

The seal of Lund University is a circular emblem in a golden color. It features a central figure of a lion rampant holding a sword. The text around the border of the seal includes "SIGILLVM • VNIVERSITATIS • LVDV • SIGILLVM • VNIVERSITATIS • LVDV" and "SIGILLVM • VNIVERSITATIS • LVDV".

Lund University – MSc. Service Management, Logistics – 2017/2019  
SMMM20

# Exploring Expectations of an Unattended Delivery Service: A Case Study in Sweden

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## ABSTRACT

Title: Exploring Expectations of an Unattended Delivery Service: A Case Study in Sweden

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Purpose of Paper: The goal of this thesis is to better understand Swedish consumers' expectations of an unattended delivery box system such as Nowaste's E-drop.

Methodology: This thesis answers its research question through a series of case studies in which a combination of qualitative methods was used. The thesis work contains ten separate cases representing each family. Semi-structured interviews were conducted with partially participant observations of the families' homes and offices in order to create a deeper understanding for each family, their life, their needs and expectations therefore helping the author answer the research question.

Results: Through the data and theory, three overarching expectations resulted. Swedish consumers, represented by ten case studies, expect that an unattended delivery box and system will fix problems with current shopping habits or options, fit seamlessly into their lives and have little to no learning curve involved.

Value: This thesis was written with the goal of combining academia knowledge with industry practices. While studies have been conducted analyzing benefits for companies, there is little customer-centered knowledge on unattended delivery boxes.

This thesis suggests value to both the academic and business worlds. This thesis attempts to give academics more understanding about customer expectation formation of a new service, specifically unattended delivery boxes. Swedish businesses can take the data yielded in this thesis to further the database about their market. Any business attempting to create or improve an unattended delivery service may gain a basic understanding of the expectations of such a service therefore being closer to providing their consumers with the best possible service.

Keywords: Last-Mile Logistics, Online Grocery, Unattended Delivery, Swedish Market, Expectations

## EXECUTIVE SUMMARY

All industries have undergone a shift due to the emergence of online retail. Retail sectors moved in waves according to the demand of customers. Grocers have been one of the last movers in this wave towards integrating online retail. Unlike the other sectors of retail, groceries have higher delivery requirements to stay fresh and acceptable for consumption. These requirements have restricted delivery methods available to customers. While grocers advertise online shopping as a flexible alternative, many customers believe otherwise hence becoming dissatisfied.

The proposed unattended delivery system by Nowaste Logistics AB called E-drop includes a temperature-controlled delivery box and corresponding mobile app aims to meet the needs of customers that is lacking from the current delivery options. This service is the first of its kind in Sweden therefore leaving many questions unanswered. The focus of this research is on how customers expect the service to complement their daily lives. Understanding the expectations of one's customers allows the organization to meet the needs of their customers thereby creating satisfied loyal customers.

The study took five months to complete. Ten families were chosen to participate in the company's proof of concept. All families were interviewed on the family dynamics, current shopping habits, comfort with technology use and expectations for the delivery box. Observations of the family home were also collected to gain a deeper understanding of the family and their lifestyle.

Three overarching results were found. The families expected that an unattended delivery service would fix the problems they perceived from their current shopping habits or the options provided by the grocers, the service would fit seamlessly into their lives and there would be little to no learning curve. These results extend the knowledge on the formation of expectations and market reaction towards a new service.

Studying the families' reactions, lifestyles, and opinions after integrating the unattended delivery service into their lives for a few months will reveal the accuracy of the expectations projected from this study. Juxtaposing the before and after will allow Nowaste to create a better service for their customers establishing a firm foundation in the Swedish market.

## ACKNOWLEDGEMENTS

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# 1 Introduction

*This chapter will introduce the reader to the project of this master's thesis with a background of the subject, the problem facing the researcher, the purpose of the research and the research question (RQ).*

## 1.1 Background

Every year, the Swedish e-commerce market grows, making Sweden the Nordic country with the largest online shopping presence (PostNord, 2018). PostNord (2018) states in their yearly report that 3.6 million Swedish people shop online every month (PostNord, 2018). Swedish consumers purchase mainly clothes, media, electronics, and healthcare products online, yet the online grocery sector is a growing and relatively unexplored area of e-commerce (PostNord, 2018; Svensk Digital Handel, 2018). As more and more Swedes buy their groceries online (Figure 1), the question of how to handle last-mile delivery of food items becomes more important (Ferne & Sparks, 2009; Svensk Digital Handel, 2018).

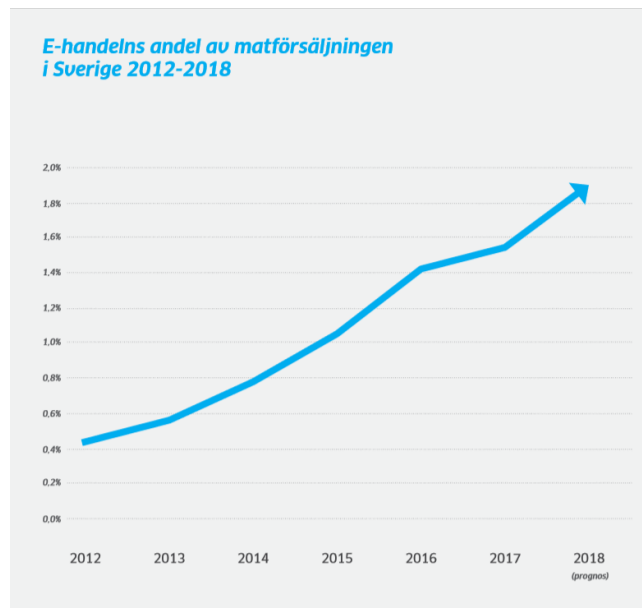


Figure 1 E-commerce share of food sales in Sweden 2012-2018 (Svensk Digital Handel, 2018, p. 7)

Currently, there are a few different methods of food delivery utilized in Sweden depending on the store chain and the size of the consumer's city (PostNord, 2018; Svensk Digital Handel, 2018). Consumers can shop online and later pick up their goods at a designated store (City Gross, 2019; Coop, 2019; ICA, 2019; Willys, 2019). Some of the larger grocery chains deliver to homes but it is recommended to be home in order to receive the goods (City Gross, 2019; Willys, 2019). City Gross (2019) states on their website that they are not responsible for any goods left unattended (City Gross, 2019). Similarly, Willys (2019) states that they cannot take responsibility for anything that happens outside of their control, from mundane inclement weather and traffic jams to extreme circumstances like political unrest and war (Willys, 2019). Coop (2019) will not allow their drivers to leave orders without someone home (Coop, 2019).

ICA (2019) does not state on their website what happens if no one is home when the order is delivered (ICA, 2019). The marketing promise of being able to shop and buy groceries online is to enjoy the freedom and flexibility, however, the current circumstances are still binding for some customers leaving them lacking the freedom and flexibility promised by online grocery shopping (City Gross, 2019; Coop, 2019; Fernie & Sparks, 2009; ICA, 2019; Willys, 2019).

As the desire to have groceries sent to one's home is growing as online grocery shopping increases, customers are also becoming more open to innovative delivery options that allow their groceries to stay fresh and safe while they continue with their daily life uninterrupted (Fernie & Sparks, 2009). Fernie and Sparks (2009) identify four different possible methods for delivery of groceries when no one is home to collect the order, "*giving the delivery driver internal access to the home or an outbuilding, placing the order at a home-based reception (or 'drop' box), leaving it at a local collection point, delivering the order to a local agency which stores it and delivers it when the customer is at home*" (Fernie & Sparks, 2009, p. 227).

Companies like Nowaste have started exploring the second option in more detail as they believe it will give both the company and customer the greatest benefit (Fernie & Sparks, 2009). Possibilities of providing unattended delivery are available through Self-service technology. Self-service technology (SST) has been present for some time, for example, ATMs and self-check-in machines at the airport, so consumers are accustomed to interacting more and more with the technology. SSTs in the form of at-home delivery boxes have begun to pop up in research and in prototypes from companies that would allow grocery stores to deliver orders unattended (Vakulenko, Shams, Hellström, & Hjort, 2019). Research completed in Sweden and Finland supports Nordic customer readiness for such a product (Kämäräinen & Punakivi, 2002; Vakulenko, Hellström, & Hjort, 2018). Where the research falls short is how the customers create expectations, experience and eventually value in relation to such technology. Understanding these aspects of consumer behavior will aid both academics and organizations to better grasp the modern shopper – their habits, their preferences and expectation formation. Much research has been done on how one forms expectations on well-established service offerings, however, the service researched in this thesis is not mainstreamed so there are still many concerns and questions about how customers will approach it (Ziethaml, Berry, & Parasuraman, 1993).

## 1.2 Problem Research & Purpose

The Swedish organization, Nowaste Logistics AB, recognized the potential of creating an innovative home reception system for groceries. Therefore, they have been developing a delivery box and software system designed for unattended delivery of groceries called E-drop. In the spring of 2019, the organization began their proof of concept including ten families to determine if Swedish consumers were truly ready for this service. As the last-mile is the most expensive portion of the entire B2C (business to consumer) supply chain, especially when dealing with temperature controlled goods, it is already known that businesses are open and ready for unattended delivery solutions (Fernie & Sparks, 2009; Kämäräinen & Punakivi, 2002; Pålsson, Pettersson, & Winslott Hiselius, 2017; Punakivi, Yrjölä, & Holmström, 2001). However, there is a lack of knowledge about customer expectations on unattended delivery boxes (Punakivi et al.,

2001; Vakulenko, Hellström, & Oghazi, 2018). Objectives of previous studies have mainly hypothesized how such delivery systems benefit the company rather than the consumer (Kämäräinen & Punakivi, 2002; Punakivi et al., 2001). Therefore, this master's thesis is a qualitative case study contribute to the knowledge on how the customer forms expectations about an unattended delivery box system. The goal of this thesis is to determine consumers' expectations of an unattended delivery box system such as Nowaste's E-drop.

### 1.3 Research Question

The research question was formed to determine customer's expectations of a home delivery system like E-drop (both the physical delivery box and its smartphone application) and generalization of customer behavior in relation to such a system.

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*How does a customer expect an unattended delivery service such as E-drop will affect their daily lives?*

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### 1.4 Research Focus

This research focuses on the Swedish consumer market. Sweden is a world leader in technology and innovation (Swedish Insitute, 2018). All the participants are living in the southernmost county (län) of Sweden, Skåne, which is considered part of the Greater Copenhagen Area. This region is considered one of the most innovative and forward-focused regions in Europe and the world (Greater Copenhagen, 2019). The research's epicenter, Helsingborg, has a municipality goal of becoming the most sustainable, innovative and inclusive cities in Europe by 2035 (Helsingborg 2035, 2019). The municipality has made it clear that this goal cannot be reached alone and urges all citizens to participate.

The municipality of Helsingborg reported in December 2018 that the city consisted of 145,415 inhabitants making Helsingborg the eighth largest city in Sweden (Helsingborg Kommun, 2019). Helsingborg is considered a metropolitan area by the basic definition of having minimum 50,000 people living within a certain area, however Helsingborg's metropolitan layout is much different than that of Helsinki, a city of 1.48 million, or London with a population of almost 9 million where similar projects have taken place (Berry, Goheen, & Goldstein, 1969; City of Helsinki, 2019; Nockold, 2001; Punakivi et al., 2001; Trust for London, 2019).

An unattended delivery system can be used for any type of online purchase; however, the focus of deliveries will be on groceries. The last mile of grocery goods can be complicated due to the inherited challenges of keeping groceries fresh and at the highest quality (Boyer & Hult, 2005; Kämäräinen & Punakivi, 2002; Murphy, 2007). By creating a system that successfully solves grocery deliveries will allow deliveries of other products simpler to tackle.

The time allotted for this work was limited to five months and therefore affects how much data was collected. The goal was to create the best understanding of the issue while maintaining a reliable, valid and ethical research.

## 1.5 Report Outline

This final section breakdowns the remainder of the thesis and what will be discussed in each chapter.

### ***Chapter 2: Methodology***

This chapter will explain which methods were followed to produce the knowledge seen later. Motivation for the use of multiple-case studies are provided. The qualitative methods used to gather data are described and how the data was analyzed. The manner in which the author upheld ethical, validity and reliability concerns are also included.

### ***Chapter 3: Frame of Reference***

The purpose of this chapter is to summarize all the research and previous literature concerning the topic at hand therefore creating a basis of understanding and exposing knowledge gaps. Literature about customer value, experience and expectations are included in addition to literature on how the grocery retail environment and consumer behavior has changed. The theoretical framework used to analyze the data harnessed is presented in this chapter.

### ***Chapter 4: Case Description***

This chapter presents information about the E-drop delivery system and all the participating families. By presenting this information, the reader gains a full understanding of the context (families) in which the case studies occurred.

### ***Chapter 5: Findings and Discussion***

In this chapter, the findings of the ten case studies are presented alongside a discussion of the findings based upon the theory chosen to analyze the data.

### ***Chapter 6: Conclusion***

The final chapter of this thesis includes an answer to the research question presented in this chapter. Additionally, limitations of the research and proposals for future research is included.

## 2 Methodology

*This chapter will lay out the author's methodological approach used through the master's thesis. First, a description of the research approach followed by research strategy. The author will describe the processes taken to collect relevant data and how it was analyzed. The conclusion of the chapter will describe how the author strives to produce a reliable and valid study.*

### 2.1 Research Approach

The choice of methods undergone during a master's thesis should reflect the research topic and research questions at hand and the methodologies chosen greatly impacts the results yielded (Silverman, 2013). Therefore, with careful consideration, the author has decided to conduct this master's thesis using exploratory and abductive reasoning approaches and a qualitative research strategy.

Exploratory research hopes to find new insight on whatever topic is being researched and possibly poses new research questions to be answered in the future (Jaeger & Halliday, 1998; Stebbins, 2001). Due to its nature and mission, exploratory research is used when the researchers have very little beginning knowledge about the subject, making it a fitting research outlook for this master thesis (Stebbins, 2001).

The three reasoning approaches in research include deductive, inductive and abduction (Bryman, 2016; Kovác & Spens, 2005). Deduction is present when one tests existing theories through their research. With last-mile logistics in connection to customer value being such a new field, it seems inappropriate to use deduction reason. In abductive reasoning, data and theory are gathered continuously which in turn allows for a learning loop to occur (see Figure 2). Induction is where one starts by looking at collected data and arrives at an appropriate theory and is used most commonly when collecting qualitative data. There is a constant movement between data and theory before presenting a conclusion which allows for creativity (Bryman, 2016; Kovác & Spens, 2005). Kovac and Spens (2005) state that abductive research leads to suggesting norms (Kovác & Spens, 2005). In abductive research, there is a systemic combining where constant learning and questioning from data collected, previous literature and patterns formed (Alvesson & Sköldbberg, 2018). For these reasons and the topic of this research, an abductive reasoning approach was the best fit.

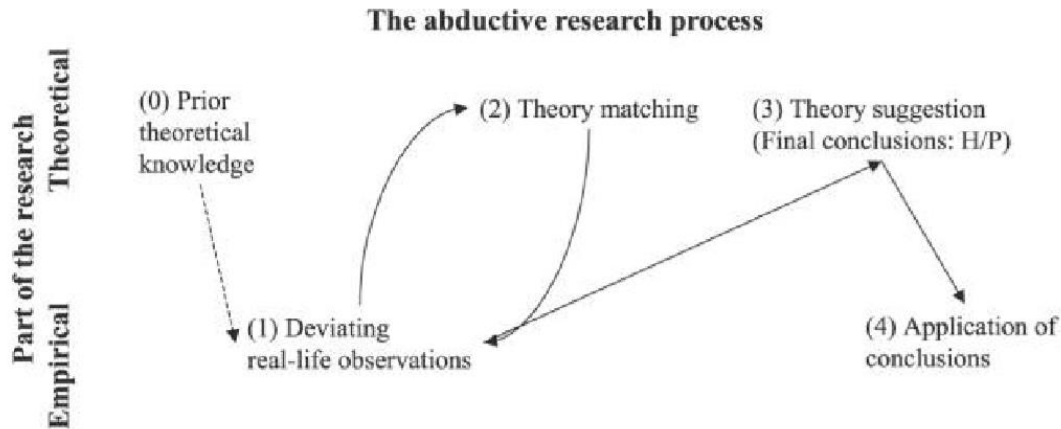


Figure 2 The Abductive Research Process (Kováč & Spens, 2005, p. 139)

While collecting data, the research can take on a quantitative or qualitative form. Quantitative data includes numbers and measurements to later be analyzed statistically. However qualitative data “embodies a view of social reality as a constantly shifting emergent property of individuals’ creation” resulting in a body of words, experience, and descriptions to be categorized (Bryman, 2016, p. 36). As the objective of this work is to better understand the reasonings and behaviors behind customer value creation and expectation in relation to a product and service combination, all the data collected in this thesis to create a case study will be qualitative.

## 2.2 Research Strategy

A well-structured research design is meant to carry the author through the entire research process aiding the author to answer four questions:

1. What questions to study?
2. Which data is relevant?
3. Which data to collect?
4. How to analyze the results? (Yin, 2014)

Keeping these questions in mind, the author utilized the main steps in qualitative research as described by Bryman (2006), which are as followed:

1. General research question (s) (RQ)
2. Selection of relevant site(s) and subjects
3. Collection of relevant data
4. Interpretation of data
5. Conceptual and theoretical work
6. Writing up findings and conclusions (Bryman, 2016, p. 384)

In order to most successfully fulfill all the steps of qualitative research thereby gaining the richest amount of data to answer the research question, a case study was a chosen method of research. Due to the structure of a case study, it is most effective to research a modern phenomenon through qualitative methods (Yin, 2014). Additionally, the author has little control over the behavior that arises nor does the author want to have control of the behavior.



Interrupting natural behavior does not lead to an authentic understanding of the phenomenon (Yin, 2014).

In addition to the case study, a literature review was completed. The literature gives the author a frame of reference and launching pad to begin research and data collection from. By critically reading and performing a literature review, one can learn from mistakes of past research as well as understand how much is studied about any certain topic. A strong literature review gives roots to a strong and valuable research design of a case study as understanding previous research enables for “*sharper and more insightful questions about the topic*” (Yin, 2014, p. 15).

### 2.2.1 Literature Review

A thorough literature review is a vital portion of a master’s thesis as well as a case study as it provides basis for the topic’s background, a greater understanding of the topic’s importance and identifying any knowledge gaps in the phenomenon to be studied (Jesson, Matheson, & Lacey, 2011; Yin, 2014).

Typically, a literature review process includes steps such as deciding keywords, literature search, choosing literature, evaluation, and summarization (Silverman, 2013). All these steps were followed, and a final summarization of the literature read can be found in Chapter 3. Somewhat different than other research approaches, the abductive approach allows the author to gain inspiration from previous literature before conducting a literature review and continue to search for new literature as new issues arise (Alvesson & Sköldbberg, 2018).

Using keywords (Table 1) the search for literature was conducted through the online databases of Google Scholar and LUBsearch. LUBsearch is the online library belonging to Lund University granting students and faculty access to many online academic journals.

Table 1 Literature Research Keywords

Keywords
Acceptance of new technology, consumer, customer acceptance, customer expectations, customer experiences, customer value, e-commerce, Europe, European Union, grocery store, home delivery, last mile delivery, online shopping, parcel locker, self-service kiosk, self-service technology, service sector, shopping behavior, shopping trends, Sweden, Swedish market, value creation

### 2.3 Case Study Research

As one overarching goal of a case study is to be read and understood by many, one must gain insightful results that can be generalized to others outside the immediate circle of the research project (Gomm, Hammersley, & Foster, 2000; May, 2011). While some argue that true generalization is impossible to attain, steps can be taken to generalize a case study as much as possible (Gomm et al., 2000). As the research question for this project revolved around the ‘how’ of unmanipulated behaviors resulting in qualitative data through interviews about a modern phenomenon, it appropriate to call this study a case study (Yin, 2014). The cases detailed in this thesis are considered revelatory cases which as described by Bryman (2016) is “*when the investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to*



*scientific investigation*” (Bryman, 2016, p. 70). More detailed information about data collection is explained in Section 2.5.

Yin (2014) describes four different types of case studies as depicted below (Figure 3). The use of single-case studies are geared more to common cases or studies of revelatory nature neither of which matches this study (Yin, 2014). The flow of a case study’s research design between the design, collect and analyze phases lends itself to be suitable in an abductive reasoning and explanatory research (Alvesson & Sköldberg, 2018; May, 2011). As explanatory research aims itself to dig deeper into a phenomenon while abductive reasoning methods result in a better understanding of the said phenomenon (Kováč & Spens, 2005; Yin, 2014).

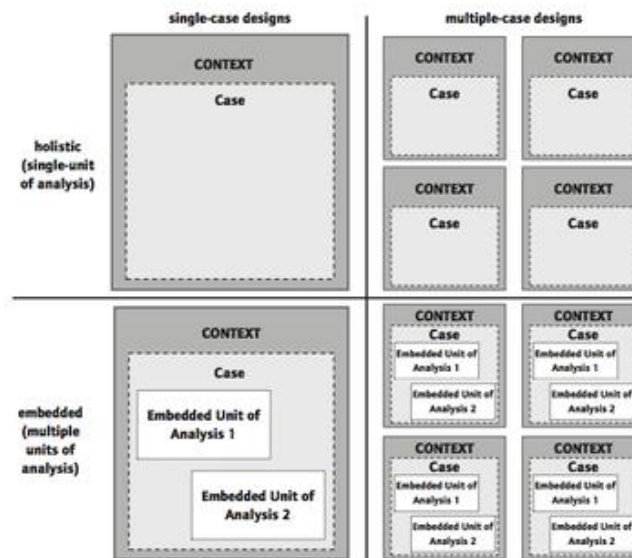


Figure 2.4 Basic Types of Designs for Case Studies  
SOURCE: COSMOS Corporation.

Figure 3 Basic Types of Designs for Case Studies (Yin, 2014, p. 48)

Knowledge gained from multiple-case studies are considered richer than those coming from single-case studies. The choice to implement multiple embedded case studies (bottom right corner in Figure 3) is motivated by the subject matter of this study. The researcher wants to understand a phenomenon that includes a survey of each case study site (Yin, 2014). When completing multiple-case studies, one must remember to include a factor of replication which strengthens the results. Either literal replication or theoretical replication can be applied to multiple case studies. In this thesis, the author utilizes literal replication as the cases chosen are predicted to produce similar results (see Section 2.3.2 for more about the selection of cases) (May, 2011; Yin, 2014). Figure 4 visualizes the rough process that was followed in this study. Diverting from the process seen in Figure 4, the author used an existing theory and model rather than create her own.

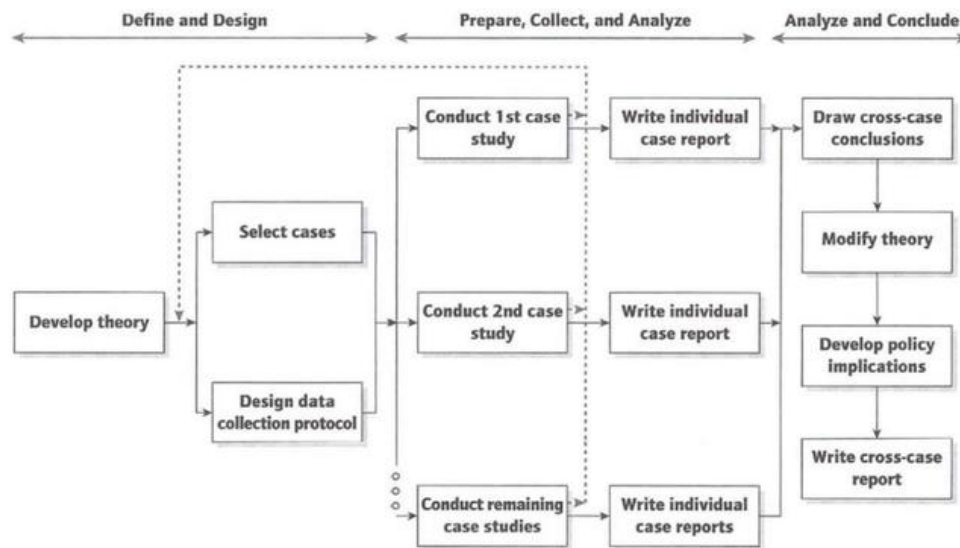


Figure 4 Multiple-Case Study Procedure (Yin, 2014, p. 58)

The case selection and data collection protocol are explained in the remainder of this section. The reader is provided detailed information about each family and the delivery system in Chapter 4. Chapters 5 and 6 include the cross-case conclusions, modifications to theory, the implications and final report for this multi-case study (Yin, 2014).

### 2.3.1 Case Design

A case study is comprised of three different components: context, case, and unit. In this thesis work, each family is a context where the delivery box and E-drop system is the case and the unit as family expectations and experiences (see Figure 5).

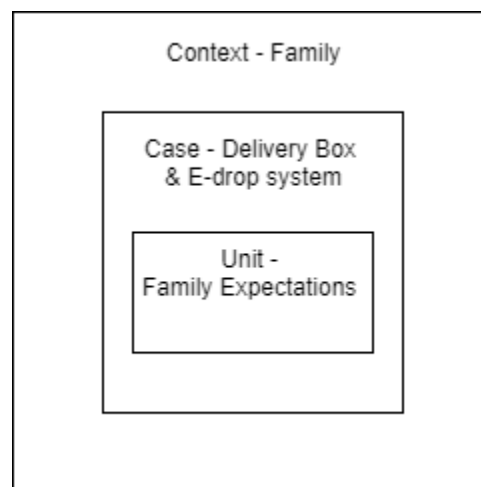


Figure 5 Case Study Design Based on Yin's (2014) Design (Yin, 2014)

This thesis will consist of ten separate cases each representing a different family as seen visually in Figure 5. These case studies will be used to answer the research question (section 1.5).

Utilizing multiple cases in the study adds confidence to findings for not only the researcher but

the academic community strengthening the precision, validity, stability, and trustworthiness of the findings (Miles & Huberman, 2014).

### 2.3.2 Case Selection

Ten families volunteered to participate in the trial. The project was promoted by employees of Nowaste. Interested families were given information about the conditions of participating and the willing families consist of the ten families outlined in Table 2.

All the households involved earn above the average income level for the area, identifying with E-drop's predicted target market. The families are spread across the different neighborhoods of Helsingborg ensuring diversity in the home styles and varying distances from the nearest grocery store. The children of the families' range in age with most in the primary school age range (4 – 12). One household has older children who no longer live at home.

Prior to the delivery box's installation, households were sent information describing the project and all it would entail. The families were also given simple instructions on how the delivery box and its corresponding app works (Chapter 4).

*Table 2 Participant Demographics*

Family ID	Area	Number of Adults	Number of Children (at home)
A	Husensjö	2	0
B	Husensjö	2	2
C	Ätekulla	2	2
D	Rydebäck	2	3
E	Laröd	2	2
F	Ramlösa	2	2
G	Pålsjö	2	2
H	Husensjö	2	2
I	Råå	2	2
J	Strandbaden	2	2

## 2.4 Data Collection

For this master's thesis, secondary empirical data was collected. Some view the literature review as a collection of secondary data, as it is compiled information originating from another researcher or organization. There was a variety of different secondary data collected for this study from a range of different sources, including government publications, academic journals, books and websites (Hox & Boeije, 2005). The secondary data collected for the literature review contains both qualitative and quantitative data.

The primary data used for this thesis is qualitative in the form of semi-structured interviews and partially participating observations. A qualitative study allows for the researcher to dive deeper into the 'why' of the phenomenon. The author chose semi-structured styled interviews and partially participating observations as the manner of giving consistency but also allowing for flexibility and freedom in the responses to gain a deeper, truer understanding (Bryman, 2016).

Through these interviews and observations, the author is hoping to be able to answer the research question found in section 1.5.

#### 2.4.1 Semi-Structured Interviews

Understanding that opinions, thoughts, and experiences needed to be extracted from the participants in order to answer the research question, the author decided that semi-structured interviews would yield the best results. Semi-structured interviews allow the researcher to gain clarification and elaboration (May, 2011). While there is a rough list of questions the interviewer would like to ask, semi-structured interviews allow for the interviewee to be at the reins either by elaborating depending on their own experiences and opinions. However, the disadvantage connected to semi-structured interviews is that is bound to be a variation in the quality of information produced. This can be caused by a few different reasons – variance in experience or interviewee’s personality (Bryman, 2016; May, 2011).

Each of the participating families was interviewed prior to the delivery box’s installation (Table 3). The interview questions were broken down into four different sections: family dynamics, current grocery shopping habits, comfort with technology use and expectations for the delivery box. The four sections were built to create a clear image of each family thus creating the context for each case and understanding each family’s expectations (case unit) which would later be compared and analyzed.

*Table 3 Interview Breakdown*

Family ID	Date	Length	Location of Interview
A	20 February	43:58	Home
B	28 February	28:52	Home
F	12 March	25:32	Mother’s Office
I	14 March	39:15	Home
E	15 March	25:33	Coffee Shop
D	22 March	30:36	Home
C	22 March	27:44	Father’s Office
H	1 April	28:15	Home
J	5 April	35:30	Father’s Office
G	6 April	-	Interview Conducted via E-mail

#### 2.4.2 Observations

While there are some aspects of observation embedded in an interview, it is still limited to the interviewee and how much they wish to share with the interviewer through their body language and tone (May, 2011). To gain a more holistic understanding of the families, observation as a source of data collection was included to complement the information gathered through semi-structured interviews (Bryman, 2016). The author acted as a partially participating observer while conducting the interviews meaning that the author acted as a participating observer immersing herself into the families’ home or ‘core activities’ however whatever information was

gained through observation would not act as the main data source, but only as a way to gain more insight into the lives and habits of the families (Bryman, 2016; May, 2011).

To honor the interviewees' time and privacy, the interviewees chose the location for the interview, some chose their workplace or coffee shop, but many allowed the author to come into their home. If invited to the family's home, the author observed the façade, interior, and general cleanliness of the home but not past the extent of what one may do if they were invited to someone's home for the first time. The author did not ask to see any more of the home than what the interviewee offered to show.

Observation Protocols are included in Appendix B. All observations recorded are included in the Observation Protocols.

## 2.5 Data Analysis

As previously stated, prior to analyzing the data, relevant literature was collected, and a literature review was performed. As literature was read and synthesized, gaps in previous research were revealed and presented methods for possible theoretical frameworks. The abductive nature of this research allowed the author to simultaneously gather information from literature and empirical data in order to choose the best theory for answering the research question (Kováč & Spens, 2005).

The empirical data collected through interviews and observations underwent five steps of analysis: compiling, disassembling, reassembling, interpreting and concluding. At each step, the author utilized thematic analysis. Thematic analysis is a method for analyzing qualitative data allowing new information to be mined while still keeping a certain theory or concept in mind (Castleberry & Nolen, 2018). A series of semi-structured interview questions were prepared based on findings in the literature, all of which were later transcribed. All the families were given the same questions so later analysis would be easier. During the disassembling stage, the data was taken apart and then grouped back together based on features of the data. Once the data has been grouped it is later assembled back together to create overarching themes found in the literature. At this point in the process, it is important for the author to stay clear-minded looking only at the data and not forcing the data to form to the theoretical framework. The last stage of data analysis, the interpretation stage, is when data helps the researcher form analytical conclusions (Castleberry & Nolen, 2018). The aim of the whole process is to see sound themes and analysis formed from raw data. The coding scheme resulting from the interviews and observation is found in Appendix C.

## 2.6 Criteria in Qualitative Social Research

According to Bryman (2016), in order to have a research that is valuable to others in the field, a study must be valid and reliable. While undergoing a case study, it is of the utmost importance to ensure that study has credibility in the way of being both valid and reliable. Keeping these criteria in mind creates a more valuable research for both academia and organizations such as Nowaste (Bryman, 2016; Yin, 2014). Table 4 breaks down how the author ensured validity, reliability, trustworthiness, credibility, dependability and conformity while conducting and presenting the case studies.

Table 4 Trustworthiness of the Study and Findings

<b>Test</b>	<b>Implementation during this research</b>	<b>Reference</b>
<i>Construct Validity</i> – Does the research measure what it intends to measure?	<ul style="list-style-type: none"> <li>- Ten individual families included</li> <li>- E-drop project manager supervised every step of research and analysis process</li> </ul>	(Bryman, 2016; Mollenkopf, Frankel, & Russo, 2011; Yin, 2014)
<i>Internal Validity</i> – Can conclusions be clearly drawn?	<ul style="list-style-type: none"> <li>- Looked for patterns across all ten families</li> <li>- Looked for logical consistency across all factors and determinants</li> </ul>	(Bryman, 2016; Castleberry & Nolen, 2018; Mollenkopf et al., 2011; Yin, 2014)
<i>External Validity</i> – Can the research be applied to other populations? Is it generalizable?	The interview and analysis processes were the same for all ten families	(Bryman, 2016; Castleberry & Nolen, 2018; Mollenkopf et al., 2011; Yin, 2014)
<i>Reliability</i> – Does this study demonstrates repeatability?	<ul style="list-style-type: none"> <li>- Case study database created</li> <li>- Case study protocol created</li> </ul>	(Bryman, 2016; Castleberry & Nolen, 2018; Mollenkopf et al., 2011; Yin, 2014)
<i>Trustworthiness</i> – Are the results appropriate representations of the data?	E-drop project team gave feedback at every step of research	(May, 2011; Mollenkopf et al., 2011)
<i>Credibility</i> – extent to which the findings are unique to time and place, stability or consistency of explanations	Evidence from multiple respondents used to support concepts	(Castleberry & Nolen, 2018; May, 2011; Mollenkopf et al., 2011; Silverman, 2013)
<i>Dependability &amp; Confirmability</i> – Is the study free of biases and misinformation?	Author asked others to check for any underlying biases or misinformation present in the work	(Mollenkopf et al., 2011)
<i>Integrity</i> – Does the research conduct an ethical and non-threatening study?	<ul style="list-style-type: none"> <li>- All identifying information redacted</li> <li>- Participants could choose not to answer a question if they felt uncomfortable</li> <li>- Encouraged to use whatever level of English they felt comfortable with</li> </ul>	(Bryman, 2016; Diener & Crandall, 1978; Mollenkopf et al., 2011)

### 2.6.1 Evaluation of Utilized Methods

After the completion of data collection, the methods utilized to collect the data was evaluated. The use of qualitative methods was beneficial in collecting appropriate data to understand better the behaviors, emotions, and opinions of the families therefore best answering the research question posed. The researcher utilized semi-structured interviews as the main method of gaining information. Semi-structured interviews allow for flexibility and the interviewee to in a way lead the interviewing answering the questions within their comfort zone. The downside to the flexibility is found in the variance of responses given by the participants (Bryman, 2016). Reflecting, some participants generally felt more comfortable and chattier therefore giving more in-depth responses and some gave the minimum acceptable response. While it was logistically the best option to interview all the families separately, it would have been interesting to have the families participate in a focus group. With a focus group, the researcher could have seen quickly the differences and similarities between the families. Focus groups may have been able to extract more information as people jointly share their experiences and opinions, therefore, possibly giving a richer amount of data from which to analyze and answer the research question (Bryman, 2016).

Acting as a particularly participating observer allowed the author to gain a deeper understanding of each family from non-verbal cues (Bryman, 2016; May, 2011). However, this method does not collect substantial data to answer the posed research question alone. If one wanted to use a purely observation method, a change in research question is necessary.

The design of the case study could have been formed differently, for example with the delivery box as context and the family as the case. However, for the posed research question, the author still believes that the original case study design is the most appropriate and is best suited to provide valuable knowledge to both academics and organizations such as Nowaste.

### 2.7 Ethical Considerations

When writing an academic piece of any kind, the ethical considerations should always be kept at the highest standards. The ethical principles of Diener and Crandall (1978) were followed closely in this thesis work when collecting data.

The principles include ensuring:

- No harm comes to the participants
- No lack of informed consent
- No invasion of privacy
- No deception (Diener & Crandall, 1978)

All these principles are interconnected, and it is difficult to have one without the other. When speaking about harm, it does not only include physical harm (Diener & Crandall, 1978). A participant can also be mentally or emotionally harmed by research. A lack of informed consent occurs when the participants do not feel like they are given enough information to where they can make a comfortable and firm decision about if they would like to continue or not with the research (Bryman, 2016; Diener & Crandall, 1978). The researcher must be aware that at any time a participant may begin to feel uncomfortable and the researcher should do everything



within reason to ensure the participant feels relaxed during the data collection. Deception occurs when the researcher is not honest about the manner or purpose of their research (Bryman, 2016). To be certain that none of the participants felt deceived, comprehensive information was provided to the families prior to any research beginning and they were given multiple contact persons if they had questions or concerns.

### 2.7.1 Upholding Ethical Principles in this Research

The author paid careful attention to these principles at all stages of the data collection process – choosing the methods, writing of the interview questions, conduction of the interviews, observing the home of the families, transcription of the interviews and presentation of their information in this report. Prior to the author beginning this thesis project, potential test families were given a large information packet about the delivery box, the proof of concept, and the author's participation so that families who continued with the project would understand completely what the project entailed. If the families had any questions or concerns arise, they were ensured they could address these questions or concerns to someone. Interviewees were given the ability to choose the location of their interview based on their own schedule, therefore some chose to meet at the family home, office or coffee shop. Observations of the interview location included only what the author was shown of the home or office, taking simple observations that any visitor to the home or office would view.

Participants were always asked if they were comfortable with being recorded before the interview started. The interview questions were vetted by multiple people to ensure that none of the questions would cause harm or uncomfortable feelings. During the transcription process, all information that would reveal the participants' identities such as names, workplaces, children's names, names of pets, or other details that may allow someone to determine the identity of the test family was redacted.

### 2.7.2 Conducting Interviews in Non-Native Language

All the interviews were conducted in English and the participants were informed upfront that the interviews would be conducted in English. If they felt uncomfortable speaking in English, they could ask for the interview to be conducted in Swedish, however, none of the interviewees requested for an interview in Swedish. There are additional ethical concerns when dealing with non-native English speakers and conducting research in English that should be acknowledged (Koulouriotis, 2011). All the interview questions were screened and translated into Swedish to ensure clarity before meeting with the participants. No matter how advanced the participants may have felt in their English skills, it can still be unnerving to speak with a native speaker as the author is a native English speaker (Koulouriotis, 2011). Understanding this feeling and apprehension, the author, upon first meeting the participants, introduced herself in Swedish, chit-chatting with the participants, possibly their children and pets in Swedish as a way to build trust and make the interviewee feel comfortable as the author was also showing interest in their native language and attempting to 'meet them halfway' (Koulouriotis, 2011).

One may not be able to express their opinions and emotions as deeply or fluidly as in one's native language, so the author allowed the interviewee to express their themselves to whatever extent they felt comfortable and nothing more. During the transcription and analyzing process,



the author did not analyze their words more than what was said in the interview (Koulouriotis, 2011). Before the interview began, the author informed the participants that if they did not know the English word or phrase to describe themselves properly, they were encouraged to use the Swedish word or phrase. During the transcription process, the author called upon a native Swedish speaker to translate the word or phrase in the most unbiased manner possible, so that the interviewee would be understood fully and correctly (Koulouriotis, 2011). Finally, as the author is not a native speaker of Swedish, she comes into this research already with a cultural lens of language, home life and grocery shopping from her home country. In order to ensure that there would be no culture clashes at any point in the research process, the author constantly asked native Swedish speakers to check for any cultural biases that may be underlying and unnoticed by the author (Koulouriotis, 2011).

### 3 Frame of Reference

The following chapter's aim is to provide a strong background and theoretical base for both the author and the reader. First, an overview of customer value will be presented including information about customer experiences as experiences affect how a customer evaluates a product or service and eventually any expectations in future purchases similar in nature (Klaus & Maklan, 2013; Ziethaml et al., 1993). Then an explanation of shopping trends is explained focusing on online shopping, grocery shopping and trends seen in Sweden to better grasp the environment in which the case study occurs.

The factors (Figure 6) that create eventual consumer satisfaction and on which consumer satisfaction is built upon should be understood separately so their dependence is clearer. The expectations of consumers are difficult to separate from value and quality, which stems from experiences. Surhartanto (2019) explains that expectations of varying levels lie behind all aspects (Suhartanto, Helmi ali, Kim Hua, Sjahroeddin, & Kusdiby, 2019). All three play a large role in the future in the adoption of unattended delivery systems in a larger market.

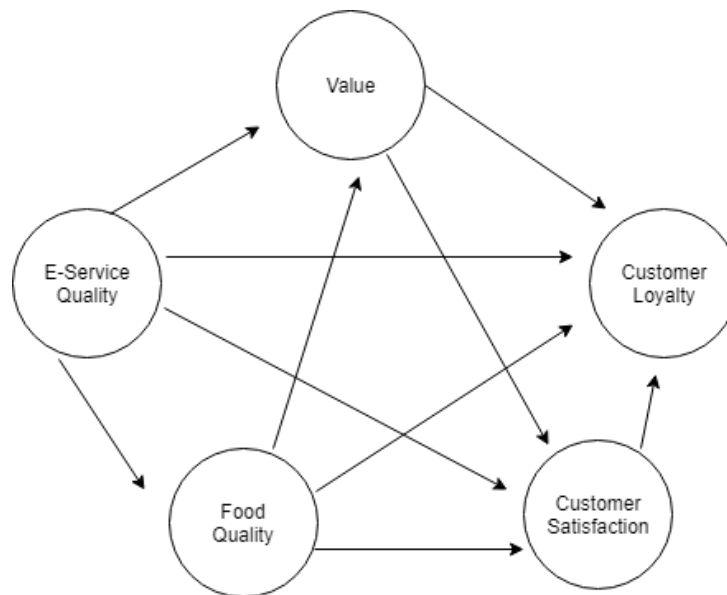


Figure 6 Consumer Satisfaction Model (Suhartanto et al., 2019)

#### 3.1 Customer Value

Customers have the ability and power to give value to any product or service no matter the physical size or monetary value (Gong, Choi, & Murdy, 2016; Sheth & Uslay, 2007). According to Sheth and Uslay (2007), value is created any time “two individuals/institutions with complementary resources are connected” (Sheth & Uslay, 2007, p. 303). Customer value can be interpreted, measured and utilized in many ways depending on which angle of customer value the research takes as well as the context and situation (Åslund & Bäckström, 2017; Tynan, McKechnie, & Hartley, 2014). Customer value from the perspective of the customer looks and is created much differently than the organization’s perspective, both should be taken into

consideration (Parasuraman, 1997). Yet companies understand that true value is in the hand of the consumer and the consumer ultimately creates value despite the efforts of the company (Normann & Ramirez, 1993).

Most researchers in the social science and service fields recognize Woodruff's (1997) definition of customer value as the base of all other definitions, "*a customer's perceived preference for and evaluation of those product attributes, attribute performance and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations*" (Woodruff, 1997, p. 142). In the simplest terms, a product or service has both attributes and consequences which form customer value and a customer weighs the attributes to the costs to result at the end value (Smith & Colgate, 2007; Woodruff, 1997). Attributes are any characteristic of the product or service (color, smell, price, etc.) and attribute performances are the characteristic of the product that comes indirectly from its attribute (Vakulenko, Hellström, & Oghazi, 2018; Woodruff, 1997). Consequences are how the customer evaluates the product or service based on any number of standards (Vakulenko, Hellström, & Oghazi, 2018; Woodruff, 1997).

The reactions of the customer change over the time of consumption beginning with any pre-purchase thoughts to any evaluations made post-purchase (Tynan et al., 2014) thus, "*desired customer value (assessed prior to purchase) and received customer value (assessed after purchase) may not be readily comparable if the pre and postpurchase evaluative criteria are different*" (Parasuraman, 1997, p. 157). Gong (2016) describes that there are voluntary behaviors necessary from the customers necessary for value creation to occur. (Gong et al., 2016). Customers may subconsciously rely on variables such as advertising, brand name, price or warranty to infer value (Mahmoud, Hinson, & Anim, 2018). Value may also come from other sources such as environment or ownership (Smith & Colgate, 2007). Ultimately, for value creation to occur according to Gong (2016) there should be a fulfillment of the three universal psychological needs – autonomy, competence and relatedness (Gong et al., 2016). Assumptions of certain variables may affect how a customer ultimately perceives the value of a product or service (Mahmoud et al., 2018; Shukla, 2010).

### 3.1.1 Customer Value Creation

Value creation of services differs slightly than that of products in that the customer becomes involved. Therefore, the factors for evaluating a service becomes more focused on the customer. Meuter (2000) writes that there are three factors affecting how a customer evaluates a service encounter: "*employee response to service delivery failure, employee response to customer need and requests, and unprompted and unsolicited actions by employee*" (Meuter, Ostrom, Roundtree, & Bitner, 2000, p. 51). Meuter (2000) also states that coming away from a service encounter with a sense of joy and/or control are the most positive attributes while evaluating a service (Meuter et al., 2000).

Value creation was once thought to be linear but now it is accepted that customer value and its creation is continuous and dynamic occurring at every stage of consumption (Normann & Ramirez, 1993; Parasuraman, 1997; Tynan et al., 2014). Depending on which side of the transaction one sits changes one's outlook on value creation. Slater and Narver (1994) believe

that organizations should start to view customer value creation as something that is constantly changing in order to better serve their customers (Slater & Narver, 1994). Looking into how your customers will determine value not just in the present but in the future greatly benefits the firm and should be taken seriously (Parasuraman, 1997; Sánchez-Gutiérrez, González-Alvarado, Cabanelas, & Lampón, 2018). The introduction of technology has drastically changed how customers become involved in value creation. Technology has allowed customers to become more involved with the structure of the product or service thus allowing them to become co-producers of value (Flores & Vasquez-Parraga, 2015). An important thing to remember about changing technology is that at the heart of the matter the customer still wants products that will meet their expectations and quality customer service (Boyer & Hult, 2005).

### 3.1.2 Four Factors Influencing Consumer Choice and Value

Researchers have categorized value and value creation in many different ways, however, the elements of how customer value is typically thought to be created is usually classified into four types with the customer at the center of any decision making: functional, emotional, social and financial (Figure 7) (Sánchez-Gutiérrez et al., 2018; J. Sheth, B. Newman, & B. Gross, 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018). These value types drive the consumer to purchase a good or service as well as evaluating the purchase (J. Sheth et al., 1991). Functional value is based on the physical qualities of a product including location, time access and design (J. Sheth et al., 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018). Emotional value is related to how the consumer feels as he or she experiences the product or service throughout every stage of the consumption process (before, during and after) (J. Sheth et al., 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018). Social value is related to human interaction or lack thereof during the consumption of a product (J. Sheth et al., 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018). This social or relational value may stem through creating value with another consumer possibly through face-to-face interactions or via online platforms (Flores & Vasquez-Parraga, 2015).

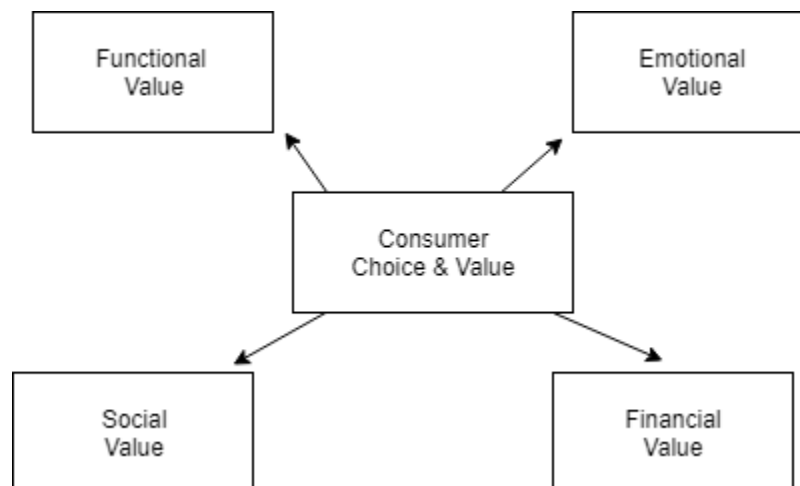


Figure 7 Consumer Choice & Value

Organizations can create customer participation-enabling platforms (CPEP) to foster and fuel relational value. These platforms allow the customer to feel more involved in the creation of the

actual product (Flores & Vasquez-Parraga, 2015). These personal experiences either face-to-face or through online platforms are some of the strongest enablers of creating value (Sheth & Usley, 2007). Lastly, financial value which is one of the more common values when exploring how the customer and firm relate to one another. Financial value is simply the cost or perception of cost during the use of the product (J. Sheth et al., 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018). Not all these values may be formed after a purchase. It could be that one or a mix of values influence a purchase (J. N. Sheth, B. I. Newman, & B. L. Gross, 1991). By using this framework, one can “*describe a generic marketing strategy, enhance product concept specification, identify value creation opportunities and develop measures of customer value*” (Smith & Colgate, 2007, p. 15).

### 3.2 Customer Experiences

In today’s retail market, customers have more options than ever before making it of the utmost importance for companies to understand what brings value to the customer and their experience when interacting with their product or service to ensure their customers stay loyal and satisfied (Mascarenhas, Kesavan, & Bernacchi, 2006; Meyer & Schwager, 2007; Roy, 2018; Verhoef et al., 2009). Customer experience is created holistically and can be affected by anything that the customer meets when dealing with a company (McColl-Kennedy, Zaki, Urmetzer, Neely, & Lemon, 2019; Meyer & Schwager, 2007; Verhoef et al., 2009). One’s judgment of the experience can remain for a long time after the initial interaction (Klaus & Maklan, 2013). It is difficult to separate one factor from the equation and expect complete customer satisfaction (Mascarenhas et al., 2006). One of the more widely used definitions comes from Verhoef (2009) where “*customer experience originates from a set of interactions between a customer and a product, a company or part of its organization which provoke a reaction*” (Verhoef et al., 2009, p. 32). Customer satisfaction is just one factor for customer experience. Meyer (2007) gives his definition for customer satisfaction as “*the culmination of a series of customer experiences, or one could say, the net results of the good ones minus the bad ones*”, arguing that once customer satisfaction is understood then it is possible to understand customer experience on a deeper level (Meyer & Schwager, 2007, p. 2).

Throughout the years, researchers and organizations have formed various ways to measure and track customer experience. Companies may opt to monitor their customers looking at their patterns over time in both direct and indirect contact with the company and its products (Meyer & Schwager, 2007). Direct contact occurs with any action that was initiated by the customer and indirect contact are times when customers interact with representations of the company most often by word of mouth (Meyer & Schwager, 2007). Loyalty to a company, brand or product can be seen through the customer’s behavior, attitude, and situations (Mascarenhas et al., 2006). While attempting to understand customer’s behavior, it is important to keep in mind the emotional and sometimes irrational side of consumers as emotions and indescribable behavior drive many purchases (Gentile, Spiller, & Noci, 2007).

Verhoef (2009) has created a five-pronged model of customer experience (Figure 8) that identifies the different determinants of customer experience including social environment, service interface, retail brand, customer experience dynamics, and customer experience

management (Verhoef et al., 2009). The social environment determinant discusses how other customers can impact one customer's experience. The service interface component explains how the service is presented and how customers can interact with it. The company's branding image and reputation may impact customer's experience before the customer steps into the store making the retail brand a vital experience determinant. The customer experience dynamic factor acknowledges that customer experience formation does not begin and end in the retail store. In the time of social media and constant information saturation, the experience dynamic is at the forefront of the manager's minds. Finally, the customer experience management "*is a retailer's strategy to engineer the customer's experience in such a way as to create value both to the customer and the firm*" (Verhoef et al., 2009, p. 38). This final determinant in Verhoef's (2009) model can be intertwined with Schmitt's (1999) five strategic experiential modules that aim to create certain types of experiences depending on the management's desires. The five strategic experiential models are sensory, affective, creative cognitive, physical, and social-identity (Schmitt, 1999)

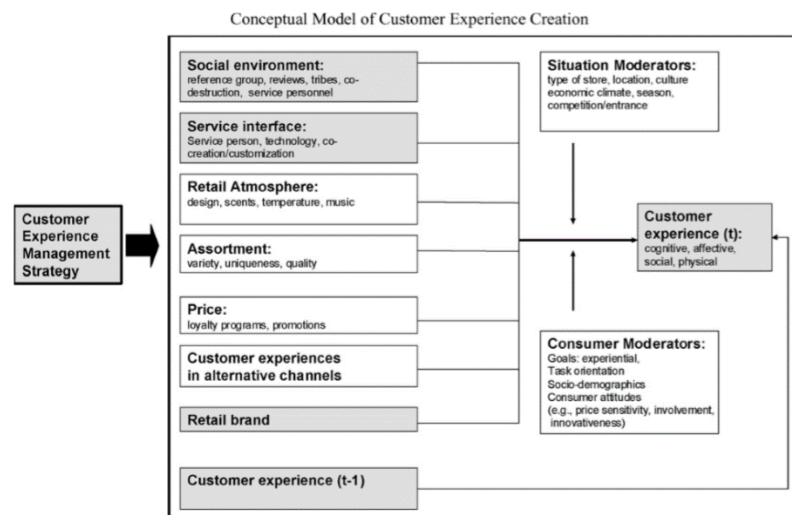


Figure 8 Conceptual Model of Customer Experience Creation (Verhoef et al., 2009, p. 32)

Parasuraman (1988) laid out 10 different dimensions in which customers experience service quality which in turn creates customer value. The experience of the customer in relation to any service encounters creates the overall customer journey (Vakulenko et al., 2019). The dimensions include tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding/knowing the customer and access (Parasuraman, Zeithaml, & Berry, 1988). Urban (2010) explains in his research that tangibles and empathy are completely unrelated to the creation of perceived quality (Urban, 2010). Responsiveness and communication are the strongest factors in how customers connect experience and perceived quality gained therefore affecting the final satisfaction and possible repurchase of a service (Urban, 2010). Roy (2018) goes past SERVQUAL with the model of Experience Quality (EXQ) stating that EXQ can better measure the customer's point-of-view and the customer experience can be understood and measured as a service (Roy, 2018). The four dimensions of EXQ are the product experience, outcome focus, moments-of-truth, and peace-of-mind. Through research, it has seen that hedonic

services (services that are considered luxurious) are affected more than utilitarian services (Roy, 2018). The peace-of-mind dimension tends to have a higher effect on customer satisfaction (Klaus & Maklan, 2013). The EXQ model allows managers to evaluate their current status with customers in addition to pinpointing which strategies may help them improve (Klaus & Maklan, 2013). Both models expose the connection between experiences and formation of perceived quality of the service at hand (Parasuraman et al., 1988; Roy, 2018; Urban, 2010).

### 3.3 Customer Expectations

In the simplest terms, an expectation can be described as a biased prediction (Trișcă, 2017; Ziethaml et al., 1993). It is vital for the firm to understand what their customers expect of a product or service in order to understand how the market assesses quality, gain satisfied customers and eventually loyal repeat customers (Lin & Lekhawipat, 2016; Nicolae, Tănăsescu, & Popa, 2013; Trișcă, 2013). The initial expectation is arguably the most important as it symbolizes a customer's independent thought of a product or service with minor outside influences (Swan & Trawick, 1981). Customer expectation can be formed through many different channels – comparison of similar products, prior beliefs of a product or service from advertisement or word of mouth, and their own personal desires or goals for how the product or service may affect their life (Assouad & Overby, 2016; Nicolae et al., 2013; Trișcă, 2017).

Expectations are rarely static for long periods as consumers are constantly taking in more information and experiences that may affect their prior expectations (Lin & Lekhawipat, 2016). These personal hopes are the strongest influencers for creation of customer expectations, therefore, understanding how one forms their personal 'check-list' of how a product or service looks and functions in their life should be the most important piece of information for any company yet this information is missing from many marketing plans (Trișcă, 2017). Any previous experience that the consumer may have with the brand or company can either affect their future expectations in a positive or negative way (Trișcă, 2017; Ziethaml et al., 1993). The culture in which the product is to be sold should also be taken into consideration since one's culture can influence how customers perceive quality and consequences (Assouad & Overby, 2016).

#### 3.3.1 Types of Expectations

Overtime research has exposed, defined and utilized several different types (Table 5) of expectations (Lin & Lekhawipat, 2016; Miller, 1977; Prakash, 1984; Swan & Trawick, 1980; Woodruff, Cadotte, & Jenkins, 1983; Ziethaml et al., 1993). Recognizing and understanding the differences and similarities allow researchers to better grasp the holistic formation and use of expectations.



Table 5 Types of Expectations

<b>Expectation</b>	<b>Definition &amp; Source(s)</b>
Expected Standard	Level plausible performance (Miller, 1977; Ziethaml et al., 1993)
Predictive Expectations	Level of performance anticipated (Prakash, 1984; Swan & Trawick, 1980; Ziethaml et al., 1993)
Desired Expectations	Level of performance the customer hopes it performs at (Swan & Trawick, 1980; Ziethaml et al., 1993)
Normative Expectations	Level at which a brand should perform so that the customer is satisfied (Prakash, 1984)
Ideal Expectations	Highest level of performance the customer predicts for the product (Miller, 1977)
Experience-based Norms	Level of performance formed by both the customer's previous experience with the product or brand and any ideal expectations (Woodruff et al., 1983)
Minimum Tolerable Expectations	Lowest level of performance the customer predicts is acceptable from the given product (Miller, 1977)
Deserved Expectations	Level of performance the customer believes they are owed from the purchase of the product (Miller, 1977)
Comparative Expectations	Level of performance created by the customer when comparing brands similar to the product they intend on purchasing (Prakash, 1984)
Adjusted Expectations	Level of performance the consumer believes he/she gained from the use of a product thus determining any future repurchase behavior and expectations for future use of the product (Lin & Lekhawipat, 2016)

### 3.3.2 Creation of Expectations

According to Oliver's (1977) Expectation Disconfirmation Theory consumers create a level of service they expect to receive before purchase and then only after experiencing the product or service do, they form perceptions of service performance (Oliver, 1977). These post-service examinations can result in either a positive disconfirmation or a negative disconfirmation. A positive disconfirmation occurs when the "*perceived service exceed expectations*" (Song et al., 2016, p. 218). A negative disconfirmation is a result of the service not matching the expectations (Oliver, 1977). These disconfirmations lie on a scale as most consumers usually are not completely content nor completely disappointed in a product or service (Oliver, 1977). Most positive disconfirmations lead to the customer becoming loyal to the brand or product and spreading positive expectations via word-of-mouth creating a positive expectation cycle,



additionally negative disconfirmations can forge a similar expectation cycle but to the same strength (Shaw & Ivens, 2002; Trișcă, 2017). Branding and information gained via word-of-mouth not only affects one's expectations but how one perceives its value and eventually experiences the service (Klaus & Maklan, 2013; Mahmoud et al., 2018; Mascarenhas et al., 2006; Meyer & Schwager, 2007; Shaw & Ivens, 2002; Smith & Colgate, 2007; Verhoef et al., 2009).

One goal of a firm is to create loyal consumers who have a habit of repeatedly purchasing their products. Habits and habit creation is a learned behavior through a series of purposeful actions until these actions become automatic responses (Lin & Lekhawipat, 2016; Suhartanto et al., 2019). Lin & Lekhawipat (2016) state that if a consumer has become dependent on habitual buying then their reactions and expectations to changes are much stronger than consumers with a lower dependency of habitual buying claiming that online shopping has the ability to become a strong, resilient habit in the right context (Lin & Lekhawipat, 2016). Understanding how habits and expectations grow together adding in the safe context of online shopping and the necessity of shopping for groceries, the e-grocery industry could soon become steadfast (Suhartanto et al., 2019).

### 3.3.3 Model Determining Customer Expectations

Ziethaml, Berry, and Parasuraman (1993) created a model (Figure 9) of service expectations that sorts all expectations into three different types geared around an exchange of services: desired service, adequate service and predicted service (Ziethaml et al., 1993). Ziethaml, Berry, and Parasuraman (1993) use the same definition of *desired service* as *desired expectations* stated previously in Table 5, however, *desired service* is focused on a service rather than a product. The desired service level may or may not be kept after use of the product (Ziethaml et al., 1993). *Adequate service* is the service-focused version of *Minimum Tolerable Expectations* explained in Table 5 (Ziethaml et al., 1993). The factors of *desired service* and *adequate service* drive service expectations and aid later in assessing the performance of the service (Ziethaml et al., 1993). The *zone of tolerance* lies between what the customers recognize as desired service and adequate service with this zone growing or shrinking over time (Sachdev & Verma, 2002; Ziethaml et al., 1993). The final expectation type in Ziethaml, Berry and Parasuraman's (1993) model is *predicted service* which is described as "*the level of service customers believe they are likely to get*" which subsequently creates both desired service and adequate service (Ziethaml et al., 1993, p. 8).

Each of the three service expectations have various factors upon which they are built (see Figure 8). Desired service can be broken down into personal needs and enduring service intensifiers. Personal needs include both the physical and psychological needs of the customer related to the service provided (Ziethaml et al., 1993). Enduring service intensifiers are any factors that lead the customer to have a "*heightened sensitivity of service*" in the long term, for example how the customer views service (Ziethaml et al., 1993, p. 7).

Adequate service is built from transitory service intensifiers, perceived service alternatives, self-perceived service role, and situational factors. Transitory service intensifiers cover any short-term factors of higher service sensitivity, such as personal emergencies (Ziethaml et al., 1993).

Anything the consumer perceives he can easily replace with little recognition of the difference is considered perceived service alternatives. Self-perceived service role is the comfort level the consumer feels completing any necessary portions of the service, ex. filling out forms, navigation of mobile applications. Finally, situational factors consist of anything that the service provider has no control over such as natural disasters or catastrophe (Ziethaml et al., 1993).

Predicted service comes from explicit service promises, implicit service promises, word-of-mouth and past experience (Ziethaml et al., 1993). Official communication from the service provider, such as advertisement and contracts mold the factor of explicit service promises. Whereas implicit service promises include unofficial communication that consumers may interpret as an indicator of service quality, like price or any physical items related to the service. Word-of-mouth, as discussed before, is a form of unofficial communication from familiar sources of the potential buyer. Any past experience a consumer has with a service affects the expectations of the service in the future (Ziethaml et al., 1993).

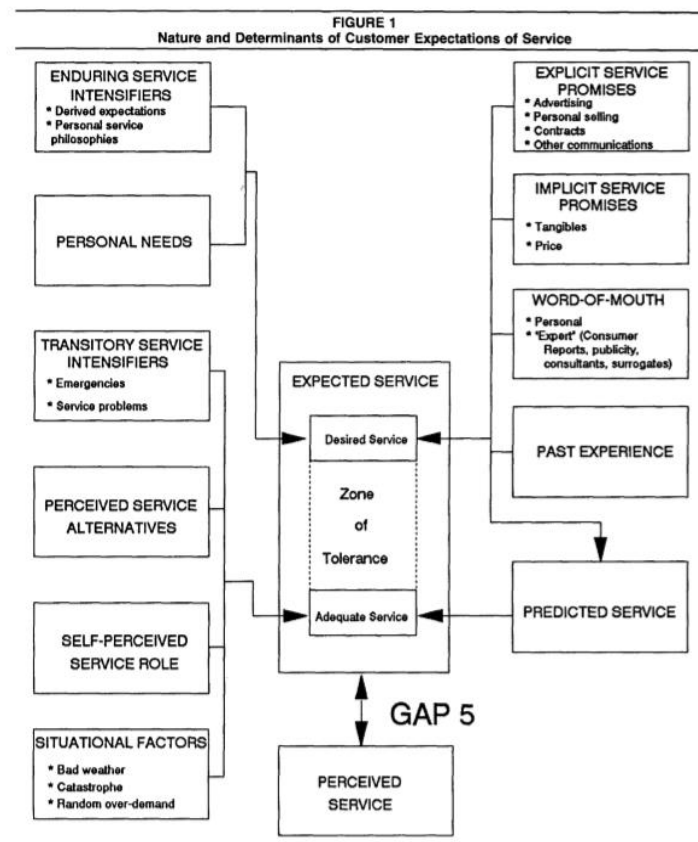


Figure 9 Nature and Determinant of Customer Expectations of Service (Ziethaml et al., 1993, p. 5)

### 3.4 Shopping Behaviors

Technology has not only changed how customers view and create value, but also how they shop for products and services. Gradually, there has been a shift from traditional shopping to online shopping as more people opt to shop online (Pålsson et al., 2017). Online shopping has many advantages over traditional shopping such as convenience, flexibility, and ability to compare

prices. Shopping online is discussed more than traditional shopping via word of mouth as people enjoy sharing the deals or discounts they find online (SivaKumar & Gunasekaran, 2017).

The product's ratings on an online platform, how the product appears and brand recognition aid in forming customer evaluation and eventually a purchase decision (Clemons et al., 2016; Gardial, Clemons, Woodruff, Schumann, & Burns, 1994). Displaying product ratings online allows customers to build trust with the company (Clemons et al., 2016). When attempting to understand the growth of online shopping, it is vital to look at how the customers perceive the trustworthiness of the company and website, "*higher the degree of confidence a consumer has in a merchant, the higher the consumer's willingness-to-pay for that product from that merchant*" (Clemons et al., 2016, p. 1119).

It can be difficult to predict and compare how a customer shops in a physical store to how one shops online. Most people, even coming from well-developed countries, behave differently depending on the shopping setting. The only exception is in the United States where the e-commerce marketplace is so strong and commonplace, due in some part to the stronghold of Amazon, that online shopping habits mirror exactly the behaviors of traditional shopping. Yet in Germany, another first-world country with an established e-commerce marketplace, the shoppers still want to feel a sense of security in their online purchases (Clemons et al., 2016). Of the Nordic countries, Sweden is the largest e-commerce marketplace (PostNord, 2018). According to a PostNord study (2018) following the shopping habits of the Nordic countries (Norway, Sweden, Denmark, and Finland) it is estimated that 3.6 million Swedish people buy online every month due to the flexibility, large range, comfort and ability to compare prices online. The largest categories of what Swedes buy online are clothes (37%), books (28%), make-up or healthcare products (28%) and electronics (23%) (PostNord, 2018).

### 3.4.1 Modern Grocery Shopping Behaviors

Grocery shopping is one of the most financially resistant activities as it is considered a routine habit and purchase (Hagberg & Holmberg, 2017; Kämäräinen & Punakivi, 2002; Park, Iyer, & Smith, 1989). Thus, typically groceries make up a large portion of any country's retail profit (Hagberg & Holmberg, 2017).

While the act of buying groceries has not changed, how one thinks and goes about buying groceries has changed. The majority of people use a car to get to and from the grocery store (Hagberg & Holmberg, 2017). In recent years, customers have expressed a want to cut down on the time they spend grocery shopping including the time it took to get to and from the store. This was one of the many reasons grocers introduced an e-grocery option to their customers (Durand & Gonzalez-Feliu, 2012). The general expansion of the internet and the growth of e-commerce also moved grocers to introduce e-grocery.

There are two factors affecting how one shops for groceries in a physical store – how well one knows the layout of the store and how much time is allotted for shopping (Hui, Bradlow, & Fader, 2009; Park et al., 1989). Park, Iyer, and Smith (1989) say that about one-half of purchases in a grocery store are unplanned. Feeling stressed for time may cause people to feel flustered and spend more than planned (Park et al., 1989). Not being familiar with the store's design may

make shoppers anxious and purchase things without thinking (Park et al., 1989). If there is no time pressure, then the shopper feels more relaxed independent of their knowledge of the store and therefore buys more purposefully (Hui et al., 2009; Park et al., 1989). The presence of other shoppers may also affect what and how much a shopper buys if the store is crowded with people then one may be more apt to just pick something and leave even if they did not plan to purchase that item in the first place (Hui et al., 2009). However, the option of shopping online eliminates all these factors, one can shop when it convenient, one can search the website or ‘online store layout’ as much or as little as they want and since they are shopping from a computer or mobile device there is no worry of social pressures.

### 3.4.2 Modern Grocery Shopping Behaviors in Sweden

In a study conducted by Nilsson (2015), 22% of Swedish shoppers surveyed lived less than .5 km from their most frequented store. 17% of shoppers lived between .5 to 1 km away from their favorite store while 12% live more than 10 km away. When asked about how they planned their shopping trips, 50% of those surveyed said they planned separate trips to the grocery store instead of combining a trip to the grocery store with another activity such as picking up children from activities. The majority of people surveyed (80%) stated that they shop more than once a week (Nilsson, Marell, Nordvall, & Gärling, 2015).

In deciding how to get to and from the grocery store, most Swedish shoppers stated the distance from the store as one of the main reasons for using their chosen mode of transportation. While the researchers analyzed later that residence, income level, and marital status also played a role (Nilsson et al., 2015). During the 2015 study, Nilsson was able to create four categories of shoppers that describe where and how average Swedish shoppers buy groceries. Using the distinction between fill-in (urgent, quick purchases), major shopping (large, usually planned, purchases), convenience store (smaller stores located in the city center) and supermarkets (large ‘one-stop’ stores located outside the city center), he created the four grocery shopper categories: city-dwellers, social shoppers, pedestrians and planning suburbans (Nilsson et al., 2015).

### 3.5 E-Grocery Trend

E-Grocery is considered an e-service which is a “*two way dialogue to build customized service offerings, knowledge about the customer to build strong customer relations*” (Rust & Kannan, 2003, p. 37). In this day and age, it is difficult to forego any sort of e-service and still be profitable as consumers distance themselves from the traditional models (Isman & Ilisan, 2018; Rust & Kannan, 2003). A seamless flow between online and physical shopping has been created and is now expected by customers (Isman & Ilisan, 2018; Pålsson et al., 2017; Rust & Kannan, 2003). It has only been in recent years that we have seen the e-service concept utilized by grocers thus creating an e-grocery platform. Since, there has been a growth in online food orders in Europe (Saskia, Marei, & Blanquart, 2016).

Predicting which customers will buy food online stems from how often they currently shop online, their income and if they live in an urban area (Hagberg & Holmberg, 2017). If all of these factors are high, the probability is also high that these customers would also opt for home delivery of the online purchased groceries (Hagberg & Holmberg, 2017). This market of wealthy, urban, active online shoppers may just be the early adopters of e-grocery, Murphy

(2007) identified parents with young children, those without cars, the elderly and those who have special diets or enjoy cooking as later target groups for e-grocery (Murphy, 2007). Yet no matter the market group, *“today’s shopper is not simply looking for the best price, but also the best choice, best availability and more importantly, the freshest product”* (Isman & Ilisan, 2018, p. 137)

### 3.5.1 Challenges in E-Grocery

There are many different factors that cause current grocers hoping to begin in e-grocery trouble such as, the high storage cost, picking costs and the general requirements for fresh foods mandated by the local government (Saskia et al., 2016). Yet, the highest cost of e-grocery is found in the last mile (Nockold, 2001; Pålsson et al., 2017; Punakivi & Tanskanen, 2002). The last mile is expensive, takes a lot of time and requires a lot of energy (Hagberg & Holmberg, 2017; Pålsson et al., 2017; Punakivi & Tanskanen, 2002). E-commerce of any sort has also affected the CO<sub>2</sub> emissions which are beginning to concern Western consumers (Pålsson et al., 2017). E-grocers will need to formulate a way to reduce their carbon footprint and convince consumers that shopping online is more sustainable than traditional shopping.

Owning the logistics of e-grocery and finding a way to make it cost effective will make one the champion of the e-grocery scene as the biggest challenge is to determine the best method for getting the groceries to the end consumer (Murphy, 2007; Saskia et al., 2016).

### 3.5.2 E-Grocery Trend in Sweden

Every year since beginning the report, online grocery shopping has grown in Sweden (Svensk Digital Handel, 2018). The Svensk Digital Handel from 2017 predicted that 5.7 million kronor would be spent on online shopping in 2018. At the beginning of the e-grocery trend, more matkassor (prepared and pre-packaged meals) were bought than individualized items now the opposite has occurred. More and more Swedish people are opting to buy online citing the time savings, freedom from visiting a physical store, home delivery, flexibility in shopping time and cost saving aspects as advantages. Online shopping across all age groups have seen an increase (Svensk Digital Handel, 2018).

There are many options for buying groceries from almost every major grocery chain, however, only 10% of Swedes have stated that they have bought groceries online (PostNord, 2018). E-grocery is in its early stages across the Nordics. Denmark has the highest shoppers of online food, however, only 11% of Danes have done so. The lowest Nordic shopper of e-grocery is Finland with 7% of people claiming they have bought food online (PostNord, 2018).

## 4 Case Description & Findings

The following chapter is included to aid the reader understand the unattended delivery system created by Nowaste and the dynamics of the participating families thereby giving the reader the ability to actively follow the discussion and results.

### 4.1 Description of Delivery Box & E-drop System

Nowaste first began developing an unattended delivery box in 2017. Now, two years later, the prototype is ready to be tested in the field. The following information was provided graciously by the Nowaste E-drop project team. The E-drop system comprises two parts: the mobile app and the delivery box. The E-drop mobile app acts as the control board and virtual key for the delivery box. Once the app is downloaded, the owner links the app to their delivery box indicating its location and assigning the box a name. The owner may give temporary access to the delivery box for as long or little a time period as they would like. A temporary key is sent via SMS in the form of a QR code. Figure 10 includes screenshots of multiple screens from the version of the app the participating families used.

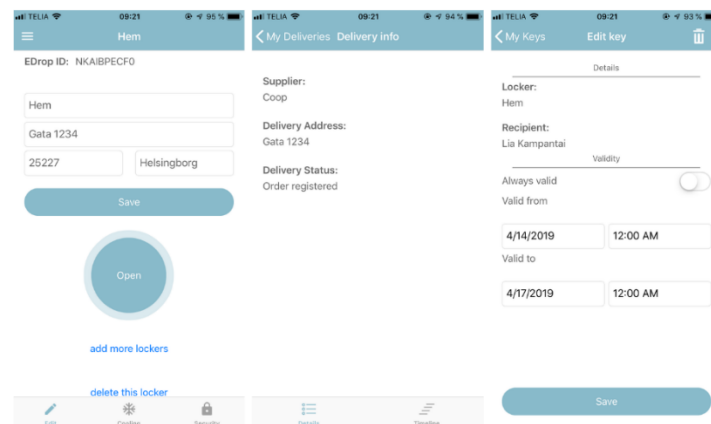


Figure 10 Screenshots from E-drop App

Essentially, the delivery box is a secured mailbox with an integrated 4G-SIM card, barcode reader, and cooling component controlled by the owner via the app. If the owner forgets to turn on the cooling feature, it will be activated once the box senses a delivery. Once the items are retrieved from the box, the cooling function is shut off. Due to the experimental nature of the cooling function, the trial focuses on home delivery of groceries. For the delivery box to fully function, it needs to be connected to a source of electricity. An electrician visited the families prior to the installation of the delivery boxes to ensure that everything was running and set up properly. The delivery box is measured at 70 x 50 x 120cm with the ability to hold four large standard paper bags (Figure 11).





*Figure 11 Prototype of E-drop Participating Families Received*

Nowaste has chosen to collaborate with the grocery store chain Coop during this trial period. There are five physical Coop stores of varying sizes in areas where the families are residing. During the test period, the families were asked to shop on Coop.se for their groceries and other home goods optimally ordering three to four times a month. Currently, Coop offers two types of delivery methods of online purchases— home delivery or click and collect. The families are instructed to choose home delivery on the website where they can later specify that they would like their purchase to be left in their delivery box. Coop requires a minimum order of 500 SEK to be eligible for home delivery (Coop, 2019). Once the order is placed, it will be registered in the app where it can be tracked similarly to the PostNord app.

The participating families live in numerous different neighborhoods across Helsingborg as described in Table 2. The map (Figure 12) below shows these neighborhoods and the locations of the physical Coop stores (green boxes). A few of the families live further outside of the city center, therefore the directions of these areas are indicated for the reader.



Figure 12 Modified Map of Helsingborg including Coop Locations

For the delivery personnel to place the items in the delivery box, they simply need to scan the barcode and the box will open and lock automatically when closed again. There is a narrow instruction panel containing three symbols (Figure 13). The symbols light up to guide delivery personnel through the process.



Figure 13 Delivery Box Instruction Panel

## 4.2 Case Findings

*Each family was interviewed separately thus giving the author the ability to become acquainted with each one therefore giving her a genuine understanding to how each family functions including their shopping habits and expectations for the unattended delivery system. The following chapter presents all ten families separately.*

### 4.2.1 Family A

Family A consists of a husband, wife and their cat. The husband works as a purchaser and the wife as an agency director for a medical supplier. Both drive a car to work. No one in the family has any special dietary needs, but the husband is diabetic. They state that his diabetes does not affect what they buy. They have three grown daughters who no longer live with them. One daughter is living in Stockholm, one in Malmö and the youngest is still in school in Lund. The



youngest daughter lives in Lund instead of commuting to school. They have one grandchild and a second due this spring. They visit their daughters, or their daughters come to visit possibly once or twice a month. It is very seldom that all the children visit home at the same time, possibly during the holidays like Christmas or Easter will they all be gathered together for a meal or few days. They own a home in the country located about an hour and a half away that they visit year-round. They may visit their country home every third weekend during the year and for longer periods of time during the summer holidays. Possibly once a month or so do they have friends over dinner. They have lived in their current home for the past 36 years and raised all their children there.

They have a garden in the back where during the warmer parts of the year they grow fresh fruits and vegetables. They also have a garden at their country home. The husband places employee orders at Everfresh for fruits and vegetables to complement their garden. Between their two gardens and buying fresh food from work, they do not need to buy such items from the grocery store. They shop at their nearest ICA due to its proximity to their home, range of products and comparable prices. However, they are not brand loyal to ICA. They shop at ICA only for convenience. While the children were growing up, they shopped about once a week but now that it is just the two of them, they shop about three times a week and splitting the responsibility of shopping. The wife remembers that she did most of the shopping as the children were growing up but now it is an equal duty between the two. They take the car to the store as it easy to pop in and out either from the way to or from work.

The wife is concern with how the delivery box will look at the front of the house and she would prefer it to be placed on the side. When asked if it was a security issue having the delivery box on the front, she said no it was just that she did not like the way it would look on the front of the road.

They have never ordered food online prior to this project. They do order other things online such as books, house goods, clothes, and sports gear from various online suppliers. The wife said that about ten years ago, they tried to buy food online, but it was too difficult to navigate and manage the website, so they never followed through on the purchase. She stated that this online shop has since closed.

Both the husband and wife are comfortable with using technology, own smart phones and are not worried about navigating the Coop website. When the interviewer met with the pair for the first time, they were already thinking about the future of the delivery box and if other suppliers, such as Bokus, would place their orders in the delivery box instead of at their local pick-up site. Both were curious about the environmental affects home delivery may have and already brainstorming ways to reuse the delivery bags from Coop. While they are excited to test out the delivery box and E-drop system, the wife says that she is worried that she may miss the personal interaction of going to their local store.

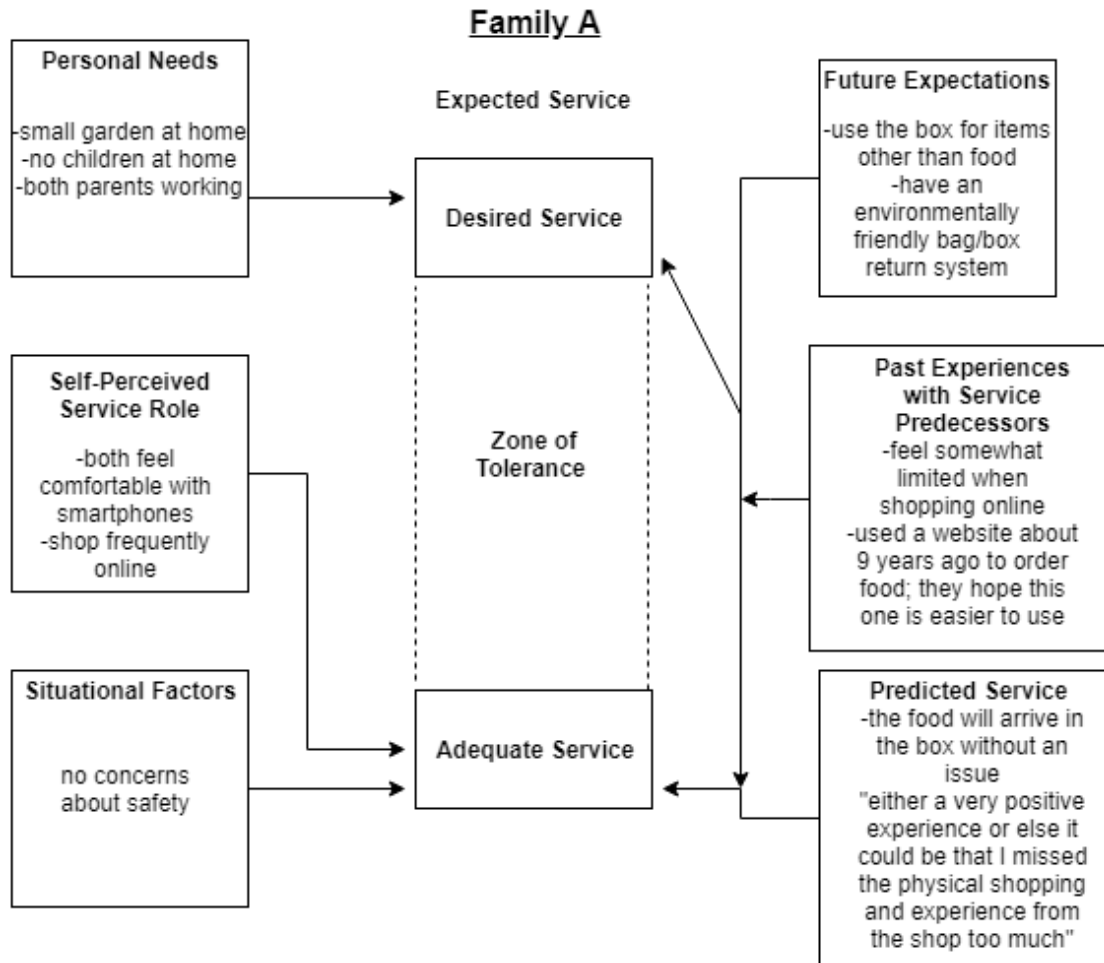


Figure 14 Family A's Nature and Determinant of Customer Expectation

#### 4.2.2 Family B

Family B lives in the Husensjö area of Helsingborg. The household consists of two adults and two children. The mother is a teacher and the father is a business owner. No one in the household has any allergies. The mother tries to prepare vegan food during the week however the son seems to not be an adventurous eater. So, the mother makes a mix of dishes some vegan and some containing meat.

A normal working day starts early with the children waking up around 6 am for school. The children watch TV and the father prepares breakfast while the mother gets ready. The mother will prepare the children's school bags and snacks. A normal breakfast for the children consists of eggs and sandwiches. Around 7:30 the mother takes the daughter to school on the way to work while the father takes the son to preschool. The children and parents eat lunch at school or at the workplace. Depending on the day, the mother picks up the children around 3:30. They sit together as a family for dinner at 6pm. The children go to bed between 7 and 7:30pm. The parents will watch TV after the children go to bed and then go to bed around 10pm. On the weekends, the family enjoys having breakfast together.

The daughter goes to swimming lessons once a week and has gymnastics twice a week. The mother says the son is a little shy to join any sports or other activities just yet. It is common to have friends over from school a few times a week.

The mother does most of the food shopping for the home. For the last six months she has bought almost everything online from either ICA Maxi, Coop or MatHem. Of the three, the mother prefers ICA for its range. Her least favorite is Coop even though it is the cheapest. She believes that Coop does not have the same range as ICA and lacks ecological fruit options. The family has membership cards at both ICA and Coop. They have also tried ordering online from City Gross in the past as well. They usually buy loose goods based on whatever their needs are compared with a prepackaged recipe bundle (matkasse). City Gross is the only store that only offers matkasse.

The mother switched to buying food online because she enjoys the ease of it, the ability to see all the options on one page and spending the extra time with her children. Depending on the purchase and store, the order will either need to be picked up or it will be delivered to the house within a certain time slot. The father usually picks the food order up on his way home. The mother has stated that the time slots the stores give are very broad and the orders have even been delivered after a chosen time slot. When given the option for substitution for an item, she would gladly take it rather make another order to a different store. Additionally, the family buys most items (books, clothes, make-up) online. The mother is not fond of being in a store around many people so instead she opts to buy online and return any items that do not work.

Both the mother and father have smart phones and feel comfortable using them. The father is a business fanatic reading on new trends and current on-goings in the field. He is enthusiastic about the possibility of having a delivery box installed outside their home as he believes it is the future of business. Whereas the mother is more excited to eliminate a step in her shopping process and create an easier shopping journey for her. The two of them are already thinking about other things they can buy, have shipped and returned through their delivery box. The mother predicts that their thoughts on home food delivery will only become more positive with the installation of the delivery box as they are already so accustomed to buying food online.

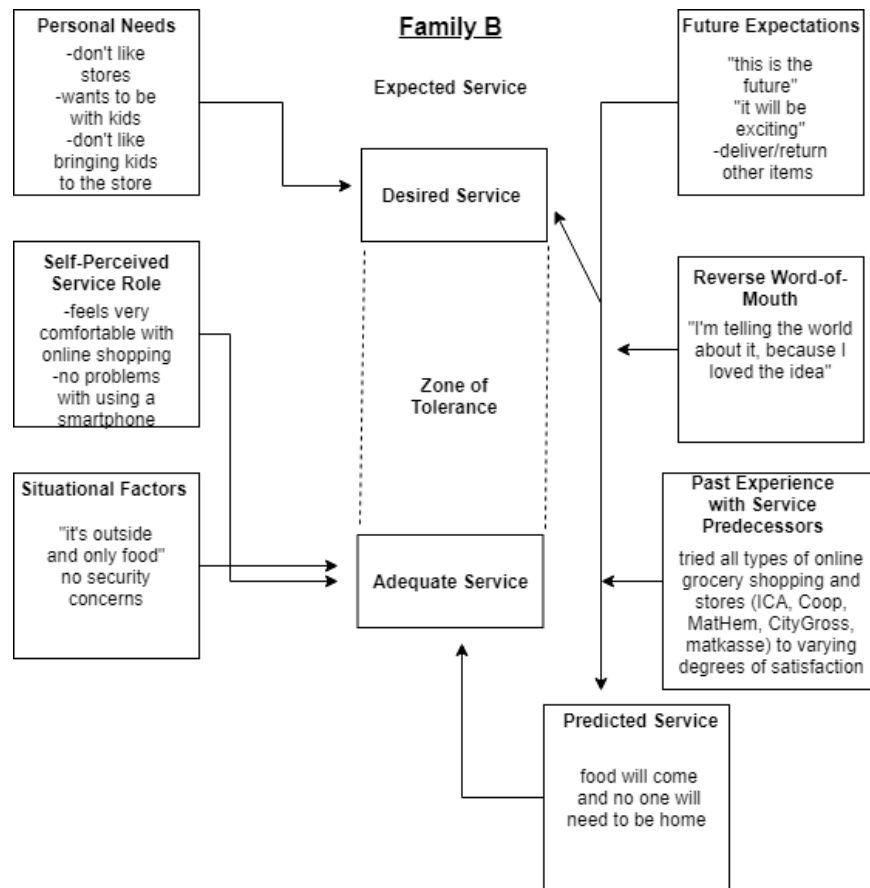


Figure 15 Family B's Nature and Determinant of Customer Expectation

#### 4.2.3 Family C

Family C is comprised of two adults and two children. The father works as an operations manager and the mother works in real estate. Both parents drive to work. Currently the family does not have any pets, but they are considering getting a rabbit for the daughter.

A normal day for the family begins at 6:30 getting ready for work and daycare for the children. The wife then takes the children to school while the husband goes straight to work. One of the parents pick up the children and typically the whole family is home for the day by 4:30. The family tries to eat dinner around 6pm after which they prepare the children for bed. The children participate in sports about twice a week. It is commonplace to have other children playing at the house and having their children playing at other houses.

The father has a strong interest in food and cooking. He tries to get the children involved in preparing the meals, however as they are still young it can be difficult to keep them interested. The parents enjoy getting local products buying directly from the farms in the area. He states that even during the Proof of Concept period he will continue to buy products from the farms as he is not satisfied with the selection Coop provides.

Currently the parents split the task of grocery shopping. The father stated that is hoping to save both time from going to the store and time from discussing who will go to the store. He wants to

spend more time cooking dinner than shopping for it. He is concerned that in the end they will not save time as their planning may fall short therefore forcing them to swing by the store to pick up the missing items. He does not mind going to the store but when the added element of having tired children in tow is when shopping becomes tiring and a chore.

Both parents feel comfortable using smartphones and ordering items online. On average, the family makes an online purchase once a week. Typically, they order clothes, makeup, books and toys online. Even though both parents feel confident in using technology, they could not call themselves techies. They normally wait, see how others react to the new technology and allow any bugs to be fixed. However, when given the chance to try an unattended delivery service geared towards the delivery of groceries, they jumped at the opportunity as they could see this service creating drastic improvements towards their shopping habits and daily lives.

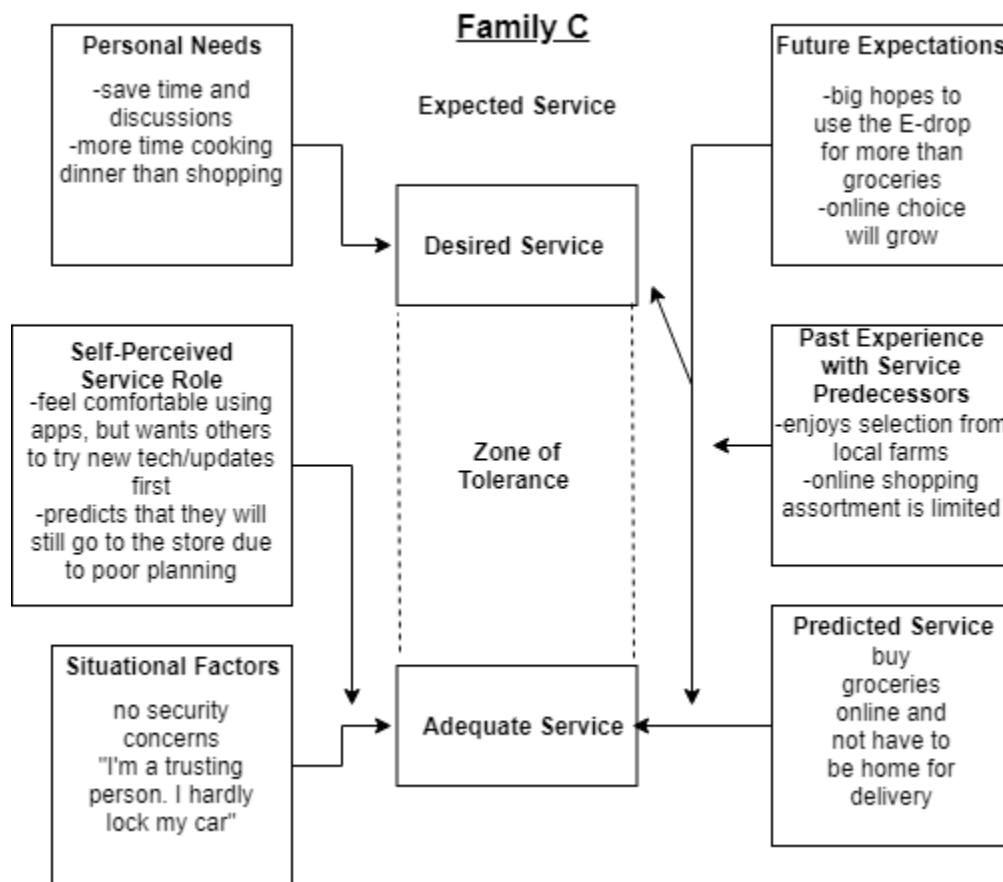


Figure 16 Family C's Nature and Determinant of Customer Expectations

#### 4.2.4 Family D

Family D includes mom, dad and three school aged children. The mother works as project manager and the father works in the implementation of CRM systems both having offices in Malmö to which they drive. One of the daughters has a nut allergy. The mother tries to prepare more vegetarian meals citing a large media drive to eat less meat. At least one of the children has

an afterschool activity during the week such as football or gymnastics. The family does not have a pet.

At 7am either the mother or father heads to the office leaving the remaining parent to prepare the children for school. The older two children go to school by bike but the youngest is driven to daycare. The parent who did not prepare the children for school picks them up around 4pm and begins dinner. The family tries to eat dinner together but find it difficult to sync schedules.

The daughter, who is the oldest, regularly has friends over to play and sleepover. The other two children also have friends over to play but are a little too young for sleepovers. Usually the mother's parents help by picking up the children and preparing dinner. The father's parents help similarly about once a month.

The family buys almost everything online because it is easier to have something sent to the house than to pack the children in the car to go to the mall or city center. Both parents feel extremely comfortable making online purchases and using smartphones. The mother does not care about keeping up with the technology curve, however when the father heard about the possibility to become part of the project, he expressed a deep interest in seeing how the service worked and if it helps innovate habits.

The mother does most of the food shopping for the family. They normally do one large weekly shopping and replenish with small purchases such as milk or fruit throughout the week as needed. She has tried a few different online grocery options, but also visits a physical grocery store as well. There is no norm to which method is used when, grocery shopping method is based on the mother's mood, schedule and the work schedule of the father. She prefers to use the self-checkout due to its ease and quickness.

When the author met with the mother, the mother did not know what the delivery box would look like, so the author showed her a few pictures. After seeing the box, the mother had no problems with the design of the box saying that it is something different and new so the neighbors will be curious about what it is. While the neighbors may be curious about the new 'mailbox' the family has outside their home, the mother is not concerned about the security of the box citing a trust for her neighbors and that if a car is in the driveway one would not be able to see the box.

The mother is hoping to become more organized in their shopping, at the moment when she visits the store, she always purchases things that she had no intention of buying. While she wants to stay away from buying unnecessary items, saving money is not her main goal of this project. They would like to save time and become more organized as a family unit. The mother is also looking forward to being able to allow her parents or in-laws pick up any deliveries that comes while they are taking care of the children giving her and her husband more flexibility in their schedules.

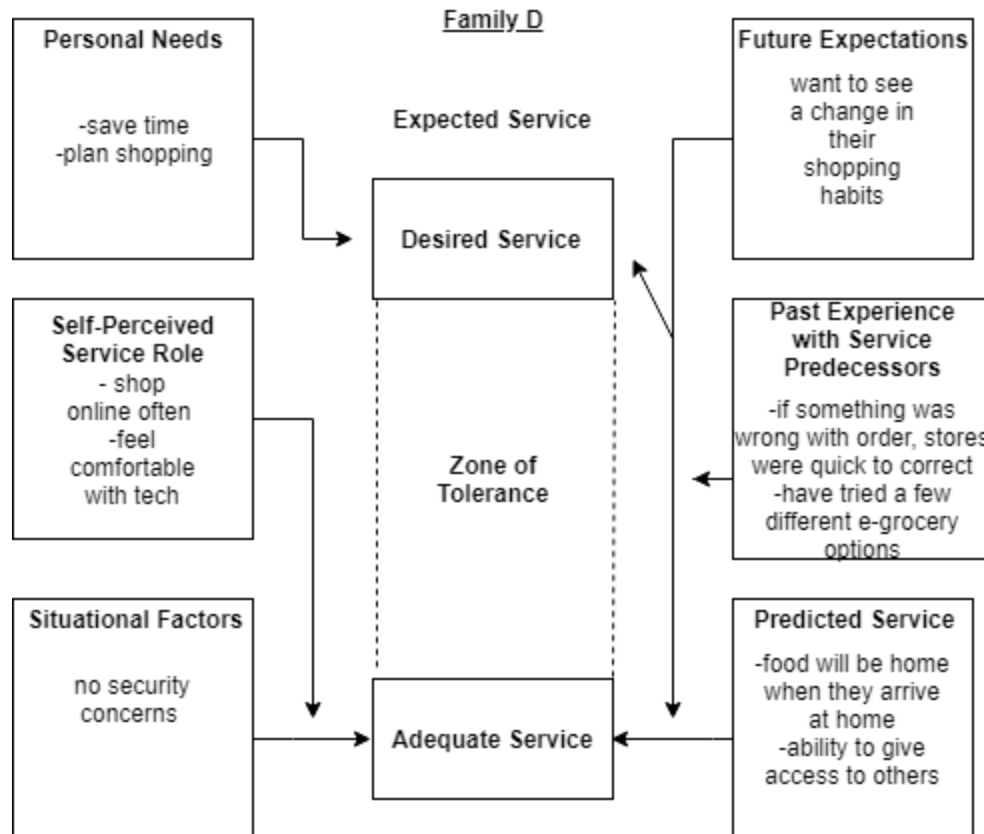


Figure 17 Family D's Nature and Determinant of Customer Expectations

#### 4.2.5 Family E

Family E includes a mother, father and two children. The mother works in finance and the father is an engineer. The family owns a cat and hamster. The parents get up around 6am to get ready before waking up the children at 7am. The family usually sits down for breakfast together before going to school or work. The mother will take the children to school on her way to work. The mother's parents pick up the children from school and see that they get to after-school sports and start their homework. Both children play sports two to three times a week after school. The parents also try to train a few times a week.

The father does the grocery shopping for the family as the mother greatly dislikes visiting the grocery store. Every few days he will buy things online and pick them up on his way home from work. They do occasionally forget things therefore having to go to the store and taking away from the perceived benefits gained through click and collect. He has had very good experiences with click-and-collect that the parents thought it would be interesting to see how home delivery with E-drop would work for the family.

The family tries to cook together every night as a way to connect and share their days. The mother finds it relaxing to prepare the food with the help of the children. They look over homework together or just unwind as a unit.



The family buys mainly clothes and makeup online from websites like Boozt, Zolando or Sportamore. The mother prefers going to the physical store when shopping for clothes, shoes or make-up however she rarely finds the time to enjoy the shopping process becomes rushed in the store so then she would rather buy online when she has the time. With their online shopping experiences, the mother does not foresee any issues navigating the mobile app or physical box involved in the project.

In the future, the mother would really like to be able to use the delivery box for all types of purchases not just groceries making Christmas shopping less stressful. She has no concerns for the security of either the box or the deliveries.

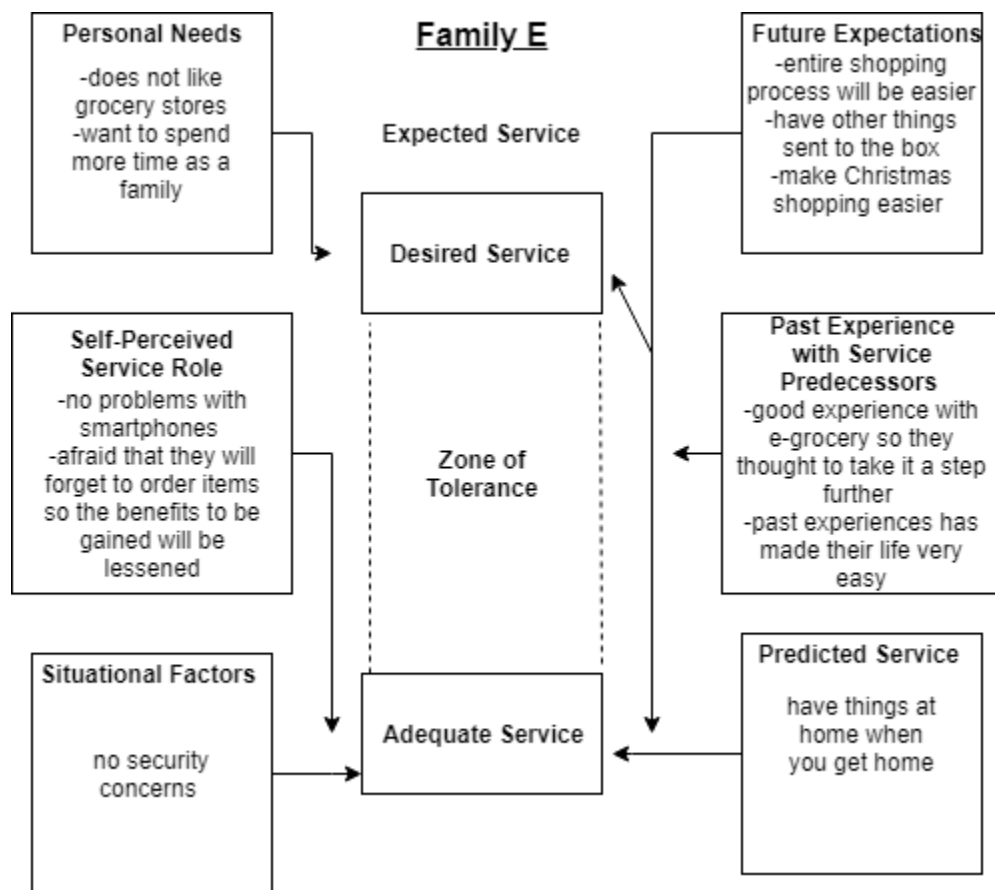


Figure 18 Family E's Nature and Determinant of Customer Expectations

#### 4.2.6 Family F

Family F consists of two adults and two children living in a radhus located in the Läröd neighborhood of Helsingborg. The children in house are aged six and twelve. The mother works as a civil engineering consultant at a firm in Helsingborg. The father is a sales and marketing manager in Malmö. No one in the home has an allergy and the family neither vegetarian nor vegan. In the next month, the family will be adding a dog to household.

A normal working day begins around 7 am with breakfast. Only the children and the father eat breakfast at home while the mother eats breakfast at the office. Then one of the parents will take the children to daycare on the way to work. The father always drives to work while the mother will either drive or take a scooter. The parents are at work until about 4 or 5 in the evening. A few times a week, the parents will go to the gym after work. The daughter attends football practice three times a week. The son goes to swimming lessons once a week. It is normal for the children to have friends over a few times a week to play after school. The family only eats dinner together a few times a week. Either one of the parents is at the gym while the other eats with the kids or one parent may travel therefore the other stays and eats with the children.

The mother does most of the food shopping and always drives to the store. She does most of the grocery shopping at their nearby ICA store. While she has shopped at Coop and Willys previously, she enjoys shopping at the ICA due to its proximity to the home and quality of the store. Explaining that for most of her life she has shopped at ICA even her parents shop at an ICA. She says that she does not feel like she spends a lot of time planning or shopping for groceries. She explained that most of their shopping purchases are spur of the moment, coming home asking everyone what they would like for dinner before heading to the store. Shopping for groceries is an enjoyable thing for her, she enjoys getting away from the house, walking around and seeing the store has to offer. However, she doesn't talk to anyone as she shops, and she opts to use the self-checkout for ease and to save time. She estimates that she visits the store about seven times a week. She recounted that last Sunday the family visited the store three separate times – once in the morning to buy breakfast items, again in the afternoon for a picnic lunch and a third time in the evening for dinner. While this is currently how the family shops for their food, the mother expressed a desire to change their shopping habits instead planning better and shopping once a week. In the past the family planned more regularly their meals and shopped accordingly but with the family's busy schedules that habit has fallen.

The family buys many products online from clothes to furniture from a wide variety of stores. The family has bought matkasse before from a large chain in Sweden. The overall experience of the matkasse was good but at times they were a little disappointed with the quality of the fresh produce. Yet they enjoyed the convenience of the matkasse.

Both the husband and wife have and feel comfortable using a smart phone and the apps on their smart phone. The family, especially the father, enjoys trying new technology. The mother stated that she just wants the product to work and that it is simple to use. When asked how she feels about the upcoming project, the mother responded that she was both optimistic and skeptical. She wants it work but also at the same nervous that she will miss going to the physical grocery store. She believes that even after the delivery box is installed, she will still go to the store a few times a week because she enjoys going to the store.

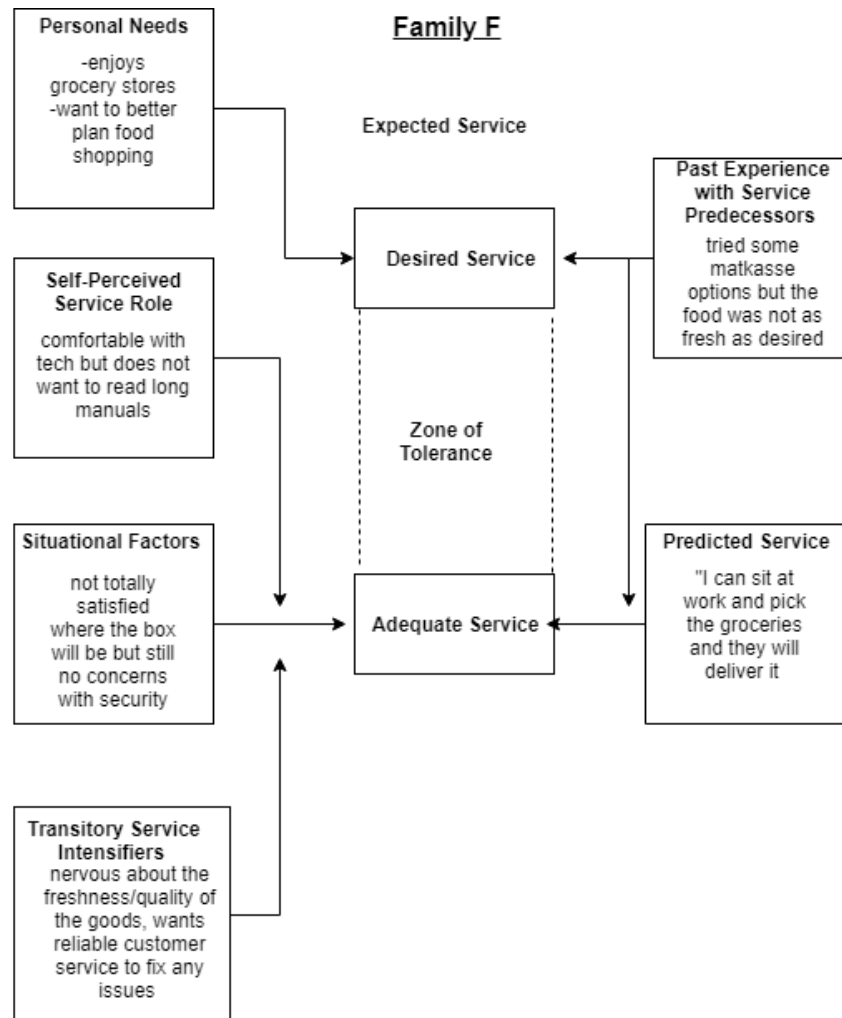


Figure 19 Family F's Nature and Determinant of Customer Expectations

#### 4.2.7 Family G

Family G consists of two adults and two children. The father is an engineer and the mother is an accountant. The family has both breakfast and dinner together. The family leaves for either work or school at 7:30. The younger child stays at school for daycare while the older plays sports. The family prepares the dinner together and sits down to eat between 6-7pm.

Grocery shopping is split between the husband and wife. The husband finds going to the store somewhat enjoyable in the evening when there are fewer people. They have tried Linas matkasse previously. The family enjoyed the service of the matkasse but not the actual food and recipes included in the matkasse.

The family normally orders something online about twice a month. Online orders normally are things like clothes, shoes, makeup or perfume. The family feels very comfortable using their smartphones for a variety of uses.

The father is interested to see how the E-drop service will affect their food shopping habits and he is hoping to save time and avoid going to the physical store.

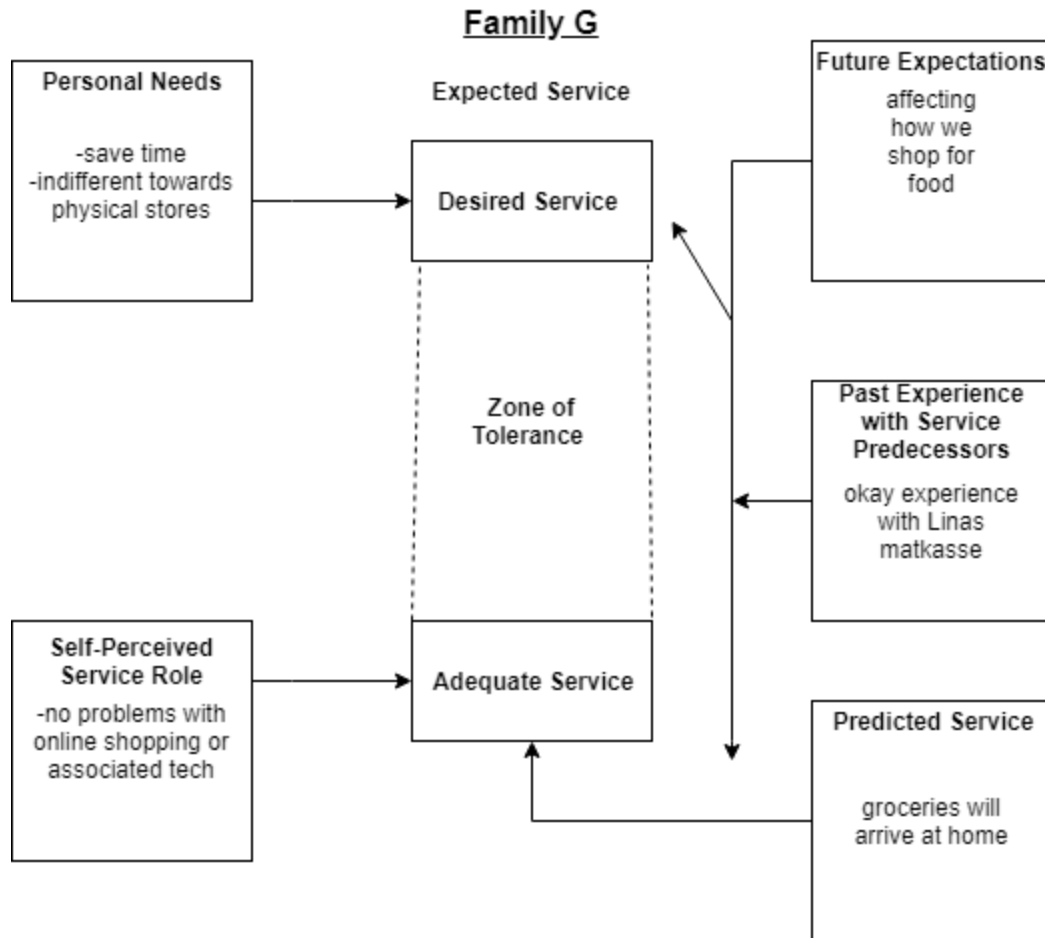


Figure 20 Family G's Nature and Determinants of Customer Expectations

#### 4.2.8 Family H

Family H contains two adults, two children and a dog. The mother works as a project manager and the father works as a technical manager. The youngest child is allergic to milk, so the entire family is currently milk-free. The entire family has an interest in sports and training.

The father wakes up at 5:30 to leave for work by 6:30. The mother gets the children ready for school and walks them up to the school before driving to work. The parents take turns picking up the children from school. A few times a week the children will play at a friend's house or will have friends over to play. Almost every day the family plays a sport or trains after school or work. The family eats dinner together between 6:30 and 7 then the children go to bed between 8:30 and 9:30pm.

Every other week the family receives Linas matkasse which they find very easy and convenient with all the ingredients included involving few decisions. The parents split the responsibility of the remaining grocery shopping. They have tried other online grocery shopping options in past but felt constricted having to plan to be home when the delivery arrives.

The family uses their smartphones in almost every aspect of their lives and have no concerns about using their phones with this service. The father has no concerns for the security of the delivery box.

The family's hope for the E-drop is that their online shopping habits will increase and become easier to pick up their purchases thus saving time. The father believes that this is a good service that will bring Swedish families more flexibility and ease of mind when buying online. He has discussed the project with his co-workers and friends who seem to agree with him.

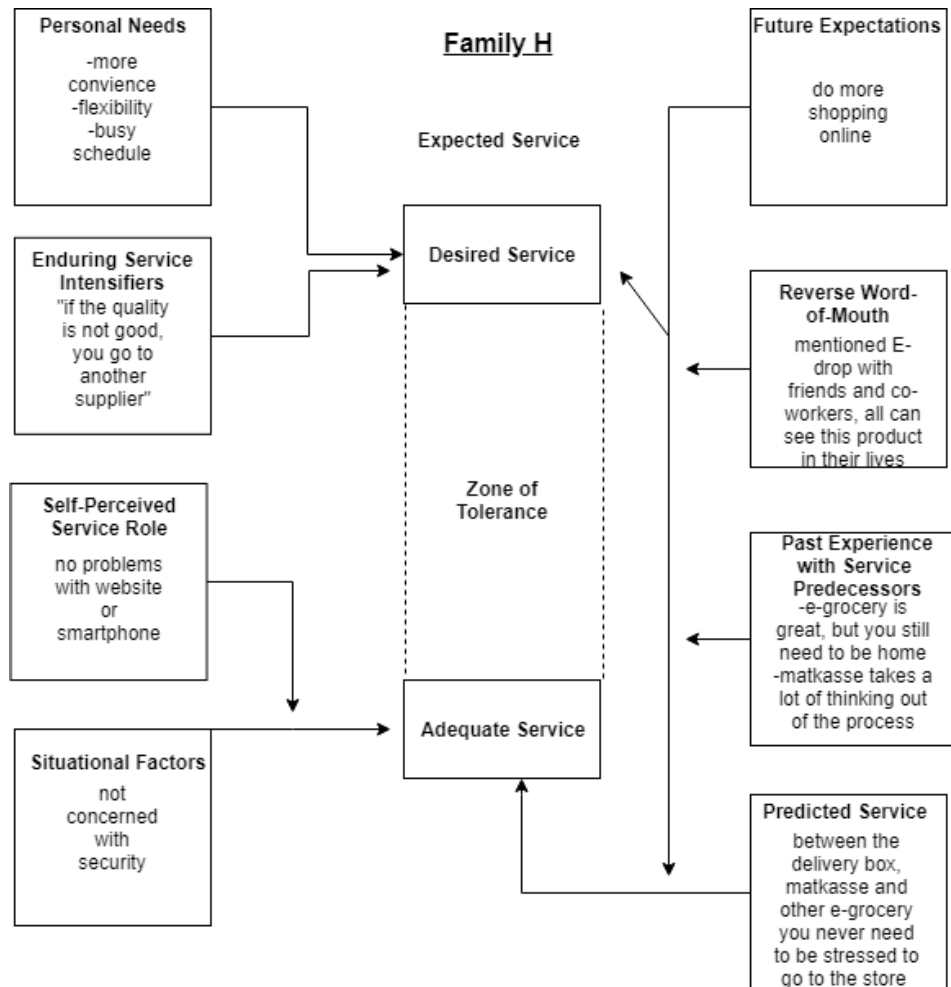


Figure 21 Family H's Nature and Determinant of Customer Expectations

#### 4.2.9 Family I

Family I consists of two adults and two children living in the outskirts of Helsingborg in a small village called Råå. The father is a package design engineer by car to work unless he is traveling for work which is about 60 to 70 days of the year. The mother works in HR for a large multi-national business. The mother also travels quite often for work, about every other week to either Oslo or Stockholm. The children both attend daycare with the eldest in the first grade. No one in the home has an allergy, but the parents buy lactose-free milk for the younger child. The family

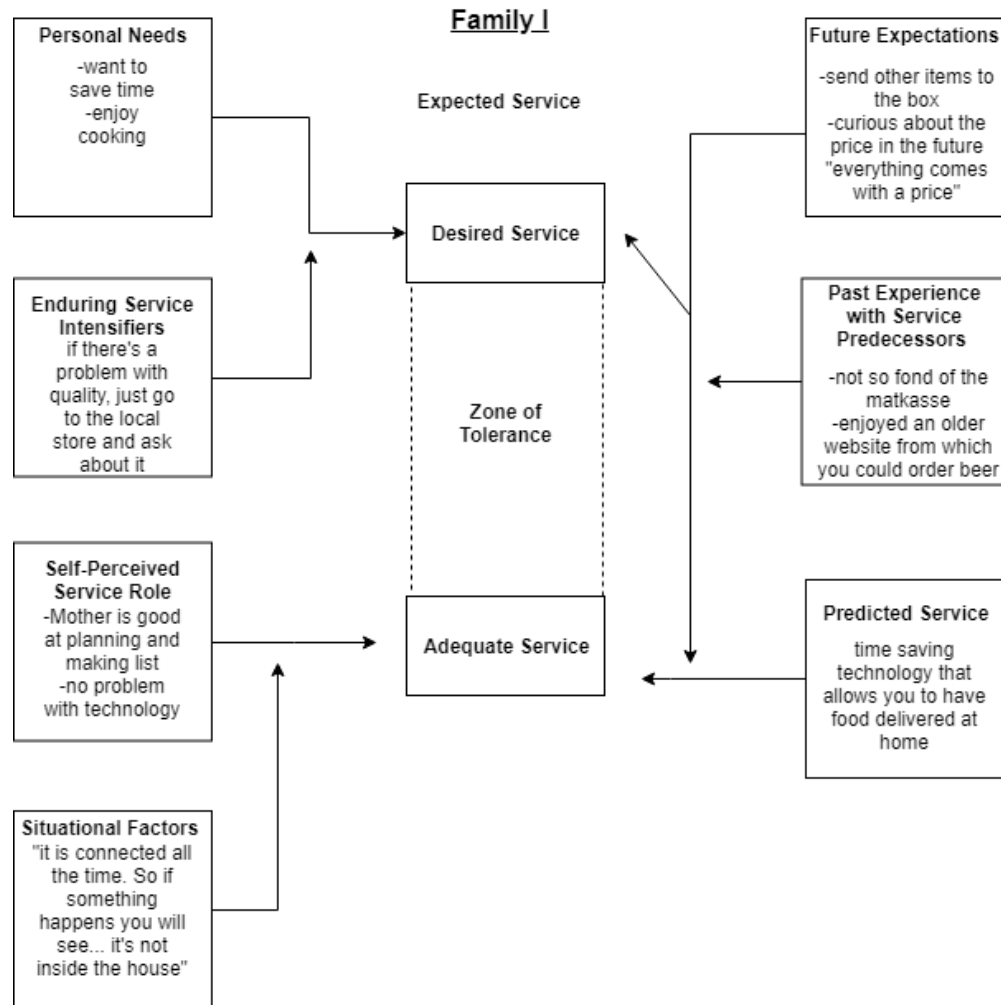
owns a cat who the father describes a spoiled and beloved. When the author first met the family, they were expecting an au pair to start at the home in the next few days.

A normal day starts for the parents around 5:30 when they get up and start to get ready. Then they get the children up and get to school by 7am. If the girls are at school before 7am, they are fed breakfast. The father explained how much time is lost in the morning if they cook breakfast at home, so they just take the children to school early to save time. The parents are hoping in the future with the au pair they can all eat breakfast together as they will then have someone to help fix the breakfast, clean up and get the girls to school. In the past, the parents skip breakfast all together but recently, the father has started to eat a small breakfast. Both parents normally buy lunch at the office while the girls eat lunch at school. Then one parent picks up the children at 5pm. The grandparents pick the children on Mondays and about once a week the children may go home with a friend. The other parent may get home around 7:30pm. Both girls go to swimming class once a week. The older daughter has gymnastics class twice a week.

The mother does most of the meal planning and shopping in the home. She plans for a few weeks at a time and shops for about ten days at a time. She prefers to use the self-checkout for its ease. The father shops for the breakfast food. They shop at the Coop near their home and have a loyalty card to Coop. The store manager at the Coop where they shop seems to be very good about creating a personal touch in his store – small things like treasure hunts throughout the store or ordering special cuts of meat. The father says that while these extra touches are nice he is not super concerned about missing them saying that the store is not that far away and if he plans to have a special cut of meat then he can always go up to the store.

The family home is covered with cookbooks from around the world. The father explains that the family interest is food and cooking. However, with the hectic work schedules and children, most of their cooking is quick and child-friendly (pasta, meatballs, etc.). In the past they have bought food online, about 10 years ago there was a website that allowed you to buy your food online and pick when it was delivered to your home. However, this company has gone bankrupt since. The family has also tried Lena's matkasse but found it too stressful and not suitable for the children. The family does buy things online but not to a great extent. The father is apprehensive to buying things online, but does not feel the same about buying food online as he feels like he has a good relationship with the store manager at his local Coop.

Both parents own and feel comfortable using their smartphones. They both use their smartphones and other technology extensively in their jobs. They do not feel like they need to be ahead of the tech curve, they just want the technology to work. Since the husband works in food packaging, he is very interested in how the technology and delivery box system works. He believes that this is the way of the future which is why he was so driven to test out the system in the first place.



*Figure 22 Family I's Nature and Determinant of Customer Expectations*

#### 4.2.10 Family J

Family J includes two adults, two children and a dog. The father is the CEO of a logistics company and the mother is a teacher. The family is trying to eat a more vegetarian diet, but not fully. The children participate in gymnastics and innebandy a few times a week after school.

The day begins at 7am to get ready. The mother takes the children to school as she teaches at the same school. The mother typically finishes her workday around 1 or 2pm then the children come home from school between 2 and 3pm. The children either play sports or play with friends. The family sits for dinner together at 6pm. The older child is keener to help with the preparation of dinner.

The wife does most of the food shopping for the household. She goes to the store once a week. She does not enjoy going to the grocery store, she finds that it takes a lot of time and usually would like her husband to join her as she finds it difficult to carry all the groceries. They have bought food online before and find it very easy to sit after the kids have gone to bed and place an order. However, while the ordering process is easy and flexible, they feel constrained when it came to the delivery of the goods.



The family has become very comfortable with making purchases online. They buy clothes, shoes, home goods as well as presents for birthdays and Christmas. The father has no concerns about safety of the deliveries or delivery box.

The family opted to be a part of this project because it will make grocery shopping easier for everyone saving time. The father also sees this service as a benefit for both logistics companies and consumers as a last-mile solution.

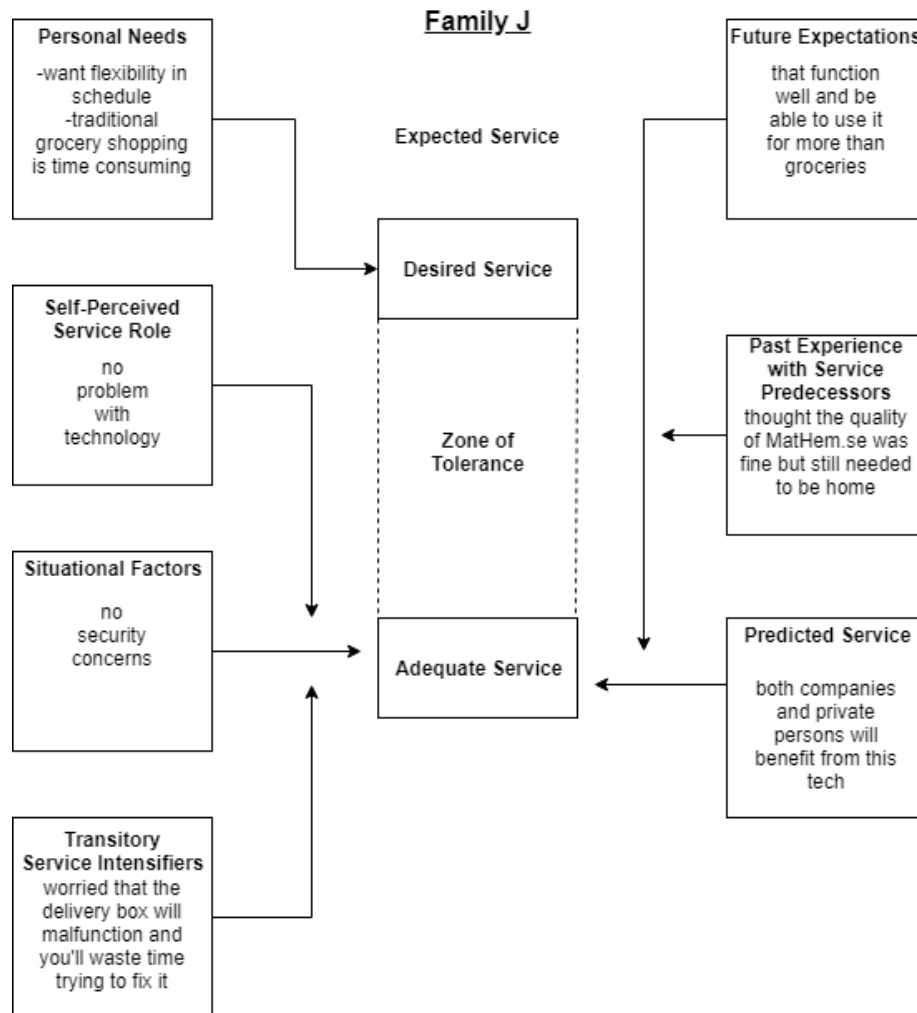


Figure 23 Family J's Nature and Determinant of Customer Expectations

## 5 Results & Discussion

*This chapter describes the results from the case studies including patterns that arose during the interviews and observations while simultaneously describing how these results either support or contradict previous studies and literature. Suggestions for future research to further explore expectation creation for an unattended delivery service are included in their appropriate section.*

### 5.1 Nature and Determinants of Customer Expectations of an Unattended Delivery System

The initial analysis of the ten families' expectations led to a holistic analysis and formation of an extensive model of the group's expectations (Figure 24). As this is a new service, some original antecedents based on established services were altered or deleted completely as seen fit. Each antecedent will be discussed respectively.

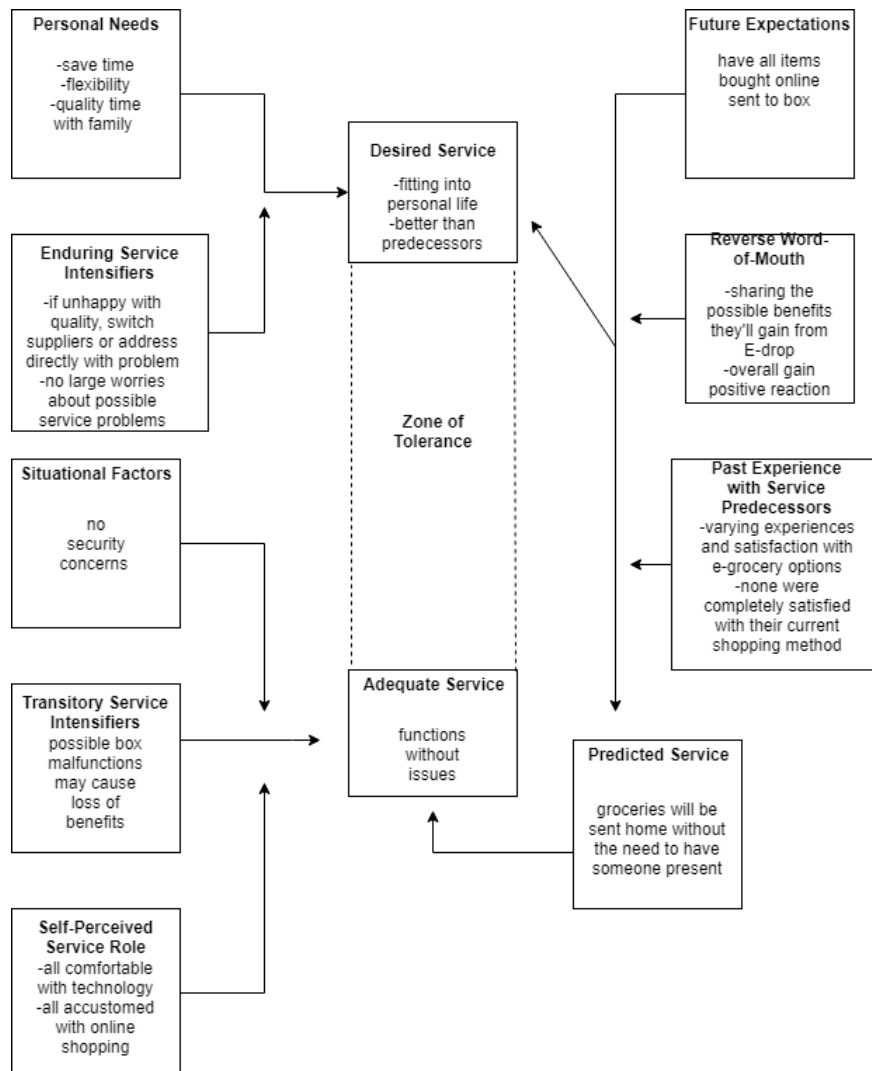


Figure 24 Nature and Determinants of Customer Expectations of an Unattended Delivery Service

## 5.2 Desired Service

Achieving the desired service level is what any company aims to meet when producing a service or product for their customers. By understanding where most customers place the desired service, companies can better comprehend how to provide their customers with that desired service retaining loyal customers (Mascarenhas et al., 2006; Meyer & Schwager, 2007; Roy, 2018; Verhoef et al., 2009; Ziethaml et al., 1993).

The desired service in this situation indicates the highest hope the families have for E-drop. Companies providing new services such as Nowaste will strive to have their service meet all the requirements of customers so it lies in the desired service range, but in reality, it will fall for most families in the zone of tolerance (Klaus & Maklan, 2013; Roy, 2018; Verhoef et al., 2009).

The desired service was determined as ‘fitting into personal life and better than predecessors’ (see Figure 24). By this definition, the antecedents of personal needs and past experience with service predecessors had the largest impact in determining the desired service. The factors of reverse word-of-mouth and future expectations affect the desired service as well. Findings for all factors are presented in the following sections with a discussion.

### 5.2.1 Personal Needs

As this is a service, that customers have no prior experience with, what they probably will base much of their desired service decisions upon what they perceive they lack in their current grocery shopping experience and how their personal family dynamics can potentially benefit from the delivery box system. Their personal needs will be one of the more important determinants of their overall expectations as the families have very little to compare or base their opinions upon. One’s personal needs related to service are almost impossible to alter once established (Assouad & Overby, 2016; Woodruff, 1997; Ziethaml et al., 1993). If the delivery box fits into their family life as they expect then they will be satisfied.

Each family structure and lifestyle are different, but in general, there are three overarching hopes arising from personal needs that connect all ten families:

*Saving Time:* All ten families lead hectic lives. They see the time planning and shopping for groceries as a major cost that they would rather spend elsewhere as they could purchase the groceries during the workday and optimally have them waiting at home at the end of the workday. Glancing at the families’ calendar reinforced how little time the family had to spare in an average week.

*Flexibility:* Connected with saving time, the families who have tried online grocery options still state that they desire more flexibility than what is given through these options. They want the ability to shop online and have their groceries delivered to their home without anyone having to be home unlike the online grocery delivery options now. As the Father from Family J explained, “*stuff happens with the kids that they want to play, and we have to go to get them and so on, so we feel that we get stuck [waiting] at home when we have delivered a food order*”.

*Quality Time with Family:* A common thread throughout the ten families is that mealtimes are considered family time while the shopping for the meals is not. Bringing the children to the store has been stated by multiple parents as chaos and they try to avoid it at all costs. Parents want to have more energy to spend this time with their children rather than spending their energy keeping the calm in the grocery store – they are hoping that the delivery box can help the family create more quality time. From the families' homes, one could deduce what was considered quality family time for every family – some families had stacks of cookbooks lining the kitchen while others had tennis rackets and innbandy sticks lining the entryway. Some see involving the children in the preparation of meals serves as a way to enjoy each other's company, while others want to grow closer as they play sports together. Regardless of the family's choice of quality time, utilizing the delivery box will allow them to spend less time on a chore and more time with their family.

Meuter (2000) stated that one predicted goal of self-service technology such as E-drop was to help customers save money (Meuter et al., 2000). Yet, none of the families expressed hopes to save money. This could be a result of the general demographic of the participating families – all of which were in a higher than average income bracket. This market is predicted as one of the first adopters of unattended delivery boxes (Murphy, 2007).

### 5.2.2 Future Expectations

Many pondered the possible use of the delivery box for much longer than the determined project timeline. Those who had higher or more creative expectations for the delivery box system in the future seemed to have a higher desired service level than those who had more reachable expectations.

All wanted to have the ability to have all online orders shipped to the delivery box (clothes, books, make-up) therefore making the physical retail store experience almost non-existent. Mothers from Families B and E reflected how easy and enjoyable Christmas shopping would become if items like toys or books could be sent to the delivery box.

Going one step further, some considered the possibility of returning items via the delivery box. Having the ability to return items through the delivery box would give families even more flexibility and help them save even more time foregoing having to take items back to either a physical store or to a pick-up point. The parents of Family A stated that this could also help lessen excess carbon gas by vehicles, *“if they would be able to coordinate the delivery, so [they] make a small route to go to the homes. That may be more efficient...rather than everyone going back and forth”*.

Another environmental-friendly idea was mentioned during the interviews. Currently, all the e-grocers use one-time-use paper bags to deliver goods. While these bags are recyclable, Family A questioned how difficult it would be to implement a return system of either cloth bags or plastic cartons. Grocers would send the items in one of these reusable containers, families would place the containers in the delivery box and the grocer would take them when they deliver a new order. As the use of delivery boxes become more mainstream, more and more retailers could implement

a similar system creating a closed supply chain and a more environmentally friendly system overall (Hagberg & Holmberg, 2017).

With all these suggestions for how the delivery box may behave in the future, it seems that customers are becoming more distant from the physical retail experience clinging to the possible benefits of an unattended delivery box leaving the question of the fate physical stores to be answered.

### 5.2.3 Reverse Word-of-Mouth

While the test families may not be able to hear opinions from others who have previously used the service, they can tell their friends and extended family about the service they are hoping to gain from the delivery box. Functioning as a sort of ‘self-pump-up’, the role of reverse word-of-mouth works similarly to traditional word-of-mouth by increasing the level of desired service.

Since this is not an established service yet in Sweden, it is difficult to impossible to spread either positive or negative opinions about the service that influence others to use the service. However, as discussed before, word-of-mouth is one of the most important determinants for forming expectations and shoppers are more prone to share about their online shopping experiences (Shaw & Ivens, 2002; SivaKumar & Gunasekaran, 2017; Trișcă, 2017). Through the interviews, it was seen that word-of-mouth does play a role in forming expectations just not in the traditional sense. Participants that discussed having shared their participation with friends or co-workers appeared to have a more excited outlook on how the service would work. Almost as if sharing the news of the participation in the project served as a pep-up for what is possibly to come. The mother from Family B said that she is “*telling the world about it because I loved the idea*”. The same mother later speculated about all the possibilities for the delivery box in the future envisioning it as a method for receiving and returning goods other than groceries such as clothes or toys. The excited manner she expressed her hopes for the delivery box system raises her level of desired service. She is hoping the system will be pleasurable and a success so she can utilize the system deeper into her daily life. Father from Family H spoke with his colleagues and they agree that a service like this can help give the average Swedish family more flexibility in their schedule and create a more convenient shopping experience for all.

To see more precisely how reverse word-of-mouth affects both the desired service level and how one interacts with the service could be a point of interest in future research. Future research may expose a correlation.

### 5.2.4 Past Experience with Service Predecessors

Dissatisfaction with the current grocery options paved the way for companies like Nowaste to attempt to find a solution through an unattended delivery box. None of the families felt a strong connection with the options currently available to them. This emotionless switch may represent a lack of loyalty that could hinder the desires to switch to a new service (Mascarenhas et al., 2006). While one cannot compare this service directly with past experience, past experiences with grocery alternatives could affect how one expects the delivery box to behave.

One could visit a physical grocery store to complete their shopping. Some families who normally went to a store found shopping at a physical store tiring and time-consuming. The Father from

Family C compared going to the grocery store with a tired child with a zoo. However, two mothers stated that walking through the grocery store served as a way of relaxation or a social outlet. Mom from Family F likes the grocery store without children claiming that it was her time to relax. These opinions on the physical grocery store affect the level people are willing to welcome a substitute.

As online shopping has expanded, grocers have given shoppers the option to shop online for their groceries with multiple delivery options (PostNord, 2018). Families mainly using e-grocery still find it to take time and restricts their schedule. Household found ease in buying a matkasse or ordering groceries online but still found it tiresome to wait at home to collect the goods. Father from Family I said that he is hoping to take the last step out allowing family's schedule to be even more flexible. Even with the 'click and collect' option, one still needed to drive to the store to pick up the groceries and depending on the family's schedule, the store could be out of the way thus wasting time that could be better used elsewhere (City Gross, 2019; Coop, 2019; ICA, 2019; Willys, 2019). The delivery box would allow one to forget worrying about collecting items from the store, they would already be home upon your arrival at the end of the day.

The family's use and comfort with e-grocery affect what they are hoping to gain through the delivery box. If the family does not have much experience with e-grocery, then their expectations for the service will be much lower than those who use e-grocery regularly.

### 5.3 Adequate Service

As discussed previously in the Frame of Reference (Chapter 3), adequate service is the level of service that customers accept. Adequate service fulfills the minimum requirements prescribed by the consumer. From the findings of the ten case studies, the adequate service of E-drop (Figure 24) is that the system functions without issues. Factors that build a customer's adequate service level include transitory service intensifiers, perceived service alternatives, self-perceived service role and situational factors (Ziethaml et al., 1993). The findings establish that situational factors and self-perceived service role are the most influential antecedents in determining adequate service.

#### 5.3.1 Situational Factors

One situational factor that could greatly affect the service provided through E-drop is the box's security. The development team at Nowaste took great care in developing software to ensure the goods inside the delivery box would stay safe until retrieved. However, none of the participating families felt concerned about the box's security. Most state that it is only food and located outside the home, justified their lack of concern over the box's security.

Despite some of the bad weather that the region, Skåne, receives throughout the year, no one mentioned any apprehensions of how the system would function during periods of bad weather.

A strange over-demand as described in the Ziethaml article does not really apply - there are 10 delivery boxes available for the predetermined 10 families (Ziethaml et al., 1993). All the participating families are certain they will receive a delivery box. The possibility of a food shortage may be so out of the realm of thought for Swedish consumers that the thought does not even cross the minds of most Swedish consumers.

This lack of situational factors could be due to cultural influences or possibly not a concern considered with new services (Assouad & Overby, 2016). None the less, this antecedent could be one of quickest to change and affect expectations as unattended delivery boxes become more mainstream.

### 5.3.2 Self-Perceived Service Role

In most services, the customer does play a role. The customer's comfort with participating in the service dictates their expectation of adequate service. Feeling comfortable participating will strengthen their adequate service expected while feeling uneasy in their ability will cause the opposite (Ziethaml et al., 1993). With the E-drop, customers must navigate the grocery website and mobile app controlling the delivery box. All the families said that they have shopped online previously without problems. Shopping online has become more routine in some households than going to the store to buy clothes, make-up or home goods. A few of the families had already looked at the Coop website, saying that it was easy to navigate or search quickly for their favorite brands.

All the parents own smartphones and feel comfortable using them. PostNord's (2018) study revealed that almost half of Swedish consumers have used their smartphones to order online (PostNord, 2018). A few of the participants mentioned the possible ease of ordering their weekly groceries through the Coop app and immediately seeing its delivery status in the E-drop app. This technology fluency makes the worries of participating in the service nearly non-existent.

Many families stated a personal need of becoming more organized and shopping purposefully. Yet a few mentioned the fear that they may forget to order something thus forcing them to go unnecessarily to the store, diminishing the perceived benefit of the delivery box. The Father from Family I expressed this fear, hoping to have the option to create a 'favorite shopping list' so one could simply press one button to order the family's most frequent items, because with the *"craziness of work and home - you just forget simple things"*.

### 5.4 Zone of Tolerance

Of course, the zones of tolerance vary from family to family depending on their own hopes and envisions for the delivery box in their life, but generally, the zone of tolerance revealed to be quite small. Desired service was established only a small step above the level assigned as adequate service. As this is a new service, so all thoughts, opinions, and expectations are based on rough images of what the families believe the service to be like and not how it truly behaves.

The average zone of tolerance (Figure 25) for this service proves to lay between concerns about it functioning as described and filling the gaps exposed through grocery alternatives. According to Ziethaml's (1993) model, if the E-drop functions without any major issues (adequate service) then the customer's expectations are met, and they are satisfied. If the E-drop begins to improve their daily lives as they hope and the service proves to be better than others on the market (desired service), then their expectations are exceeded making them delighted with the provided service (Bitner, Booms, & Tetreault, 1990).



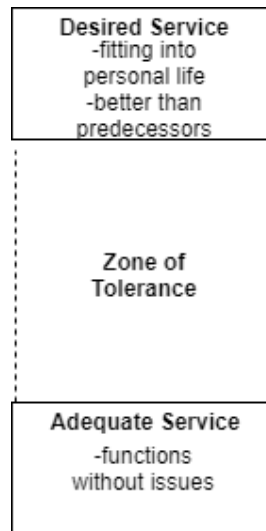


Figure 25 Zone of Tolerance for E-drop

In a traditional service, while it is the hope of the customers, they normally understand that every service encounter will not be at the level of their desired service (Ziethaml et al., 1993). Understanding this, customers accept service exchanges that occur in the zone of tolerance (Bitner et al., 1990; Ziethaml et al., 1993). The experience of an unattended delivery box has yet to be fully understood so later research could be proven to have a different zone of tolerance in the future.

### 5.5 Predicted Service

Predicted service plays a large role in the creation of adequate service (Ziethaml et al., 1993). However, as the service being studied is new, there is interest in how the consumer predicts the service to behave as they have never interacted with it previously. The first time a new service is available, the predicted services could be quite basic but as the service becomes more a norm the predicted service may become more complex (Vakulenko et al., 2019). Companies should be aware of this possible shift so they can continue to provide service that meets expectations.

The average predicted service of E-drop broke down into three different steps: choosing the food online, the order would arrive in the delivery box and a simple collection of the groceries once home. This average predicted service reflected the information provided to the families before the project began. Further research could be done to see if this lack of variance in predicted service (Table 6) was due to either the inability to fully envision the possibilities of the service or effective marketing from the organization (Shaw & Ivens, 2002; Ziethaml et al., 1993).

Table 6 Predicted Service

<b>Family ID</b>	<b>Predicted Service</b>
Family A	The food will arrive in the box without an issue; “either a very positive experience or else it could be that I missed the physical shopping and experience from the shop too much”
Family B	Food will come and no one will need to be home
Family C	Buy groceries online and not have to be home delivery
Family D	Food will be home when they arrive at home and they will be able to give others access to the delivery box
Family E	Have things at home when you get home
Family F	“I can sit at work and pick the groceries and they will deliver it”
Family G	Groceries will arrive at home
Family H	Between the delivery box, matkasse and other e-grocery you never need to be stressed to go to the store
Family I	Time saving technology that allows you to have food delivered at home
Family J	Both companies and private persons will benefit from this tech

### 5.6 Perceived Service

The perceived service in Ziethaml’s (1993) model is how the customer views the service received allowing them to compare the actual service to their expectations (Ziethaml et al., 1993). Due to the nature and limitations of this study, true perceptions of the service were unable to be gathered. Only opinions and thoughts prior to use of the delivery box were collected therefore making it impossible to properly include the perceived services in the final model so it was deleted. Deleting the perceived service component allowed for closer attention to analyzing the creation of expectations.

### 5.7 Irrelevant Antecedents

The antecedents of enduring and transitory service intensifiers were found to be present in the formation of expectations. However, they did not create as strong an influence as other antecedents. These are the factors that were discussed but through analyzation found to not be as important in forming expectations. Currently these factors may not create a strong impression on the formation expectations, yet their importance may become more vital as customers become more familiar with the service.

### 5.7.1 Enduring Service Intensifiers

Enduring service intensifiers are controlled by how the customer personally perceives service quality to be, whether that be from a cultural or industry view, or stance of personal experience, reflects on their opinion on any new service they encounter behaves (Assouad & Overby, 2016; Ziethaml et al., 1993). The families have not experienced a service exactly like E-drop, but they did have opinions on how the service quality from the grocery store (both physical and online) should look like. As the online grocery service quality may play into how one evaluates their overall expectations of the unattended delivery box, they are included here.

Giving up the ability to pick out groceries bothered a few people. The mother from Family F was nervous that “*maybe the bread will be a few days old*”. Those who expressed this anxiety were those who enjoyed the process of grocery planning and shopping finding it either social or relaxing. Whereas those who greatly disliked going to the physical grocery store had no problem handing the responsibility of choosing products to another.

Some mentioned a general dislike for the chosen partner grocery chain stating that they don’t have the same assortment as other grocery chains or described a past experience that made them upset with Coop. The previous experiences or prejudices revolving around Coop also could affect how the families expect the entire delivery system to function. If the expectations are low for Coop, then possibly subconsciously, the expectations for E-drop also become low (Trișcă, 2013). Most families had no opinion about which grocery store they shop at, the mother from Family A stating that they only shop at their most frequented store based on its proximity to their house.

The families that did not express any sort of dislike or bad experience from either online grocery or Coop do not have as high enduring service intensifiers. They are happy if all the groceries they ordered are present and in relatively a good condition. Whereas the families who do have a preexisting opinion or dislike for Coop may be more difficult to please, even though the E-drop system’s and Coop’s services are independent of each other.

Fathers from Family H and Family I suggest that if they are unhappy with the quality of their groceries, they would either talk directly with the grocer or switch stores. Neither stated a deep worry of the quality of service from either Coop or E-drop.

### 5.7.2 Transitory Service Intensifiers

Few concerns about emergencies or major service problems were mentioned, leaving transitory service intensifiers missing from most case studies. The Father from Family J mentioned that he is afraid that the technology will not function properly and that the time spent dealing with the technology malfunctions will outweigh the possible time saved by not having to go to the physical store.

As a trend, people did not mention any major emergencies or service problems that could arise during the test period. This could mean that as this is a new service, it is not certain what a service problem or emergency would entail in this setting, therefore, the families are unable to foresee any problems. The families may go into this project only thinking about the best

outcomes instead of dwelling on possible negative ones as people tend to be more hopeful about the technology they predict to be an asset to their lives (Normann & Ramirez, 1993).

### 5.8 Values of Unattended Delivery Service

As explored in the Frame of Reference chapter, the concepts of customer experience, value and expectations are intertwined building off one another. Four values central to the creation of customer choice and value were presented in Chapter 3 (see Figure 7). Analyzing expectations without keeping the other two factors in mind would create an incomplete understanding of the customer's expectations of an unattended delivery box. The strongest values present were social and emotional. Functional and financial values were found to have a smaller presence.

Prior to having the delivery box installed, most of the families preferred a grocery shopping method that allowed for the least amount of social interaction such as click and collect or self-scanning checkout. Only the Mother from Family A was worried that she would miss the small social interactions with the employees or chatting with neighbors at the grocery store. Some of the interviewees say they use e-grocery options to avoid small-talk or find the social situation of going to the grocery store stressful. Participants do not want to interact superficially but rather on a deeper level. They perceive that the unattended delivery system will allow them to spend more time with their family and friends therefore forging deeper connections. Past research states that human interaction in the exchange of services creates more value for the customer (Czepiel, 1990). However current research claims that customers no longer find value in human interaction, modern customers prefer to have as little human interaction as possible and the findings from the case studies uphold this claim (Vakulenko, Hellström, & Hjort, 2018).

Experiences and emotions found in experiences, as discussed previously, are one of the most important antecedents when understanding expectations for a new service. Remembering how one felt while going through a store with tired children or collecting groceries bought online creates a negative emotional value (Vakulenko, Hellström, & Hjort, 2018). Findings show that there are more negative emotions than positive ones related to past experiences with service predecessors, therefore setting a low emotional value for the unattended delivery system. If the customer perceives that their previous negative emotions, which affects their expectations of the service, are recognized in the slightest, then they will be satisfied (Parasuraman, 1997).

The functional value of the service including the design of delivery box and its service setting was rarely mentioned. Few cared about the box's design. The service setting would be the family home. All families subconsciously have their own biased view of their home and yard. Previous research studied the value of a public service setting so it is difficult to compare the findings between the two (Vakulenko, Hellström, & Hjort, 2018).

The participating families received the delivery box for free and all the installation costs were covered by Nowaste. The only financial value comes from the groceries which are marked at the same price as in the physical store (Coop, 2019). In the future, unattended delivery boxes such as E-DROP may be available for rent or purchase, so there is a possibility for the importance of the financial value to shift and a possible point of future research.

### 5.9 Experiences Related to Unattended Delivery Service

The final component of expectation creation is experience. Verhoef's (2009) model of customer experience creation, presented in Chapter 3 (see Figure 8), will be broken down alongside the findings of the ten case studies in order to create the fullest possible picture of expectations.

The social environment differs slightly from the social value factor of customer value. Social environment pertains to how a customer's experience may be influenced by another (Verhoef et al., 2009). It is difficult to draw a conclusion as the families are separate with little to no possibility that they could overlap and influence each other. Word-of-Mouth would naturally fall into this factor (Shaw & Ivens, 2002). However, as discussed previously, no true Word-of-Mouth is present in this research but Reverse Word-of-Mouth. More research would need to be completed to conclude a connection among the social environment, experience and expectations of an unattended delivery system.

Service interface concerns how the customer interacts with the service and all its accompanying components. A clear conclusion is difficult to draw before hearing recounts for the families after they have interacted with the delivery box. Verhoef (2009) poses the question of finding the perfect balance between human-based and technology-based service when discussing the service provided by an SST (Verhoef et al., 2009). Vakulenko (2018) would suggest that less humans involved create higher value for the customer, however future research could conclude otherwise in the creation of experience therefore affecting one's expectation (Vakulenko, Hellström, & Hjort, 2018).

The third factor of Verhoef's (2009) model concerns the providing company's image and brand. The service providing company, Nowaste, is an established organization in the region for transportation of fresh produce and other fast-moving consumer goods typically B2B (Nowaste Logistics AB, 2019). Creating an unattended delivery system is a new endeavor and creating a B2C proponent to their business strategy. Their previous B2B focus has not allowed the general public to make connections and opinions of the company and its brand. It is difficult to draw clear conclusions on if or how the brand image of Nowaste affects the experience one has with the E-drop.

The concept of customer experience dynamics refers to how a customer experiences a product over time (Verhoef et al., 2009). Currently, there is no knowledge on the families' first experience encounter with the delivery box, therefore making it impossible to make any conclusions. Future research into the importance of customer experience dynamics is predicted to expose an emotional aspect therefore proving a deeper connection of experiences, expectations and value (J. Sheth et al., 1991; Smith & Colgate, 2007; Vakulenko, Hellström, & Oghazi, 2018; Verhoef et al., 2009).

The final factor of customer experience management has more information available compared to the other factors. Much thought has been put into the design, ease of use for the delivery box and the corresponding app, however the E-drop is still in the test phase. Issues may arise that were not considered previously. Over time consumer reactions of the management strategy will

be exposed allowing research to be performed on the employee and management strategy affects the customer experience (Verhoef et al., 2009).

While there is no concrete information on experience creation for the E-drop, there is plenty of information on the family's experiences with similar services, which in this thesis have been named 'service predecessors' and are discussed in section 5.1.4. These experiences with service predecessors are not perfect substitutes but they build a base for which both academics and organizations can start to understand the experience creation and its importance in the overall value and expectation of the customer. For all five factors of Verhoef's (2009) model, more research is required to understand fully how experiences of the E-drop affects both the customer's value and expectations of the system.

## 6 Conclusions

*This final chapter will answer the research question proposed in the introduction chapter. Additional comments discussing the limitations of the project are included.*

### 6.1 Answering the Research Question

Between literature and primary data collection, a research question was formed. After completing interviews, observations and utilizing the chosen theory, three major expectations of an unattended delivery box and system on daily life was deducted.

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*How does a customer expect an unattended delivery service such as E-drop will affect their daily lives?*

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**Fix Problems with Current Shopping Habits or Options** – Every family was somewhat dissatisfied with their current method of grocery shopping. There are a common thread and hope that no matter the complaint concerning the old method, the delivery box could fix it. It is believed that one can be relieved of social stress, gain time with their children and a more flexible schedule with an unattended delivery box.

**Fit Seamlessly into their Lives** – Each family had a different schedule and method of functioning, but all ten families could foresee this product working perfectly with their lives. The ability to save time and gain flexibility with necessary chores like grocery shopping is attractive to everyone.

**Little to No Learning Curve** – Due to the level of technology fluency that most consumers have today, concerns with understanding the basic functions of the delivery box and its app are nonexistent. Consumers use their smartphones for many other uses from e-mail and social media to keeping track of their blood sugar, so tracking deliveries and controlling a home appliance through an app seem almost second nature.

### 6.2 Future Research

While this research takes great strides in understanding the behavior behind customer expectations in new technology and services such as an unattended delivery locker, it does not investigate the reality of customer acceptance and value creation of such a product. The next step to be taken is to compare and analyze the expectations to the value the delivery box has created after the participating families have adopted the service into their lives focusing especially on the antecedents of explicit and implicit service promises, reverse word-of-mouth, situational factors and predicted service. Using both the modified model and Ziethaml's (1993) Comparison between Customer Evaluation of Perceived Quality and Satisfaction model (Figure 26), comprehensive data and analysis will reveal if the Swedish market is satisfied with an unattended delivery system (Ziethaml et al., 1993). Additional research already noted related to value and

experience (sections 5.7 and 5.8) will aid in the holistic understanding of expectation creation of an unattended delivery service and a new service.

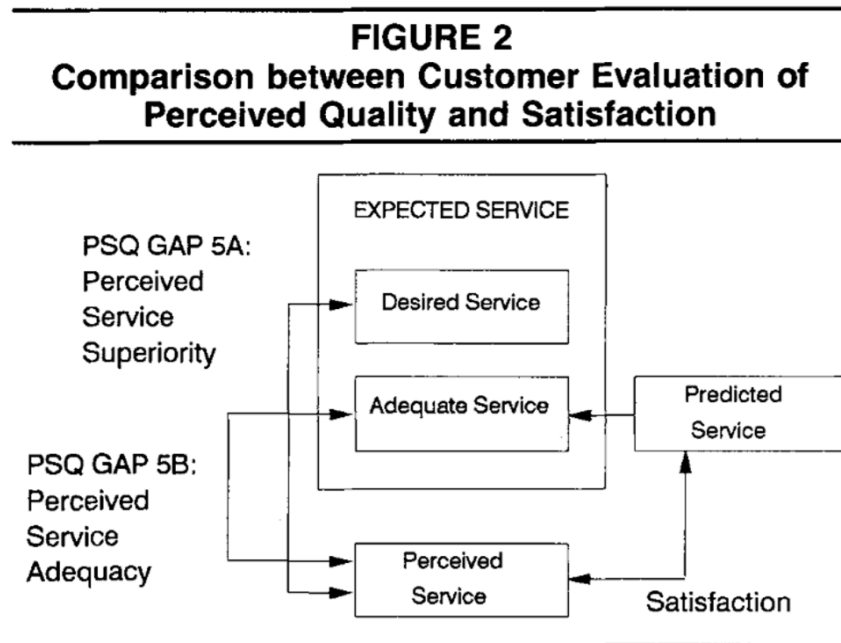


Figure 26 Comparison between Customer Evaluation of Perceived Quality and Satisfaction (Ziethaml et al., 1993, p. 8)

Once determined how the Swedish market forms expectations for an unattended delivery box and system, future research could be to replicate the project in another market giving both academics and companies the ability to see how different cultures form expectations on the same service allowing to provide better service to all markets.

### 6.3 Limitations

There are a few limitations in this research that does not make the data gathered generalizable to all researching the topic.

Only Swedish consumers were studied so it could be difficult to generalize these results to consumers living outside the Nordic countries. The partnership company, Nowaste, is a medium-sized Swedish organization hoping to target Swedish families with the E-drop, therefore, focus on the Swedish market is relevant. While all the families behaved differently, there was a lack of social diversity which does not accurately represent all the grocery shoppers and families in Sweden nonetheless a larger retail market.

Finally, only five months were allotted to this project. This timeline could only allow for a limited amount of information from each family to be collected. If time had allowed for multiple interviews for every family much more information would have been collected to produce much richer and detailed information on which to analyze and draw conclusions.



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## Appendices

Included in these appendices are information deemed necessary for the reader to gain context and deeper understanding for this thesis such as the interview guide, observation protocols, modified version of Nature and Determinants of Customer Expectations of Service for every family and coding schemes.

### Appendix A - Interview Guide

*The following includes the introduction e-mail template sent to all the participating families introducing the author, laying out the original plan of the research (which was to interview the families before and after the installation of the delivery box however due to manufactural difficulties only before interviews were conducted), and the planned questions for the semi-structured interviews. The interview questions are broken down into five different categories (family, shopping habits, online shopping, technology use and expectations) to best get a holistic understanding for each family.*

#### A.1 Introduction

Hej Family X,

My name is Macy Osman and I am a master's thesis student from Lund University working with the E-drop team on their Proof of Concept this spring I am planning to hold two interviews with all the participating families. One before the E-drop is installed to learn more about your family, your daily life and shopping behaviors. The second after the E-drop has been installed for about 5 weeks to see if your life or shopping behaviors have changed at all since E-drop's installation. I am planning to hold the pre-installation interviews during weeks 8 -10 and the post-interviews during weeks 17 & 18. Each interview will take approximately 45 minutes to 1 hour of your time and will take place either in your home or elsewhere. I am contacting you now to set up a time that would be best for you to have the pre-installation interviews. I am available all workdays from 8-18 as well as weekends if that suits you better. Please let me know which day or days would work best for you. These interviews will be conducted in English. However, if you do not feel comfortable and prefer to do the interview in Swedish, please let me know and arrangements can be made.

I look forward to meeting you.

Best,

Macy

#### A.2 Interview Questions

##### **Family**

Occupation of adults in the household

*Vilka yrken har de vuxna i huset?*

Age and gender of children in the household.

*Hur många barn och vad är barnens ålder och kön?*

Does anyone in the family have an allergy or food preference (lactose free, gluten free)

*Har någon i familjen en allergi eller matpreferens som laktosfri, glutenfri, vegan?*

Do you have any hobbies or interests that may affect your shopping habits?  
*Vad har ni för fritidsintressen? Något intresse som påverkar dina shoppingvanor?*

Do you have any pets?  
*Har ni husdjur?*

If yes, how many and what kind?  
*Om ja, hur många och vilken sort?*

Describe an average day for the household.  
*Beskriv hur en normal dag ser ut för hushållet.*

When do you leave the house?  
*När lämna ni huset?*

When does work start? End?  
*När börjar jobbet? Slutar?*

When does school start? End?  
*När börjar skolan? Slutar?*

Do the children go to daycare after school?  
*Går barnen till dagis efter skolan?*

How many days a week do you have extra activities?  
*Hur många dagar har ni andra aktiviteter?*

Do you eat meals together as a family?  
*Äter ni måltider tillsammans?*

### **Shopping Habits**

Who does most of the food shopping in the home?  
*Vem i huset ansvarar normalt för inköpen av livsmedel?*

How do you get to and from the store?  
*Hur tar ni er normal till mataffären?*

Do you do your grocery shopping at one or at multiple different stores?  
*Handla ni från enormalt i samma butik eller i olika butiker?*

Which stores?  
*Vilka butiker?*

Any loyalty programs to these stores?  
*Är ni medlem i dessa butiker?*

Do you feel like you spend a lot of time shopping for groceries?



*Tycker du att ni lägger mycket tid på att handla livsmedel?*

Do you enjoy going to the grocery store?

*Tycker ni om att gå till mataffären?*

How does walking through a grocery store make you feel?

*Hur känns ni att gå genom en mataffär?*

To pay for your groceries do you normally go to the self-checkout or the cashier?

*Gå ni till själv kassan eller normal kassan?*

Do you prefer to buy a lot of items at once or fewer items more often?

*Föredrar ni handla mycket en gång eller mindre mängd oftare?*

What do you normally buy when you buy groceries?

*Vad köper ni normal när köper ni livsmedel?*

Do you plan meals or buy a lot of food allow yourself to be inspired?

*Planerar ni måltiderna i förväg eller handlar lite av varje och lagar utifrån dagens inspiration?*

### **Online Shopping**

Have you ever bought anything online?

*Har ni köpt något på nätet?*

If yes, how often do you order things online?

*Om ja, hur ofta köper ni något på nätet?*

What do you normally buy online?

*Vad köper ni normal på nätet?*

Which online stores do you normally order from?

*Vilken onlinebutiker köper ni ifrån?*

Have you ever bought your groceries online?

*Har ni handlat livsmedel på nätet?*

If so, from which source?

*Om, ja vilken webbplats?*

How was your experience previously with buying groceries online?

*Vad var er erfarenhet tidigare med att köpa livsmedel på nätet?*

### **Technology Use**

Do you use a smart phone?

*Använder ni en smart phone?*

Do you have apps on your phone?  
*Har ni appar på mobilen?*

What sort of apps do you have on your phone?  
*Vilken sorter appar har ni på er mobilen?*

Do you feel like you are capable in using smart phones and apps?  
*Känner ni er trygga i att använda en smart phone och appar?*

Are you one who enjoys testing new technology?  
*Gillar ni att testa ny teknik?*

### **Expectations**

Why did you opt to be a part of this project?  
*Varför väljer ni bli delen av projekten?*

Do you have any expectations for this experience?  
*Har ni förväntningar på denna upplevelse?*

How do you think this will affect your life?  
*Hur tror ni att E-Drop kan påverka ert liv?*

Do you have any concerns about how E-Drop and the app will work?  
*Har ni några funderingar kring hur E-Drop och appen ska fungera?*

## **Appendix B – Observation Protocol**

*The following are accounts of observations taken during the interviews.*

### **B.1 Family A**

Living in the quiet neighborhood of Husensjö on a street off the main road, Family A lives in a brick villa with a garden both in the front and back of the house. There is a fence around the garden in front of the house. The author was only shown the entry way and the living room of the home. The home is clean and cozy. The family has a cat who enjoyed sitting in front of the fireplace in the living room during the interview.

### **B.2 Family B**

Family B lives in a villa. The home was undergoing some renovations to the garden, fence, bathroom and entryway when the author visited. The living room seemed strangely blank, as if the family had recently renovated the room but had not had the time to decorate it fully. The kitchen and dining room was fresh with new appliances. It was clear that the family had children. Toys and books were on the kitchen table and artwork was pinned on the refrigerator. The family had a playset in the backyard which was visible through a window in the kitchen. There was a patio and grill accessible through a door from the kitchen.

### B.3 Family C

Held the interview at the Father's office. The office was big and spacious with many places for the employees to sit outside the cubicles. There was a large kitchen area for the employees with fresh fruit and coffee.

### B.4 Family D

The family lives in a secluded neighborhood on the outskirts of the city. There were rows and rows of houses that looked almost identical. There was not much of a front garden, just enough to have a connecting sidewalk from the road and from the garage to the front door. In the entryway, there were many jackets and shoes of various sizes and styles. There were also sports gear lining the entryway. The home was fresh and clean with many plants. The kitchen was very organized. There was a backyard visible from the dining room. The yard had a few small bikes and other toys scattered around it, but there were few plants in the yard.

### B.5 Family E

Met with the mother at a local coffee house in the center of Helsingborg, no observations to help answer the research question was gathered.

### B.6 Family F

Met with the mother at her office that overlooked the ferry terminal and the coast of Denmark. The office was very modern and clean looking. There was a calendar with some notes about the family's schedule on the wall as well as additional sticky-notes pinned on the wall or desk. There was a small kitchen in the office available to the employees as well as a place to work outside the individual offices.

### B.7 Family G

This interview was completed via e-mail, so no observations were taken.

### B.8 Family H

The family lives in a villa with a fence around one portion of the yard. The home is brick with an sun room addition on the back. The entry way was scattered with coats, shoes and various sports gear. There were children's books and homework on the kitchen counter. The yard had a small raised garden bed for growing vegetables or herbs. There was a small playhouse in the yard. The family owns a dog who ran around the yard while the author and father sat on the patio.

### B.9 Family I

The outside of the home was being renovated. The inside was very clean and fresh. The father gave the author a full tour of the home. Some of the rooms were tidier than others – it was clear which rooms the children played and lived in by how many toys and art supplies were in the room. The upstairs of had been renovated recently as well. In the basement, the family had converted an extra room into a bedroom. The living room and kitchen had cookbooks of various cuisines and chefs. The schedule pinned on the refrigerator showed a busy family. There were many appliances laying in the kitchen, many of which were atypical for an average home.

### B.10 Family J

The author met the father of Family J at his office. The office was large and spacious. The interview was held in the employee common space where there are many tables and couches where people can sit and talk in a more comfortable manner outside their cubicles. The office space had many plants.

### Appendix C – Coding Scheme

Once all the interviews were transcribed, the coding process began. Based on the descriptions for each antecedent, some antecedents were more prevalent than others. After initial coding of Ziethaml's (1993) original antecedents, the author analyzed the frequency of certain antecedents leading the way to the modifications made. The tables display the coding scheme for both the original (Table 7) and modified antecedents (Table 8).

*Table 7 Original Antecedents*

<b>Antecedent</b>	<b>Keywords</b>
Enduring Service Intensifiers	Behavior of Service Providers, Service Recovery
Personal Needs	Time, Flexibility, Unique Family Behavior
Transitory Service Intensifiers	Personal Emergencies
Perceived Service Alternatives	Similar Service Options
Self-Perceived Service Role	Technology Fluency, Comprehension of System's Basic Functions
Situational Factors	Uncontrollable Emergencies, Security
Explicit Service Promises	Advertising, Official Communication
Implicit Service Promises	Price, Box's Appearance
Word-of-Mouth	Gossip, Opinions from Informal Sources
Past Experience	Previous Exposure
Predicted Service	Description of Basic Function

*Table 8 Modified Antecedents*

<b>Modified Antecedent</b>	<b>Keywords</b>
Future Expectations	Plans/Hopes for the Delivery Box, Plans for Future Family Schedules
Reverse Word-of-Mouth	Sharing Experience/Thoughts with Others, Gaging Reactions from Others
Past Experience with Service Predecessors	Opinions on Current E-Grocery Options, Problems with Current E-Grocery Options