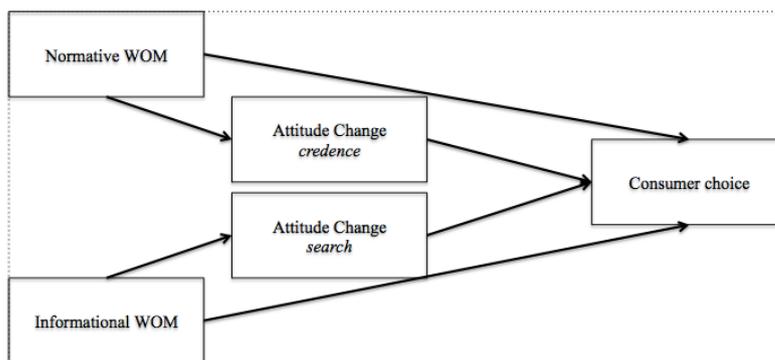


Figure 8: The form of WOM and WOM processing

### 3 Research design and methods

Prior research on receiving WOM has applied a multitude of methods such as experiments (Bone, 1995; Herr et al., 1991; Laczniaik et al., 2001; Lim & Chung, 2011; Van Hoye & Lievens, 2007) and surveys (Bansal & Voyer, 2000; Martin & Lueg, 2013; Sweeney et al., 2014; Wangenheim & Bayón, 2004). Additionally, some researchers have used multi-method approaches; for example, East et al. (2008) conducted surveys and role-play experiments, while Sweeney et al. (2012) conducted focus groups and surveys. According to East and Uncles (2008), measuring WOM retrospectively by means of a survey is appropriate due to the informal and unpredictable nature of WOM and thus is considered a practical method for investigating the naturally occurring phenomenon. Thus, in this dissertation, the retrospective survey method is adopted. From epistemological and ontological perspectives, this research falls under critical realism, in which, by identifying the structures that generate events and discourses, one can understand the social world and change it (Bryman & Bell, 2015). The critical-realist approach acknowledges that no theory represents the absolute truth and that perceptions can change with new research findings (Hunt, 1990), thus indicating that knowledge of reality is imperfect (Easton, 2002).

#### 3.1 Sampling and data collection

For the purposes of this dissertation, three data sets were collected. The first data set was collected in 2011 from current international students in Finland who were pursuing a Master's in Business from a research university or from an applied sciences university. The sample consisted of 84 respondents, giving a response rate of 13.5%. The data was used for the analysis of Publication I. The second and third data sets were collected in two waves in spring 2012 and fall 2012, adopting Chapman's (1986) distinction of search and choice phases in HE decision-making. The second data was collected within a fairly rare time frame, since the respondents received the survey after they had applied to the university but before they knew whether or not they would be accepted. Thus, the final choice has not still been made. In order to reach the participants at this stage of the decision-making process the survey method approach was selected to facilitate the collection of a representative sample. The second data set was used for the analysis of Publications II-IV, and the third data set was used in combination with the second data set for the purpose of Publication V.

The sample consisted of international applicants for Masters' degree programs of four Finnish universities who applied during the spring of 2012. An email with a link to an online questionnaire (Qualtrics software) was sent to all applicants. The data represented multiple Master's-level programs. The first data-collection phase (T1) followed the search phase, but was carried out before the applicants had received any information from the universities concerning their acceptance or otherwise. The second data set (T2) followed the choice phase, when the applicants had received letters of acceptance from different universities, and had made their final choice but had not yet

started their studies. In other words, they did not yet have any study-related experience at the universities. Thus, the data represented real choices and incorporates data points, which are relatively rarely discussed in the literature. The sample for the search phase (T1) comprised 1,718 respondents, a response rate of 43.8 percent. Of these, 1,110 respondents proceeded to the second point of data collection, the choice phase (T2), which took place in August 2012. This second phase yielded 481 responses (response rate 43.3 percent). Of these, 149 were usable for the longitudinal data, which included students who had been accepted into one of the original four universities (T1).

Retrospective surveys are subject to bias, such as sampling bias and measurement bias (East & Uncles, 2008). Sampling bias is associated with the representativeness and relevance of the sample to the research at hand (East & Uncles, 2008). As the aim of this dissertation is to understand the impact and processing of WOM during a high-involvement service choice, an important objective relating to the representativeness of the sample is to assess whether the sample represents the aim. The sample was collected at a time when the applicants had already applied to one of the four universities, and the extent of WOM discussions was assessed in the survey prior to measures of WOM by a single item slider scale ranging from 0 to 100, anchored from “not at all” to “a great extent” (see Appendix 1). This was conducted in T1 for each source of WOM (family, teachers, and friends): “This part of the questionnaire concerns the discussions you have had with other people about university x. Please indicate below the extent to which you have had such discussions”, and in T2 for each source of WOM: “This part of the questionnaire concerns the discussions you have had with other people about university x when you were making your choice on which university to start your studies at, AFTER you have received your acceptance letter from the university. Please indicate below the extent to which you have had such discussions”. If the respondent indicated that they had had discussions with the social source to some extent, then the following WOM scales (activity, praise, and diagnosticity) were presented. Thus, the sample can be seen as representative from this perspective, but a limitation to the sample is that only one high-involvement service is represented, which also relates to external validity.

In order to reduce measurement bias, both surveys were distributed as close as possible to the WOM discussions and subsequent behavior, in order to minimize the time span for recall. Additionally, pretesting was conducted prior to the launch of the surveys to increase precision in wording and clarity of statements, thus complying with the compatibility of measures principles (East & Uncles, 2008).

### 3.2 Structural equation modeling and confirmatory factor analysis

Consumer psychologists and behavioral researchers are frequently interested in the theoretical processes by which a phenomenon occurs, and these are often analyzed through mediation (Iacobucci, 2008). Analyzing mediation by structural equation modeling (SEM) has some advantages, since the simultaneous fitting on multiple paths has been noted to yield results which are more precise and are associated with smaller

error and less bias than results yielded by, for example, multiple regression, and thus can be seen as an important tool for marketing researchers (Iacobucci, 2009). Additionally, SEM modeling takes into account measurement error and incorporates unobservable variables, and thus can be considered as a strong method for theory testing and empirical model building in marketing (Fornell & Larcker, 1981).

SEM refers to “a general method for estimating the unknown coefficients in a set of linear structural equations” (Jöreskog, 1970, p. 1) and “is used to specify the phenomenon under study in terms of tentative cause and effect variables and various causal effects” (Jöreskog & Sörbom, 1982, p. 404). In this dissertation SEM with LISREL 8.80 software is conducted for hypothesis testing, as the aim is to test theory on a phenomenon level. This method is generally adopted in confirmatory studies, (i.e., confirming hypothesis based on theory); however, it can also be useful for exploratory analysis by a sequence of confirmatory analyses, which can be based on more tentative theory or hypothesis (Jöreskog & Sörbom, 1993). Confirmatory factor analysis (CFA) is based on models, which are assumed to describe, explain, or account for empirical data in terms of relatively few parameters. The CFA is based on a priori information about the data structure and builds on at least tentative theory, and thus is more confirmatory than exploratory in nature (Jöreskog & Sörbom, 1993). In this dissertation, CFA is conducted in order to determine overall model fit and provide insights into construct validity, that is, analyze the extent to which observed variables reflect the theoretical constructs they are hypothesized to reflect (Fornell & Larcker, 1981). These validity issues are elaborated more in the next section, which focuses on validity and reliability issues of the dissertation work.

### **3.3 Validity and reliability of the study**

Validity refers to “the degree to which instruments truly measure the constructs which they are intended to measure” (Peter, 1979, p. 6). Ping (2004) conducted a review of marketing literature using a survey method and came to the conclusion that at least three forms of validity should be addressed: content or face validity, criterion validity, and construct validity. Content, face, and criterion validity focus more on the validity of a single measure, whereas construct validity takes into account the model and how constructs are associated with one another. Since the measures in this dissertation are adapted from previous literature, the focus of this chapter will be more on issues regarding construct validity.

Content validity or face validity refers to the extent in which items are in line with their conceptual definition (Ping, 2004). Measures for the focal concepts in the different models appearing in Publications 1-5 in this dissertation were adapted from prior literature, thus increasing their face validity. The main reason for the adaptation of the measures was to adapt them into the HE context (except for the measure of service values, which was originally developed by Durvasula et al. (2011) for HE). After the adaptation of the measures, an outside expert performed a language revision to the

survey. The survey measures were examined by two other researchers prior to data collection, in order to increase content and face validity. Criterion validity refers to “measure correspondence with other known valid and reliable measures of the same construct” (Ping, 2004, p. 130). Since the survey was rather lengthy (mean response time for T1: 31 minutes, and for T2: 33 minutes), additional measures for the constructs could not be added to the instrument. However, since the measures were from previous research, their validation has been assessed previously. Through the pretesting of both surveys, each measure was discussed with the pretesters in order to comprehend their view and understand the measured concepts based on the survey instrument, thus contributing to face and criterion validities.

Construct validity (nomological validity) refers to “measure correspondences with other constructs are consistent with theoretically derived predictions” (Ping, 2004, p. 130). Common method biases, if not taken into consideration, may impact construct validity (MacKenzie & Podsakoff, 2012). There are two ways these biases can be controlled for: first, by aiming to minimize the effects through careful design of the study procedures and second, by statistically controlling for the effects after the data has been collected (MacKenzie & Podsakoff, 2012). In this dissertation, both statistical analyzes were conducted and pre-data collection efforts were administered in the development of the survey instrument. MacKenzie and Podsakoff (2012) raised the issues of the ability to respond to questions and motivation to respond to questions, as important considerations when method biases may cause problems. According to their suggestions, pretesting was conducted for both surveys, through which item ambiguity and complexity were assessed with the pretesters. Additionally, the personal relevance of the respondents could be considered high due to the high-involvement nature of HE choice, which decreases motivation effects on method biases (MacKenzie & Podsakoff, 2012). Additionally, the survey included a cover letter, which emphasized the importance of the personal opinions of the respondents and the importance of the research for the HE institutions developments, as recommended by MacKenzie and Podsakoff (2012). Further, steps were taken in the research design in order to diminish conditions that may have caused method bias. For example, the participants were not forced to participate, and the respondents were communicated with in a respectful way. They were told the value of their time spent as participants, and highlighting there were no right or wrong answers to the issues and that anonymity was guaranteed (MacKenzie & Podsakoff, 2012).

After data collection, data can be analyzed for its construct validity through convergent and discriminant validities (Fornell and Larcker, 1981). Convergent validity refers to the common variance the variables in a construct share, and is commonly assessed through average variance extracted (AVE) and constructs reliability (CR). AVE measures the amount on variance captured by a construct in relation to measurement error, and CR measures the reliability of the construct (Fornell & Larcker, 1981). AVE values above 0.50 are usually considered to reflect sufficient construct validity (Hair et al., 1998), and CR values should be above 0.60 to reflect sufficient internal consistency (Bagozzi & Yi, 1988). The reliability of this dissertation work will be further discussed

in the next paragraph. Discriminant validity refers to the uniqueness of a construct and can be assessed in different ways: by squaring correlations and comparing them with the AVEs (Fornell & Larcker, 1981) or by means of nested modeling, as recommended by Anderson and Gerbing (1988). In the nested modeling approach the correlation between a pair of constructs is assessed and should be significantly different from 1.0, which confirms sufficient discriminant validity. Discriminant validity and convergent validity criteria are reported in the dissertation for each model in Publications 1-5.

Reliability is defined broadly “as the degree to which measures are free from error and therefore yield consistent results” (Peter, 1979, p. 6). In order to increase the reliability of marketing research, Peter (1979) suggests that surveys should use multi-item scales, improve the clarity of survey instructions, and report construct reliabilities. In this dissertation research, all measures were multi-item measures and performed soundly in both waves of the data collections. Construct reliabilities were reported for all measures in the different models of Publications 1-5. Additionally, as stated previously, the survey was pretested and language checked in order to increase clarity and avoid ambiguous statements. Further, increasing the reliability of this dissertation work was the two-wave data collection, since the same measures for WOM and brand attitudes yielded consistent construct reliabilities and results throughout the publications.



## 4 Summary of the publications and review of the results

This section reviews the results of the five publications included in the dissertation.

The first publication provides insights into the context of the research, and studies the linkage between personal values, educational motives, and choice criteria. The results indicate that personal values have an important role in forming educational motives, which in turn, affects university choice criteria. The publication therefore provides insights into the complexity of HE decision-making.

The second publication focuses on the processing of WOM information during the search phase of HE decision-making. The paper presents a conceptual framework through which the processing of WOM can be understood and takes into account the nature of choice criteria in the formation of brand attitudes. Further, the publication provides empirical evidence that WOM is processed through both information processing routes, and suggests that the nature of choice criteria explains the occurrence of this parallel processing.

The third and fourth publications adopt the same model as the second study. Additionally, the third publication focuses on the effects service values have on the processing of WOM information in the formation of a complex credence-based belief, while the fourth publication investigates how the very source of WOM (family, friends, teachers) affects the processing routes of WOM.

The fifth study uses a longitudinal model to investigate the behavioral processes of WOM, since it focuses on how the form of WOM (normative or informational) affects attitude change, and impacts subsequent choice behavior.

Taken together, the Publications II, III, and IV focus on brand attitude and belief formation in the search stage, in which the final choice has not yet been made. Through these publications, the results suggest that the processing of WOM occurs mainly through the central route, in which information is analyzed for its central merits. However, the nature of choice criteria, service values, and the source of WOM impact this process. As the nature of choice criteria becomes more complex, suggesting that evaluation is more difficult the extent of peripheral route processing increases. The service values have distinct effects on information processing, depending on their orientation. Moreover, all three values affect central route processing, but not peripheral route processing, which might suggest that there are no trade-offs between the processes. Further, the different sources of WOM are associated with different forms of influence, and thus the processing of WOM information from these social sources tends to vary.

Through the conceptual model developed in Publication II, and further validated in Publications III and IV, it also became evident that WOM activity is processed through both processing routes, depending on the nature of choice criteria. However, WOM

praise was in all publications processed through the peripheral route, which suggests that WOM praise is processed more as a simple cue of information and not evaluated for its diagnostic properties. Thus, the publications provide insights into the multiple roles of variables' postulate in the case of WOM in complex and high-involvement service evaluations.

Publication V focuses on the choice phase and highlights the behavioral processes of WOM. The publication emphasized the central role of normative WOM in attitude change and consumer choice. Further, the central role of normative WOM was highlighted in the case of a positive decision. Additionally, the results provided novel insights into the role of informational WOM during a high-involvement service choice, since informational WOM seemed to be more active when the choice was negative.

#### **4.1 Publication I: International Students' Personal Values, Educational Motives and University Choice Criteria**

Overall objective

The HE industry is experiencing increasing global competition for students. A central challenge in this competition is determining how to attract students and how to identify their expectations. The expectations of the performance of a service are arising from personal values (i.e. service values) and motivations, which can be assessed via choice criteria. Studying personal values facilitates a deeper understanding of the educational motives of prospective students, and provides insights for universities to develop their marketing efforts that are targeted at prospective students.

Thus, the objective of this study was to provide insights into the linkage between personal values, educational motives, and choice criteria. The results thus increased understanding of the decision-making process of a HE applicant. The first paper had a central role in the structure of this dissertation, since it provides understanding of the high-involvement and complex nature of the context of this study.

Main contribution

This study extended prior research on HE marketing by applying the goal structure approach to HE decision-making. By providing empirical evidence of how personal values affect motives, and how motives affect relevant choice criteria, this study provides unique insights into linkages between these central variables in the HE domain.

Based on the results, the SVSR seems to have an important role in explaining educational motives, especially in the case of instrumental motives. However, instrumental motives had only a small effect on choice criteria, and the effects that were significant were negative. Social and scholastic motives seemed to play a larger and positive role in explaining choice criteria.

## **4.2 Publication II: The Impact of Word-of-Mouth on Attitude Formation: an Information-processing Perspective** 45

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The study thus addressed the objective of how do international HE applicants evaluate institutions. By examining the linkages between the central concepts, the study provided further evidence of the complexities and multifaceted nature of HE applicants' decision-making.

### **4.2 Publication II: The Impact of Word-of-Mouth on Attitude Formation: an Information-processing Perspective**

#### Overall objective

Prior research on the processing of WOM has studied WOM diagnosticity and aimed to understand the factors that contribute to the overall perceived diagnosticity of communication. This paper aimed to understand the processing of WOM through the ELM, by adopting the concept of information diagnosticity. In addition to the diagnostic information, the publication aimed to understand the simple processes of WOM operating in parallel to the cognitive and diagnostic information.

Thus, the objective of this study is to understand the processing of WOM information, and its effects on brand attitude formation in a high-involvement service context. The first paper has an important role in the structure of this dissertation, since it conceptually builds and empirically tests a model for the processing of WOM for complex service evaluations, which is further adopted and developed in Publications II and III.

#### Main contribution

This study expanded the prior research on WOM and services marketing by developing and empirically testing a conceptual framework of WOM information processing, and applying it to a high-involvement service context by taking into account the complex nature of choice criteria.

Adopting the SEC framework into the evaluation of brand attitudes, allows division of the attitude construct into three distinct levels, which vary in terms of evaluation difficulty. Through this distinction, the processing of WOM was shown to vary, and different processing routes were active depending on the difficulty of the nature of the evaluative attitude. This contributed to the understanding of how consumers utilize WOM information in their evaluations of complex services.

Based on the results, the extent of cognitive processing of information seemed to decrease as evaluation difficulty increased. This is an important finding since the attitudes that are considered highly difficult to evaluate are also based on criteria, which are perceived as most important in decision-making. Since the results suggest that these difficult and important criteria are largely based on information that is processed more as simple cues or heuristics, researchers and practitioners should acknowledge this finding as it suggests that the attitude may be unstable and thus susceptible to competitors' marketing efforts.

The study thus addressed the objective of how consumers utilize WOM information, by providing the theoretical background of social psychology and forming a conceptual framework in which the context of complex service is taken into account through the nature of choice criteria.

### 4.3 Publication III: How Service Values Influence the Processing of Word-of-Mouth in the Evaluation of Credence Beliefs

#### Overall objective

This study aimed to take the framework developed in Publication II further, by studying how service values impact the processing of WOM. Since, Publication II showed interesting findings of parallel processing regarding the most difficult and important credence criteria, this study focused on beliefs based on the specific criteria and aimed to gain a deeper understanding of their formation.

Therefore, the objective of this paper was to assess the effect of service values on the processing of WOM information and the impact of WOM on the evaluation of complex beliefs. The role of the second study is relevant since it focuses theoretically on an important topic related to information processing, the service values, which reflect the underlying reasons as to why a consumer is making the decision in the first place.

#### Main contribution

The study further validates the proposed model of information processing of WOM, since the results are in line with the parallel processing of WOM in the formation of complex beliefs. Thus, the study provided further insights into how consumers utilize WOM by tapping into the values that matter while making important evaluations.

First, based on the results, service values were found to have distinct effects on the processing of WOM information. Self-oriented values, which reflect values that are less dependent on others, were noted to increase the extent of cognitive processing of WOM in the formation of complex beliefs. However, the opposite effect occurred when focusing on more socially oriented values.

Second, the study did not find any trade-offs between more cognitive and simple cue processing of information, meaning that when self-oriented values increased more cognitive processing of WOM, they did not simultaneously decrease the extent of the simpler processing of information. The finding encourages further research on the area but also suggest that when WOM is considered, the tradeoffs are not relevant in forming complex beliefs through more simple processing. This result is more in line with theorizing based on the Heuristic Systematic Model (HSM) (Chaiken et al., 1989), which is also a dual-processing model.

#### **4.4 Publication IV: How the Source of Word-of-Mouth Influences Information Processing in the Formation of Brand Attitudes 47**

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#### **4.4 Publication IV: How the Source of Word-of-Mouth Influences Information Processing in the Formation of Brand Attitudes**

##### Overall objective

In prior WOM research relatively little was understood about how the source of WOM (e.g., friends, family) affects the impact of WOM on attitude formation. The objective of this study, with its focus on information processing, was therefore to enhance the understanding of how consumers utilize WOM information when the source of information is taken into account. Additionally, the research field of HE found some varying results regarding WOM effectiveness. Some researchers highlighted the crucial role of WOM in evaluating HE institutions, whereas others found weaker support, especially in the case of Master's degree or graduate students.

The role of this study in the structure of the dissertation was to further develop the conceptualization of information processing and take into account identified research gaps in WOM literature by focusing on the source of WOM.

##### Main contribution

Through the ELM and social influence theories, this study was able to provide further insights into the complexity of the WOM phenomena. Each source (family, friends and teachers) had its own unique effect on attitude formation. Additionally, as in Publication I, this study adopted the SEC framework and further verified the focal role of the complex nature of choice criteria in understanding the processing of WOM.

First, the family source was found highly impactful in the formation of brand attitudes, and this impact was strongest for the most complex attitudes of the SEC framework. However, interestingly, the family source was found to provide information mainly through the peripheral route. Therefore, information diagnosticity (more cognitive processing) was found irrelevant for the overall model.

Second, the friend source provided information, which was processed through both routes. Friends also had a notable impact in attitude formation, and WOM praise was largely influential in the formation of the more complex criteria. Additionally, the processing in the more simple attitudes was impacted by simple cues but to a lesser extent than the more difficult criteria.

Third, the teacher source also provided information that was analyzed through both processing routes. Again, the more complex criteria were formed mainly through simple cues of WOM information, and this effect grew stronger as the difficulty in evaluating brand attitudes increased. However, the more simple attitude was formed only through simple WOM information, which contradicted the prevalent view that cognitive processing is most active when the information is easy to process. However, this may be due to the very source of information and the content of the attitude measure.

Finally, interaction effects of WOM praise and activity were also studied. Significant interactions were found in some situations, especially concerning the formation of simple attitudes. Additionally, a negative interaction between WOM praise and activity was found affecting information diagnosticity, which would warrant further research to negative WOM concerning the teacher source of information. The cognitive processing route has a unique pattern in each source, which may be related to the specific brand attitude criteria which were adapted by this research. Thus, further research could investigate more neutral criteria, which vary in their level of difficulty but are not related content wise to a specific source.

#### **4.5 Publication V: Facts or Opinions - Which Make a Difference? Word-of-Mouth and Attitude Change in a High-involvement Service Context**

Overall objective

Publication IV studied how Word-of-Mouth changes consumers' attitudes and affects choice behavior. Using a longitudinal perspective, this publication aimed to provide insights into the intervening behavioral processes of WOM. More context specifically, although it is recognized that close relevant others (e.g., family and friends) constitute a major source of information in the choice of HE the research field lacks longitudinal empirical evidence of how WOM from such sources affects behavior during the final decision-making stages. Hence, the main objective was to enhance understanding of how different forms of WOM from close relevant others change attitudes and affect consumer choice in a complex decision-making process.

The role of this study in the structure of the dissertation was to provide new insights into the use of WOM information by adapting two distinct forms of WOM influence, normative and informational. And further, to investigate their role in choice phase of decision-making. Thus, this study aimed to respond to the objective in this dissertation regarding the underlying behavioral process of WOM.

Main contribution

The main results indicate that different forms (normative and informational) of WOM affect consumers in the final choice phase. The results of the study imply that normative WOM from close relevant others seems to play a more significant role in attitude change (credence and search from the SEC framework) and consumer choice, especially when focusing on highly complex credence-based attitude.

Additionally, post hoc analysis was conducted in order to understand the role of informational influence in the final choice phase. In the analysis, the focus was on the formation of beliefs for when a positive choice was made compared to results for when the choice was negative. The results of the post hoc analysis indicated that informational WOM had a significant effect on both search- and credence-based beliefs

#### **4.5 Publication V: Facts or Opinions - Which Make a Difference? Word-of-Mouth and Attitude Change in a High-involvement Service Context**

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when the choice was negative and that normative influence played a more important role in credence-based belief formation when the choice was positive. Thus, the main contribution of this study lay in demonstrating the highly central role of normative influence in consumer behavior, but additionally pointing out the central role on informational influence during a negative choice.

Throughout this dissertation, the aim was to understand how the receiver utilizes WOM in decision-making by focusing on the processing routes of WOM and different forms of WOM. The combined results provide evidence of the complexity of WOM and highlight the important role of processing WOM information as simple cues and of the normative role of WOM, which has not been paid attention to in prior research to a great extent. Finally, the results provided evidence that WOM has a central role in forming attitudes, beliefs, and consumer choice.



## 5 Conclusions

Taken together, the purpose of this dissertation was to enhance scientific knowledge in the field of marketing by narrowing the gap identified in WOM literature concerning the processing of WOM by consumers. In order to achieve this goal, the two following research objectives were set:

1. To theorize how consumers process WOM information in decision-making
2. To theorize how the service context influences the processing of WOM information

The dissertation addressed the first research objective by forming a conceptual framework of the processing of WOM and reasoning based on the ELM about the relationships for the relevant constructs identified (WOM activity, WOM praise, and information diagnosticity). Further, the framework was empirically tested in three distinct models in Publications II, III and IV. Additionally, introducing the survey method into the testing of the theoretical assumptions of ELM can be considered as a contribution of this dissertation as the survey method is a recommended approach to understanding WOM from the receiver perspective (East & Uncles, 2008). Further, certain postulates of the ELM have not been empirically studied in the WOM domain. Finally, the investigation of normative and informational forms of WOM, provides insights into the behavioral processes of WOM. With guidance from social influence theories and the ELM, this dissertation contributed to the understanding of the relationships between WOM and its outcomes, such as brand attitudes, beliefs, attitude change, and choice.

The second research objective was addressed by collecting longitudinal data, as high-involvement choices are associated with long and extensive information search phases. The contextualization of knowledge of the relationships between WOM and related outcomes was additionally addressed by adopting the SEC framework in Publications II, III, IV and V. Thus, focusing on the nature of choice criteria through attitudes, which are associated with complex service decisions, provided knowledge on why certain processing routes of WOM are active and effective during the evaluation of a service.

### 5.1 Theoretical contribution of the study

The five Publications comprising this research provide four main contributions to the theoretical understanding of how consumers process WOM during a complex and high-involvement decision.

#### 5.1.1 Broadening the concept of information processing in WOM research

The two routes of information processing have been widely identified in field of social psychology (Briñol & Petty, 2012). Prior research on the processing of WOM has

mainly focused on its more cognitive nature, through information diagnosticity (e.g., Herr et al., 1991). However, this research suggests, based on the assumptions of the ELM that more simple processing mechanisms are active and can operate in parallel with diagnostic information. To the author's best knowledge, this is the first study to investigate both processing routes of WOM information in the services domain on an empirical level.

Through Publications III and IV the developed framework in Publication I for WOM information processing was further verified, with additional gaps identified in the WOM literature. First, by incorporating services values, and second, by focusing on specific sources of WOM. Through, the results of Publications 2, 3, and 4 it becomes evident that simple processing mechanisms are important to identify and acknowledge, since they have an additional impact in the formation of brand attitudes and beliefs and further are mostly present in the information provided by each source of WOM.

More specifically, the findings of the different publications suggest that the different processing routes are complimentary in nature. In Publications II, III, and IV the results indicated a higher impact on the outcome when parallel processing occurs. The only exception for this is information from the family source, which seemed to have compatible explanatory power on brand attitudes compared to the other sources for the more complex criteria, even though the cognitive processing route seemed to be irrelevant for the processing of information through the source. This finding interests more investigation into the relevance of normative influence and information processed as simple cues. However, taken together, the results imply that parallel processing of information occurs especially in the processing of complex criteria which suggests that more cognitive processing is active as far as the ability to evaluate difficult criteria enables, and the peripheral route provides additional information for the formation of a veridical attitude.

### 5.1.2 **Bringing forth the context: the nature of choice criteria in complex service decisions**

In addition to recognizing both processing routes, this study provides novel insights into the reasons that certain processing routes are active by applying the SEC framework. Through the SEC framework, the author was able to demonstrate how difficulty in evaluating, arising from the nature of choice criteria, affects the processing routes of WOM information. Prior research has acknowledged that this difficulty affects consumers' ability to meaningfully evaluate the information (Murray, 1991). This research thus aimed to consider this notion and empirically study its effects on information processing. Prior research on social psychology has acknowledged that the ability to evaluate information affects information processing routes (Petty, 1994), but this had not been evaluated in the WOM domain through relevant choice criteria.

Through the results of Publications II, III, and IV, it can be noted that the parallel processing of both routes increases as the complex nature of choice criteria increases.

This implies that more complex and important attitudes are not as stable as the more simple attitudes. To provide insights into this proposition, Publication V studied how WOM changes attitudes, and based on the results, it seems that the more complex criteria indeed change more than simple attitudes do based on WOM, and that this change affects consumers' choice to a greater extent. This provides additional support for the importance of understanding the processing on WOM through both information processing routes.

### 5.1.3 Introducing a survey approach to the multiple roles of variables postulate

Prior research on social psychology focusing on information processing generally adopted an experimental approach (Briñol & Petty, 2012). Since this dissertation is focusing on received WOM from multiple sources of information and two data points, the survey method seemed more appropriate for capturing a representative sample. Therefore, the author has taken steps to develop a model based on the survey method, which also incorporates a central assumption of the ELM, that is, the multiple roles or variables. Since information processing is a mechanism or process, a mediation approach was selected, which was also suggested for analyzing the multiple roles of variables postulate (Fabrigar et al., 2010).

However, prior WOM research, especially that focusing on complex services, has not investigated the roles of WOM constructs (praise and activity). Thus, the results of Publications I, III, and IV provide insights into this issue. In all the three publications, WOM praise was not mediated in any model, which would suggest that WOM praise is not analyzed for its diagnostic properties but is considered more as a simple cue of information. Further, WOM activity was mediated in multiple occasions, but it was also processed as simple cues. This implies the dual role of WOM activity. Therefore, this study contributes to WOM research by providing insights into how different constructs of WOM are processed. These results may also shed more light into the findings reported by Liu (2006) and Wu (2013) concerning the focal role of WOM activity (i.e., volume). As Wu (2013) notes, when the effect of WOM activity is controlled for, the valence of the message (i.e., WOM praise) becomes less relevant in consumer evaluation. Based on the results of this dissertation, it seems that WOM activity is indeed impactful since it is processed for its diagnostic properties to a greater extent than WOM praise. Prior research may have therefore found the focal role of WOM volume (compared to valence) in impacting outcomes, such as awareness (Liu, 2006).

### 5.1.4 Extending the understanding of the behavioral processes of WOM through two different forms

Social influence theories have highlighted the role of two distinct forms of social influence: normative and informational (Deutsch & Gerard, 1955). Both forms have been found to have different effects on behavioral outcomes (Childers & Rao, 1992). Normative influence in particular has been observed as an important form of influence

(Nolan et al., 2008). This has also been noted in the WOM domain, and it has been suggested that the strength of WOM depends on the level of both forms of influence (Wangenheim & Bayón, 2004). However, to the author's best understanding, this has not been empirically studied in the WOM domain in relation to consumer choice.

This research provides empirical evidence that the normative form of WOM is, in fact, highly impactful in a complex service choice. The results of Publication V suggest that normative influence plays a crucial role in changing complex attitudes and affecting consumer choice. Additionally, the results provide evidence that normative influence is highly relevant in the formation of beliefs when a positive decision is made. However, the results also highlight the role of informational WOM when the decision is negative, thus extending the understanding of how these two forms of WOM impact behavioral processes.

## 5.2 Managerial implications

From a managerial perspective, the findings of this dissertation highlight the importance of understanding both processing routes and forms of WOM, since they have distinct impacts on attitude formation, attitude change, and consumer choice. The service industry is experiencing increasing competition and growth, which is forcing companies to constantly differentiate themselves from their competitors. In this turbulent environment, consumers are known to consult each other for advice and guidance in evaluating options. Yet another challenge relates to the complexity of the evaluated information: in services, are a wide variety of credence criteria inherent that are difficult for consumers to evaluate even after purchase. Further, managing WOM is a complex issue, due to its informal, unplanned, and unpredictable nature (East & Uncles, 2008). However, there are some things that can be done.

Marketers can attempt to trigger WOM through indirect and direct marketing efforts. Indirect efforts include general advertising attempts, such as, testimonials, teaser campaigns, and celebrity endorsements (Lang & Hyde, 2013). Direct efforts include incentivized WOM (i.e., the company gives a reward for spreading WOM), or targeting influencers (Lang & Hyde, 2013). The results of dissertation show that both processing routes are active when potential customers of high-involvement services engage in the evaluation process, and this effect is dependent on differences in the nature of the choice criteria. The results, therefore, provide insights into how information in terms of choice criteria conveyed by advertisements or testimonials could be portrayed in order to support both processing mechanisms. Additionally, influencers or incentivized WOM senders can be educated beforehand on how they could portray the message of the target brand based on the same knowledge.

A useful starting point here is that managers should identify the relevant choice criteria associated with the service and acknowledge that different activities should be targeted in an attempt to communicate these criteria effectively. Identifying the complex criteria is the first step in understanding how their potential consumers may utilize WOM in

their decision-making. It is essential for a marketer to understand whether a message is processed carefully as an argument or as a simple cue, since carefully processed information is known to produce stronger and more durable attitudes.

Many marketers attempt to trigger positive WOM of their brand, and the findings of this study provide guidelines for those engaged in high-involvement services. Given that the more simple search-based criteria are processed mainly through the central route (wherein issue-relevant information is scrutinized and other information may be disregarded as irrelevant), marketers should do their best to provide potential consumers with clear information of search criteria through marketing efforts that gives them relevant content to discuss, thereby harnessing the practical value of WOM. Practical value has been shown to be a motivation for consumers to engage in WOM discussions (Berger, 2013), given that they ask for advice and share information. If a marketing manager invests in a large buzz campaign, celebrity endorsement, or arousal-generating viral video that highlights search-based information, he or she may not be spending wisely, as consumers may consider the extra effort irrelevant to their judgment (Petty, 1994). On the other hand, such efforts may be highly effective in conveying experience and credence criteria based information. It should be remembered that both information processing routes are active when consumers evaluate these difficult criteria. Thus, a viral campaign must in addition to creating arousal, convey credible information for scrutinizing the information and harnessing practical value.

Additionally, marketers can attempt to promote the ability of the consumer to process information in their attempt to create strong brand attitudes. This can be done by designing marketing efforts, which promote message repetition, prevent the message from being presented too fast, and control for distractions (Petty et al., 2013). These are important issues a marketer should take into account when designing marketing campaigns facilitating WOM, especially when credence criteria are highly important in evaluation, such as in the case of complex services. Since WOM activity is processed for its diagnostic properties to a greater extent than WOM praise, marketers could devote more attention to increasing WOM activity. However, marketers should ensure that the active WOM concerning their service is not negative in valence, and that the valence of the communication is also relevant.

In terms of service values, the results imply that consumers with high levels of values related to peace and contentment are more likely to process information as arguments than consumers with low levels of such values, whereas the opposite is true for consumers who highly value social integration and, given the direction of our results, for those who value social recognition. Thus, given the presence of simple information cues in the formation of complex and focal beliefs, marketing managers should aim to support the level of cognitive processing among consumers. These supporting efforts should be stronger when targeting consumers who value social integration and social recognition, and tend to scrutinize the informational aspects of messages to a lesser extent. One suggestion is that marketers can reflect service values in their marketing efforts: in the case of social integration the marketer could provide information about

networking opportunities, strong alumni networks and referrals, etc. Moreover, marketers could also make an effort to communicate credence criteria, which could be done via alumni evidence of how the degree positively affected their career development. Fulfilling service values should be a pre-purchase priority for marketers aiming at forming stronger customer relationships. Additionally, the alumni and current students of a university can be encouraged by direct marketing efforts to act as influencers and spread the word. The current student may be an important simple cue of information for the prospective student, and the message portrayed could concern the credence criteria, thus providing valuable diagnostic information.

Additionally, a marketer should identify the focal sources of WOM information, since the very source impacts the processing routes of WOM. A marketer can attempt to target families by means of different communication mediums, such as direct mail and advertising. These communication mediums incorporated with relevant information presented clearly and understandably to applicants' parents in their own language may also facilitate more information rich discussions. Since some sources and dimensions of brand attitude were more associated with peripheral route processing, a marketer could aim to target these sources and discussions concerning the certain criteria to a greater extent by aiming to increase WOM activity. More complex criteria (credence) could be conveyed with a high level of positivity in order to increase overall impact not only via largely fact-based communication but in combination. Further, more simple information (search) could be encouraged in a clear manner, without devoting extensive effort to creating arousal and excitement. Marketers should be cautious in targeting these sources given the evidence of some negative effects in the evaluation of search-based criteria.

Further, due to the important role of normative WOM in the choice phase, a marketer should place extra effort in increasing this form of WOM in this phase. Marketing efforts targeted on normative or informational WOM differ in nature in that the latter requires arguments and facts, whereas normative influence may require the arousal of positive emotions in particular. According to the results of the dissertation, marketing efforts should aim to strengthen the influence of normative WOM from close relevant others, especially in the final phase of the choice process. Given the focal role of normative WOM identified in our analyses, it could be concluded that marketers need to "sell" their services not only to the decision maker but also to close relevant others such as family and friends, whose approval and support seem to be strongly influential.

### 5.3 Limitations and suggestions for future research

However, this study is not without limitations. Since the underlying aim of this research was to enhance the understanding of information utilization and processing on a more general level of consumer decision-making, further research should take into account individual-level factors such as mood state and the need for cognition, which are acknowledged in the ELM domain as central factors contributing to the processing of information (Briñol & Petty, 2012).

This dissertation focused on the ELM as the primary theoretical background. However, the focus on ELM may entail the exclusion of some potentially applicable theories such as the Heuristic Systematic Model (HSM), which also examines dual-processing of persuasion (Chaiken et al., 1989) and provides a useful framework for understanding information processing. However, the ELM acknowledges that there are multiple forms of peripheral processes and does not limit them to retrieving an accessible and stored decision rule, as HSM does. ELM enables the processing of new information for low-level conditions, since in some occasions consumers receive information about products or services that they do not have prior experience with, such as in the case of this study. However, other important assumptions (such as dual-processing, ability and motivation to process information) affecting this research based on the ELM are shared with the HSM. Further investigations with experimental designs are also recommended to establish causality and investigate individual differences of the consumers' ability and motivation to process WOM information.

Interestingly, none of the simple cues (direct effects of WOM praise or WOM activity on credence belief) seemed to be moderated by service values, which is a somewhat surprising finding, as the ELM postulates a tradeoff between the impacts of high- and low-effort processes on judgments, such as that the former strengthens and the latter weakens (Petty et al., 2013). The fact that none of the simple cues were influenced by service values even if the central-route processing was could imply that there are no tradeoffs. This calls for more research in the area. A richer approach to measuring WOM, taking into account content and negative WOM for instance, may provide insight on the issue.

Further, cost-related issues, which are significant as evaluation criteria (e.g., Soutar & Turner, 2002), were excluded from the study for contextual reasons (i.e., only two of the participating universities charged tuition fees). Within the HE context, it would be interesting to find out if the relevant criteria are the same for the actual decision maker and their close relevant others. Earlier research has identified critical choice criteria for the decision maker, but given the implication in our results that HE applicants seek the approval and support of family and friends, their evaluation criteria should also be investigated.

An additional limitation of this study concerns the context-specific nature of the analysis: applying to a higher-education institution is rather time consuming, and is possible that potential students do not apply to a university that could be considered a poor choice. Thus, the information and discussions related to the rejected HE institution may be mainly positive in nature during the choice phase. It would also be useful to conduct research on other service contexts that vary in terms of level of involvement, to further assess the generalizability of the findings.

The author believes that the conceptualization of WOM as activity and praise is sufficient to capture the phenomenon of WOM, but acknowledges the limitation of additional variables of WOM, and therefore suggests this for further research. Future

research could adopt a richer approach to the study of WOM by including additional elements such as negative WOM (Goyette, Line, Bergeron & Marticotte, 2010; Sweeney et al., 2014), cognitive content, and content richness (Sweeney et al., 2012). Negative WOM may provide an interesting perspective, since negative WOM attributed toward the brand affects consumer evaluations and has been proposed to have higher diagnostic properties (Laczniak et al., 2001) therefore increasing the role of information processing through the central route. Additionally, investigating whether these other concepts of WOM are processed as simple cues of information or evaluated for their diagnostic properties in a similar manner as in the conceptual framework presented in this dissertation will lead to further insights into how consumers process WOM.

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## Appendix A: Survey scales

### Information diagnosticity

Scale used in the analysis of Publications II, III, IV, and V.

Please give your opinion about the information you received from the discussions you had about University of Technology (LUT). The left-hand column indicates which discussions are of concern.<sup>1</sup>

	Please indicate the degree to which the information provided was relevant or irrelevant for your evaluation of LUT					Please indicate the degree to which the information provided was indicative of how good or bad LUT is					Please indicate the degree to which the information was useful in your evaluation of LUT				
	Irrelevant	.	.	.	Relevant	Not at all indicative	.	.	.	Very indicative	Not useful	.	.	.	Useful
With my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
With my family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
With teachers from my previous school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### WOM praise and activity

Scale used in the analysis of Publications II, III, and IV.

Please indicate the extent to which you agree or disagree with the statements in the left-hand column on information received from discussions with your FRIENDS<sup>2</sup> about Lappeenranta University of Technology (LUT)<sup>1</sup>

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
LUT has been frequently mentioned in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had more discussions about LUT than other universities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The discussions of LUT tend to be in great detail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The discussions have been only good things about LUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the discussions LUT was praised	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<sup>1</sup>The name of the university that appears in the survey was dependent on which university the applicant had applied.

<sup>2</sup>Each source of WOM was asked separately

### Normative Influence

Scale used in the analysis of Publication V.

Please indicate below the extent you feel people close to you think about your choice to study at Lappeenranta University of technology (LUT)<sup>1</sup>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
People whose opinion I care about approve of my choice to start my masters' degree studies at LUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I care about encourage me to start my masters' degree studies at LUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel social pressure to start my masters' degree studies at LUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People who are close to me approve of me starting my studies in LUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<sup>1</sup>The name of the university that appears in the survey was dependent on the applicant's positive decision.

### Personal/service values

Scale used in the analysis of Publication III.

Please indicate the extent to which you agree or disagree on what a Master's degree allows you to achieve

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Respect from others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peace of mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmony and stability in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong relationships (e.g. social, professional and family)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good relationships (e.g. social, professional and family)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A pleasurable life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The feeling that the world is an agreeable place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social recognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A stimulating and adventurous life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high level of integration in my group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Educational motives

Scale used in the analysis of Publication I.

How important were the following reasons motivating you to study a higher education degree

	Not important at all	Of Little Importance	Moderately Important	Important	Very important
The desire to acquire a profession	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to achieve a high- status job and social class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to acquire an academic degree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The will to expand my knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual challenge and interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire for self-fulfillment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to be associated with a high-status group of people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to be publicly and politically active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to meet a boyfriend/girlfriend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The desire to make friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Choice Criteria

Scale used in the analysis of Publication I.

Now please, go back in time when you were making a decision to take a full university degree in Finland. To what extent the following factors had an effect on your decision-making

	No effect at all	To a small extent	To some extent	To a moderate extent	To a great extent
Institution's cost of education/tuition fees are reasonable	<input type="radio"/>				
Accommodation is available at reasonable cost	<input type="radio"/>				
Other living costs (food, travelling etc.) are reasonable	<input type="radio"/>				
Financial aid/scholarships is available for studying	<input type="radio"/>				
There is a possibility to work during the studies	<input type="radio"/>				
My parents influenced my decision-making process	<input type="radio"/>				
My friends influenced my decision-making process	<input type="radio"/>				
My other family members influenced my decision-making process	<input type="radio"/>				
My teacher in my prior school influenced my decision-making process	<input type="radio"/>				
Institution's official information (webpages, brochures etc.) influenced my decision-making process	<input type="radio"/>				
Other unofficial information sources (word of mouth, discussion forums etc.) influenced my decision making process	<input type="radio"/>				
Institution's entry requirements are reasonable	<input type="radio"/>				
Institution provides a wide range of courses in English to select from	<input type="radio"/>				
Institution provides students flexibility in selecting courses/subjects	<input type="radio"/>				
Institution offers degrees with reasonable completion periods of study	<input type="radio"/>				
Institution is located in an ideal location in Finland	<input type="radio"/>				
Institution provides students necessary resources that are required for studying	<input type="radio"/>				
Institution provides students a clean and a safe study environment	<input type="radio"/>				
Institution provides students advice and help to organize everyday life in Finland	<input type="radio"/>				
Institution provides social life and contacts to Finnish people and culture to students	<input type="radio"/>				
Institution is well known for its reputation	<input type="radio"/>				
The degrees offered have academic value	<input type="radio"/>				
Institution is well recognized by other academic institutions	<input type="radio"/>				
Institution provides employment/career support for students	<input type="radio"/>				
Recognition of academic qualification by future employers	<input type="radio"/>				
Good job prospects in the future	<input type="radio"/>				



## Beliefs

Scale used in the analysis of Publications II, III, IV, and V.

To what extent do you agree or disagree that the following factors are associated with the university<sup>1</sup>. Please respond to all the questions.

	when regarding Lappeenranta University of Technology				
	Strongly disagree	.	Neutral	.	Strongly agree
University's cost of education/tuition fees are reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The degrees offered have academic value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The degree's offer good job prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A clean and safe study environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The possibility of studying for a doctoral degree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reasonable entry/admission requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly disagree	.	Neutral	.	Strongly agree
The university has a central location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country's high academic reputation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A positive city image	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Institution is well known for its reputation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The programme fulfills my educational needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University's high ranking position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	when regarding Lappeenranta University of Technology				
	Strongly disagree	.	Neutral	.	Strongly agree
The possibility to work during one's studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reasonable living costs (accommodation, food, traveling etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The availability of advice and help with organizing everyday life in the host country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The availability of financial help/scholarships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendations from alumni or current students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends are applying to the same university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly disagree	.	Neutral	.	Strongly agree
I know someone who has studied or is currently studying in the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know someone who has studied or is currently studying in the country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high level of security in the host country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A low level of racial discrimination in the host country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An active student life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<sup>1</sup>The name of the university that appears in the survey was dependent on the applicant's positive and negative decision.

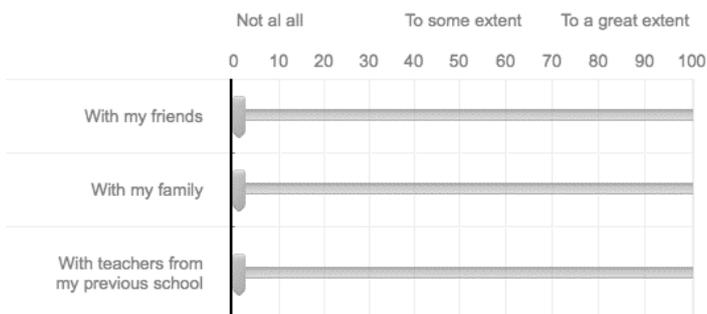
### **The extent of WOM discussions**

Scale used as a control for assessing the usage of WOM sources.

Question formatting (T1): This part of the questionnaire concerns the discussions you have had with other people about Lappeenranta University of Technology (LUT). Please indicate below the extent to which you have had such discussions. (Publications 2, 3, and 4)

Question formatting (T2): This part of the questionnaire concerns the discussions you have had with other people about Lappeenranta University of Technology (LUT), when you were making your choice on which university to start your studies at, AFTER you have received your acceptance letter from the university. (Publication V)

Appeared in both T1 and T2: Please indicate below the extent to which you have had such discussions





ACTA UNIVERSITATIS LAPPEENRANTAENSIS

628. SKLYAROVA, ANASTASIA. Hyperfine interactions in the new Fe-based superconducting structures and related magnetic phases. 2015. Diss.
629. SEMKEN, R. SCOTT. Lightweight, liquid-cooled, direct-drive generator for high-power wind turbines: motivation, concept, and performance. 2015. Diss.
630. LUOSTARINEN, LAURI. Novel virtual environment and real-time simulation based methods for improving life-cycle efficiency of non-road mobile machinery. 2015. Diss.
631. ERKKILÄ, ANNA-LEENA. Hygro-elasto-plastic behavior of planar orthotropic material. 2015. Diss.
632. KOLOSENI, DAVID. Differential evolution based classification with pool of distances and aggregation operators. 2015. Diss.
633. KARVONEN, VESA. Identification of characteristics for successful university-company partnership development. 2015. Diss.
634. KIVYIRO, PENDO. Foreign direct investment, clean development mechanism, and environmental management: a case of Sub-Saharan Africa. 2015. Diss.
635. SANKALA, ARTO. Modular double-cascade converter. 2015. Diss.
636. NIKOLAEVA, MARINA. Improving the fire retardancy of extruded/coextruded wood-plastic composites. 2015. Diss.
637. ABDEL WAHED, MAHMOUD. Geochemistry and water quality of Lake Qarun, Egypt. 2015. Diss.
638. PETROV, ILYA. Cost reduction of permanent magnet synchronous machines. 2015. Diss.
639. ZHANG, YUNFAN. Modification of photocatalyst with enhanced photocatalytic activity for water treatment. 2015. Diss.
640. RATAVA, JUHO. Modelling cutting states in rough turning of 34CrNiMo6 steel. 2015. Diss.
641. MAYDANNIK, PHILIPP. Roll-to-roll atomic layer deposition process for flexible electronics applications. 2015. Diss.
642. SETH, FRANK. Empirical studies on software quality construction: Exploring human factors and organizational influences. 2015. Diss.
643. SMITH, AARON. New methods for controlling twin configurations and characterizing twin boundaries in 5M Ni-Mn-Ga for the development of applications. 2015. Diss.
644. NIKKU, MARKKU. Three-dimensional modeling of biomass fuel flow in a circulating fluidized bed furnace. 2015. Diss.
645. HENTTU, VILLE. Improving cost-efficiency and reducing environmental impacts of intermodal transportation with dry port concept – major rail transport corridor in Baltic Sea region. 2015. Diss.
646. HAN, BING. Influence of multi-phase phenomena on semibatch crystallization processes of aqueous solutions. 2015. Diss.

647. PTAK, PIOTR. Aircraft tracking and classification with VHF passive bistatic radar. 2015. Diss.
648. MAKKONEN, MARI. Cross-border transmission capacity development – Experiences from the Nordic electricity markets. 2015. Diss.
649. UUSITALO, ULLA-MAIJA. Show me your brain! Stories of interdisciplinary knowledge creation in practice. Experiences and observations from Aalto Design Factory, Finland. 2015. Diss.
650. ROOZBAHANI, HAMID. Novel control, haptic and calibration methods for teleoperated electrohydraulic servo systems. 2015. Diss.
651. SMIRNOVA, LIUDMILA. Electromagnetic and thermal design of a multilevel converter with high power density and reliability. 2015. Diss.
652. TALVITIE, JOONAS. Development of measurement systems in scientific research: Case study. 2015. Diss.
653. ZUBEDA, MUSSA. Variational ensemble kalman filtering in hydrology. 2015. Diss.
654. STEPANOV, ALEXANDER. Feasibility of industrial implementation of laser cutting into paper making machines. 2015. Diss.
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656. GORE, OLGA. Impacts of capacity remunerative mechanisms on cross-border trade. 2015. Diss.
657. AURINKO, HANNU. Risk assessment of modern landfill structures in Finland. 2015. Diss.
658. KAIJANEN, LAURA. Capillary electrophoresis: Applicability and method validation for biorefinery analytics. 2015. Diss.
659. KOLHINEN, JOHANNA. Yliopiston yrittäjämäisyyden sosiaalinen rakentuminen. Case: Aalto-yliopisto. 2015. Diss.
660. ANNALA, SALLA. Households' willingness to engage in demand response in the Finnish retail electricity market: an empirical study. 2015. Diss.
661. RIABCHENKO, EKATERINA. Generative part-based Gabor object detector. 2015. Diss.
662. ALKKIOMÄKI, VILLE. Role of service and data reuse in enterprises. 2015. Diss.
663. VÄNTSI, OLLI. Utilization of recycled mineral wool as filler in wood plastic composites. 2015. Diss.
664. KLEMOLA, KATJA. Tuottavuuden, vaikuttavuuden ja kustannusvaikuttavuuden arviointi alueellisesti integroiduissa sosiaali- ja terveyspalveluissa – palvelujen käyttöön perustuva malli ja esimerkkejä. 2015. Diss.

