

**EXPLORING THE ANTECEDENTS OF E-LOYALTY AND EWOM  
IN THE CONTEXT OF FOOD DELIVERY  
APPLICATION SERVICES IN FINLAND**

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## ABSTRACT

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<b>Title</b> Exploring the antecedents of e-loyalty and eWOM in the context of food delivery application services in Finland	
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<p><b>Abstract</b></p> <p>The novelty introduced by food delivery applications to meals provided by restaurants has created a new customer experience due to its unique properties. Nevertheless, harnessing the full potential of such a service requires a deep understanding of the factors that lead to desired behavioral consequences. In this study, various quality dimensions (<i>Food quality, service quality, and electronic service quality</i>) and <i>perceived value</i> were explored as potential antecedents of the highest predictive capability towards forming electronic word-of-mouth and electronic loyalty intentions, through the mediating role of <i>customer satisfaction</i>.</p> <p>In order to explore this, the author conducted a literature review and formed a new theoretical model based on previous research findings. Once a new theoretical model was formed and presented, a quantitative, self-mediated survey was formulated and translated to suit the Finnish context. The accompanying restaurant chain named Rolls provided its digital distribution channels to gather the data from 238 valid respondents which was later analyzed in SPSS for validity and reliability and a structural model was plotted in order to examine the hypothesized relationships.</p> <p>Contrary to the expectations set in the study, <i>food quality</i> was shown to not have any significant relationship with any of the proposed constructs, while <i>service quality</i> proved to have the highest impact on <i>eWOM</i>, and <i>eQuality</i> had the highest impact on <i>eLoyalty</i> intention through the indirect mediation of <i>customer satisfaction</i>. Furthermore, the role of <i>perceived value</i> as an antecedent of <i>customer satisfaction</i> was confirmed, as well as the mediating role of <i>customer satisfaction</i> towards <i>eWOM</i> and <i>eLoyalty</i> intention. The theoretical and managerial contributions of this study allow for additional improvement of service development for practitioners in the field to enhance intended customer behaviors while academics can test the proposed new model in different contexts and add additional dimensions that would increase the predictive capabilities in the context of food delivery applications.</p>	
<b>Key words</b> Food delivery applications, service quality, eWOM, eLoyalty, fast-food restaurants, customer satisfaction	
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# 1 INTRODUCTION

## 1.1 Study background

The proliferation of Food Delivery Application (FDA) services worldwide has ushered in new possibilities for restaurant business owners and fast-food chains, particularly during the global pandemic of COVID-19 (Dsouza and Sharma, 2021; Chan and Gao, 2021; Bao and Zhu, 2021). However, not all restaurant businesses are benefiting equally from the service, due to the challenging location or increased price of the service itself which may not provide added value for the customer who may face service, food, or e-SQ hurdles (Chan and Gao, 2021; Bao and Zhu 2021).

Ordering food directly through a mobile phone application presents a wide range of options, competitive prices, with easily comparable menu, readily available, and secure payment process guaranteeing a high penetration level for those willing to experiment with such a service (Chan et al., 2021; Suhartanto et al., 2019). Nevertheless, fostering a continued repurchase and formation of a closer bond as a favorite choice which will result in *e-Loyalty* and *eWOM*, requires the provider to provide high-quality service and *PV* that consequently impacts the *customer satisfaction* (CS) levels (Suhartanto et al., 2019). Due to the novel nature of FDA services, also called *third-party aggregators*, little is known about the exact mechanisms that drive customer behavior and measurement of quality as it comprises two separate entities (A restaurant business and a delivery platform) which contain a mobile app, a distribution service, and a food cooking venue. (Dean et al. 2019; Ganapathi and Abu-Shanab, 2020). Hence, failure to provide a well-coordinated and satisfactory level meal that looks presentable, fresh, tasty, affordable, and in a timely manner may significantly reduce the satisfaction levels of customers who might discontinue using the service and opt for physically visiting the restaurant instead of ordering online.

In pursuit of exploring this phenomenon through the perspective of a Finnish fast-food chain called *Rolls*, a unique opportunity to conduct quantitative research is presented in order to provide both theoretical and managerial implications that would contribute to the understanding of customer behavior (*e-Loyalty* and *electronic word-of-mouth*) with relation to FDA services. Particularly in this thesis, the Finnish fast-food chain, *Rolls*, aims to adopt the usage of the FDA services across all its franchises and understand how it impacts its short and long-term customer behavior. However, as FDA services introduce a novelty to the food and restaurant industry, it similarly introduces an untapped academic research opportunity to explore and expand on previous findings and theories.

## Research gap and problem

Previous research papers suggested that *food quality (FQ)*, *SQ*, and *eQuality* are critical antecedents influencing *e-loyalty* and *eWOM* in the context of FDA services (Chan et al., 2021; Suhartanto et al., 2019; Ruiz-Alba et al., 2021). In addition, *CS* and *PV* have been taken under consideration when building predictive theoretical models in order to achieve the highest degree of accuracy (Suhartanto et al., 2019, Ganapathi and Abu-Shanab, 2020). Moreover, the attempts of recognizing the importance of *CS* and *PV* to a predictive theoretical model, have been also studied in different contexts, for instance; the hospitality sector by Jeon and Jeong (2017), the e-commerce sector by Sohn, Seegebarth, and Moritz (2017), the banking sector by Islam, Ahmed, Rahman, and Al Asheq (2021), and the fast-food restaurant sector by Hung, Yueh-Shian, Weng-Kun (2016). Furthermore, the existing body of knowledge presents various theoretical models that attempt to explain the antecedents influencing various customer behaviors as presented by the *Gap model* (Parasuraman, Zeithaml, and Berry 1985), *Technology Acceptance Model (TAM)* that was developed by Davis (1989) and *Shopping Value* (Babin, Darden, and Griffin, 1994). In addition, various measurement *Quality* scales have been developed for specific industries and platforms in the past few decades such as *SERVQUAL* (Parasuraman, 1988), *Hierarchical Model of Retail SQ* (Dabholkar, Thorp, and Rentz, 1996), *eTailQ* (Wolfenbarger and Gilly, 2003), *SSTQUAL* (Lin and Hsieh, 2011), *e-SELFQUAL* (Ding, Hu, Sheng, 2011), *MS-SQ* (Omar, Suha, Mohsen, Kholoud, Tsimonis, Georgios, Oozeerally, Adam, Hsu, Jen-Hsien, 2021) and *DEQUAL* (Chan and Gao, 2021).

However, there are distinct gaps that were diagnosed during the review of the literature, firstly, to the best knowledge of the researcher of this paper, no extensive academic research focusing on quality dimensions, *PV*, *CS*, and its behavioral consequences due to the novelty of the phenomenon. For instance, previous research that was conducted by Suhartanto et al. (2019), Chan and Gao (2021), Lee and Liu (2016), and Dsouza and Sharma (2021) represent a small minority of published research papers, thus presents an opportunity to expand such knowledge. The second existing research gap, relates to the further validation and testing of the most recent theoretical model that were presented in the context of FDA services, called *DEQUAL* which stands for "Online food delivery quality" presented by Chan and Gao (2021). Although their recent study introduced a highly relevant measurement model, it was still not utilized by any other significant research paper, and particularly not for the fast-food industry which may yield different results.

## 1.2 Research aim, objectives, and scope

The aim of this research is to investigate the key contributing antecedents of Customer *e-Loyalty* intention and *eWOM* including the role of CS as a mediator. Furthermore, the researcher aims at contributing to the existing body of knowledge by validating and strengthening the prominent theories and hypotheses in the context of FDA services such as the importance of *PV* and its influence on CS. Alongside *PV* the three most critical dimensions of quality are examined (*FQ*, *SQ*, and *E-Quality*) in order to form a reliable research model that predicts the underlying consequences. Upon reviewing the most recently published peer-reviewed research publications, the most relevant hypotheses are developed and examined via a qualitative survey in Finland.

The objective of this thesis is to obtain the highest quality and up-to-date information regarding the key theoretical concepts in the context of FDA services, execute quantitative research based on a proposed theoretical model, collect, and analyze the data in order to meet the aim within a limited amount of time and resources. Furthermore, the researcher scopes the extent of the study by focusing merely on FDA services that are available in Finland (i.e., Foodora, Wolt).

### Research question

In order to be able to successfully accomplish the aims of this thesis, concrete, measurable, and achievable research question must be formulated. Answering these questions will shed light on a better comprehension of the precise contribution of each construct to the researched customer behavior (*eWOM* and *e-Loyalty*) and the role of CS in the context of FDA services in Finland. In this research, the chosen antecedents mainly focus on different dimensions of Quality (Food, e-service, and service) and *PV*. The following three questions will be answered:

RQ: What factors affect *eWOM* and *e-Loyalty* intention in the context of FDA services in Finland?

## 1.3 Structure of the thesis

In this study the researcher follows the traditional structure of a master's thesis research formulation through five main chapters. The first chapter will include an introduction to the field of FDA services, its impact on the food and restaurant industry, and the need of a local fast-food chain, Rolls, to understand how to cater to its customers with this new service. Furthermore, the aims, objectives, and limitations will be detailed as well as the research question and research structure. In the second chapter, an extended literature review will be provided for the reader to recognize the key concepts and theories upon which the various hypotheses are compiled

to compose a robust research model which will be able to provide satisfying answers to the research question. The third chapter will discuss the research methodology chosen to test the suggested model in quantitative means. In the fourth chapter, the results of the conducted survey will be displayed, described, analyzed, and summarized with confirmation or disconfirmation of the hypotheses. In the last chapter, the conclusions, managerial implications as well as theoretical ones will be presented, alongside research evaluation, limitations and future research suggestions. The references and appendix of the survey questions are presented at the very end of the study.



## 2 THEORETICAL BACKGROUND

This literature review will present the theoretical background required to comprehend the purpose, need and use of the models and core concepts chosen to be utilized in this thesis. In the first section, a few definitions will be proposed for each theoretical concept, such as *service quality (SQ)*, *electronic SQ (e-SQ)*, *customer e-Loyalty Intentions*, *Electronic Word-of-Mouth (eWOM)*, and *PV*. The second section will focus on synthesizing previous research results in the field of Food Delivery Apps and how these results can serve as a foundation for hypothesis development with reference to e-SQ and its consequences. The adopted model for this thesis will be focused on *DEQUAL* as presented by Chan and Gao, 2021, yet since it is based on previous models, it is critical to review as well.

### 2.1 Service quality

Before defining the term *SQ* it is critical to present the meaning of the two terms separately. Kotler and Keller (2012, p.131) define *Quality* as “the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs” while *Service* is referred to as “any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. It may or may not be tied to a physical product” (Kotler and Keller, 2012, p.378). Townsend and Gebhardt (1986, p. 167) further differentiate between *Quality In Perception* which relates to the customer’s feelings and understanding about the service or product, and *Quality In fact* which is described as the actual features that a provider successfully delivered. In this paper Kotler and Keller’s definition is adopted since *Quality in perception* is measured through *PV*. These differentiations set the grounds to understand *SQ* as Parasuraman et al. (1988, p.15) present it as “Consumer’s judgment about an entity’s overall excellence or superiority or the overall evaluation of a service firm arising from evaluations of a firm’s performance with customers’ expectations”.

Other definitions that are commonly used do not differ greatly from one another; For instance, Parasuraman et al. cited, (1985, p.42) Lewis and Boom’s definition of *SQ* as “A measure of how well the service level delivered matches customer expectations. Delivering quality service mean conforming to customer expectations on a consistent basis”. Furthermore, Edvarsson (1998, p. 144) defines *SQ* as “What should correspond to the customers’ expectations and satisfy their needs and requirements”, yet he also states that a much broader scope of stakeholders should be taken under consideration in addition to the customers. Namely, he claims that customers may not be fully able to articulate their own needs and requirements clearly, hence, the perception of the employees and owners should be taken under consideration when measuring *SQ*. Furthermore, in other literature sources such as Parasuraman et al. 's (2005, p.214), *SQ* is observed from a

technological standpoint when referred to as “the quality of all non-Internet-based customer interactions and experiences with companies”. In this study, Parasuraman et al.'s (2005) definition is adopted as it excludes *e-Quality* which is used in a separate construct for measuring the application SQ.

The quality measurement of physical goods can be as simple as assessing the number of defects and durability, yet due to the intangible nature of services, objective measurement can face a challenge, hence scholars have attempted to develop a concrete scale that can serve as an indicator for fault diagnosis and improvement. One of the earliest attempts was made by Grönroos (1984) who proposed a basic model comprising of three main dimensions (Technical, Functional, and Image) which primarily determined the degree of *Perceived SQ* while traditional marketing activities such as advertising, PR, field selling, pricing, ideology and Word of mouth yielded a lower impact on consumer intentions. Grönroos conceptualized *technical quality* as the ability of a customer to be fairly objective in assessing the outcome of the service received, for instance, being able to rate the comfort of the bed he slept in during a stay in a hotel yet more subjective when it comes to the process by which it was served by the hotel staff which he referred to as the *Functional quality*. The corporate image of a company is a combination of the perception a consumer has of its Technical and Functional dimensions in addition to the advertising efforts made by the company to paint a mental image that sets the expectation levels at a certain point (Grönroos, 1984, p.38-39).

The specific gaps between expected SQ and experienced SQ were further solidified by Parasuraman et al. (1985), who proposed the Gap theory to account for the five different existing gaps between the marketer in service-based businesses and their customers. The first gap occurs between the consumer expectations and management perceptions of those expectations, the second is the gap between management perceptions of consumer expectations and the firm's SQ specifications. The third gap is between SQ specifications and actual service delivery, while the fourth describes the gap between actual service delivery and external communications about the service, and the fifth relates to consumer's expected service and perceived service (Parasuraman, 1985, p. 45-46). In essence, if measured gaps are high, it is plausible to deduct that the SQ will be poor, therefore the theory not only proposes the various dimensions in which a service is evaluated as Grönroos proposed (Functional, Technical, and Image) but also addresses its possible root cause in an attempt to rectify the possible discrepancies.

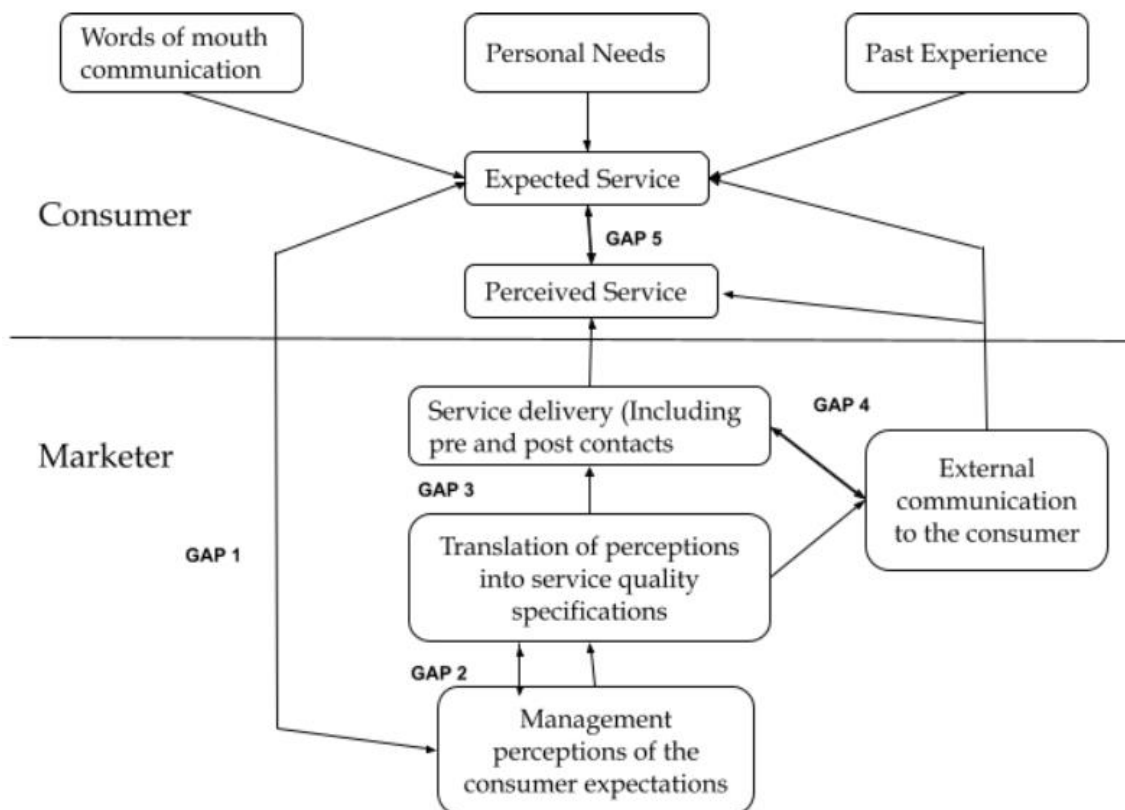


Figure 1 Gap model of service quality (Adopted from Parasuraman et al., 1985, p.44)

Parasuraman et al. (1988) presented a more elaborate twenty-two items scale called *SERVQUAL* that measured five different perceived dimensions of SQ as follows; *Tangibles*, *Reliability*, *Responsiveness*, *Assurance*, and *Empathy*. *Tangibles* included physical facilities, equipment, and the appearance of personnel. *Reliability* refers to the capacity of a provider to deliver a promised service precisely and independently. *Responsiveness* meant the “desire to assist the customers and give rapid service. *Assurance* was described as the comprehension and kindness of the staff and their capacity to form certainty and reliance, and lastly, *Empathy* was defined as mindful and personalized attention the service extends to the consumers (Parasuraman et al., 1988). Cronin and Taylor, however, challenged this scale in 1992 with their own model called *SERVPERF* which underlines the unreliability of the *Expectation* component in their model and instead suggested that *Performance* is more suitable for use as a stronger predictor of consumer intentions. Despite the fact they adopted the same five dimensions of *SERVQUAL*, they further argued that CS is an antecedent of SQ and the difference between the two is that SQ is a kind of approach, related to the longitudinal comprehensive judgment, while *Satisfaction* is a transaction-specific observation (Cronin and Taylor, 1992). This research adopts *SERVQUAL* measurement dimensions as part of *DEQUAL*.

Several years after the development of *SERVPERF*, Dabholkar et al. (1996) have proposed, yet another improved model which covers a different range of industries such as retail with 11 new items on top of 17 items from the original

*SERVQUAL* scale as seen in Figure 2. Their model, which was referred to as the *Hierarchical model* was based on *Gap theory* and posited that the mixed nature of acquiring physical goods in a store in addition to the service element requires supplementary measurement factors in order to capture *SQ* in the context of retail businesses. For instance, instead of *Tangibles*, Dabholkar et al. used *Physical aspects* measurement to account for the quality of the store layout and appearance. *Reliability* had slightly different subcategories which measured *Promise keeping* and *Doing it right* as means of forming trust between the parties (Dabholkar et al., 1996). The other aspect of this model is tied to the attempt to classify certain *high* and *low-level* dimensions compared to the previous models, hence suggesting that there is a need for subcategories for each dimension and that there are some dimensions that carry a greater impact over the overall evaluation of *SQ*.

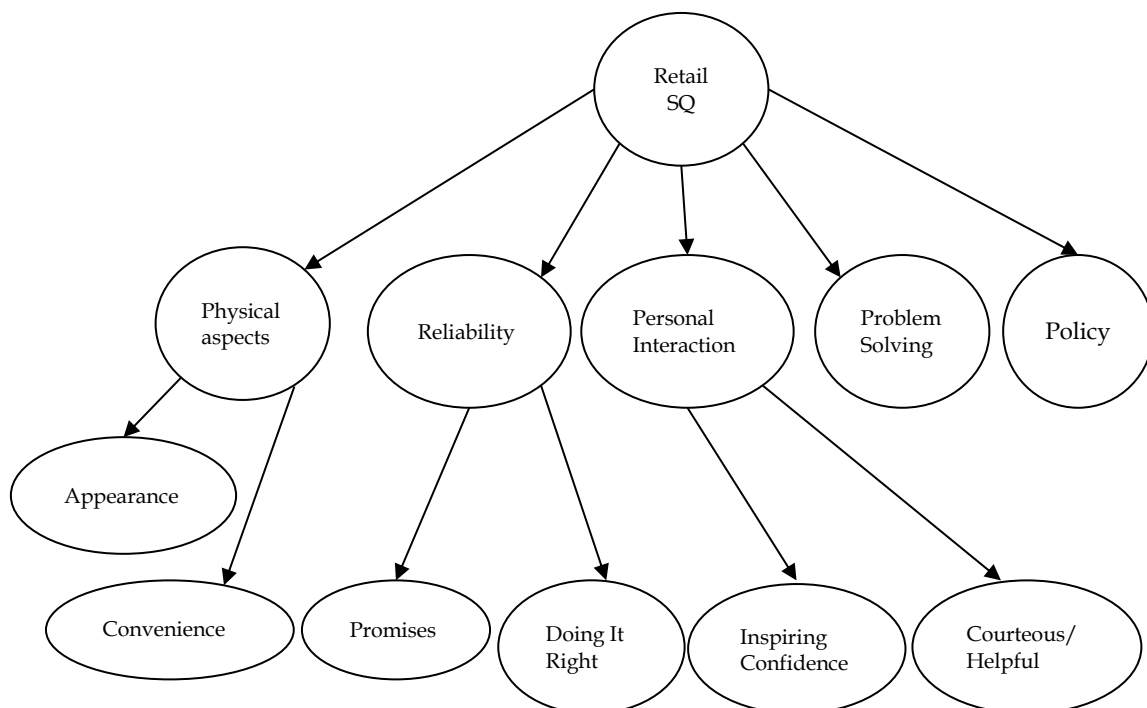


Figure 2 Hierarchical model of retail service quality (Adopted from Dabholkar et al., 1996, p.6)

## 2.2 Electronic service quality

As various industries began to adopt a measurement model of their *SQ*, multiple kinds of specifications had to be added to adequately capture the uniqueness of each service provided to customers in an electronic environment. Kim et al. (2009, p.239) cited Wolfinbarger and Gilly's (2003) definition of *e-SQ* as "the beginning to the end of the transaction including information search, website navigation, order, customer service interactions, delivery, and satisfaction with the ordered product." According to Parasuraman et al. (2005, p.5) "*e-SQ* is defined broadly to encompass all phases of a customer's interactions with a Web site: The extent to

which a Web site facilitates efficient and effective shopping, purchasing, and delivery". A slightly different definition of *e-SQ* is, "the degree to which an electronic service is able to effectively and efficiently fulfill relevant customer needs" (Fassnacht and Koese, 2006, p. 25), while electronic service is defined as "services delivered via information and communication technology where the customer interacts solely with an appropriate user interface (e.g., automated teller machine or Web site) in order to retrieve desired benefits" (Fassnacht and Koese, 2006, p. 23). These three definitions illustrate how the view of *e-SQ* shifted with technological advancement from focusing merely on the *SQ* of websites to including a wider range of technological platforms that keep emerging and require a broader spectrum of service touchpoints. In this study, the adopted definition is the one made by Fassnacht and Koese (2006) since it does not only fixate on a website service, which does not include apps, while their definition is broader enough to also include such electronic services.

The introduction of digital information systems has also ushered in a new set of theories that were added on top of the traditional *SQ* model to explain the underlying customer behavior such as the *Technology Acceptance Model (TAM)* that was developed by Davis (1989), and *UTAUT* which stands for *The Unified Theory of Acceptance and Use of Technology* (Venkatesh et al., 2003). Dabholkar P.A (1996) was among the first ones to propose an alternative model to *SERVQUAL* and similar models with the *Attribute-Based Model* which accounted for the cognitive process of evaluating the outcomes of using an online service and the *Overall Affective Model* which relates to the predispositions and attitudes of users before they use the service. The *Attribution Based Model* was mainly based on the expectations users may have regarding five main dimensions; *Expected ease of use*, *Expected speed of delivery*, *Expected reliability*, *Expected enjoyment*, and *Expected Control*.

The dimension of *Expected ease of use* was based on *TAM* which was introduced by Davis F.D (1989, p.320) and defined as the level to which an individual believes that utilizing a certain technological system would require minimal effort. Based on *TAM*, the higher the perceived effort required by a customer to perform a certain task, the lower the chances he may adopt the use of the system. Thus, if the perceived effort invested by a customer to learn how to manage the system is high the higher the chances he will perceive the e-service as of low quality and consequently refrain from using it in the future. Dabholkar (1996, p.34) additionally posits that a social risk of appearing foolish in case of failure to use a new system may result in a poor-quality service perception.

Furthermore, this dimension was replicated in different research studies and was specifically defined with certain measurable items such as in the study of Santos (2003, p.263) which was described as an effortless recollection of website address, well - modeled, laid out, and catalogs that are effortlessly readable, navigation within the website, and accurate and comprehensible contents, terms and conditions. Other researchers that adopted *Ease of use* in their scale development were Wolfinbarger and Gilly (2003, p.188) who devised a 14 items scale called *eTailQ* tailored, as seen in Figure 3, specifically to the use in the electronic retailing

business and included unique items such as; The Website layout allows me to save time, no complications in completing a transaction, downloading rate is fast, the website contains high-quality photos of items, and I can find what I wish to have with the least number of mouse clicks.



Figure 3 eTailQ Model (As adopted from Wolfinbarger and Gilly, 2003, p.193)

Another new dimension that was introduced in Dabholkar's (1996) model, was *Enjoyment* which did not appear in Parasuraman et al.' *SERVQUAL* at all. This element of entertainment arises from the pleasure experienced while playing electronic games and the introduction of novelty to the field of e-commerce. Therefore, customers who appreciate novelty and fun would perceive the quality of an e-service as high. Loiacono et al. (2007) have also used this dimension to construct their website *SQ* measurement tool called WebQual, yet labeled it as *Entertainment Value* and added additional measurement items such as Visual appeal and emotionally appealing. The need for hedonic value fulfillment for customers corresponds well with Babin et al's (1994, p.645) *Theory of Shopping Value* which argues that consumers need both *Utilitarian value* from a purchase (*Efficient, easy, useful, economical, durable, safe, and timely*) and a *Hedonic Value* (*Novel, playful, attractive, enjoyable, creative and pleasurable*) for a complete evaluation of customer motives.

Other research studies that focused on e-SQ revised the *SERVQUAL* model and added additional dimensions such as *Personalization, Customization, Security, and Privacy* (Wolfinbarger and Gilly 2003; Lee and Lin 2005; Swaid and Wigand, 2009). *Personalization* can be regarded as customized caretaking, individual acknowledgment messages from digital shops, and the access of a commenting area for customer questions or responses (Lee and Lin, 2005) or in a broader sense as the customer's recognition of the unique attention and customized service that is suited to meet their requirements and likings (Swaid and Wigand, 2009). With regards to *Privacy* and *Security*, some studies have combined the terms under one dimension defining it as the safe use of credit card transactions and the privacy of

the information the customer provides to the service (Wolfenbarger and Gilly, 2003) while other studies defined them separately with a unique set of items. Nevertheless, despite the fact that personalization increases the probability of high-quality e-service, research has also found that over-personalization may reduce the sense of *Privacy* and *Security* a customer has during its journey on a website. Therefore, a balanced approach towards *Security* and *Personalization* should be applied in order to achieve the highest outcome (Lee and Lin, 2005).

e-SQ scales did not only differentiate based on the measurement of antecedents from various industries (e.g., banking, transportation, and e-commerce) or platforms (e.g., ATMs, vending machines, websites or mobile applications), yet it additionally had scales that were based on specific behavior such as frequency of purchase or nonroutine customers. Such a scale, for instance, was developed by Parasuraman et al. (2005) and named E-RecS-QUAL. It attempted to capture the important qualities for a non-committing behavior with three main dimensions (*Responsiveness, compensation, and contact*) using eleven items. Unlike, the definition of *Responsiveness* in other studies, for instance with *SERVQUAL* (Parasuraman, 1988), the definition here was adopted to the electronic environment as follows; productive processing of difficulties related to customer issues and reimbursements via the website (Parasuraman et al., 2005). Furthermore, since the level of trust in a provider may not be high for no routine customers, the perception of adequate *Compensation* (the level to which the site remunerates customers for problems) was proved to be critical. The dimension of *Contact* which was referred to as the accessibility to support via online representatives or telephone contributed to the need for customer support and accountability in case there are extraordinary issues with the payment, shipment, or quality of the products that need to be reevaluated.

Another set of different e-SQ models is the *Self-Service Technology*-based scales (SST). One definition and example of SST is; "Technological interfaces that enable customers to produce a service independent of direct service employee involvement, including automated teller machines (ATM), automated hotel check-out, banking by telephone, and services over the Internet, such as Federal Express package tracking and online brokerage services". (Meuter et al., 2000, p.50). An alternative definition was proposed by Hilton et al. (2013, p.3) as "technologies, provided by an organization, specifically to enable customers to engage in self-service behaviors. In many cases, this will involve customers performing tasks that were previously undertaken by the employees of the organization". In this research, the adopted definition is of Meuter et al. (2000), since it refers to customers as users versus employees of an organization as proposed by Hilton et al. (2013).

Among the most frequently used scales of SST in the context of e-SQ is of Lin and Hsieh (2011) called *SSTQUAL*. This scale encompassed seven-dimension (Functionality, enjoyment, security, assurance, design, convenience, and customization) and 20-measurement items. An additional scale that was introduced in

parallel to *SSTQUAL* was *e-SELFQUAL* which proposed four dimensions (*Perceived control, service convenience, customer service, and service fulfillment*) with 13 different measurement items (Ding et al., 2011, p.512). The major difference between the application of these two scales is that *e-SELFQUAL* is primarily designed to measure website self-service interactions while *SSTQUAL* is valid for a wider scope of industries such as mobile devices, grocery stores (Items scanning and payments), financial services (ATM), hotels services (self-check-in), and transportation services (purchasing and validating tickets).

Unlike any other dimensions, one dimension that appeared mainly in *SST* scales is the *Control* or *Perceived Control* dimension. Given the human contactless nature of *SST* services, the importance of empowerment and self-efficacy of the customer proved to be crucial for the success and adoption of such service. Ding et al. (2001, p. 510) adopted Ajzen's (1991) definition of *Perceived Control* as a mental condition of the flow experience which relates to the overall belief that the individual possesses in order to be able to provide an adequate action that may be impactful. This definition emphasizes the importance of the cognitive process which in turn reduces the level of uncertainty a customer may experience while engaging with *SST*. However, Dabkklar et al. (1996) offered a definition that is based more on the emotional aspects stating that *Perceived Control* is the degree of control that a customer senses they have over the result or proceedings. The premise of such a dimension correlates with the observation that individuals who believe that they possess a degree of control over a process are as equally influential as actual control, therefore it is enough if they may sense a certain degree of control.

With recent developments of smartphone devices and the advanced applications they offer, researchers have been fixing their gaze on adopting the previous finding of quality dimensions to this specific medium. Mobile smartphone devices allow the expansion of the various services which were previously unattainable easily such as mobile TV, location-based services, mobile reading services, electronic books, and mobile e-commerce applications (Huang et al., 2015, p.126). Therefore, the need for mobile *SQ* measurement has become a subject of interest for scholars and practitioners alike. Huang et al. (2015) were among the few researchers who devised a scale called *M-S-QUAL* to measure mobile *SQ*. This research adopts the use of *M-S-QUAL* since it is part of the *DEQUAL* model and is suitable for developing the research model that will be presented later on.

Similar to Parasuraman et al. (2005) who made a unique distinction between *E-RecS-QUAL* and *E-S-QUAL* when measuring various types of behaviors, so did Huang et al. (2015) who suggested two scales that differed from one another by the type of service used. A service that included a purchase of a virtual product included a scale with five dimensions (*Contact, responsiveness, fulfillment, privacy, and efficiency*) while a service that involved a physical product was measured with four dimensions (*Contact, responsiveness, fulfillment, and efficiency*), essentially omitting the dimension of *Privacy*. Several years later, Omar et al. (2021) introduced a different mobile *SQ* model called *MS-SQ*, as seen in figure 4, which was similar to the four dimensions scale of Huang et al. (2015) yet with the added dimension of



*Content* which measured how concise, comprehensive, and up-to-date the information that was presented on the mobile application (Omar et al., 2021, p.6). Additionally, their study has strongly confirmed the validity of the scale in relation to customer loyalty and satisfaction.



Figure 4 MS-SQ model (Adopted from Omar et al., 2021, p.4)

### 2.3 Customer e-loyalty intention

According to Kotler and Keller (2012, p.131), *Customer Loyalty* is defined as “a deeply held commitment to rebuy or patronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior”. Others narrowly referred to *Customer Loyalty* as “being the decision to remain with the company despite dissatisfaction” (Zeithaml et al., 1996, p.34). The major difference, however, between loyalty intention and demonstrated loyalty behavior has been a subject of study for various researchers in order to accurately predict the magnitude of the relationships between these two variables. *Customer Loyalty Intention* was presented by Leva and Ziliani (2018, p.5) as “the disposition of customers to either repurchase a product/service from a company or consider switching to a competitor” and expanded by Zeithaml et al. (1996, p.34) to include other behavioral intentions such as the “intent to spread positive Word-of-mouth about the company, recommend the company to others and/or do more business with it in the future”. In this research, the definition of Leva and Ziliani (2018) is adopted since *WOM* is measured separately from *Customer Loyalty Intention*.

The foundation of the field of customer loyalty has its roots in the *Relationship Theory* (Fournier, 1998). Within this paradigm, customers do not only enter a transactional short-term-based interaction, yet may also seek a deeper and meaningful connection with a brand which is similar to the reasons individuals engage in various types of relationships with each other. Within this context, *Relationships* are defined as continuous interaction among two sides who are familiar with each other and develop according to the feedback received and changes to the external environment (Fournier, 1998). *Loyalty*, therefore, is displayed when there is a sizable degree of trust, love, commitment, behavioral interdependence, and self-other integration. Human relationship formation which is built on the general phase of relationship building stages (*Initiation, growth, maintenance, deterioration, and dissolution*) can reflect a similar relationship building between individuals and the brands they interact with. Furthermore, the Relationship theory asserts that should a brand wish to encourage loyalty behavior by its customers it must view itself as a humanized valid partner in a relationship in order to invoke emotional attachment with its clients. (Fournier, 1998)

Since this research focuses on electronic platforms and services it is also critical to define loyalty intentions within the context of digital environments. One such definition of *e-Loyalty* intention was given by Lauren and Lin (2003, p.157) as “the intention of a consumer to repurchase products/ services through a particular e-service vendor”. Mouakket and Al-hawar (2012, p.50) offered a wider range of behavioral intentions within *e-Loyalty* such as revisiting a website, demonstrating high preference, encouraging friends of these online services, saying positive things about the service, and keeping their usage of the online service despite price increases. Observing customer e-loyalty intentions in the context of mobile applications is an under-researched sphere, therefore, it has not been well defined in the literature. However, in this study, the definition of customer *e-Loyalty* provided by Lauren and Lin (2003) is adopted as it excludes behavioral intentions related to *e-WOM*.

## 2.4 Customer satisfaction

Another observed antecedent of customer loyalty in the literature is CS as seen in Table 1. CS is broadly defined, and adopted in this research, as “the customer’s fulfillment response. It is a judgment that a product or a service itself, provided a pleasurable level of consumption-related fulfillment, including levels of under - or over-fulfillment” (Oliver, 2010, p.8). CS relies additionally on the cognitive theoretical background of the *Expectation-Disconfirmation Theory (EDT)* presented by Oliver in 1977, who suggested that “perceived performance is a positive function of expectation and disconfirmation when other factors are held constant” (Oliver, 1977, p.485). In other words, if the actual performance of service remains constant while the customers under-evaluate it before the purchase, they will experience a

positive disconfirmation which translates to increased CS and vice versa. This emphasizes the importance of the manner marketers are presenting their products and services in order to create a realistic yet attractive offering that would exceed expectations and their perceptions to encourage loyalty and positive attitudes.

Table 1 Customer satisfaction - antecedents and consequences (Adopted from Oliver, 2010, p.9)

<b>Viewpoint</b>	<b>Antecedents</b>	<b>Core concept</b>	<b>Consequences</b>
Individual: One Interaction	Performance or service encounter	Transaction - specific satisfaction	Complementing, complaining, WOM
Individual: Time Accumulated	Accumulated per- formance history	Summary Satisfaction	Attitude, Loyalty, Switching
Firm's Customers in the aggregate	Reputation, product, quality, promotion	Average satisfac- tion, repurchase rates, competitive ranking	Share, profits
Industry or com- mercial sector	Average quality, monopoly power	Consumer sentiment	Regulation, taxation
Society	Product and service variety, Average quality	Psychological well-being	Tranquility, productivity, social process, alienation, consumerism

The consequences of customer loyalty have been closely observed by practitioners and researchers in order to attribute the influencing factors adequately to its roots. Churn reduction and retention have been clear signs of strong customer loyalty even when the quality of the service drops, furthermore, it is more likely to up-sell or cross-sell a new product or a service to existing loyal customers than to new customers. Customer loyalty directly affects cost reduction as it is cheaper to maintain an existing customer than to acquire new ones. Loyal customers are less likely to produce negative word-of-mouth in case of a crisis situation and protect their brand's image proactively. Loyal customers are also willing to pay a price premium or tolerate an increase in price in cases the company decided to increase it, which may cause a switching type of behavior among disloyal customers (Kotler and Keller, 2012).

Moreover, loyal customers are less likely to complain frequently about the SQ even if there is a justification to do so since they tend to be more forgiving and understanding towards the brand and allow for a greater margin for errors as they trust the brand would act similarly with them in their time of need (Zeithaml et

al., 1996). Customer loyalty also has a positive impact on Share-of-wallet (SOW) that “corresponds to the share of category expenditures spent on purchases at a certain store, which integrates both choice behavior and transaction values during a specific time period into a single measure of customer share” (Meyer-Waarden, 2007, p.224). One measure by which brands attempt to increase their customer loyalty is by introducing Customer Loyalty Programs, which include measures for cultivating relationships and SOW, offer incentives plans that include financial, psychological, and social rewards (Meyer-Waarden, 2007). These long-term rewards reduce the probability of service switching and prolong the customer lifetime duration as long as the customers are motivated by the offered loyalty schemes.

## 2.5 Electronic word-of-mouth

Considered to be one of the most reliable forms of non-paid advertising means, *Word-of-Mouth* (WOM) was defined by Arndt (1967, p.3) as “oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial, concerning a brand, a product or a service”. Furthermore, Sen and Lerman (2007, p.77) presented it as “a face-to-face conversation between consumers about a product or a service experience”. WOM is particularly powerful as it does not raise much suspicion of being influenced by a commercial party and reflects a genuinely personal experience with a service or a product worthy of sharing with a friend, a family member, or a colleague. Others, such as Kozinets et al. (2010, p.72), proposed that WOM “occurs between one consumer and another without direct prompting, influence, or measurement by marketers. It is motivated by a desire to help others, to warn others about poor service, and/or to communicate status”. The main common denominator throughout the decades of using the various definitions is that the interaction happens between two individuals that are either close in proximity or in their relationship with each other. For the purposes of this study, the adopted definition is of Kozinets et al. (2010) since it adds the motivations for spreading WOM between individuals.

Although these definitions emphasize the absence of the marketers in the process, it was still considered critical for businesses to tap on this valuable source of influence on the consumer decision-making process, therefore *Opinion leaders* have become of greater interest and use as promotional tools. Advertisers refer to WOM as means of *Earned media* which does not require any direct payment for ad spaces in magazines, radio, television, or the internet as it is made with *Paid media* (Kotler and Keller, 2012, p.546). WOM is observed to be most effective for smaller businesses that are mainly based on personal relationships and involve close interaction, for instance, a small neighborhood pizza restaurant that relies on the positive experiences of its diners to succeed. Nevertheless, WOM is equally pow-

eful in spreading negative evaluation of a certain service and may cause a decrease in repeat business, churn and erode the loyalty of existing customers by encouraging variety-seeking behavior (Kotler and Keller, 2012).

Buttle (1998) presented a model of WOM, as seen in figure 5, by which its antecedents and consequences can be evaluated, predicted, and managed in order for marketers to be able to influence this process for their specific needs. The model is divided into two main influencing spheres; *Extrapersonal environment* which includes the cultural input, the influence of the social networks of the individual, possible extrinsic incentives, and the business climate of the market, while the *Intrapersonal environment* includes the cognitive and emotional state by which an individual processes an *Input WOM* and shaping the expectations and perceptions it has before and after consumption of the product/ service. The consequences are *Output WOM* generated by the target individual which is an expression of his delight or dissatisfaction.

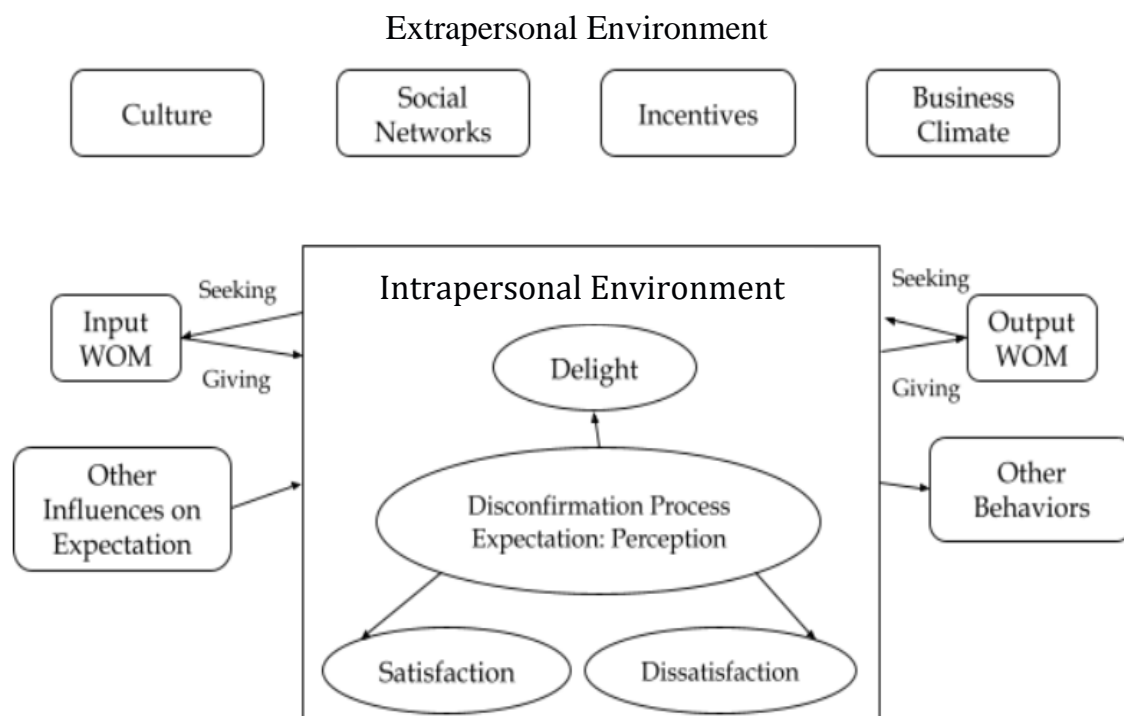


Figure 5 Word-of-Mouth model (Adopted from Buttle,1998, p.246)

The other characteristics Buttle (1998) refers to in his WOM model are *Valence*, *Focus*, *Timing*, *Solicitation*, and *Intervention*. *Timing* is described in the context of Input and Output WOM which emphasizes its importance both as a pre- and post-purchase source of information. *Valence* describes the positive or negative sentiment of the WOM which also includes the Volume (intensity) which can be managed by the marketers through their response to the input. *Focus* in Buttle's model relates to the different possible parties that may be involved in the WOM process, as it is not only restricted to one customer to another customer relationships but

also an employee to another employee and other contexts by which there might be different social norms and roles. *Solicitation* is an indication of the state by which the customer is before he receives the information, whether actively or passively, and whether it was made from a credible or non-credible source to trigger a certain response. *Intervention* relates to the degree of involvement of companies in the process of decimating *Input WOM*, for instance, the use of endorsements by celebrities.

Once electronic media devices started to gain popularity and prominence, *WOM* was beginning to naturally emerge also in these mediums without the need for any physical face-to-face interactions as it was defined by Sen and Lerman (2007). This novel breed of *WOM* gave rise to a new term which comprehensively described the phenomenon as *Electronic Word-of-Mouth (eWOM)* that is defined as "any positive or negative statement made by potential, actual, or previous customers about a product or company that is disseminated over the Internet, including email, user groups, online discussion forums, bulletin board systems, virtual communities, review sites, online consumer opinion platforms, retail websites, and social networking sites" (Wang et al., 2019, p.5). Alternatively, Litvin et al. (2008, p.461) delineated the following definition: "All informal communications directed at consumers through Internet-based technology related to the usage or characteristics of particular goods and services, or their sellers". In this research, the adopted definition is of Litvin et al. (2008) since it does not attempt to capture any negative *eWOM* but only the positive potential consequences of *CS* and *eSQ*.

Cheung and Thadani (2012), have further characterized *eWOM* as different from *WOM*, firstly by the means of scalability and speed of diffusion and secondly by the multi-way exchanges of information. Thirdly, the Information does not need to be passed along at the same moment when all communicators are present. Fourthly, the communicated message is more persistent and accessible meaning that it can be read from different devices including mobile devices from any location. The fifth characteristic is its traceability and measurability which allows for better quantification and attribution of the impact of the message on its receivers. Viral marketing, for instance, is one type of *eWOM*, also known as "word of mouse," that encourages consumers to spread company-developed products and services or audio, video, or written information to others in a manner that reaches exceptionally high volumes of audiences across the digital networks (Kotler and Keller, 2012, p.549). Most often, it is the novelty, uniqueness, and high relevance of the viral marketing content that incentivizes others within the network to share it with their own networks which creates a cumulative effect of massive audience expansion.

*WOM* and *eWOM* behaviors have been incorporated in various studies as a variable measured through several items which include specific indicative statements in a survey, experiment or interview. Through these statements, researchers are able to assess the degree to which an independent variable, such as loyalty, *CS*, trust, or aesthetics influences the propensity to create *WOM/eWOM* type behaviors. Researchers have taken a particular interest in studying the non-tangible and indirect qualities of *WOM* since it can produce repeat purchase behavior in other

customers in the future even if it does not translate to financial rewards immediately as repurchase intention indicators.

Quantitative research examples of the use of *WOM* evaluation scale can be found in Swan and Oliver's (1989) research using a unidimensional seven-point Likert, self-administered questionnaire. The respondents were new car buyers in the automotive sector and included two main items: "(1) Did you mention mostly positive or mostly negative comments regarding the car? (2) Did you recommend purchasing the car or not purchasing it?" (Swan and Oliver, 1989). Another example of *WOM* evaluation was made by Hennig-Thurau et al. (2002) who tested student's satisfaction and the probability of engaging in *WOM* behavior towards a wide range of service providers (e.g., financial consulting, medical care, travel agency, and, hair care services). The measurement statement they used was: "I often recommend this service provider to others" (Hennig-Thurau et al., 2002, p. 245) which indicates three important characteristics of *WOM* (Valence, Focus and Timing).

Furthermore, a wide range of studies that measure Negative *eWOM* have been conducted for online auctions, travel websites, software programs, coffee shops websites, Telecom providers customer discussion forums, and banking services (Balaji et al., 2016). According to Balaji et al. (2016), *Negative WOM* is defined as the consumer's attempt to provide negative or unfavorable responses or points of view with siblings, acquaintances, or others. In their conceptual model, Balaji et al. (2016), proposed a few unique antecedent dimensions that impact Negative *eWOM* which are: Contextual Determinants (Feeling of injustice, Firm attribution, Firm Image), Individual Determinants (Face - concern, Emotion regulation), and Social Networking Determinants (Social Networking Site Intensity, Tie Strength). Their study found that, *Feeling of Injustice*, *Face Concern* and *Social Networking Site Intensity* are the strongest antecedents regarding Negative *eWOM* prediction. These kinds of studies demonstrate the importance of using the appropriate theoretical model, constructs, and items in order to extract the most valuable results in the sphere of measuring *WOM* and determine its relationship with other variables. In this research, *eWOM* mainly relates to positive *eWOM* and does not include negative item statements.

## 2.6 Perceived value

As one of the most significant indicators of customer behavior, *PV*, is defined in this study as the general evaluation of the possible use cases of a product or a service with the consumer's understanding of the potential gained benefits versus the expected associated costs (Zeithaml, 1988; Patterson et al., 1997). A high *PV* occurs when the expected received benefits surpass the expected invested cost, similarly, a low *PV* occurs when the perceived benefits received are lower than the cost. The measurement of the added value extracted from product or service usage can further be divided by the type of value which can be financial, emotional, social, and psychological which translate to time, place, effort, convenience, energy, and money as sacrifices made by the customer to trade for another set of valuables (Zeithaml, 1988). The nature of *PV* is also observed through the *PV* that is subjectively experienced by the consumer, in other words, a specific product or a service can deliver a different set of *PV* for different customers who would be willing to sacrifice accordingly.

The linkage between *PV* and quality products or services is direct, yet not all customers are willing or able to afford high quality, hence the trade-off would be deemed as low value as it may erode their buying power towards other products which are more essential for their personal use (Suhartanto et al., 2019). In this case, the assumption that high quality leads to high *PV* is incorrect since *PV* is an individualized construct measured against the perceived related costs that are required to obtain such high quality. Furthermore, *PV*, in the context of online commerce, allows customers to compare prices and potential benefits instantaneously from a wide range of sources, hence turning *PV* into an important factor in the perception of possible product quality and consequently the experience of *CS* (Suhartanto et al., 2019). The measurement of *PV* is often made through surveys using a Likert scale via statements that address the various possible tradeoffs that are presented to them. For instance, respondents may choose the intensity by which they agree or disagree (From 1-7) with regards to how much they think the acquisition was worth their money, time invested in the process, and the level of convenience they have obtained during the transaction (Zeithaml, 1988; Patterson et al., 1997).



### 3 THEORETICAL MODEL

In order to answer the main research question of this paper, it is pivotal to form a robust understanding of the relationships between FDA services and Food Industry *SQ* with the formation of *e-Loyalty intention* and *eWOM* based on previous research results. As previous research is reviewed and specific themes emerge from reviewing customer feedback of the *SQ* of the case company, certain hypotheses will be proposed in order to form a theoretical model that would provide plausible explanations and bridge the literature gap.

The theoretical model development process in this paper adopts Chan and Gao's (2021) measurement scale, which was recently developed to measure the quality of Online Food Delivery services (*DEQUAL*) due to its comprehensive approach to all the required quality elements in this context. Unlike many others, this specific model unifies the three basic elements, as seen in Figure 6, that comprise an FDA service; *SQ* dimension that pertains to the five different dimensions presented in the *SERVQUAL*. *e-Quality* dimension is based on the *M-S-QUAL* with five dimensions and *FQ* dimension which aggregates six different attributes, excluding any variables related to an actual restaurant facility.

In addition to the employment of *DEQUAL* scale elements in the theoretical model development, this research proposes, *PV* as a significantly positive antecedent to *CS*, and instead of focusing on *Repurchase Intention*, this study will focus on *e-Loyalty intention* and *eWOM* as consequences. Furthermore, the role of *CS* will be examined as a mediator for *DEQUAL* dimensions in order to test its viability and necessity.

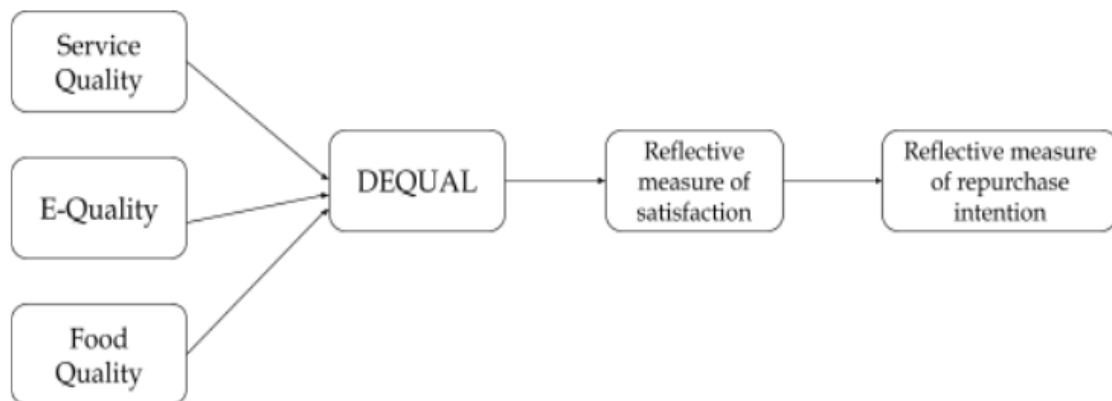


Figure 6 DEQUAL scale (Adopted from Chan and Gao, 2021, p.4556)

To aggregate and illustrate all the hypotheses statements in this research framework in a visual representation, Figure 7 was scratched with all the relevant constructs as follows:

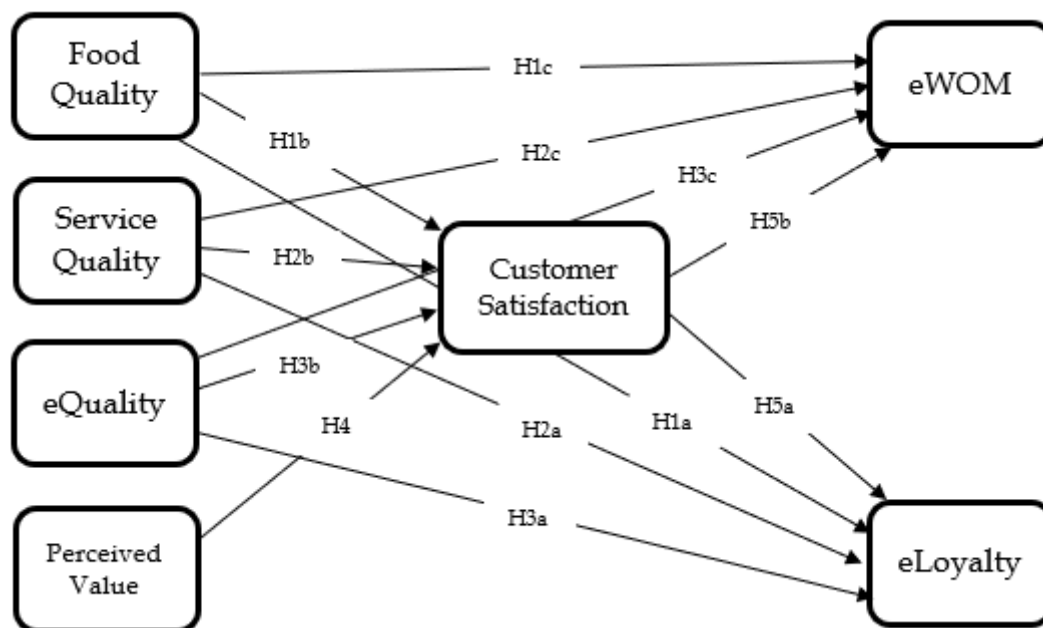


Figure 7 Proposed research model

### 3.1 Food quality and its consequences

*FQ* has been the focus of various research studies which attempted to determine its properties and means of improvement of customer experience and satisfaction. According to Namkung and Jang (2007, p.393), *FQ* refers to “necessary conditions to satisfy the needs and expectations of customers”, which can be measured by a set of attributes. Despite the lack of consensus over the exact attributes it should constitute, certain attributes appear to have a greater impact on the literature, such as *Freshness*, *Presentation*, *Temperature*, *Variety*, *Taste*, and *Healthiness* (Suhartanto et al, 2019; Chan et al., 2021). *Freshness* refers to the state of crispiness, juiciness, and aroma when the meal is served, while *Taste* relates to the sensation of flavor in the mouth which may be subjectively pleasurable or not. The *Temperature* in the context of food is linked to the perception of taste and smell. The appropriate temperature of food, measured in Celsius, can indicate whether it is safe to eat, enjoyable, or distasteful. The *Presentation* dimension indicates the manner the meal is decorated and its outward attractiveness which is directly linked to the perception of quality. *Variety* accounts for the different kinds of possible items that appear on the menu which indicates abundance and freedom of choice in addition to the possibility to select items that correspond to the customer’s dietary requirements. Finally, *Healthiness* involves menu items that offer nutritious and healthy food options. (Namkung and Jang, 2007).

Numerous research papers have studied the relationship between customer loyalty and *FQ* and found that it was positively significant (Clark and Wood, 1998). For instance, in 2007, Namkung and Jang researched the six various attributes of

*FQ* on early signs of loyalty type behavior (Revisit, recommend, and positive WOM) and found a significant positive relationship while *Taste* and *Freshness* were the leading attributes. Furthermore, Ha and Jang (2010) studied the effects of *SQ* and *FQ* in the ethnic restaurant segment of Korean restaurants to find that *FQ* has a greater role in influencing customer loyalty behavior compared to restaurant atmosphere and *SQ*. Similar results were found in 2014, in Bujisic et al.'s study on the moderating effect of Quick-service and Upscale restaurants on *FQ* and early indicators of customer loyalty (WOM and return intention). Suhartanto et al.'s (2019) research was found to be among the very few most relevant research papers, which were conducted in the context of online food delivery services and reached similar results. In their paper, they conducted a survey-based study in Indonesia including 405 respondents while *CS* and *PV* served as mediators to *Customer Loyalty*. However, no relevant research paper used the term *e-Loyalty intention* in relation to *FQ*, hence, based on the above-mentioned findings and studies, the research hypothesizes the following relationship:

H1a: *FQ* positively influences customer *e-Loyalty Intention* toward FDA services

In addition to the relationship between *e-Loyalty* and *FQ*, *CS* in the various studies was utilized as a mediator. Nevertheless, earlier studies have proven the tight and positive relationship between high quality of food and high satisfaction levels. Qin and Prybutok (2009), studied the role of *PV*, *SQ*, *FQ*, and *CS* in the fast-food restaurant business in the USA and concluded that there is a significant positive relationship between *FQ* and satisfaction. The attributions they used for *FQ* were *Fresh*, *Presentation*, *Well Cooked*, and *Variety of food and beverages*, which excluded *Healthiness* away since it was assumed that fast foods do not provide healthy food choices which would have misrepresented the results with regards to satisfaction.

Other researchers, such as Singh et al. (2021), studied the antecedents of customer loyalty and satisfaction in the context of fast-food restaurants in Fiji reaching similar results as Qin and Prybutok (2009). Moreover, their study also omitted the use of *Healthiness* as a measurement item which further suggests it provides low value in the context of fast-food restaurants. However, the measurement items for *CS* in both studies were not identical, since Qin and Prybutok's research was accounting for both emotional (*Enjoyable experience*) and rational-transactional aspects of the added value (*Wise choice*, and *Right Thing*), Singh et al. (2021) used only emotionally engaging terms to describe *CS* (*Satisfied experience*, *good mood*, *enjoyment*). Although *FQ* had a significantly high positive influence over *CS*, *Price Fairness* carried a greater impact.

Additional studies, with the same outcome, were conducted by Ha and Jang (2010) who tested the moderating effect of restaurant atmosphere on the relationship between *FQ* and *CS* in America. Similarly, Nakung and Jang (2007), collected data from middle and upper-scale restaurants in America with 300 respondents, yet did not employ any other construct besides *FQ*. Qin et al. (2010), tested the fast-food industry in China which strengthens the generalization of the suggested

relationship in a multicultural setting. As mentioned earlier, the closest study in the FDA services context was conducted by Suhartanto et al. (2019) who found that *FQ* had a direct and positive relationship with *CS*, yet not greater in path coefficient than *PV*. Given the possible impact of *FQ* in understanding the mediating effect of *CS*, this study hypothesizes the following relationship:

H1b: *FQ* positively influences *CS*

The direct relationship between *FQ* and *WOM* formation has been researched in a limited capacity. However, in various research studies, this relationship is mediated through *CS* (Konuk 2019; Kim et al., 2009; Ryu and Han, 2010), while in others, a direct relationship is integrated and measured as part of *Customer Loyalty* behavior or *Behavioral Intentions*' dimension (Suhartanto et al., 2019; Nakung and Jang 2007; Zhang et al., 2019). For instance, Zhang et al. (2019) measured part of *Customer Loyalty* intention with *WOM*-related behavior including the following description of measurement items: I shall provide a high overall evaluation of Jun'an steamed pork, and I will most likely encourage others to try Jun'an steamed pork. Bujisic et al. 's (2014) research on the effects of restaurant-quality attributes on customers' behavioral intentions indicated a direct and positive relationship between *FQ* and *WOM* in quick-service and upscale restaurants, meaning it is a valid hypothesis regardless of the type of restaurant.

However, Serra-Cantallops, Cardona, and Salvi (2020) contested the notion that *eWOM* is a mere online extension of *WOM* since it does not specifically address friends or family yet a wider range of individuals who are not affiliated with them, hence may yield different results as compared to measuring *WOM* items. Bangsawan, Marquette, Mahrinasari (2017) were among the few who tested the hypothesis in the context of the Indonesian restaurant industry to find yet again a significant and positive relationship. The manner by which they measured *eWOM* was through a survey including 323 viable respondents rating their engagement with *eWOM* activities based on six statements (Expression of positive feelings, and deliberate attempt to promote the restaurant). Generating *eWOM* is a clear sign of the customer's engagement with a service, while *FQ* is an important factor that may have a direct impact on it, therefore this research hypothesizes the following:

H1c: *FQ* positively influences customer *eWOM* toward FDA services

### 3.2 Service quality and its consequences

The role of *SQ* concerning *Customer Loyalty* will also be considered within the parameters set in this research framework. Bell et al. (2005), have examined the dynamics of this relationship in the financial retail industry while dividing *SQ*

into *Functional* and *Technical* qualities which showed that both had a direct positive relationship with customer loyalty behavior. In Bell's study, *Perceived Investment Expertise* and *Perceived Switching Costs* were taken into account as moderators since previous studies confirmed a significant impact.

Studies within the food industry sector have also tested these relationships thoroughly. One such study conducted by Ha and Jang (2010), regarded *SQ* as the service provided by the restaurant employees and used a customized version of the *DINESERV* scale which was originally developed by Stevens et al. in 1995. This scale is grounded on the *SERVQUAL* model yet uses only 29 items out of the possible 40 which are more suitable for the context of restaurants (3 for responsiveness, 10 items representing tangibles, 5 for assurance, 5 for empathy, and 5 representing reliability). Ha and Jang (2010) used only three dimensions in their study, omitting the *Empathy* dimension as it only wanted to focus on cognitive processing and the *Tangibility* dimension was discarded as it closely resembled another environmental aspect that was measured through the *Atmosphere* dimension as a moderator. The results of the study, which included 607 valid respondents, confirmed the positive nature of the above-mentioned hypothesis.

Another research in the context of the food industry was carried out by Hung, Lee, and Liu (2016) who used a rather simple model to explore *SQ*, Customer Loyalty, and *CS* as a mediator variable. *SERVQUAL* was used to measure *SQ* with 15 different items while the Customer Loyalty dimension was measured through 12 items that did not include any WOM elements, focusing only on purchasing behavior such as repurchase, first and second choice selections. The survey included 197 respondents of leading fast-food franchises in Taiwan and confirmed the proposed hypothesis. Given the importance of *SQ* in the development of the researched behavioral consequences this study aims to further validate previous findings by proposing the following statement:

H2a: *SQ* positively influences customer *e-Loyalty Intention* toward FDA services

In this research, *SQ* and *CS* will also be observed for a possible correlation. González et al. (2007) have focused mainly on these two dimensions and their behavioral consequences in the tourism industry within the spa sector. They measured *SQ* perceptions through a 22 items scale based on *SERVQUAL* and one item to measure satisfaction which stated: "What is your post-purchase feeling after using our spa services?" which was assessed with seven points Likert scale. The empirical results of the research confirmed the hypothesis of a positive and direct relationship between the constructs. Islam et al. (2021), have investigated the same constructs within the banking sector in Bangladesh using 200 respondents while dividing the five elements of *SERVQUAL* into separate measurement items to discern which one has a stronger influence on *CS*. The results indicated that the overall *SQ* was positive and significant towards *CS*, yet *Reliability* and *Access to Service* were not significant.

These relationships have been similarly addressed within the food industry sector by various researchers. Qin and Prybutok (2009) have found that SQ was an important antecedent of CS as well as Qin et al. (2010), Hung et al. (2016), and Singh et al. (2021) who used *SERVQUAL* to measure SQ in the fast-food sector. However, Singh et al. (2021), divided SQ into two distinct dimensions through *Employee SQ* and *Physical Environment Quality*, the latter was found insignificant towards SQ yet within the context of FDA services it has no relevance as much as the former dimension which proved to be significant and positive in relation to CS. Moreover, Chan and Gao (2021) who developed the most relevant measurement scale in the context of FDA services, found that SQ has the highest contribution towards CS as compared to *e-Quality*, and *FQ*. Therefore, this study delineated the following relationship:

H2b: SQ positively influences CS

The potential consequence of *eWOM* stemming from SQ will be examined in this study. Some research, such as in the tourism industry (Liu et al., 2016), telecom industry (Ullah et al., 2018), and banking sector (Mukerjee, 2018), confirmed there is a direct and positive relationship between the proposed constructs. Liu et al. (2016), examined the influence of SQ and price perception on WOM and revisiting intention among 484 Taiwanese air travel passengers. SQ was measured via the five dimensions of *SERVQUAL* with 15 items adopted to the specific needs of a low-cost travel experience, while two items measuring WOM were used. Mukerjee (2018), proposed *Customer Loyalty* as a mediator between *Brand Experience*, *SQ* and *PV*, and *WOM*, surveying 412 consumers who used banking services in India. In this study, certain WOM were included in the measurement of *Customer Loyalty* (Primary choice, Liking, Admiration, Recommendation, Revisits, and Upselling), while the WOM dimension was measured with two items related to customer recommendation and saying positive statements about the service. Furthermore, 14 *SERVQUAL* items were used to primarily capture the SQ delivered by the employees of the bank and their perceived performance.

Ullah et al. (2018), studied the mediating role of CS while SQ and *After-Sale Service* function as antecedents of WOM regarding Pakistani telecom companies. The research used six items to measure SQ, and three items to measure WOM based on Baron and Kenny's (1986). Furthermore, certain research papers have included elements of WOM within their measurement of *Customer Loyalty* such as Zhang et al. (2019) to account for a direct correlation with SQ and even fewer studies have been made in the context of the hospitality industry yet still supported the hypothesis (Bujisic et al., 2014; Jun et al., 2017). Both of these research papers used three item measurement statements to factor for WOM which included recommending, positive statements, and defending the brand, in addition to three SQ statements including statements about the performance of the staff.

As delineated earlier with regards to *FQ* and *eWOM* relationships, this study adopts the notion presented by Serra-Cantalops et al. (2020) and does not exclusively relate to *eWOM* as *WOM*'s online expansion. Following an extensive review

of the literature, no substantial relevant publication offered a study examining a direct relationship between *SQ* and *eWOM* which is important to measure in order to answer the research question accurately. Moreover, in light of the fact, *WOM* attributes are related to *eWOM*, the same correlations can be expected, therefore the following relationship is proposed:

H2c: *SQ* positively influences customer *eWOM* toward FDA services

### 3.3 e-Quality and its consequences

The third dimension of quality investigated in this thesis is e-Quality and its relationship to *e-Loyalty* formation. Similar to other dimensions previously described, the dynamics of this relationship was explored in various contexts to find a positive and direct association. For instance, Pearson, Tadisina, and Griffin (2012), collected survey data from 409 undergraduate students in the United States in order to determine the role of *e-SQ* and *Information Quality* in treating *PV* as an antecedent to *e-Loyalty* in the context of online retail shopping. The relationship between *e-SQ* and *e-Loyalty* was examined directly by using measurement items based on E-S-Qual (Eight items for *Efficiency*, four items for *System Availability*, seven items for *Fulfillment*, and three items for *Privacy*) and *e-Loyalty* (Five items including three *WOM* related statements, repurchase, and continuance behavioral intentions). Furthermore, Khan, Zubair, and Malik (2019) similarly used E-S-Qual to measure for *e-SQ* with 17 items and *e-Loyalty* with four items which did not contain any *WOM-related* expressions in a survey including 298 Pakistani respondents in the context of online shopping that achieved the same results.

More recent research, conducted by Anser, Tabash, Nassani, Aldakhil, and Yousaf (2021), focused on the development of *e-Loyalty* in the context of digital libraries. The researchers collected data from 783 users in Pakistan using three dimensions for *e-SQ* (5 items for *Efficiency*, 4 items for *Privacy*, and 5 items for *Customer Service*) and seven items scale for *e-Loyalty* (Three items of *WOM* and four items related to repeat usage and priority choice). The role of E-trust was also included in the study as a mediator between *e-SQ* and *e-Loyalty*, yet its mediation role was not much greater than the direct positive relationship between these constructs. Suhartanto et al. (2019) were among the only researchers to examine the above-mentioned correlations within the context of Food Delivery Services in Indonesia. The survey contained 12 items measuring *e-SQ* which were partially based on *ES-QUAL*, and *Loyalty* which was measured with four items (Two containing *WOM* and two relating to continued purchase and tolerance to price increase). Their findings showed that despite the positive nature of the relationship, it did not prove to be significant. Nevertheless, given the multitude of other research studies that proved otherwise, the researcher hypothesizes the following statement:

H3a: *e-Quality* positively influences customer *e-Loyalty Intention* toward FDA services

The connection between *e-Quality* and CS is addressed within this research context as a valid one. Chang, Wang, and Yang (2009) surveyed 330 online shoppers in Taiwan, utilizing 14 items for *e-Quality* (*Website design, Reliability, Security and Customer Service*) and three items for CS (Measuring for cognitive and affective constructs) with the aim of determining the impact on *Customer Loyalty*. Their study presented a significant and positive relationship between *e-Quality* and CS, which was later on replicated in research papers of Jeon and Jeong (2017) within the lodging industry in the United States, Khan, Zubair, and Malik (2019) in the online retailing sector in Pakistan, and by Liang, Guo, and Zhang (2020) within firm-hosted online communities in China. Despite the common results, each one of the studies adopted a different measurement method for *e-Quality* in order to capture the unique service interaction in each sector. For instance, Khan et al. (2019) used the four dimensions of *E-S-QUAL* (*Efficiency, Reliability, Assurance, and Fulfillment*) while Jeon and Jeong (2017) divided the composition of *e-SQ* into three main components (*Website Functionality, Personalization/Customization, and Reputation*), and Liang et al. (2020) included three dimensions (*Information Quality, SQ, and System Quality*).

The extent of research using the suggested constructs in the context of the food and hospitality industry is scarce. Van Birgelen, Ghijsen, and Semeijn (2005) were among the few who tapped into the subject when it was still a novel introduction to the field of food catering business. Their study compared the influence of *e-Quality* and traditional SQ on CS and discovered that traditional SQ (Measured via *SERVQUAL*) had a greater positive impact compared to *e-Quality* dimensions (*Navigation, E-scape, Accuracy, E-assurance, E-responsiveness*). However, the advancement and improvement of internet and mobile technologies have since been widely adopted and popularized, which called for further inquiry into the subject as Suhartanto et al. (2018) to prove a direct and positive relationship which will furthermore provide responses to the research question by measuring the following relationship:

H3b: *e-Quality* positively influences CS

The subsequent examined relationship is between *e-Quality* and *eWOM*. As with previous relationships deliberated thus far, the observation of *eWOM* elements within *e-Loyalty* are present since there is no clear separation between the constructs (Jeon and Jeong, 2017; Liang et al. 2020; Van Birgelen et al. 2005; Anser et al. 2021; Chang et al. 2009; and Suhartanto et al. 2019). In some of these studies, the relationships are mediated through CS while others are directly linked to each other which emphasizes the legitimacy of further inquiring into the nature of this relationship within the context of this research. However, a few researchers stud-



ied *e-Quality* and *eWOM* exclusively, such as Li, Liu, and Suomi (2013) who conducted a survey collecting 543 valid responses in the field of online traveling services in China. Unlike many other studies, in this research, the measurement of *e-Quality* was only taken with two items which stated if the customers agree if the online *SQ* was good and if it was better than they expected.

Additional research, completed by Szucs, Simon, Ákos, and Krisztián (2016), measured every dimension of *e-Quality* separately while combining items from two measurement scales (E-S-Qual, and the E-RecS-Qual) in order to capture offline *SQ* which is required for an online bookshop service handling deliveries through a third-party service. The research collected empirical data from 277 users of the online bookshop in Hungary and discovered that *Fulfillment* and *Efficiency* had a significantly positive relationship with *WOM* while *Security* had an insignificant negative effect and *System Availability* had a positive insignificant relationship. Similarly, Rajaobelina, Prom, Arcand, and Ricard (2021) broke down the elements of *e-Quality* in the context of mobile banking applications with the intent to measure each construct's impact on positive *WOM*. Their findings confirmed that three constructs (*Usability*, *Value-Added Features*, and *Security/Privacy*) had a significantly positive correlation with positive *WOM* while one (*Interactivity*) was insignificantly positive. As with previously proposed relationships of *FQ* and *SQ* towards *e-WOM*, *e-Quality* has not been studied with a direct relationship to *eWOM* by significant research publications, hence in light of these conditions, the research posits that:

H3c: *e-Quality* positively influences customer *e-WOM* toward FDA services

### 3.4 Perceived value's effect on customer satisfaction

Studies from diverse industries have researched the relationship between *PV* and *CS*, such as telecom mobile services (Kuo, Wu, and Deng, 2009), hospitality industry (Konuk, 2019), fast-food industry (Qin and Prybutok, 2009), restaurant business (Jalilvand, Salimipour, Elyasi, and Mohammadi 2017), online shopping (Chang et al., 2009), and food delivery context (Suhartanto et al., 2019; Bao and Zhu, 2021; Dean, Suhartanto, Leo and Triyuni, 2019). Kuo et al. (2009), focused their research on examining *e-SQ* and *PV* as antecedents for Post-purchase Intention including the mediating role of *CS* measured via a survey completed by 387 Taiwanese students. *PV* was evaluated by three items that accounted for affective (Feeling of getting good value for the cost), cognitive values (Wise choice), and utilitarian values (Time-saving and effort) while, *CS* also measured with three items (Expectations exceeding, expectation confirmation, and success or failure perception of the service). Their study confirmed a highly significant and positive relationship between *PV* and *CS*. Konuk (2019) reached similar results when examining how *FQ* impacts the perception of price and value and consequently *CS*.

However, his three items' measurements of *PV* did not include any affective or utilitarian elements as Kuo et al. (2009) used but mainly focused on monetary value as Jalilvand et al. (2017) did in their study of restaurants in Iran.

Several research papers in the context of online food delivery services included *PV* and *CV* in their models to predict customer behavior. Bao and Zhu (2021), focused on the Chinese market to assess the antecedents (*Information quality, system quality, and SQ*) of *Intention to Reuse* surveying 312 users of FDA services. The three items they used to measure *CS* were related to expectation confirmation and affective experience, while *PV* focused mainly on the financial value extracted from ordering a meal home. Dean et al. (2019) used similar definitions for *CV* and *PV* in the Indonesian market surveying 332 Millennials to determine the magnitude over its consequences (*Intention to repurchase, Intention to recommend, and Intention to pay more*).

Furthermore, Suhartanto et al. (2019), measured *CS* by rating their satisfaction levels and affective state with regards to the service, and *PV* utilized two items to measure financial values and unlike the two other studies in this context also included convenience. Thus, due to the importance of *PV* in influencing *CS*, as measured in different contexts, it is asserted that:

H4: *PV* of FDA services has a positive influence over *CS*

### 3.5 Customer satisfaction and its consequences

In this research, *CS* undertakes the role of a mediator between quality dimensions relevant in the FDA services context and its consequences. One of them, *e-Loyalty*, has been a subject of scrutiny for scholars from varying industries, such as in the Fast-food industry by Hung et al. (2016), Qin and Prybutok (2009), Qin et al. (2010), E-commerce sector by Sohn et al. (2017), the banking sector by Islam et al. (2021), hospitality sector by Jeon and Jeong (2017), Food Delivery Services by Dsouza and Sharma (2021), Suhartanto et al. (2019), and Ganapathi and Abu-Shanab (2020). For instance, Jeon and Jeong (2017) used three items in the Hospitality sector such as; "Satisfied with the hotel website's services, fulfilled my needs, the service was not lacking additional information about the service expected". Hung et al. (2016) used two items in the fast-food sector which included affective and cognitive statements, while Islam et al. (2021) used four items in the banking sector;" Satisfied with banking services, operation, the total system provided by the bank, and with the fact that it was a local service"

Furthermore, *CS* and *Customer Loyalty* relationships were researched in these papers in a wide range of multicultural settings including the United States, Germany, Bangladesh, China, Taiwan, India, Indonesia, and Qatar which further validates the credibility of the overall findings which have been mostly gathered from publications from recent years (2016-2021), apart from Qin and Prybutok (2009)

and Qin et al. (2010). Thus, despite the fact that there were no findings in the FDA services context in Nordic countries or in Finland, this research adopts the validity of previous studies for these constructs.

Various examples of loyalty which include elements of WOM measurement in different sectors include Sohn et al.'s (2017) three items in the e-commerce sector; "I will probably repurchase via this site, I will use this online shop again, I would recommend this online shop to a friend". Furthermore, Dsouza and Sharma (2021), used three measurement items including; "Repurchase intent, intention to recommend, continue purchase even when the price is higher". All of the above-mentioned research papers have proved a significant and positive relationship between CS and *Loyalty*, therefore the following hypothesis is considered true as means to examine the impact of CS in this paper's context:

H5a: CS positively influences customer *e-Loyalty* intention toward FDA services

Since this research separates *eWOM* from *e-Loyalty* intention it is critical to justify this relationship based on previous findings in the context of CS. Exclusively measuring CS and WOM relationships as separate constructs were conducted by various researchers such as Kemény, Simon, Nagy, and Szucs (2016) in the context of e-commerce in Hungary, Konuk (2019) who focused on the food industry in Turkey, Jalilvand et al. (2017) who researched the hospitality sector in Iran, and Dean et al. (2019) who observed it in the context of Online Food Delivery services in Indonesia. An earlier study by Kim et al. (2009) was conducted in the United States in the context of restaurant businesses and proved similar results as recent studies suggest. Kemény et al. (2016), used a sample size of 277 valid customers of an online bookshop to test CS (One item measuring the degree of satisfaction) and WOM (Three measurement items), their results indicated a positive yet weak relationship intensity. Furthermore, Dean et al. (2019), used a mix of WOM and *eWOM* statements to account for the intended behavior both offline and in online settings which proved to be both positive and significant with relation to CS as an antecedent.

As in earlier instances in the context of *eWOM* is not treated identically as WOM based on how Serra-Cantalops et al. (2020) regarded it in their research which partially explained why they have reached different results (CS and *eWOM* have a weak negative relationship). In their study, they surveyed 3,671 hotel guests, while CS was measured with four items (Affecting and cognitive) and five *eWOM* statements which measured actual behavior and intentions on social media regarding their visit. Similar results were obtained in Yang's (2013) research which focused on knowledge sharing in the context of restaurant businesses in China. In her study, she gathered data from 244 respondents and used three *eWOM* statements which were restricted to such behavior on the restaurant's website. By contrast, Ruiz-Alba, Abou-Foul, Nazarian, and Foroudi (2021), have concluded that CS (Three affective and cognitive measurement items) and *eWOM* (Three measurement items) were significantly and positively related. Their study

gathered data from 501 respondents based in the United Kingdom regarding their experience using Uber as an alternative transportation service. Given the fact that most of the research studies proposed a positive relationship between the above-mentioned constructs this research hypothesizes the following in order to evaluate of the mediating role of CS:

H5b: CS positively influences customer *eWOM* toward FDA services

## 4 METHODOLOGY

In this chapter, the methodology chosen in the research will be presented alongside with the process of data collection, survey development and measurement scale chosen, the online survey implementation and concluding with an elaboration on the data analysis stages.

### 4.1 Quantitative research

A quantitative research method was chosen in order to provide the most suitable form of data collection to fulfill the objectives of this thesis. According to Klob (2008, p.17), the definition of qualitative research is “research based on scientific principles used when proof of a fact is needed or when the research question deals in descriptive facts such as who or how”. The focus on numerical and statistically empirical measurement of previous findings based on existing theories and their adjustments through a development of new hypothesis to fit the requirements of the research goals, was preferable over a qualitative approach which would have not been able to provide a repetitive observable pattern across a wide range of demographics (Leavy, 2017). The research question, that was defined in the early stage of the thesis development, require a statistical examination of collected data through a survey which would further expand the knowledge on the role of various quality dimensions, CS as a mediator in the FDA services context and its consequences in a systematic manner. The exploration of a statistical relationship attempts to examine the degree in which a certain event or a variable has an impact or causes another event (Hair, Celsi, Money, Samouel, and Page, 2016).

### 4.2 Data collection method

A self-administered online survey was chosen as the most suitable method for data collection for this research study. The development of a measurement scale was grounded on previous research publications which utilized items to account for various dimensions. For instance, all quality dimension items, including *FQ* (Five items), *SQ* (12 items), and e-quality (Nine items) in addition to *CS* (Four items) were adopted from Chan et al. (2021), while *PV* (Three items) were adopted from Suhartanto et al. (2019). For measurement of customer behavior items, this research adopted Ruiz-Alba’s et al. (2021) items for eWOM measurement (Three items) and Ganapathi and Abu-Shanab’s (2020) research items for measuring *e-Loyalty* intentions (Three items) as presented in Table 2.

Table 2 Survey items and source

<b>Item Name</b>
<p><b>Food quality</b> (Chan et al., 2021)</p> <p>FQ1: The fast-food restaurant offers visually appealing presentation  FQ2: The fast-food restaurant offers a variety of menu items  FQ3: The fast-food restaurant offers tasty food  FQ4: The fast-food restaurant offers fresh food  FQ5: The fast-food restaurant delivers food at the appropriate temperature</p> <p><b>Service quality</b> (Chan et al., 2021)</p> <p>SQT1: The FDA service provider has visually attractive packages  SQT2: The FDA service provider has menus that are easily readable  SQT3: The FDA service provider includes high-quality cutlery and napkins if needed  SQRS1: The FDA service delivers prompt and quick service  SQRS2: I received prompt service from the delivery people  SQRS3: The FDA service puts extra effort in handling special inquiries  SQAS1: The FDA service has employees who can fully answer your questions  SQAS2: The FDA service makes you feel comfortable and confident in your dealings with them  SQAS3: The FDA service has personnel who seem well-trained, competent and experienced  SQEM1: The FDA service anticipates your individual needs and wants  SQEM2: The FDA service has employees who are sympathetic and reassuring if something goes wrong  SQEM3: The FDA service seems to have the customers' best interests at heart</p> <p><b>E-quality</b> (Chan et al., 2021)</p> <p>EQEF1: The site/app service do not crash or freeze after you enter your order information  EQEF2: The site/app enables you to complete a transaction quickly  EQEF3: The site/app loads its pages quickly  EQFU1: The site/app delivers orders when promised within a suitable time  EQFU2: The site/app sends the items I ordered  EQPR1: This site/app protects my credit card information  EQPR2: This site/app protects information about my online-shopping behavior</p> <p><b>Perceived value</b> (Suhartanto et al., 2019)</p> <p>PV1: Buying meals from FDA services are a good value for money  PV2: FDA service offer reasonable price  PV3: FDA service offer good cost/benefit ratio of a transaction</p> <p><b>Customer satisfaction</b> (Chan et al., 2021)</p> <p>CS1: I am satisfied with my purchase from the FDA service  CS2: I have truly enjoyed purchasing from the FDA service  CS3: Buying from a FDA service was experienced as expected  CS4: My choice to purchase from a FDA service was the right thing to do</p> <p><b>eWOM</b> (Ruiz-Alba et al.,2021)</p> <p>EWOM1: I "talk up" about the FDA service on social media</p>
(Continues...)

EWOM2: I give the FDA service a lot of positive word of mouth on the Internet  
 EWOM3: I try to spread the good word about the FDA service on the Internet

**eLoyalty Intention** (Ganapathi and Abu-Shanb, 2020)

ELOY1: I will continue ordering meals through FDA in the future

ELOY2: I am committed to using FDA service

ELOY3: I will continue to use the same service provider that I am currently using for future orders

Various items, which appeared to measure similar concepts were subtracted from the original *DEQUAL* model, in order to ensure external validity which was stems due to the fact that the proposed model in this research measures each of the quality dimensions separately and not under the same construct. For instance, the original *DEQUAL* model contained five items for SQT which were reduced to three in this study. The same occurred with SQAS and SQAM (Both reduced to three from five), while the *Contact* items in *e-Quality* dimension were completely removed.

The formulation of the questionnaire was made via the use of a web-based tool called Webropol which allows the formulation, testing, and launching of such projects efficiently while storing the data for further examination and analysis. The respondents were exposed to the survey through the social media channel of *Rolls* and the researcher's own direct personal online connections. The questionnaire was divided into five main parts which included three behavioral questions in the first page, then one question relating to the quality assessment of the respondents via a Likert 7-point scale (1=strongly disagree to 7= strongly agree), then questions relating to *CS* and *PV*, followed by questions related to behavioral outcomes. The last three questions about their demographics were placed on the last page in order to reduce the risk of churn in case the respondents would be introduced with personal questions at the beginning of the questionnaire which may serve as a hurdle for some respondents as the completion of the questionnaire they have invested some effort which increases the chance of following through the question till its full completion.

### 4.3 Data analysis

The most essential steps in completing a data analysis process in the particular chosen research setting contain two main stages including an exploratory factor analysis (EFA) and CFA which stands for confirmatory factor analysis (Klob, 2008). According to Hair et al. (2016), factor analysis is the reduction of a large number of variables into a representative amount which are considered as factors, and allows for an easier interpretation of the data at hand as there is a clear variance between the variables. Furthermore, based on Karjaluoto (2007), the recommended minimum number of respondents should exceed 100, in order to extract a statistically valid analysis and results, therefore this research aimed at achieving at least 250 respondents to exceed this criterion. Once an EFA is done through a data analysis

software, certain items can be removed in case they may present a difficulty in interpreting the results (Zhang, Gao, Bi, and Yu, 2014), therefore it is critical to measure a certain dimension with different items in order to confirm the internal validity of the statements and the differentiation from other constructs on the model.

The next step of the analysis, CFA, utilizes a partial least square structural equation modeling (PLS-SEM) which examines the relationships between constructs and determines if these are significant in nature, positive or negative, and their effect size (Hair et al., 2016). Through this method, it is, therefore, possible to determine if a causal relationship exists and what is the magnitude it expresses within a given model. In this research, EFA was conducted via IBM SPSS software and CFA in a software called SmartPLS for partial least squares structural equation modeling (PLS-SEM).



## 5 RESULTS

Within the spectrum of this chapter a detailed account of the results shall be reported, including the demographics of the respondents, their preferences and habits, following the results of statistical analysis tools.

### 5.1 Demographic information

The survey results yielded a total of 260 respondents out of which 238 were qualified for further analysis after 22 respondents were excluded due to a suspicion of non-genuine answers which were answered within less than a minute or had very low variation in the responses (e.g., mainly “4” or “7”). The dataset, as presented in Table 3, contained slightly over a double number of female respondents with 65.1% of the total respondents compared to male respondents with 31.5%. The smallest age group of respondents varied between the age of 66-76 with 3% in total, while the largest group was between 26-55 with a total of 73.6%. Almost half of the respondents, 48.3%, held a vocational undergraduate degree while only 14.3% were university students or obtained a higher university degree.

Furthermore, with regards to the frequency of a FDA services, 44.5% of the respondents used it less than once a month, then 29% claimed to use it once a month. Only a small minority were frequent users, 3.8%, who used it several times a week or on a daily basis. The most popular app among the respondents was Foodora with 41.6%, followed by Wolt with 32.4%, and its own restaurant’s app with 21.4% while only 4.6% used some other service. Additionally, McDonald’s (22.7%) and Hesburger (22.3%) were the main fast-food restaurants frequently used by the respondents, while Burger King (8.8%) and Rolls (6.3%) were less popular, and Scanburger (0.8%) was the least used, while the largest group were ordering from other restaurants (39.1%).

Table 3 Respondent demographics

Age	N	%	Gender	N	%	Education	N	%
15-25	30	12.6	Male	75	31.5	High school	22	9.2
26-35	59	24.8	Female	155	65.1	Vocational undergraduate degree	115	48.3
36-45	63	26.5	Do not wish to answer	8	3.4	University student	11	4.6
46-55	53	22.3	<b>Total</b>	238	100%	Bachelor’s degree	18	7.6
56-65	26	10.9				Master’s degree	19	8.0
66-75	4	1.7				Post-graduate degree	4	1.7
> 76	3	1.3				Other education	49	20.6
<b>Total</b>	238	100%				<b>Total</b>	238	100%

## 5.2 Factor analysis

Before conducting factor analysis, Kaiser-Meyer-Olkin (KMO) measure is needed to determine if the sample is adequate enough which are represented numerically on a scale between the values 0.60 (poor prediction) and 0.90 (excellent prediction) (Karjaluoto, 2007). The KMO level is 0.959 which well exceeds the minimum required level. Furthermore, Bartlett's test of sphericity ( $< 0.1 - 0.5$ ) for the null hypothesis was rejected ( $p < 0.00$ ) which means that there is a sufficient correlation between the tested variables (Karjaluoto, 2007). Given the presented results of the two tests, it is possible to proceed to the rest of the factor analysis measurements.

Once the data sample was found to be appropriate for factor analysis, the next step is to examine the Communalities table to test the level of item correlations with other items which present a value lower than 0.3 (Karjaluoto, 2007). The results indicated that there were no items that were lower than this minimum threshold, since the lowest extraction for the item SQT3 is 0.478 while the highest is 0.815 with CS1. It is critical to note at this stage that following an early *AVE* analysis, in order to determine the validity of the constructs it was found that there was a need to remove six different items from the original model in order to pass the *AVE* requirement. The specific items were one from *FQ* (*FQ5*), two from *e-Quality* (*EQFU1*, *EQPR2*), and *SQ* (*SQAS2*, *SQRS2*, *SQT2*). The following results, therefore, are a presentation of the outcomes after the items were removed.

## 5.3 Measurement model assessment

The widely accepted business and marketing research practice of PLS-SEM is conducted as means of fulfilling the criteria needed to complete a confirmatory factor analysis (Sarstedt, Ringle, Smith, Reams, and Hair, 2014). The graphic representation of the relationship measurement between variables, the effect size, statistical faults, and correlation assessment contributes to its popularity among researchers in the field (Jarvis, MacKenzie, and Podsakoff, 2003). The measurement of the *Inner model* (Structural model), which captures the relationships between the dependent and independent variables, is critically important in order to determine the magnitude of the correlation between the constructs and whether they are significantly positive or negative, hence determining if the proposed hypothesis can be accepted or rejected (Sarstedt et al., 2014). *The Outer model* (Measurement model), stands for the validity and reliability of the model as it measures the variance between items associated with one construct and ensures they all account for the same construct (Sarstedt et al., 2014). For instance, if one constructs consists of five measurement items with an average loading of 0.8 while one of them loads with 0.3, it is clearly an item that misrepresents the construct and thus can be eliminated from the analysis to ensure the reliability of the *Outer model*. A typical analysis of PLS-SEM, initi-

ates with a Measurement model assessment, followed by a Structural model assessment, since the former may impact the further processing of the latter (Sarstedt, Ringle, and Hair 2017).

The first step of the model building was commenced by plotting a visual model based on the hypotheses suggested in this paper in SmarPLS. The independent variables (*SQ*, *PV*, *FQ*, and *eQuality*) were aligned on the left-hand side of the model while *CS* was assigned as a mediator which came in between the behavioral constructs (*eWOM* and *eLoyalty*). Once the placement was determined, direct relationships were drawn between the constructs via pointing arrows which then signify the path coefficients and other statistical measurements. The labeling of the constructs was based on the abbreviation of the concept it represented, for instance, *CS* was labeled as *CS* while each separate item was given a sequential number which resulted in a series of items labeled with an abbreviation and a number (*CS1*, *CS2*, *CS3*, and *SC4*) which stood for a different question or a statement in the questionnaire. Once the model was complete, an initial analysis was initiated to determine Cronbach's Alpha values for internal consistency, Composite Reliability (*CR*), the Standardized Loadings of each item, t-values, and Average Variance Explained (*AVE*) as presented in Table 5.

#### 5.4 Internal consistency reliability

An examination of the internal consistency reliability utilizes two main testing components, namely Cronbach's alpha and Composite Reliability (*CR*). Both of these tests should be measured above the minimum threshold of 0.7 in order to pass, hence any value below such measure should indicate a fault with the construct that can be resolved by removing an item that loads poorly against the rest of the items in the construct (Hair et al., 2016). The conceptual difference between the two measurement tests, according to Hair et al. (2016), is that *CR* is a more recently accepted reporting measure for the upper threshold of values while Chronbach's alpha is a more traditional measure that is fixated on the lower cutoff values. The results of the analysis, as seen in Table 4, indicate that the lowest value for Cronbach's alpha was measured with *eLoyalty* with 0.827 and the highest with *CS* with 0.932, which exceeds the minimum requirement. Furthermore, the *CR* values range between the lowest measure by *eLoyalty* with 0.897 and the highest value measured with *CS* with 0.952, meaning they pass the test for internal consistency reliability.

Another measure that was reported was t-values, which accounts for the degree of relationship between the factors and indicators that should exceed 1.96 as a minimum cutoff value (Hair et al., 2016). All the items analyzed from the model exceeded the requirement, with the lowest value of 20.83 for the item named *EWOM2* and the highest value of 53.42 for *FQ3*. With regards to the Standardized Loadings, the accepted cutoff value, according to Hair et al. (2016), is 0.708 which is fully met by all items apart from *SQT3* with 0.616 which was not excluded from the

model since other items had already been removed (*SQAS2*, *SQRS2*, *SQT2*). The highest value that was displayed in the analysis was *CS1* with 0.935.

Table 4 Cronbach's alphas, CRs, factor loadings and *t*-values

Construct	Cronbach's Alpha	Composite Reliability (CR)	ITEM	STANDARDIZED LOADINGS	T-VALUE
Food quality	0.856	0.903	FQ1	0.783	40.871
			FQ2	0.77	45.212
			FQ3	0.865	53.421
			FQ4	0.848	47.233
Service Quality	0.926	0.938	SQT1	0.753	36.797
			SQT3	0.616	25.92
			SQRS1	0.823	44.703
			SQRS3	0.811	37.56
			SQEM1	0.746	35.759
			SQEM2	0.778	37.549
			SQEM3	0.807	35.4
			SQAS1	0.826	39.582
eQuality	0.883	0.915	SQAS3	0.833	37.981
			EQEF1	0.826	43.275
			EQEF2	0.817	53.003
			EQEF3	0.825	51.642
			EQFU2	0.824	47.731
Perceived Value	0.912	0.945	EQPR1	0.75	47.245
			PV1	0.919	39.872
			PV2	0.923	41.31
Customer Satisfaction	0.932	0.952	PV3	0.925	36.619
			CS1	0.935	44.225
			CS2	0.873	35.114
			CS3	0.91	43.606
eWOM	0.913	0.945	CS4	0.929	40.395
			EWOM1	0.931	24.085
			EWOM2	0.906	20.836
eLoyalty	0.827	0.897	EWOM3	0.932	23.883
			ELOY1	0.903	37.666
			ELOY2	0.803	24.445
			ELOY3	0.878	40.589

## 5.5 Convergent and discriminant validity

Convergent validity analysis, which corresponds to the level two items positively correlate in the same construct, is made by examining the average variance explained (*AVE*) values that should exceed the value of 0.50 (Hair et al., 2016). According to the initial analysis, the three quality measurement constructs were not loading well against each other which indicated that the variance was not sufficient enough, hence when observing the cross-loadings table, it was possible to detect six items that had a very similar loading figures and were good candidates for removal from the model; which were *FQ5*, *EQFU1*, *EQPR2*, *SQAS2*, *SQRS2*, *SQT2*. Once these were removed and tested for *AVE* all the values were aligned with the expected acceptable value of above 0.5 with *SQ* as the lowest value with 0.629 and the highest value with *eWOM* of 0.852 as shown in Table 5.

Discriminant validity was also assessed via Fornell-Larcker test which requires the square root of each construct's *AVE* to be greater than the correlations between other constructs and itself in the proposed model (Hair et al., 2016). As noted in Table 5, all values passed the test successfully, suggesting that every construct explains more accurately the variance of its own indicators compared to the variance of the other constructs, deeming the model as valid based on this test after removing the abovementioned items.

Table 5 *AVE* and Fornell-Larcker

	<b>AVE</b>	1	2	3	4	5	6	7
CS (1)	0.832	<b>0.912</b>						
FQ (2)	0.699	0.664	<b>0.836</b>					
PV (3)	0.85	0.777	0.585	<b>0.922</b>				
SQ (4)	0.629	0.768	0.753	0.731	<b>0.793</b>			
eLoyalty (5)	0.744	0.852	0.559	0.68	0.652	<b>0.862</b>		
eQuality (6)	0.683	0.79	0.699	0.676	0.738	0.695	<b>0.826</b>	
eWOM (7)	0.852	0.58	0.453	0.526	0.587	0.564	0.391	<b>0.923</b>

## 5.6 Structural model assessment

Once the criteria for the measurement model analysis were met, only then was it plausible to proceed with the structural model evaluation via PLS-SEM. In this stage, the hypothesis that was proposed and argued for can be confirmed for significance, and path coefficient can be determined between the various constructs (Hair et al., 2016). In order to test the model, a bootstrapping test must be applied to obtain all

the path coefficients and relevant values for further analysis ( $\beta$ ,  $f^2$ , and  $t$ -statistics). The settings chosen for running the bootstrapping was with 500 subsamples and a significance level of 0.05 (5%). In other words, the  $p$ -values should be  $<0.05$  to be considered significant enough for the purposes of this study (Sarstedt et al., 2014). The variance of the path coefficient ( $\beta$ ) must have a range of -1 to +1 values, with a minus (-) sign representing a negative relationship and a plus (+) sign representing a positive one (Hair et al., 2016).

Table 6 Hypotheses, path coefficient, t-statistics

Hypothesis	$\beta$	$f^2$	$t$ -statistics	Supported
H1a: $FQ \rightarrow eLoyalty$	-0.031	0.001	0.68	No
H1b: $FQ \rightarrow CS$	0.047	0.003	0.648	No
H1c: $FQ \rightarrow eWOM$	0.043	0.001	0.393	No
H2a: $SQ \rightarrow eLoyalty$	-0.01	0	0.16	No
H2b: $SQ \rightarrow CS$	0.202	0.046	2.559	Yes
H2c: $SQ \rightarrow eWOM$	0.433	0.096	4.314	Yes
H3a: $eQuality \rightarrow eLoyalty$	0.075	0.007	1.158	No
H3b: $eQuality \rightarrow CS$	0.372	0.208	6.264	Yes
H3c: $eQuality \rightarrow eWOM$	-0.351	0.066	3.854	No
H4: $PV \rightarrow CS$	0.351	0.211	5.706	Yes
H5a: $CS \rightarrow eLoyalty$	0.821	0.746	12.157	Yes
H5b: $CS \rightarrow eWOM$	0.497	0.129	4.795	Yes
	<b><math>R^2</math></b>			
CS	0.752			
eLoyalty	0.728			
eWOM	0.424			

Table 6 summarizes the results with six rejected hypotheses and six supported hypotheses based on the proposed model. The predictive capability of the model, measured via  $R^2$ , was “substantial” for  $CS$  (0.752) as it exceeded the minimum criteria (0.75), “Moderate” for  $eLoyalty$  (0.728) since it was above (0.50) but not 0.75, and “weak” for  $eWOM$  (0.424) as it was above 0.25 yet not above 0.50 (Sarstedt et al., 2014). However, according to Hair et al. (2016), whilst exploring behavioral aspects, any value above 0.20 could be regarded as “high”, thus according to this approach, the predictive capacity can be considered “high”.

As observed from Figure 8 and Table 6, the highest coefficients were between  $CS \rightarrow eLoyalty$  ( $\beta = 0.821$ ,  $p < 0.01$ ,  $t$ -value 12.157) which confirmed the proposed hypothesis, while the lowest observed coefficient was between  $eQuality \rightarrow eWOM$  ( $\beta = -0.351$ ,  $p < 0.01$ ,  $t$ -value 3.854) which rejected the proposed hypothesis. All H1 hypotheses related to  $FQ$  were rejected ( $\beta = 0.043, 0.047, -0.031$ ). The H2b ( $\beta = 0.202$ ) and H2c ( $\beta = 0.433$ ) hypotheses were confirmed, while H2a ( $\beta = -0.01$ ) was rejected. Hypotheses H3c ( $\beta = -0.351$ ) and H3a ( $\beta = 0.075$ ) were rejected, while H3b that was

confirmed ( $\beta = 0.372$ ). Hypothesis H4 was confirmed ( $\beta = 0.351$ ,  $p < 0.01$ ,  $t$ -value 5.706), alongside with H5a ( $\beta = 0.821$ ,  $p < 0.01$ ,  $t$ -value 12.157) and H5b ( $\beta = 0.497$ ,  $p < 0.01$ ,  $t$ -value 4.795).

## 5.7 Indirect effects

Following a thorough observation of the structural model and the path coefficients of with CS as a mediator it was evident that various relationships were either fully or partially mediated since their direct relationship with the behavioral outcome variables were significantly lower in path coefficient. Hence, a *Bootstrapping* method, with 5000 samples, was conducted in order to clearly determine which relationships were fully mediated ( $> 0.8$ ), partially mediated (0.2-0.8) and not mediated at all ( $< 0.2$ ) (Hair et al., 2016). The first step of the analysis involved the assessment of the *Direct Effect* by removing CS from the model and directly linking PV with the behavioral variables in order to observe whether the relationships are still significant. Once this step is completed, the most relevant paths are analyzed for an Indirect Effect and Variance Accounted For (VAF) as seen in Table 7.

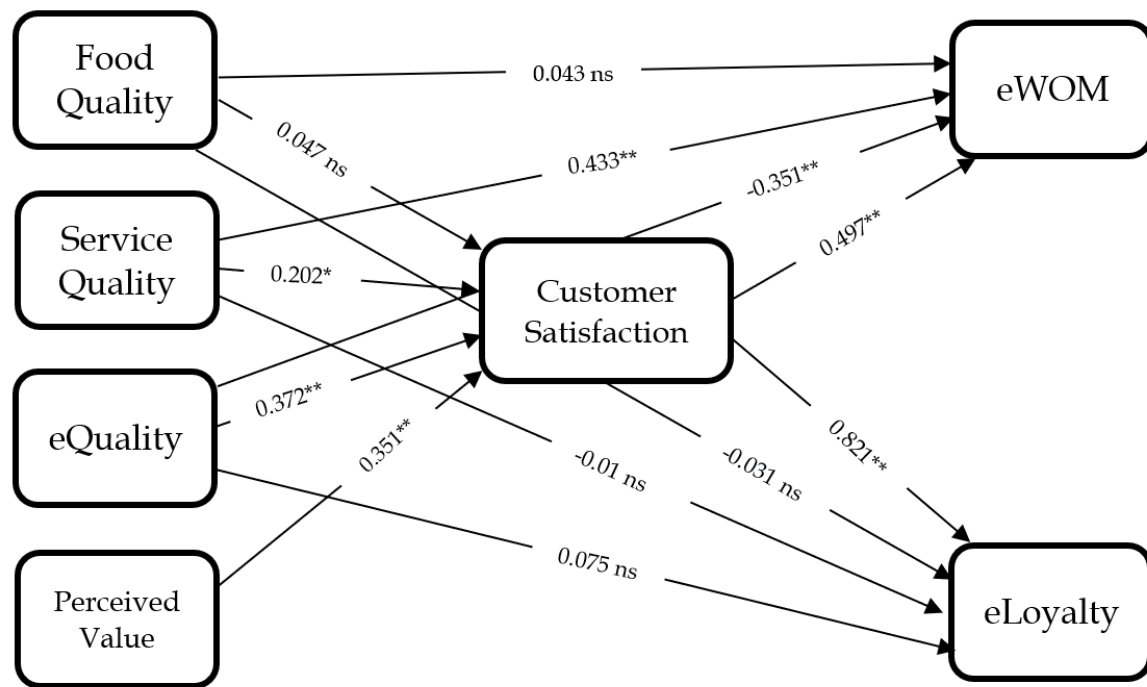
In this case, the variables chosen for assessment were *eQuality* and *SQ* while the rest were not qualified for the analysis (*FQ* and *PV*). The mediated relationship between *eQuality* -> *eWOM* was indicated as partially mediated with a value of 0.345. It is important to notice that the mediation of CS caused a minimization of the *Total Effect* to -0.166 while the direct path coefficient between *eQuality* -> *eWOM* was much stronger with -0.351. The second relationship measured was *eQuality* -> *eLoyalty* which was fully mediated (0.802) which means that *eQuality* still has a major impact regarding *eLoyalty*, despite the fact it is not directly significant. A third relationship that was evaluated, was between *SQ* -> *eWOM*, turned out to not have any significant mediation effect over *eWOM* as it was below the cutoff value (0.188), hence the role of CS as a mediator is not crucial as it is with the other relationships.

Table 7 Indirect and total effects

Mediator	Path	Indirect Effects**	Total Effect	VAF
	<i>eQuality</i> -> <i>eWOM</i>	0.185	-0.166	0.345*
	<i>eQuality</i> -> <i>eLoyalty</i>	0.305	0.381	0.802
CS	<i>SQ</i> -> <i>eWOM</i>	0.1	0.533	0.188

\* The figure was retrieved by turning the negative value into positive during the calculation

\*\* The indirect effects presented in the table were found to be significant



Note: \* $p < 0.05$ , \*\* $p < 0.01$

Figure 8 Structural equation model



## 6 DISCUSSION

The objective set forth in this research focused on exploring the antecedents of *e-Loyalty* and *eWOM* in the context of FDA services in Finland. Following a thorough literature review, it was determined that three main *Quality* dimensions and *PV* played a major role in influencing *CS* which was found to have a significantly positive effect on behavioral consequences and intentions. Based on these findings, 12 hypotheses were developed and tested. This chapter provides the interpretation and various implications of the results by presenting the theoretical and practical contributions in addition to a critical evaluation of the research, its limitations and suggestions for further research directions.

### 6.1 Discussion of the results

Half of the proposed hypotheses were confirmed and matched previous findings and their justification were delineated in the hypothesis development section, yet the rejected hypotheses require particular rationale to be able to comprehend them in the context of this study. For instance, H1a, H1b, and H1c were all rejected contrary to expectations. One potential explanation for the rejection hypothesis regarding food quality could be concerned with the measurement model and items themselves, since the food quality items measure the restaurant service while items measuring *eWOM* concern the FDA service which may create a logical gap. Nevertheless, given the fact other studies such as Chan and Gao (2021), Suhartanto et al. (2019), Dsouza and Sharma (2021) have used these items similarly, therefore, this thesis holds these results credible. Another possibility is that the nature of fast-food industry does not value the food quality as greatly important in the context of FDA services as compared to fine-dining options (Bujisic et al, 2014).

In addition, the results of the survey indicate that *SQ* ( $\beta = 0.433$ ) had the highest path coefficient in its positively significant relationship with *eWOM*, confirming it as a first order construct similar to results obtained by Chao and Gao's (2021), as compared to *FQ* ( $\beta = 0.043$ ) that was not significant and *eQuality* that was found to have a negatively significant relationship ( $\beta = -0.351$ ). This negative relationship between *eQuality* and *eWOM*, means that the more customers are satisfied with the electronic services presented by the service the less likely they will actually engage in *eWOM* behavior. This behavior contradicts previous findings by Li et al. (2013), and Ricard (2021) which can be explained by Buttle's (1998) *WOM* model that require "Delight" as an essential stage and motivation in order to create *eWOM* behavior which was achieved with *SQ* yet not sufficiently with *eQuality*.

Furthermore, all the *Quality* dimensions were not significantly correlated directly with *eLoyalty* (*SQ*  $\beta = -0.010$ , *FQ*  $\beta = -0.031$ , *eQ*  $\beta = 0.075$ ), apart from *eQuality* which had an indirect effect through *CS*. Nevertheless, the path coefficient *CS* towards *eLoyalty* ( $\beta = 0.821$ ) are significantly positive, in addition to a "substantial"

predictive capability ( $R^2 = 0.752$ ), which can be explained by the possibility that customers of FDA services in Finland are concerned more with a short-term and transaction specific based interaction (Fournier, 1998, Cronin and Taylor, 1992) as compared to the possibility of reaping long term rewards through loyalty development (Meyer-Waarden, 2007).

## 6.2 Theoretical contributions

Various theoretical models had been developed in an attempt to capture the influence over behavioral consequences such as *SERVQUAL* by Parasuraman et al. (1988), Hierarchical Model of Retail *SQ* by Dabholkar et al. (1996), *eTailQ* Model by Wolfinbarger and Gilly (2003) and recently *DEQUAL* by Chan and Gao (2021). None of these models, however, accurately possess the same predictive capability of *CS* in the FDA services context for *eLoyalty* and *eWOM* as the presented model in this thesis. Therefore, despite the fact that previous research papers found that the relevant *Quality* antecedents are important (Suhartanto et al., 2019; Chan et al., 2021; Singh et al., 2021; Konuk, 2019) within the context of the restaurant business, the result of this paper regarding the *FQ* dimension challenges previous findings on the topic. One possible explanation is that the importance of *FQ* itself in the fast-food category is less crucial when ordering a home delivery since it is more important for the customers to have the food on time, convenient and secure transaction, and receive the order correctly since they do not expect to fine-dine in this context but mainly satisfy an immediate craving (Ryu and Han, 2010). The second possible explanation for the discrepancy is the items measurement, yet these were validated in previous studies as mentioned earlier. Hence, the first theoretical contribution of this paper, is that *FQ* is not a good predictor of *eWOM* and *eLoyalty* intentions in the context of fast-food restaurants while using FDA services, meaning that other concepts might have a greater impact.

The second most notable theoretical contribution is the strengthening of theoretical knowledge regarding *CS* as a mediator toward *e-Loyalty* and *eWOM*. Various studies that were conducted in non-restaurant related fields and related fields confirmed its validity as a critical mediator and theoretical measurement models should not overlook its potency when attempting to predict behavioral consequences (Kemény et al., 2016; Jalilvand et al., 2017; Konuk, 2019). Consequently, if *CS* is not included in a model, it is hard to determine whether customers are driven only by long term values that are tied to *Quality* or short term, transactional values that are tied to *CS* (Oliver, 2010; Kotler and Keller, 2012)

A third contribution relates to strengthening the literature regarding the role of *PV* in similar prediction models. *PV* was found critical in models in the context of mobile services (Kuo, Wu, and Deng, 2009), hospitality industry (Konuk, 2019), fast-food industry (Qin and Prybutok, 2009), restaurant business (Jalilvand et al., 2017), online shopping (Chang et al., 2009), and the relevance to the food delivery context was confirmed in this research. In other words, customers would be more

inclined towards exhibiting *eLoyalty* intention and *eWOM* behavior if they perceive the purchase as economically, logically and emotionally beneficial for them in order to have enough incentives for continued purchase intention and commenting online regarding their satisfaction with the service (Suhartanto et al., 2019, Zeithaml, 1988; Patterson et al., 1997).

### 6.3 Managerial implications

The first major implication for managers based on the results of this study are related to the antecedents of *eWOM* and *e-Loyalty*. For instance, the role of *FQ* with regards to the behavioral consequences are downplayed due to their insignificance compared to other studies made by Suhartanto et al. (2019), Zhang et al. (2019), and Ha and Jang (2010) which proposed that *FQ* has a significant role towards *eLoyalty*, meaning that fast-food restaurant managers who are involved with decision making with regards to customer retention planning and churn reduction must recognize the possibility that their own product is less significant in the decision making process of a given customer, yet in the context of a home delivery with an FDA services, it is more critical to make sure they choose a delivery partner that offers the highest *SQ* since it will be more influential towards a long term relationship development with their customers and focus more on short term rewards which would enhance *CS* and consequently customer behaviors. This result could be explained by the possibility that fast-food customers who order a home delivery are interested more in fulfilling a spontaneously arising need (hunger) by having it delivered fast and precisely as ordered, while knowing they are not expected to dine or eat gourmet food (Bujisic et al. 2014). In other words, a customer would be prone to become loyal to an FDA services platform than to the fast-food restaurant it orders from since the *FQ* is not important to him as much as the *SQ* and *eQuality*.

The second major implication relates to the role of *CS*, which according to Cronin and Taylor (1992) is more concerned with a transaction-specific observation as compared to *SQ*. The results clearly indicate that *CS* plays a major role in mediating the various *Quality* dimensions and behavioral consequences, hence if the customers can see an immediate benefit generate through the transaction and if their *PV* is high, they are more likely to develop *eLoyalty* intentions and *eWOM*. Therefore, fast-food restaurant managers can provide some immediate benefits on the app such as loyalty programs or one-off discounts which will increase the *PV*, in addition, to clearly communicating the uniqueness their meals add compared to other restaurants which then will form the appropriate level of expectation for a customer in order to achieve a sense of fulfillment or even over-fulfillment as suggested by Oliver (2010). Furthermore, FDA services users indicate that the sense of enjoyment in the process of purchasing was important for them as part of the purchasing journey through the app, meaning that apps that offer a sense of entertainment and pleasure

will create greater *CS* (Dabholkar, 1996), hence restaurant managers should choose an FDA services provider that is able to fulfill this criterion.

A third major implication regards the antecedents of *CS* which indicate that fast-food restaurant managers need to recognize that out of all the *Quality* dimensions, *eQuality* carries the highest impact over *CS*. More specifically, users mostly agree that the site/app does not crash or freeze after they've entered their information, yet tend to be more skeptical about the app's credit-card information protection policy. Hence, managers should carefully examine the kind of online security measures their partners utilize and how their partners communicate to their users, in order to increase the perception of their financial safety. Furthermore, *CS* is nearly as influenced by *PV* as it is by *eQuality*, meaning that it is critically important for the customers to sense and perceive the transaction as a good value for their money, much more than the actual food that is served when it is delivered home and slightly more important than the quality of the service, they receive during the whole customer journey. Hence, this finding underlines the importance of marketing communications.

Lastly, insights related to *SQ* have direct managerial implications for the marketing campaign strategy of fast-food restaurant owners who wish to use FDA services and harness the impact of *eWOM* who experience "Delight" (Buttle, 1998). Since *SQ* was found to be the most influential aspect over *eWOM*, managers can make sure that their FDA service partner keeps a high level of *SQ* which will, in turn, motivate customers to write positive feedback on their business on various online platforms and even on the app itself. Namely, the item *SQT3* (0.616) received the lowest loading in the *SQ* construct which presents a good opportunity for improvement and means to generate *eWOM* by providing high-quality cutlery and napkins as a unique value proposition which other fast-food restaurants do not provide.

## 6.4 Evaluation of the research

Replicating the theoretical model presented in this research and applying it to other contexts require a high level of validity and credibility which were measured through various statistical tests (Hair et al., 2016). The initial step that was taken to ensure the validity was to use previous scales and items that proved to be valid in other closely related research studies. The items that were used, despite their translation, were carrying the exact meaning conveyed in previous surveys, and the hypotheses developed were based on various studies from high-quality journals with strict peer review policies. Any research results that were not sourced from a credible journal were not taken into consideration and left outside of the scope of this paper.

Moreover, the statistical tools used in this paper via SPSS and SmartPLS measured the Cronbach's Alpha values (Results ranging from 0.827 to 0.932) and composite reliability values (Results ranging from 0.897 to 0.952) which demonstrated a

high degree of validity and reliability. The Average Variance Explained (AVE) results, after the elimination of the six items, also delivered high values ranging from 0.629 to 0.852 which are above the recommended cutoff value of 0.5 (Sarstedt et al., 2014). Furthermore, the Fornell-Lacker criterion also confirmed that the values were in line with an expected range of a valid sample.

## 6.5 Limitations of the research

Despite the credibility and validity of the presented results and analysis, this thesis faced various limitations which may impact the generalizability and applicability in other contexts. Firstly, the survey had to undergo a translation to the local language, Finnish, which may have eroded the original meaning based on the items that were measured in the studies of Chan et al. (2021), Suhartanto et al. (2019), Ruiz-Alba et al. (2021), and Ganapathi and Abu-Shanb (2020), therefore presenting slightly different results compared to these studies. A second limitation involves the full capturing of *PV*, *CS*, *FQ*, *eQuality* and *SQ* in an empirical study which is not longitudinal since it does not measure how it changes in a longer time span and it only provides correlations. Instead, a future study could include such method in order to prove causal relationships between the constructs and provide better grounds of the nature of these dynamics. A third potential limitation is related to the data collection method which was mainly a convenience sample through Roll's own social media channel, which was large and representative, yet an expansion towards other diverse data collection channels might provide better pool of respondents and give a wider image of the possible correlations. Finally, the most major limitation in the study, as previously mentioned, is the measurement items of *FQ* that refer to the restaurant itself, while *eWOM* statements refer to the FDA service. Despite the fact other studies used the same items in their models, these can still be approached differently in the future in order to prevent unreliable results.

## 6.6 Future research

The use of Food delivery applications is trending around the world and so does the desire to understand the main drivers of customer behavior outcomes by managers and academics (Tandon, 2021, Dsouza and Sharma, 2021; Chan and Gao, 2021; Bao and Zhu, 2021). The results of this study present an opportunity to expand the knowledge of researchers in order to comprise an applicable theoretical model in the context of FDA services. The first possibility for future research relates to the international validation in other cultural contexts which would provide a better view of the influence of the geographical location on the reliability of the model and its predictive capacity.

A second research direction could include constructs such as habit, brand image, or price in the context of fast-food restaurants instead of using *FQ* which proved to be insignificant. Such research may provide a stronger predictive capacity and contribute to the understanding of the unique dynamics of this industry. The third possibility of expansion is to test the proposed model with the moderating effect of the various demographics over the use of FDA services, the results of such research should assist in recognizing the different underlying motivations of using by different age groups, genders, and income levels. Lastly, the existing model was tested only within the context of the fast-food industry, it would therefore be beneficial to expand it to other restaurant types (e.g., upscale restaurants or casual dining) and measure the differences between the results of each sector as was researched by Ryu and Han (2010).

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## 8 APPENDIX: SURVEY QUESTIONS

### Kysely digitaalisten ruoan toimituspalveluiden laadusta

Tämä kysely on osa Jyväskylän yliopiston pro gradu -työtä, jonka aiheena on ruoan digitaaliset toimituspalvelut. Kutsumme näitä palveluita jatkossa yksinkertaisesti ”ruokasovelluksiksi” tai ”sovelluksiksi”. Kysely on suunnattu henkilöille, joilla on kokemusta tällaisten sovellusten (Esim. Wolt ja Foodora) käytöstä pikaruoan (esim. McDonald’s) kotiinkuljetuksiin. Tavoitteena on tutkia palvelun laadun suhdetta asiakastyytyväisyyteen. Kyselyssä kerätyt tiedot ovat anonyymejä ja niitä tullaan käyttämään vain tutkimuksellisiin tarkoituksiin. Vastaamalla kyselyyn annat suostumuksesi tietojen käsittelyyn. Tutkimuksen valmistuttua raakatiedot poistetaan kaikista verkkopalveluista, eikä niitä jaeta kolmansille osapuolille. Lisätietoa tutkimuksesta ja aineiston käytöstä voit lukea tutkimuksen tiedotteesta ja tietosuojailmoituksesta (linkit alla).

[Linkki tutkimustiedotteeseen](#)

[Linkki tietosuojailmoitukseen](#)

1. Kuinka usein tilaat ruokaa sovelluksen kautta? \*

- En ole koskaan tilannut
- En ole koskaan tilannut
- Harvemmin kuin kerran kuussa
- Kerran kuukaudessa
- Kerran kahdessa viikossa
- Kerran viikossa
- Useita kertoja viikossa
- Lähes päivittäin

2. Mistä pikaruokaketjusta olet useimmiten tilannut kotiinkuljetuksia sovelluksen kautta? \*

- McDonald’s
- Burger King
- Rolls
- Hesburger
- Scanburger
- Joku muu

### 3. Mitä ruokasovellusta olet käyttänyt useimmiten? \*

- Foodora
- Wolt
- Ravintoloiden oma ruokasovellus
- Joku muu

4. Ajattele eniten käyttämäsi ruokasovellusta ja pikaruokaravintolaa vastatessasi alla oleviin kysymyksiin. Esimerkiksi ruokatilaukset Rollsista Foodora-sovelluksen kautta. Valitse sopivin vaihtoehdoista sen perusteella, kuinka samaa tai eri mieltä olet väittämän kanssa. (1 = Täysin eri mieltä, 7 = täysin samaa mieltä)

\*

- Ruokasovelluksen henkilöstöllä näyttää olevan asiakkaiden etu sydämessä
- Ruokasovellus tarjoaa helposti luettavan ruokalistan
- Pikaruokaravintola tarjoaa tuoretta ruokaa
- Pikaruokaravintola toimittaa ruokaa oikean lämpöisenä
- Ruokasovelluksella on työntekijöitä, jotka ovat myötätuntoisia ja rauhoittavia, jos tilauksessa tapahtuu jokin virhe
- Ruokasovelluksen henkilöstö tarjoaa kotiinkuljetuksen yhteydessä korkealaatuiset ruokailuvälineet ja lautasliinat tarvittaessa
- Ruokasovellus pystyy ennakoimaan yksilölliset tarpeet ja toiveet
- Pikaruokaravintola tarjoaa erilaisia ruokalistavaihtoehtoja
- Ruokasovelluksen henkilöstö tarjoaa pikaista ja nopeaa palvelua
- Ruokasovelluksen henkilökunta on hyvin koulutettu, pätevä ja kokenut
- Ruokasovelluksen henkilöstö tarjoaa visuaalisesti houkuttelevat paketit
- Sain nopeaa palvelua ruokasovelluksen läheteiltä
- Pikaruokaravintola tarjoaa visuaalisesti houkuttelevaa ruokaa
- Pikaruokaravintola tarjoaa maukasta ruokaa

5. Ajattele eniten käyttämäsi ruokasovellusta ja pikaruokaravintolaa vastatessasi alla oleviin kysymyksiin. Esimerkiksi ruokatilaukset Rollsista Foodora-sovelluksen kautta. Valitse sopivin vaihtoehdoista sen perusteella, kuinka samaa tai eri mieltä olet väittämän kanssa. (1 = Täysin eri mieltä, 7 = täysin samaa mieltä) \*

- Ruokasovellus on ostajan kannalta kustannustehokas
- Ruokasovellus toimittaa tilaukset sopivalla aikavälillä
- Ruokasovellus saa minut kokemaan oloni mukavaksi ja olen luottavainen asioidessani heidän kanssaan

- Ruokasovellus ei lopeta toimimasta tai jumiudu tilaustietojen antamisen jälkeen
- Ruokasovellus tarjoaa kohtuullisen hinnan
- Ruokasovellus lähettää tilaamani tuotteet
- Aterioiden ostaminen ruokasovelluksesta on hyvää vastinetta rahalle
- Ruokasovelluksella on työntekijöitä, jotka vastaavat kysymyksiin riittävän hyvin
- Ruokasovellus suojaa tietojani verkkokaupan käytöstä
- Ruokasovellus latautuu nopeasti
- Ruokasovellus mahdollistaa ostamisen nopeasti
- Ruokasovellussuojaaluottokorttitietojani
- Ruokasovellus suojaa luottokorttitietojani
- Ruokasovelluksen henkilöstö näkee lisävaivaa käsitelläkseen erityispyyntöjä

6. Ajattele eniten käyttämäsi ruokasovellusta ja pikaruokaravintolaa vastatessasi alla oleviin kysymyksiin. Esimerkiksi ruokatilaukset Rollsista Foodora-sovelluksen kautta. Valitse sopivin vaihtoehdoista sen perusteella, kuinka samaa tai eri mieltä olet väittämän kanssa. (1 = Täysin eri mieltä, 7 = täysin samaa mieltä)

\*

- Aion jatkossakin käyttää samaa palveluntarjoajaa, jota käytän tällä hetkellä
- Keskustelen ruokasovelluksesta positiivisesti sosiaalisessa mediassa
- Odotukseni täyttyivät tilatessani ruokaa sovelluksen kautta
- Olen todella nauttinut ruokasovelluksella ostamisesta
- Olen sitoutunut käyttämään ruokasovellusta
- Jaan monia positiivisia kokemuksia ruokasovelluksesta Internetissä
- Jatkan jatkossakin aterioiden tilaamista ruokasovelluksella
- Olen tyytyväinen ostokseeni ruokasovelluksesta
- Yritän levittää hyvää sanaa ruokasovelluksesta Internetissä
- Tein oikean valinnan ostaessani ruokasovelluksesta

7. Ikä \*

- 15-25
- 26-35
- 36-45
- 46-55
- 56-65
- 66-75



- Yli 76

8. Sukupuoli \*

- Mies
- Nainen
- En halua vastata

9. Koulutus \*

- Ylioppilas
- Ammattilainen perustutkinto
- Yliopisto-opiskelija
- Kandidaatintutkinto
- Maisterintutkinto
- Tohtorintutkinto
- Joku muu