



LUND UNIVERSITY
School of Economics and Management

Possibilities and critical aspects of customer value creation through technological innovation in the checkout area of physical retail stores

A case study on how physical retailers can co-create customer value through mobile self-checkout systems

Master Thesis

M.Sc. Globalization, Brands and Consumption 2015/16
School of Economics and Management | Lund University

Authors: Stijn Dost & Claus Rietzschel

Date: May 2016



Supervisor: Ulf Johansson

Examiner: Jens Hultman

Abstract

Title: Possibilities and critical aspects of customer value creation through technological innovation in the checkout area of physical retail stores - A case study on how physical retailers can co-create customer value through mobile self-checkout systems

Keywords: value (co-)creation, customer experience, retail, mobile self-checkout, self-service technology, IKEA, consumer attitudes and behaviour, technology adoption

Purpose: Exploring the possibilities and critical aspects of mobile self-checkout to enhance value creation and customer satisfaction for physical retailer

Research question: How can value be (co-)created between a big box retailer and its customers through a mobile self-checkout solution?

Theoretical considerations: After the evaluation of the current literature in value (co-)creation, customer experience and self-service technologies, this research will contribute to these areas with the BOSS-model. This model is the result of the theoretical framework, which incorporates the gathered empirical data in order to become an extension of the existing theory in the previous mentioned area.

Methodology: Considering the rather explorative nature of this research a qualitative research approach will provide the empirical data needed. The large retailer IKEA exemplifies as case study for this research and the platform to conduct in-depth interviews with both its employees and customers. The perspective of external experts supplements this multi-perspective approach in the field of value (co-)creation and customer experience in the retail environment.

Conclusion: The main finding of this thesis is, that mobile self-checkout solution is perceived as beneficial by all parties involved. Based on the ratio approach between benefits and obstacles the customer is willing to do more by themselves (e.g. scanning and payment) in order to enjoy the benefit of being faster. In addition, customer perceives more freedom when they adapting to a mobile self-checkout solution, since they have the feeling of being in control. Furthermore, the customers defined using a mobile self-checkout as joyful and increase of shopping experience. However, retailers need to reflect upon customer's possible prior experiences, sociodemographic characteristics and ethical aspects when implementing a mobile self-checkout system. If the retailer can meet the previously mentioned customer, mobile self-checkout can be considered as the coalescent point where the retailer and customer meet to co-create value.

Acknowledgements

This thesis was part of the Globalization, Brands & Consumption program at Lund University and was the final assignment upon receiving our Master of Science degree.

Over the last ten weeks, we combined research, discussed and concluded in order to finalize this thesis within the subject of value (co-creation). Even though we as duo carried out this research, we were depended on several other people around us during this process. Therefore, we would like to take this opportunity to thank all them who in one way or another were involved in this journey.

First, we would like to thank Ulf Johansson for his supervision and initial contacts with IKEA, as case study, to give us the possibility to make this research happen. Furthermore, we would like to thank IKEA to provide us with the means necessary in order for us to write a thesis in this interesting subject. Within IKEA, we would to thank the following people in specific due to their frequent engagement and involvement:

- Marina Dubakina (at IKEA Group)
- Carole Bates (at IKEA Group)
- Andreas Castor (at IKEA Sweden)
- Salma Azad (at IKEA U.K.)
- Michael Watson (at IKEA U.K.)

In addition, we want to show our appreciation to all the parties who are involved with the interviews we conducted as part of this research. The independent external experts, customers and employees at IKEA provided us with insights that without we could not have carried out this research.

Finally, we would like to thank each other for making this thesis a bearable and enjoyable process as final nail in the coffin upon achieving our Master Degree.

May 24th, 2016

Claus Rietzschel

Claus Rietzschel

Stijn Dost

Stijn Dost

Table of Contents

- 1 Introduction to the existing literature and purpose of this research 1**
 - 1.1 Innovation drivers in the retail environment 1
 - 1.2 The exploration of value (co-)creation in the retail environment 2
 - 1.2.1 Customer experience in an ever-evolving environment 5
 - 1.2.2 The instigation of mobile in self-service technology 7
 - 1.3 Research purpose of this study 8
 - 1.3.1 Research question 9
 - 1.3.2 Intended practical contribution 10
 - 1.3.3 Intended theoretical contribution 10
 - 1.4 Structural outline of this study 10
- 2 Theoretical Framework 12**
 - 2.1 Value co-creation between the retailer and its customers 12
 - 2.2 The self-service journey of customers 15
 - 2.3 Assessing the suitability of existing theoretical models in correlation to value co-creation 18
 - 2.3.1 DART-model 18
 - 2.3.2 TAM model 19
 - 2.3.3 Business model canvas 21
 - 2.3.4 Value Proposition Canvas 22
 - 2.4 Establishing a suitable research model for value co-creation 24
- 3 Methodology 27**
 - 3.1 Research Approach 27
 - 3.2 Justifying IKEA as Case Study 28
 - 3.3 Research Design 30
 - 3.3.1 Data needed 31
 - 3.3.2 Method(s) of data collection 31
 - 3.3.3 Sampling 32
 - 3.3.4 Qualitative interviews 32
 - 3.3.5 Interview environment and tools 34
 - 3.4 Data Analysis 35
 - 3.5 Rigour of this research 37
 - 3.5.1 Credibility 37
 - 3.5.2 Transferability 37

3.5.3	Dependability.....	38
3.5.4	Confirmability.....	38
3.6	Research limitations and implications.....	38
3.6.1	Reflection on the ethical and political dimensions of the research design	39
3.6.2	Reflection on the potential weaknesses of the research methodology	39
4	Analysis and Discussion	41
4.1	Multi-perspective analysis.....	41
4.1.1	Customer insights.....	41
4.1.2	Company insights	50
4.1.3	External expert insights.....	54
4.2	Critical discussion/reflection of the multi-perspective analysis	56
5	Conclusion	63
5.1	Answering the research question	63
5.2	Theoretical contributions	64
5.3	Future Research.....	65
6	References.....	67
	Appendix I - Interview guide customers & company.....	78
	Appendix II - Interview guide external experts.....	80
	Appendix III - Pictures during the interviews	82

List of Tables

Table 1: Overview of customer interviewees..... 42

Table 2: Overview of company (internal experts) interviewees50

Table 3: Overview of external expert interviewees55

List of Figures

Figure 1: Thesis structure and outline of the individual chapter.....11

Figure 2: Value creation spheres (Grönroos & Voima, 2013; Prahalad & Ramaswamy, 2004).....14

Figure 3: Two perspectives on customer experience through service (Johnston & Kong, 2011).....15

Figure 4: Value Proposition Canvas Source: (Clark, Osterwalder & Pigneur, 2012) 23

Figure 5: BOSS-Model24

Figure 6: Focus areas for the retail environment (Martin Hansson, Head of Retail at IKEA).....30

Figure 7: Data analysis overview.....36

1 Introduction to the existing literature and purpose of this research

Peterson and Balasubramanian (2002) conclude that there is a need for a revised definition of retailing considering the changes in the retail environment from the 21st century in comparison to the previous century. These changes are caused by globalization, technology, consumer behaviour and retail formats among others (Peterson & Balasubramanian, 2002; Shankar & Yadav, 2011). In order to be sustainable in the rapid developing retail environment it is vital for the retailer to be on top of innovation in the previous mentioned areas, to address challenges from the market environment and triumph over competitors (Bălăşescu, 2013). Retailers will search for solutions to adapt to the changing retail environment, by developing or innovating their traditional manner of retailing. Innovation for that matter is a broad term that can be defined as follows: generating and attracting profitable use of new technologies, services, products, systems, which can lead to a new way of operating in whole (Pinchot & Pellman, 1999). Subsequently this first section will point out some of the main innovation areas and drivers influencing the retail environment.

1.1 Innovation drivers in the retail environment

The market environment changed over the last years due to maturing and ever increasing competitive influences (Christopher, Lowson & Peck, 2004) as part of globalization in the retail environment. More recent research by Sorescu, Frambach, Singh, Rangaswamy and Bridges. (2011) confirms this prediction and points out that retail globally is experiencing a 'seismic shift', which is powered by the global access to the world wide web and internet technology. A possible explanation for the globalization of the retail environment can be identified in the development of online shopping. Several researchers have shown that adaption of online shopping is current in today's society and has changed the retail environment dramatically (Keeling, Keeling & McGoldrick, 2013; Varma Citrin, Sprott, Silverman, & Stem, 2000). With the increasing globalization and the emergence of the internet in today's society, technology is a closely related subject of innovation in retailing. Retailers over the last decade are already looking into technological innovations that in some degree could substitute salespeople (Colby & Parasuraman, 2003; McCracken 2011).

Furthermore, innovation in technology can be utilized to enhance the service quality, gather knowledge from customers, attract new and maintain the existing ones (Pantano, 2014; Parasuraman & Grewal, 2000; Wahba, 2015). A feasible solution for technological innovation in the retail environment is self-service technology (SST). A wide array of recent research has pointed out that SST's are one of the trending innovation drivers for retailers to implement new technology to increase customer satisfaction (Kallweit, Spreer & Toporowski, 2014; Pantano, 2014; Lin & Chang, 2011; Zhu, Nakata, Sivakumar & Grewal, 2007; Meuter et al., 2000; CFI Group 2015).

Since the upcoming of the internet, a significant amount of research has been done to examine the relationship of power between business and the customer. Many of which points out that a shift is inevitable within this new digital age that balances the power-relation more in favour of the customer (Kozinets, 1999; Deighton & Kornfeld, 2009; Bakos, 1991). Murphy (2000) takes it one step further and claims that this is the largest transition of business-consumer power in history, where consumers will gain power from even the largest corporations in this current day. A plausible explanation for this shift is that consumers have more information within their reach due to today's digital age. This pool of accessible information makes consumers both more refined and demanding when it comes to buying products and services (Christopher, Lowson & Peck, 2004). According to Newlands and Hooper (2009), this changing market environment requires retailers to adapt and separate themselves from their competitors by being superior in meeting the customer's changing demands in a new way. According to Reynolds, Howard, Cuthbertson and Hristov (2007), retail format innovation today is more and more focusing on increasing efficiency and driving down costs, which can be realized through the integration of information and communication technologies. Subsequently the embedding of these technological advancements can be seen as potential drivers that can affect business model innovation (Sood & Tellis, 2011). This business model innovation can enhance the role of the retailer in the shopping experience of customers.

1.2 The exploration of value (co-)creation in the retail environment

Because of the previously mentioned drivers that cause changes in the retail environment, there is a need to re-analyse the values that retail is offering the customers. Earlier research points out that previous focus of the retailers was to sell products and services to the final consumer (Coughlan, Anderson, Stern & El-Ansary, 2006). In this particular setting the consumer has a more passive role in which it is 'educated' by the retailer about the value of their specific product. However, more recent research points out that the customer experience is the mere added value for retailers in

opposite to the products, prices and service as such (Grewal, Levy & Kumar, 2009; Verhoef., Lemon, Parasuraman, Roggeveen, Tsiros. & Schlesinger, 2009). A viable reason for this transformation in value creation between retailers and their customers can be the increasing homogeneity of products and their quality today (Prahalad & Ramaswamy, 2004). It is reasonable that this derives from the previous mentioned globalization and availability of information through technology and internet. More specific, according to Shaw and Ivens (2005), 85% of the senior business managers are of opinion that differentiating on traditional aspects such as price, product and quality are being replaced by the customers experience as an indicator of value creation. This could imply that value creation over the years has transformed from a more passive perceptive to a more active and engaging part of retailing. This alteration in value creation has a great effect on the management and marketing literature as it becomes of growing importance (Andreu, Sánchez & Mele, 2010).

Based on the previous literature review, it is clear that the traditional perspectives on how to create value requires a revision due to the mentioned drivers in the retail environment. Preliminary and recent research advocate that collaborative value creation or value co-creation is current (Grönroos & Voima, 2012; Helkkula, Kelleher & Pihlstrom, 2012; Vargo & Lusch, 2004). Various researches define customer value creation or innovation as a key tool to enhance competitive advantages (Lizhu & Hodges, 2012; Smith & Colgate, 2007; Berthon & John, 2006; Ericsson & Sundström, 2012). However, it is to point out that value can be created in various ways and steps of the product- and service lifecycle and thus, value creation comprise a variety of types. A rising form of value creation can be found in the collaboration of customer and company to create value, which is mainly referred as value co-creation in the literature (Saarijärvi, Kannan & Kuusela, 2013; Grönroos & Voima 2013; Prahalad & Ramaswamy, 2004; Echeverri & Skålén, 2011; Heinonen, Strandvik, Mickelsson, Edvardsson, Sundström & Andersson, 2010).

Since value co-creation is not a new matter, there are several examples in various forms where benefits are created for both sides due to conscious collaboration. With the rise of consumer power, there has been a shift from a product- and company-centric focus toward personalized customer experiences (Prahalad & Ramaswamy, 2004). The company, LEGO, exemplifies a case in the field of open innovation. They realized the potential of engaging with the fan community of their product Mindstorms (bricks with a technical function develop on an educational base). Driven by the captivation, community members started to share their designs voluntarily online, disregarding if their motivation could be based on boosting their own ego by presenting their individual creative solutions. However, LEGO saw the potential in their creative efforts and started to engage with the community to get inspired for their own products, ideas and development to strengthen their position in the brick business (Bughin, Chui & Johnson, 2008).

This example perfectly points out that value co-creation is based on the idea that it has to be beneficial for both sides even if the aspired goals or motivation behind may differ. From a company's point of view, the motivation of perusing could be based to provide a product or service firstly to meet the customer expectations and satisfaction and secondly to increase sales and branding. Whereas the customer's motivation can be found in self-determination or the feeling to be a part of improving processes or products. However, it is to point out that there is a controversial discussion by pursuing such a strong customer collaboration strategy, since some argue that the customer does not know what they want (Woodruff, 1997), which might limit the amount or the spectrum of successful solution or ideas for companies and customers itself. Narver, Slater and MacLachlan (2004) point out, that companies should take into consideration that customers have a mix of expressed (aware) and latent (unaware) needs. Expressed needs are the concrete desires of customers that become visible through market research according to their best knowledge. Latent needs are not really formulated by the customer due to their individual restricted knowledge of possibilities. For instance, no customer would have expressed a need for the internet back in the 1980s but rather asked for better telephones to communicate.

It is can be noted that customers want to interact and co-create with firms. They are willing to provide help and time for companies to create a better outcome to meet their needs (Venkatesh & Bala, 2008), which might add a positive effect on their own customer experience while shopping. Since the quality of experience is also depending on the nature of customer involvement, the working environment for firms and service providers changed. For instance, a visit as at the doctor differs a lot from 10 years ago to today. Patients inform themselves before, via sources online regardless to the quality, and want to be taken seriously by engaging in a dialogue (Pralhad & Ramaswamy, 2013).

It is to point out that there is a lack of research of how 'deep' this kind of collaboration between these two parties goes. For instance, there is no clear answer on what happens if value co-creation leads to reduction of some customer service provided by the company but increases the freedom of shopping for the customer. This missing knowledge becomes even more valuable if the shopping freedom could be achieved only by utilizing or learning new things, due to the fact that most firms are focusing on minimizing psychological-relational costs, for example to cognitive difficulty/stress or learning cost. Thus, companies like Dell or 7-Eleven are focusing on reducing the customer investment, such as effort, time and energy, which they are confronted within the consumption process to the final purchase (Smith & Colgate, 2007).

1.2.1 Customer experience in an ever-evolving environment

As another aspect of value creation, customer experience includes every touching point of a company's business, products and their customer (Andajani, 2015; McColl-Kennedy, Gustafsson, Jaakkola, Klaus, Radnor, Perks & Friman, 2015). Experience is mainly subjective and corresponds to the customer's involvement at different levels (rational, emotional, sensorial physical and spiritual). Its assessment relies on the correlation between the customer's expectations and the actual fulfilment through the interaction with the firm and its engagement by encounter them in different touch-points or moments (Gentile, Spiller & Noci, 2007). Due to customer power, by choosing the company they would have to engage with their own values and their idea how a company should satisfy (Prahalad & Ramaswamy, 2004). The idea might develop so that customer experience is a subject of constant diversification. However, Bäckström and Johansson (2006) are pointing out that the perspective of sustainable and positive customer experience in-store differs between the company's and customer's point of view. Whereas retailers define attributes to create customer experience in providing new involvement (e.g. using new technology), consumers mostly appreciate in-store experience caused by traditional values (e.g. friendly and reliable service). Regarding to increasing customer satisfaction, companies have to be aware that the customers reflect based on personal experience when they estimate their current satisfaction with the firm (Haumann, Quaiser, Wieseke & Rese, 2014). This could be a reason why companies try to find more ways to interact with customers on a personal level and provide them with the feeling of uniqueness. For example, the company Starbucks writing the customer's name on their beverage cup, which can lead to personal stronger connection with the company.

A strong aspect of customer experience can be determined in convenience for the customer, which of course has to be in line with other attributes like price or quality (Mouri, Bindroo & Ganesh, 2015). As mentioned earlier, quality and products are increasingly becoming more similar. Thus, characteristics such as convince or saving time gain stronger power, which can be seen with the rise of online businesses. However, the majority of customer does not strictly place themselves into buying offline or online. As the company Ericsson (2012) pointed out through their ConsumerLab report 2013, people want to have the mixed benefits from on- & offline shopping. The respondent, internet users in Western Europe, aged 15 and upwards are emphasized by shopping online. When shopping online, they do not like the fact that they cannot see, touch or try things (73%), they worry about security (35%), don't like waiting to receive purchases (30%), lack of customer service (16%) and too wide range (11%).

On the other hand, the respondents underlined that by shopping offline it is harder to research and compare prices (71%), they do not like the lines and crowds (51%), cannot shop whenever they want (33%), it is difficult and takes time (25%) and stores have a limited selection (12%). Ericsson describes this phenomenon as 'in-line shopping' which

can be determined because of consumer's desire to combine the best aspects of shopping in-store and online.

It has become clear that the majority of shoppers today are looking for multichannel shopping instead of 'traditional' shopping, due to the benefits that multichannel offers such as using several channels for the different stages of the shopping process (Lewis, Whysall & Foster, 2014). This trend is supported by the retail design expert Kelly Molson who is of opinion that consumers are looking to use multiple channels at the same time (Goworek, 2015) and by Walmart.com Chief Executive Raul Vazquez who is pointing out:

There was a time when the online and offline businesses were viewed as being different. Now we are realizing that we actually have a physical advantage thanks to our thousands of stores, and we can use it to become No. 1 online (Bustillo, & Fowler, 2009, B1).

This is in line with the company Ericsson (2012) which pointed out that the distinction between the physical world and online world will eventually become meaningless. They underline that retailers should focus on the consumer's desire of merging these two worlds together. Providing multiple channels for customers, which can be used, complemented across all other retail channels, anywhere and anytime, takes the integration to another level and is mainly referred as omni-channel in current literature (Beck & Rygl, 2015; Verhoef, Kannan & Inman, 2015). The focus in this small researched topic is set on integrating various retail channels simultaneously to provide a value creation by improving the customers shopping experience (Verhoef, Kannan & Inman, 2015). Enhancing the freedom during their store visit as well as providing access to recent data which all-together aims to increase the overall customer satisfaction (Rigby, 2011).

Even by being aware of the main customer satisfaction drivers, such as reliable service, in physical retail stores, the question remains about the role of integrating new technology within customer experience. Chesbrough (2010) argues that value can gain from an innovative technology itself. However, there is no clear answer if the engagement in technology is mainly perceived as being beneficial for customer experience rather than being determined as only lowering obstacles to visit a physical retail store.

The CFI Group (2015) underlines, based on their Retail Satisfaction Barometer (RSB) with research insight from a pool of 1,200 consumers in the U.S., the three main areas to create customer's satisfaction are Checkout (28%), Merchandise (26%), and Price (26%), regardless of the shopping segment. Especially large retail stores should pay attention to their checkout area. There the impact of customer satisfaction is stated with 53%, which could be seen as a strong opportunity area. The checkout process can be seen as the last opportunity to physical engage with the customer and let them leave

with a good impression. For example, if a customer is forced to wait a disproportionate time, he/she might become angry and leave which leads to a negative customer experience and a lost opportunity to make profit. As Zhou and Soman (2003) are pointing out, waiting time is an essential factor of the consumers' overall satisfaction, which is related to the service and product. The CFI Group (2015) emphasize for larger retailer to improve this area upon process efficiency, which could lead to a key competitive advantage. It is to mention that no current research considers or reflects on the store format when it comes to mobile self-checkout solutions even if it is obvious that there are distinctions from a customer point of view.

1.2.2 The instigation of mobile in self-service technology

As already underlined, customer value-creation can take place in various ways and areas in retail. Having a closer look at physical retail stores, customer value could be generated for example by providing enough parking places or friendly and competent customer service. By focusing on physical retail stores the last chapter pointed out, the checkout area is a crucial point or area to influence the customer satisfaction.

One possibility to increase customer satisfaction and competitive advantage can be found in providing self-service technologies (SST's) (Kallweit, Spreer & Toporowski, 2014; Zhu et. al., 2007; Parasuraman & Grewal 2000). Examples of SST's are multimedia kiosks (Chih-Hung Wang, 2012) or self-service checkouts (Orel & Kara, 2014; Lee & Yang, 2013). Main driving force to implement SST's are due to cost cutting, increase of productivity and convenience by collaborate with customer (Collier & Kimes, 2013; Hilton, Hughes, Little & Marandi, 2012; Roggeveen, Tsiros & Grewal, 2012; Parasuraman & Grewal, 2000) or only to incorporate present technology improvement (Demirci Orel & Kara, 2014). However, it is to point out that there are two types of SST's which can be separated by transaction-related technologies (e.g. retail purchase) and customer-service (e.g. hotel checkout) or information-related technologies (e.g. distance learning) (Meuter, Ostrom, Roundtree & Bitner, 2000). However, due to the research topic of mobile self-checkout, this paper will only focus on the transaction-related technology area.

By having a closer look into transaction-related SST's, it is to point that integration of mobile devices gain a predominant role. According to the CFI Group (2014), a RSB research with insights from a pool of 1,200 consumers in the U.S, the usage experiences of retail application is increasing from 21% (2013) to 41% (2014) and is mainly used for price comparison (47%), mobile coupons (45%), product review (41%) and product information (40%). Ericsson (2012) stated that already almost one third of the smartphones users utilize smartphones for small payments, products barcodes or coupons.

Lee, Tsao and Chang (2015) pointed out that a provided mobile application service needs to be perceived as useful, ease of use, playful and compatible to create a positive affection towards the usage. They underlined that compatibility was determined with the strongest influence of customer satisfaction. A similar implication was given by Lee, Jeong Cho, Xu and Fairhurst by underlining that the “self-checkouts should be designed to be easily understood and operated for those consumers” (2010, p. 55). However, no research elaborates what these attributes exactly mean to the customer or companies. Furthermore, there has been only limited research done in the combined field of mobile application and self-checkout out. The current literature does not provide a clear answer of what attributes are required for a mobile self-checkout and what could be the possibilities and critical aspects for companies and customers.

The relevance of mobile self-checkout’s in the retail environment can be identified through to the current consumer preferences and companies approaches of providing such a service. The CFI Group (2015) stated that 59 % of their RBS surveyed consumers are in favour to use their personal device while shopping then rather use a device provided by a company. Additionally, 51% of respondents indicated they would very likely use mobile apps to speed up the checkout when they become available (CFI Group, 2014). It is also to underline that globally, 82 % of consumers are moving toward a networked lifestyle, due to the perceived value of the increasing use of the internet and the believe that technology has a positive impact on society (Ericsson, 2015). Another indicator of relevance to conduct more in-depth research, is given by the fact that in-store mobile payments are expected to reach \$118 billion by 2018 (Martin, 2016) or \$142 billion by the end of 2019 (Wahba, 2015).

1.3 Research purpose of this study

Creating value through positive customer experience and pursuing service innovation are popular strategies for companies to distinguish themselves from other competitors and ensure profitability (O’Cass, Song & Yuan, 2013). With the continuing rise of electronic service technology, researches in the field of how to integrate new technical available resources within the customer’s buying process are increasing. Through various reports it became clear that there is a tendency from a customer point of view, to demand and utilize SST’s in the form of mobile device integration during their shopping (CFI Group, 2014; CFI Group, 2015; Ericsson, 2012; Ericsson, 2015).

Additionally, there has been various relevant researches conducted by investigating attributes of using a mobile application services for customer satisfaction (Lee, Tsao & Chang, 2015; Xu, Peak, & Prybutok, 2015) and engaging SST’s in the in-store retail environment (Collier & Kimes, 2013; Hilton et al. 2012; Orel & Kara, 2014) from a customer point of view to satisfy or outperforms the customer’s expectations. Both

researches fields provide a similar result by indicating that attributes such as compatibility, perceived usefulness and ease of use affect the customer engagement of utilize technology service. However, only little attention has been paid to such attributes, when combining these two technology services, in form of a mobile self-checkout in a physical retail environment.

By the best of the researcher's knowledge, none of the previous theoretical researches focused on the attributes, the involved possibilities and critical aspects for companies by providing a mobile self-checkout service in a large retail store format. Furthermore, no research has been conducted in the context of value co-creation where the company has to do less (no assistance to check out on tills or self-checkouts) and the customer has to do more (product scanning and payment with own mobile device). In order to enjoy the benefits of being faster and move more freely during their shopping, which can be determined as a contrarian approach to the current customer service perspectives. In addition to that, due to the novelty of this topic, there is only limited practical information provided about the process, possibilities and critical aspects of implementing mobile self-checkout systems in retail store environment. By determining the lack of current theoretical and practical knowledge, this research investigates mobile self-checkout systems from a customer and company point of view in order to gain a better understanding of the demanded characteristics and exact meanings of such a service to provide insights that is co-created by these parties.

Therefore, the purpose of this thesis as well as the white spot in literature is defined by exploring the possibilities and critical aspects of mobile self-checkout to enhance value creation and customer satisfaction for physical retailer. In order to relate this research also to practice, this study will elaborate the topic by working with a suitable case study.

1.3.1 Research question

The researchers have pointed out that there is a lack of theoretical and practical research on how mobile self-checkout solutions can enhance value co-creation. Due to that, the research question was based on the aspect of how mobile self-checkout systems can contribute to value co-creation in large physical retail stores. The size of the retail store is taking into account since the area of the checkout there has the strongest impact to customer satisfaction (53%) at large retail formats (e.g. big box stores) there compared to other kinds, for example department stores (13%) (CFI Group, 2015). Due to that, the improvement of the checkout area comes with a strong focus from both, retailers and customer, which ensures a close research collaboration to benefit from eventually valuable insights. In order to gain a better understanding of this mobile self-checkout solution, this research will go one step further by exploring attributes, the possibilities and critical aspects for physical retailers from a customer, company and external expert point of view when adapting to mobile SST as payment option.

Thus, the main research question for this thesis is formulated as follows: *How can value be (co-)created between a big box retailer and its customers through a mobile self-checkout solution?*

1.3.2 Intended practical contribution

This research is adding practical input by exploring possible solutions for physical retailers to be innovative via value creation in the checkout area of retailer stores. The research insights can contribute to an easier understanding of how mobile self-checkout systems are perceived by customers, retailer and external experts. Additionally, this paper provides input for an assessment process for other retailers. Elaborating the possibilities and critical aspects by addressing the challenge of creating customer value through providing an in-store the mobile payment solution is in alignment by answering the research question.

1.3.3 Intended theoretical contribution

The outcome of this research will provide a better understanding of the retailer's ambition why to provide such a customer value and experience within physical stores. In combination with the existing literature, this research will contribute to a deeper understanding of how to enhance customer satisfaction as well as the retailer's competitive advantage. In specific, there are three main areas of theoretical knowledge where this research aims to contribute: value (co-)creation, customer experience and self-service technology (SST) in the form of mobile self-service payment system. This paper contributes a model as outcome from the theoretical framework, to plan and structure a qualitative research in the field of value co-creation for future research.

The intended theoretical contribution is rather primitive and has as purpose to provide an overview of the theoretical spectrum this research covers. However, a more evolved contribution is presented at the end of this paper, which points out the actual theoretical outcome of this research.

1.4 Structural outline of this study

In figure 1, the structure of this research is outlined through the use of a rather conceptual map. The first chapter focused to introduce to the topics of value (co-)creation, customer experience and (mobile) self-checkout systems. Henceforth the

researchers argued for the relevance of the topic and pointing out a lack in the current literature through their research purpose and the auxiliary research question.

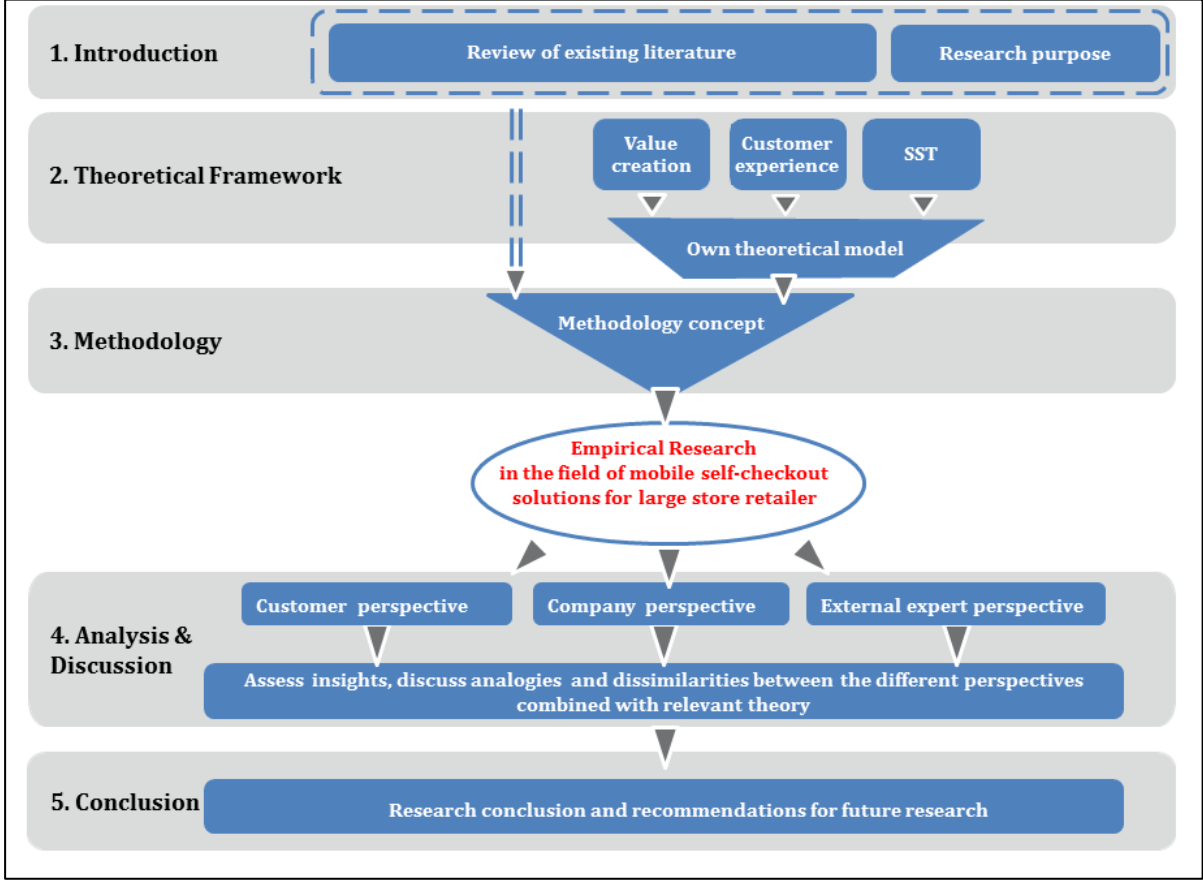


Figure 1: Thesis structure and outline of the individual chapters

The second chapter will outline the theoretical framework of this research by emphasizing on the relevant theory of the previously results and insights applied to this particular research. In addition, existing conceptual models and theory based on previous research will be assessed and applicable attributes of these models and theories will be utilized as guide for the empirical data collection and analysis. After the theoretical framework, the methodological approach of this research will be outlined by illustrating the research approach, justifying the case study, data collection method and revealing the limitations of the research design. Once the empirical data collection has been finalized, the researchers will analyse and discuss the gathered relevant insights to finally draw conclusions, answering the research question and present future recommendations.

2 Theoretical Framework

The previous chapter argued relevancy and the purpose of this research in alignment with the existing literature. This chapter examines the theoretical insights in greater depth according to the relevance of the specified research area. Furthermore, this chapter identifies the framework of investigation, by distinguishing itself from other close related fields of research. The theoretical framework will focus on existing theory and models that are relevant to the subjects of value (co-)creation, customer experience and SST's or mobile self-checkout. This will enhance to display suitable references and solutions to answer the research question of this paper by compiling a theoretical understanding on previous research. Additionally, this section will function as a guideline of missing knowledge, theoretical models and tools in order to create, evaluate compare and the primary data of this research.

2.1 Value co-creation between the retailer and its customers

Depending on the business and context, customer value can be created in various ways and thus can have various meanings (Woodall, 2003). Smith and Colgate (2007) point out that there are two main directions of value use, one can be referred towards the customer and the other one can be assigned to the company. However, this paper mainly focuses on the customer point of view to create value and elaborates value creation in the context of a retail store environment.

Holbrook defines customer value as an “interactive, relativistic preference and experience” (2005, p. 46), which captures some of the main key aspects but it is still complicated to interpret and apply. A more concreted definition can be found by Woodruff who points out, customer value is “a customer’s perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitates (or blocks) achieving the customer’s goals and purposes in use situations” (1997, p. 142), which emphasizes a focus of pre- or postproduct use. He argues that customers consider products as a package of specific characteristics and characteristic performance, which facilitate the achievement of desired experiences, possession value, and value in use, by purchasing and using these products. Woodruff believes that the customer learns to desire certain attributes in alignment of their ability

to achieve their goals, which can be seen as a contradiction to the traditional models of value creation, which mainly focuses on customers output and price.

Moving to a more service logic perspective to define the creation of value, Vargo, Maglio and Akaka, (2008) determine two general meanings of value, which are defined as value-in-exchange, and value-in-use. They refer to the former as values, which are created by the company (producer) and can be usually exchanged through goods and money. The researcher distinguish between customers and producers within creating value but emphasize value-in-exchange is mainly performed by the company. Vargo, Maglio and Akaka describe value-in-use as “the roles of producers and consumers are not distinct, meaning that value is always co-created, jointly and reciprocally, in interactions among providers and beneficiaries through the integration of resources and application of competences” (2008, p. 146). They elaborate their meaning through the example of an automobile, which is only determined as an input to create value to satisfy the need of use, e.g. transportation or self-identity. They point out that the customer has to be aware and utilize resources or services to be valuable. In this case, the car would imply no value if the customer would not know how to use it in the context of his/her own life. With this example, the co-creation takes place from the customer point of view, to apply their skills and knowledge to make use of the car and provide own resources in exchange (e.g. money). The company’s responsibility is to apply their skills and knowledge in the production and branding of the commodity or service to receive the customer’s resources for its own value creating activities. Heinonen et al., (2010) emphasize that value-in-context is naturally aligned to value-in-use and can be determined as dynamic since experiences continuously accumulate. They underline from a customer’s perspective, prior experiences are constantly present as an invisible context to reflect and evaluate on.

As it became clear, due to the complex construct of customer value, there is no clear definition whether customer value is created in a cumulative (more advantages than sacrifices) or ratio (advantages divided by sacrifices) based judgement. Neither is distinguished if customer value can be accomplished through compensatory (rational) or noncompensatory (heuristic) decision rules (Parasuraman, 1997). However, since this paper elaborates the possibilities and critical aspects of integrating a mobile self-checkout service, where the company has to do less (no assistance to check out on tills or self-checkouts) and the customer has to do more (product scanning and payment with own mobile device) in order to enjoy the benefits of being faster and move more freely during their shopping. Due to that, this research reflects on approaches of customer value-in-use in alignment with value-in-context. This perspective supports the ratio based judgement, but does not take any position towards decision rules.

As the previous chapter explored, a main driver of value creation is co-creation. From a company perspective, value can be created through interactions with customers to establish stronger connections with each other (Prahalad & Ramaswamy, 2004).

Alternatively, from a customer perspective, value could be provided by getting products or services provided which are aligned with the customer’s expectations (Vargo, Maglio & Akaka, 2008). Grönroos and Voima (2013) emphasise that value creation can take place in the three spheres of provider, joint and customer, which leads to direct or indirect customer’s interaction. Putting value co-creation in a retail context, Prahalad and Ramaswamy (2004) define the three sphere as ‘The Firm’, ‘The Market’ and ‘The Consumer’. They point out that the co-creation experience can only take place within ‘The Market’ and in collaboration with ‘The Firm’ and ‘The Consumer’.

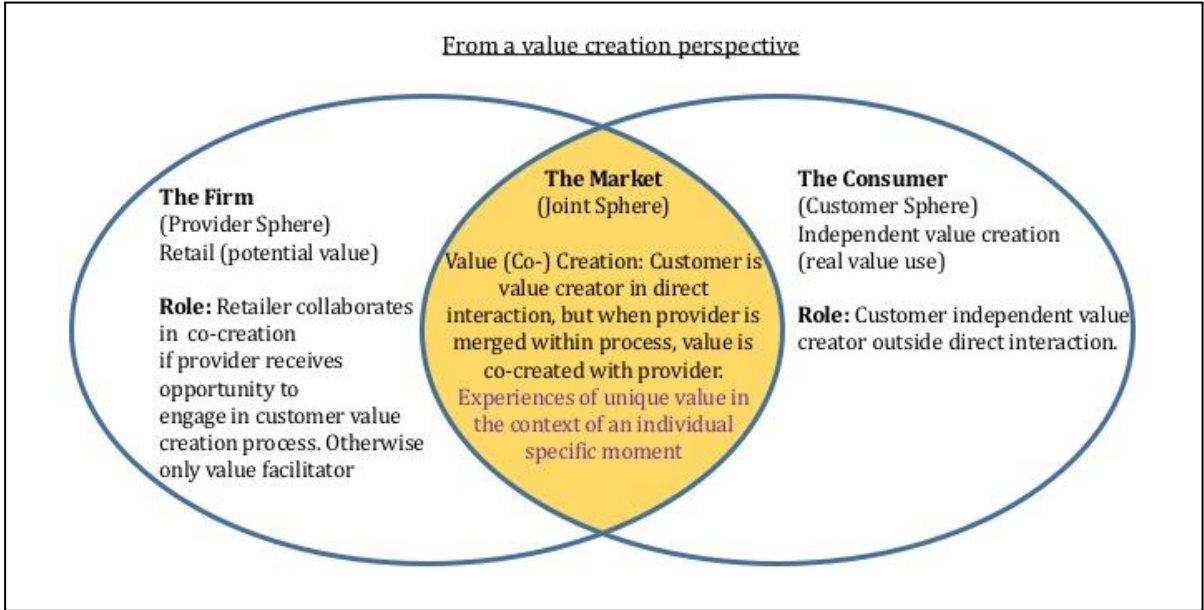


Figure 2: Value creation spheres (Grönroos & Voima, 2013; Prahalad & Ramaswamy, 2004)

As is apparent in figure 2, the firm can be only seen as the value facilitator until the opportunity occurs to engage with the customer ‘at market’, and in doing so becomes merged within the process where the firm’s role switches to a co-creator alongside the consumer. Alternatively, the consumer or customer can be defined as a value creator in direct interaction due to real value use. Prahalad and Ramaswamy (2004) pointing out that from a value co-creation perspective all touching points between the firm and customer are opportunities for value creation and extraction of personalized experiences. Numerous scientists today see a wide scope of consumption that incorporates, but stretches out beyond purchase behaviour and brand decision. The idea of experience turns into a key by understanding the consumer attitude - the central element in the current economic situation and marketing of goods and services (Carù & Cova, 2003). Prahalad and Ramaswamy (2004) emphasize that companies have to adjust their approach of interacting with customers in a more personalized way by understanding their desires and preferences, current trends, and analyse the changing society environment as a whole. This is confirmed with the closely related idea of value-in-context, where the customer considers the present in the context of prior experiences, and which could be the reason why Heinonen et al. (2010) highlight the identical suggestion of customer approach adjustment. Nonetheless, it is important to

consider that the outcome of this co-creation as a whole has to be beneficial for both engaging parties in terms to make this kind of action reasonable.

Importantly, this research only considers the interaction points within a physical retailer store environment, specifically, the self-checkout area. According to the literature, this is identified as within the 'Market', or joint sphere. By focusing on the relationship between retailer and customer in-store, this research distance itself from previous research that addresses value creation in other points of the value chain, e.g. supplier and retailer.

2.2 The self-service journey of customers

Regarding the research purpose of this paper, creating value through positive customer has the aim to contribute to customer satisfaction. Therefore, companies should ensure to firstly meet the consumer's expectations on traditional values before concentrating on finding supplementary means to provide additional customer experience.

(Teixeira, Patrício, Nunes, Nóbrega, Fisk & Constantine, 2012) state that companies can support the customer to co-create their preferred experiences by providing services, which is in alignment with (Carbone & Haeckel, 1994) who outline that a service always comes with a form experience. In order to assess how experience is perceived through service, Johnston and Clark (2008 cited in Johnston & Kong, 2011) provide two perspectives on service in figure 3.

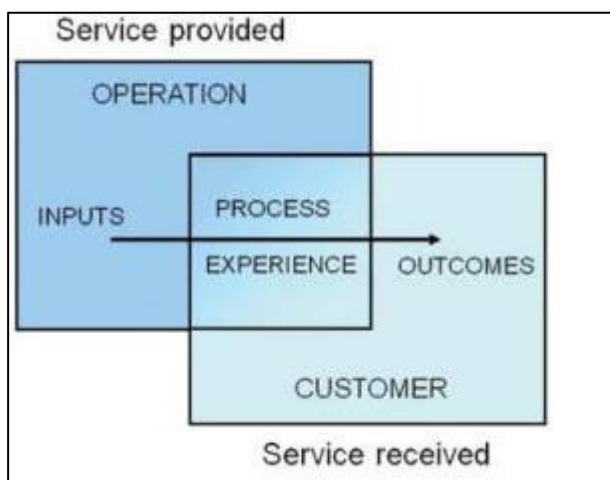


FIGURE 3: Two perspectives on customer experience through service (Johnston & Kong, 2011)

This implies that customer experience through service is a form of co-creation between the provider and receiver. An emerging form of service is the use of SST (Wang, Harris & Patterson, 2012), since mobile self-checkout systems are a configuration of the former it would behave to shed light on the relation between service and the impact on customer experience. Previous research on this relation reveals that providing SST, which reduces waiting times, can provide a positive effect on the customer's shopping experience

(Weijters, Rangarajan, Falk & Schillewaert, 2007). This is an important consideration, since previous research has indicated that waiting time is an essential aspect of customer satisfaction and experience (Zhou, & Soman, 2003).

It should be noted that prior, negative or positive, experiences with SST can have an impact on the current attitude of the customer towards SST (Verhoef et al., 2009; Wang, Harris & Patterson, 2012). There are rather vague definitions of customer logic which underlines the complex context of customer experience and engagement. Heinonen & Strandvik defined customer logic as: “

An idiosyncratic logic that informs customers' behaviour customer logic is cognitive and affective and only partly explicit. Customer logic influences how customers choose among available offerings and how customers experience the value of different offerings” (2015, p. 478).

However, the question remains if relation between SST and customer experience applies to customers in general. A distinction within customers can be made between hedonic and utilitarian minded consumers, which both have distinctive goals and values in their shopping experience. Where the hedonic mind-set is to achieve a form of enjoyment when shopping, conversely, the utilitarian seeks for efficiency through value of the time spent in-store (Babin, Darden & Griffin, 1994). Therefore, it can be argued that customer's intrinsic motivations for participating in the act of shopping can vary due to hedonic and utilitarian attitudes. This can be described as dynamic since a customer's attitude might alternate through personal motivation, perception, and time. However, being aware of these general distinctions is essential for the retailer as these attitudes come with implications towards customer expectations, engagements and satisfactions towards the shopping experience. Further research however points out that both utilitarian and hedonic shoppers perceive a form of increased convenience from using self-service checkout systems (Lee & Lyu, 2016). In addition, this perceived convenience is an increasing demand during the entire shopping experience (Reimers & Chao, 2014).

Bustillo and Fowler (2009) pointed out, in order to enhance customer experience and to stay attractive, retailers are constantly on the outlook for innovate solutions which can be found in mobile self-checkouts. An innovative retailer example is Apple, as one of the pioneers of providing a mobile self-checkout system that allows customers to purchase their products, excluding high price commodities such as Macs, iPhone and iPads, without queuing in line.

By charging the purchase to the credit card, which is associated with their iTunes account Apple focuses to make it easy for the customer to use their services. Apple Stores are not security-free zones by having cameras in their ceilings. Nonetheless, the company consciously values ingratiating shopping experience over strong anti-shoplifting strategies. Apple does not use tags that set off an alarm at the exit nor do they check the customer receipt (McCracken, 2011), which clearly confirms importance of customer satisfaction and value creation. Apple provides even outside of their own stores the possibility to pay via smartphone, through the application Apple Pay, which is already accepted by retailers such as Best Buy and Rite Aid. However, it is to point out

other companies provide similar services such as Google Wallet or Samsung Pay as well (Wahba, 2015; Hernandez, 2016).

Another recent example of utilize SST's even to a higher extent can be found in the convenience store in the town of Viken, Sweden. There the entire store is unmanned and customers have to use a provided smartphone app to gain access to the store and make purchases. In contrast to the example of Apple, people have to pay their goods at the end of each month which is send out through the app in form of an invoice (Mashable, 2016). The two biggest challenges of the convenience store in Viken is to reach out to the elderly residents (Prindle, 2016) and getting in minimizing the risk of theft, which is why they do not sell any tobacco, medical drugs or alcohol (Mashable, 2016).

After presenting two innovative solution implementing mobile self-checkouts in the retail environment, the third example of integrating SST is of relevance due to the large store format as a big box retailer, which implies different challenges and attribution than smaller store formats. Wal-Mart, as one of the biggest retailer in the world, is aiming to provide mobile payment solution across all their U.S. stores in mid-2016, which underlines again the future movement of in-store SST integration and payment. Due to financial reasons, Wal-Mart only provides this service through their own mobile application, Wal-Mart Pay, rather than joining the existing Android and Apple purchase systems. Furthermore, the companies emphasize that their focus lays on offering generic app to scan QR codes and use the in-store mobile self-payment service, which has to be compatible with any iOS or Android device (Condliffe, 2015). This could be reasoned by the fact that Wal-Mart experiment of first tries in 200 stores had to be cancelled, since customers could not figure out how to use the Walmart app by not meeting the attribute of easy-to-use (Anderson, 2014).

Retailers pursuing to personalize shopping, which requires an understanding of the consumer behaviour. One way to achieve such a goal, it makes their apps vital for their customer, which is in alignment with the statement of Neil Ashe, CEO of Walmart Global E-Commerce, "Walmart Pay makes the app more valuable to the customers and helps us build a deeper relationship with them." (Wahba, 2015). On the other hand, customer could not like the idea to provide the retailer with bank details or being pushed to download an App to be able to pay with their mobiles for each retailer they are going to visit (Condliffe, 2015).

Having the three examples of mobile self-checkout solutions in mind, it is to point out that there is an increasing relevance of SST's and mobile integration. Furthermore, it is shown that customers and companies are willing to engage in mobile self-checkout solutions. Nonetheless, it is to mention that there is no consistent and sustainable business model developed yet, to integrate mobile self-checkout to satisfy both sides. No research has been conducted regarding a common payment solution or general possibilities and critical aspects of mobile self-checkout, only little research has been

done to provide insight of the customer and company's payment preferences and no common answer can be found how to reach out to elder people or master the lack of security.

2.3 Assessing the suitability of existing theoretical models in correlation to value co-creation

During the research process for existing (conceptual) models that could be used as foundation for this research, the researchers were not satisfied with one existing model as a whole. A reason for this opinion could be explained by the fact that the Osterwalders-model was found to be too broad for this rather specific research. Therefore, the deliberate decision was made to define several models and highlight the attributes that are of importance for this research. By combining components of these existing models, this research finally presents a unique model that is utilized to analyse the gathered empirical data. Subsequently, the existing models presented will support the empirical data collection by providing a semi-structured guide in an attempt to gain as much relevant insights as possible. With this structure the researchers will be able to relate the insights to theory and conceptual models from the theoretical framework to argue for relevancy, and even contribute to the development of these existing theoretical topics.

2.3.1 DART-model

The DART-model (Dialogue, Access, Risk-benefits, and Transparency) is emerging as the basis for interaction between the consumer and the firm, which is elaborated extensively (Prahalad & Ramaswamy 2004; Taghizadeh, Jayaraman, Ismail & Rahman, 2016). Attributes of this model can be considered as constituents for value (co-)creation in the consumer-firm relationship. The components of this model will be interpreted specifically in order to be relevant to this research. Because this research focusses on both the firm and the customer's perspective on value creation, it shall be interpreted as the following:

Dialogue

Presented by Prahalad and Ramaswamy (2004) as the cooperation between firm and customer in the way they interact, have dialogue, with each other to create a 'joint' form of value. Within this research, dialogue is closely related to co-value creation aspect and will be considered as the relation between consumer and firm when analysing the empirical data. Within the spectrum of the BOSS-model, dialogue takes place between the standpoint of the company and customer, which is defined as the value (co-)creation attribute.

Access

According to Prahalad and Ramaswamy (2004) the information flow must be focused on the customer and engage cooperation in all areas of co-creation experience, for example information search, service, or consumption. In this research, the term 'access' is determined by the way of access to enter the dialogue (e.g. using a phone to call customer service) and the access of the information to be able to create dialogue itself (e.g. knowing the steps how to reach the customer service centre). This applies to both the consumer and firm by providing and gaining these two forms of access. Where for example the consumer becomes aware of a new phenomenon through their surroundings (access), the consumer can in their turn request access.

Risk-benefits

These risk-benefits can take place in the value (co-)creation spectrum by introducing new technology in physical retail stores for example. The risk in this case could come from the fact that new technology requires adaptation from the customer's side, which can lead to a rejection of this new technology. This will be further elaborated on in the Technology Acceptance Model later in this chapter. The task of the retailer in this case to educate the customer regarding the benefits of this late system which can contribute to the dialogue between customer and retailer.

Transparency

Prahalad and Ramaswamy (2004) state that transparency and access are needed to have a substantial dialogue. However, for the purpose of this research the transparency attribute will be considered in relation to risk-benefits. Providing transparency by the retailer when co-creating value gives the customer the means to better assess the risk-benefit of a new value creation phenomenon and if this indeed provides any value for the customer.

2.3.2 TAM model

The Technology Acceptance Model or TAM is a widely accepted and used model that was found to be reliable across several research areas to assess the adoption of technology (King & He, 2006). TAM is an adaption of the Theory of Reasoned Action (TRA) model, made to fit the user perception on information technology. The TRA model can be used to assess a person's behavioural intentions in compliance with attitudes towards behaviour and the subjective norm (Davis, Bagozzi & Warshaw, 1989). Subsequently, the TAM model can be utilized to determine behaviour towards technology acceptance, grounded by social psychological attributes from the TRA model. Ease of use and usefulness are the original drivers of the TAM model in order to analyse personal behaviour towards the acceptance of technology (Venkatesh & Bala, 2008; Shen & Eder, 2009). However, since this research will partially focus on the perception of how customer behaviour (in willingness to adapt new technology), the previously mentioned

subjective norm will be taken into consideration in addition to ease of use and usefulness.

Ease of use

This perceived ease of use by the user can be described as the limited amount of effort (i.e. time and resources) that one needs in order to adopt or operate new technology (Venkatesh & Bala, 2008). However, it should be noted that this threshold of effort can differ from user to user. The ease of use in appliance to this research will shed light upon the query of what customers require from the retailer in the process to adapt to mobile self-checkout solutions. In other words, what would be needed to ease the learning curve on how to use such technology.

Usefulness

The perceived usefulness from the original TAM model was described as the degree into which the user finds the newly adopted technology performance increasing or not (Davis, 1989). Since this original research was based on how technology can enhance job performance and was later confirmed (in this context) by Sabherwal, Jeyaraj and Chowa (2006), there is a need for a new interpretation in regards to this research. Thus this research will not focus on just how technology can be useful for employees, but rather on how providing a customer perspective can enhance customer's shopping experience. The definition of usefulness within the TAM model has also been characterized as the degree to which technology will improve his or her condition (Lee, Tsao & Chang, 2015). The condition in this case would be the shopping experience, as the purpose is to understand if using mobile self-checkout solutions will contribute to being advantageous during the shopping experience of the customer.

Subjective norm

Subjective norm in this case can be characterized as the degree into which a person perceives the attitude from one's (social) environment towards the acceptance of this new technology (Davis, Bagozzi & Warshaw, 1989). An example here can be given by how the social circle of a person stands towards a certain type of technology. In addition, subjective norm in this case can also derive from the acceptance in a broader sense. If one is familiar with this technology through other instances in their environment, it might lead to a more graduate acceptance, since it is already part of their live in a different form. In regards to this research, the (social) environment can be of influence if customers would easily accept self-checkout solutions. Depending on their payment behaviour in other stores for example and which options those stores offer.

2.3.3 Business model canvas

When innovative technology is introduced, it can occur that even after testing the actual integration into reality deviates from the predictions from the testing phase. A great deal of examination is put into the improvement of yet another pilot demonstrating another idea that, inevitably, neglects to be retained in practice. The issue is regularly brought on by innovation push, without a legitimate examination of the issue in its practical setting (Meertens, Iacob, Nieuwenhuis, Van Sinderen, Jonkers & Quartel, 2012). In relation to value creation through IT innovation, it is important to map out the key attributes that are affected or will affect the implementation of new technology. In an attempt to prevent the previously mentioned disconnected transition from theory to practice.

A helpful tool in an attempt to map out the key attributes and how these can create, develop and deliver value, of a new technology, can be found in the Business Model Canvas (BMC) developed by Osterwalder and Pigneur (2009). According to Chesbrough (2010) this BMC describes the chain of how value can be created in relation to the environment a company according to the value network it is in. However, the model is missing the integration of the customer's perspective in order to be relevant to value co-creation in the firm-customer relationship (Zolnowski, Weiß & Bohmann, 2014). The BMC covers a broad spectrum of attributes that are part of a business model. However, since this research will focus on the implementation of an innovative technology, being mobile self-checkout in the retail environment, a deliberate selection is made regarding which elements of the BMC that can aid in uncovering valuable insights. With a focus to include the customer's perspective that is missing in previous research, the perspective from the firm is considered in parallel in an attempt to add to the value co-creation spectrum between these two parties.

Value propositions

This attribute of the BMC can be valuable for this research in the sense that it can be used as guideline for the empirical data collection. Value proposition highlights for example how a retailer addresses issues that their customers face and fulfil their needs through value propositions (Osterwalder & Pigneur, 2009). In order to tackle these issues and create value however it is important for the retailer to understand what the customer is going through while shopping in their store, in terms of pain points and demands. Relevancy to this research can be found in uncovering the perspective from the customer in order to address these issues and uncover what they, as customer, value.

Customer relationships

Customer relationships are built and persevered with every segment, based on each segment's requirements (Osterwalder & Pigneur, 2009). Customers of a retailer presumably choose this particular store based on the value proposition. However, a retail company can have distinct segments of customers that shop at their stores. For

example, hedonic shoppers who look for the shopping experience, in contrast to utilitarian's who have the aspiration to be as efficient as possible while shopping (Babin, Darden & Griffin, 1994). Therefore, the authors argue that in order to assess how mobile self-checkout can contribute to value co-creation between a retailer and customer, it is critical to examine the segment characteristics. Through this approach, the value proposition of the mobile self-checkout solution will be adapted to the various customer segments.

Key activities

This element derives from the BMC's remaining attributes, for example, increasing customer relationships requires activities in order to achieve this objective. As previously discussed, a deliberate choice is made to include the aspects of the BMC that are relevant to this research. Thus, the key activities that will be presented reflect the selected aspects of the BMC, rather than the model as whole. These key activities depict the activities that an organization performs in an attempt to generate and convey value propositions to its customers that take shape in the rather practical implications (Muhtaroglu, Demir, Obali & Girgin, 2013). Therefore, the key activities will finally be considered in the form of recommendations if retailers decide to apply this research, to achieve value co-creation through implementing a mobile self-checkout solution.

Key resources

These are defined by Osterwalder and Pigneur (2009) as the key resources needed to create and convey the value proposition, which can be physical, intellectual, human or financial resources. It should be noted that this research is not inquiring into the financial aspect of implementing a mobile self-checkout solution. However, the remaining aspects can be valuable in regards to future research once this research has presented which key activities play a significant role in creating a value proposition through mobile self-checkout. This is because the key resources in fact derive from the key activities.

2.3.4 Value Proposition Canvas

The Value Proposition Canvas (VPC) can be considered as an extension of the BMC where the main focus is on the following two elements of the latter, being value proposition and customer (segment) relationships. In fact, the VPC is a tool to map out how to create value for customers through the development of products or services based on customer needs (Osterwalder, Pigneur, Bernarda & Smith, 2014). For this research it is important to gain insights in the customer's requirements of a mobile self-checkout solution in order to contribute to value creation.

As discussed previously, this research implicates the use of ratio value creation, where the emphasis is on the ratio of input in terms of effort, and output in terms of benefits. In

the VPC these attributes of effort and benefits, can be seen as the gain creators and pain relievers which jointly account for the value proposition that a retailer offers their customers (Pokorná, Pilař, Balcarová & Sergeeva, 2015). The other side of the VPC consists of the using experience from the customer's perspective, which includes their tasks and the gains and pains that are involved with these activities (Lindič and Marques da Silva, 2011). For example, a specific task can take form when a customer signs up for a loyalty card where the gain can be additional discounts, however, the pain that the customer perceives is the sign-up process which may take time and effort.

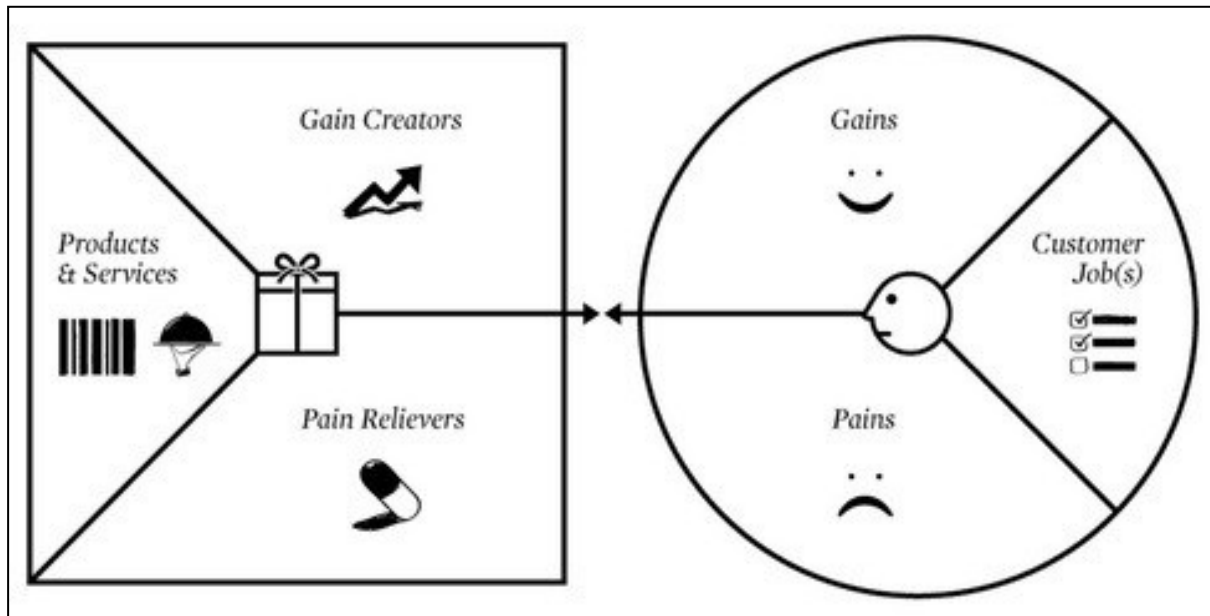


Figure 4: Value Proposition Canvas Source: (Clark, Osterwalder & Pigneur, 2012)

As can be seen in figure 3 above, there are two sides to the VPC that converge in a middle meeting point described as the 'fit' (Osterwalder et al., 2014). Nevertheless, the researchers perceive a lack in this model of a clear and definitive meaning of the part where these two parts coalesce. By adopting the VPC to this research, the empirical data will need to provide insights from both sides where after the coalescing spot will be presented as the point of value co-creation. Uncovering the customer's perception on what 'offer' from the retailer create value for them. This finally needs to translate into the actual 'offer' a retailer presents their customers in order for this coalescing spot to exist.

2.4 Establishing a suitable research model for value co-creation

As discussed previously, the relevant individual conceptual models presented in the previous chapter did not satisfy the need of the researchers to utilize in the empirical data gathering and analysis of this research. Therefore, the researchers present their own conceptual model in Figure 4, being the BOSS-Model of value (co-)creation, which is partially based on the attributes of the discussed theories and models. This preliminary model represents a visualization of the interpreted theory of the theoretical background in the fields of value (co-)creation, customer experience and mobile payment solutions as part of the technology adoption process.

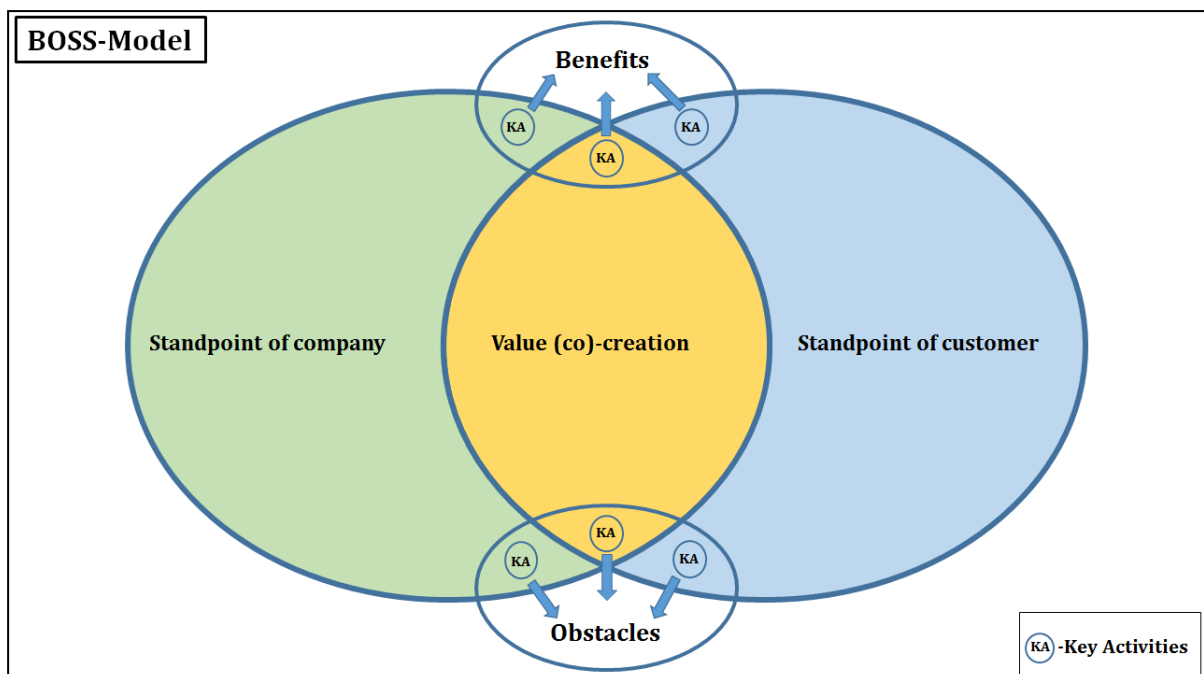


Figure 5: BOSS-Model

The BOSS-Model represents the perspectives of both the customer and company as co-creators of the value creation spectrum. This spectrum is affected by benefits and obstacles which together translate into practice through key activities. Importantly, as defined earlier in this research, the researchers argued for a ratio approach between benefits and obstacles. The model consists of the following elements:

Benefits

The benefits in this model derive from key activities which can be performed by the company and customer individually, as well as in cooperation. These benefits in turn should be seen in ratio with the obstacles that need to be addressed. The researchers argue that in ratio the benefits should exceed the obstacles in order for value creation to

take place. For example, when implementing new technology, the key activity for the company can be providing an easy to use technology that can be operated by the customer without any implications. This process can contribute to a better customer experience through co-creating value.

Obstacles

On the contrary of benefits, the obstacles that need to be overcome should in ratio be subordinate to the benefits. In the case where obstacles do exceed the benefits either the customer, company, or both will not perceive any gains which are needed in order to establish value (Osterwalder et al., 2014). For example, when implementing new technology, obstacles can occur when the customer does not perceive the use of this technology as beneficial or has difficulties operating it. This would still define the operating the technology as key activity for the customer. However, in this scenario the key activity does not contribute to value creation rather establishes an obstacle for the customer.

Standpoint of company

This perspective can include several key activities for example by providing the resources, for example service in the form of technology in an attempt to provide benefits for the customer. Furthermore, the company will need to assess what it will offer their customers, which can consist of tangible as well as intangible attributes. Finally, companies should be open for dialogue with their customers and provide the means necessary in terms of access that the customer requires in order to open up this dialogue.

Standpoint of customer

As outlined in this chapter, this research defines customer value as the ratio between the perceived benefits and obstacles from a customer's perspective. It should be noted however that customers have distinct shopping behaviour, such as the hedonic and utilitarian shopper which affects their division of benefits and obstacles. This research has argued that customers are willing to increase their effort in terms of key activities during their shopping experience if the perceived benefits as output are more valuable than the input.

Key activities

The key activities that can occur in every part of the value (co-)creation spectrum derive from tangible and intangible influences. The customer, company, or both can perform these key activities. Though the consequences of these key activities, either benefits or obstacles are created. The researchers have argued that value in-use is constructed from the ratio between these benefits and obstacles. Thus, it is of importance that this research will outline how the perceived benefits can exceed the obstacles through the insights of empirical data.

The preliminary BOSS-model was intended to be utilized as tool throughout the empirical data collection process in a structured manner, based on the theoretical interpretation of the researchers. Henceforth in the data analysis, the findings will be reflected back on the attributes of this model in order to be able to draw concrete conclusions.

3 Methodology

This chapter will outline the methodological approach towards this research to provide a rather structured process of gathering empirical data. More in-depth this part will address the research design, justifying a suitable case study where after a suitable method for data collection is presented.

3.1 Research Approach

In pursuing the study objective of presenting a business solution in form of suitable theory, this research follows the abductive approach. Hence, this research distinguishes itself from the deductive and inductive approach by leading away from former to unique (new) theoretical insights and reframe empirical findings in correlation to existing theories (Timmermans & Tavory, 2012). The main purpose of this research is to elaborate the possibilities and critical aspects of enhancing customer value creation through mobile self-checkout for physical retail stores. The aim is to highlight the contradiction of suitable in-store mobile self-checkout system solutions and the related effects and adjustments, which would have to be executed on a current overall business model. Thereafter, the research will focus on assessing the effect of self-service technology, in terms of payment solutions. These solutions should conform several influences, which include the adaptability to changing the retail environment in order to implement mobile self-checkout and customer demands.

To the best of the researcher's knowledge, no research investigates the deeper meaning of the customer demanded attributes to engage in SST technology services through qualitative way. Being aware of the required customer demands, the urge for innovation as well as the technically feasibility to provide a sustainable mobile self-checkout (Taylor, 2016), this research will go one step further. This research aims to explore the possibilities of integrating a sustainable mobile self-checkout solution within an already existing retail store format, which needs to be designed based on customer needs in order to add to the joint sphere of value co-creation. Therefore, a case study with an existing retailer could provide a constructive environment to gather empirical data and evaluate the relevance to practice. Case studies are useful for research into specific innovation and specific categories of innovations (Eisenhardt, 1989), which applies to this research purpose about the implementation of a relative, from the customer's perspective, innovative new technology. In addition, it is argued that the selection of the

case study should be based on the level of where the expected learning will be the richest (Denzin and Lincoln, 2005).

With this in mind, this research requires a collective of necessities in order to contribute to this research approach as intended. Firstly, since this research focuses on the physical retail environment it is of importance that the case study is based on an existing physical retailer. Secondly, considering that this research will be conducted during a relatively short period, ten weeks, it is essential that this physical retailer grants access to the means necessary to conduct this research. Thirdly, it is crucial that the selected retailer has not yet implemented a form of mobile self-checkout due to the explorative nature of this research. This will encourage both the customers and employees to respond in an explorative manner on this subject instead of assessing their perception on the existing mobile self-checkout solution. In addition, this requirement can contribute to selecting a case, which can offer the most in terms of learning outcomes. Fourthly, the retailer's core value needs to be into a certain extent correlate with value co-creation. In specific, a value co-creation spectrum, where both the retailer and customer participate in, should not to be confused with the retailer-supplier relationship. Finally, little research has been conducted in the field of self-service technology for a type retailer where customers purchase products in a more infrequent interval, as opposed to stores where customers come more frequently, for example grocery stores. Since a high perceived waste of time interferes with customer satisfaction (Chin Chin & Spargue, 2013), conducting a research at a not 'everyday' store could influence self-service technology attributes, due to a different customer attitudes and 'goals' that customers have when shopping.

3.2 Justifying IKEA as Case Study

To investigate the main research question and fulfil the purpose, a case study with a physical retailer and its customers will be conducted. In the research approach the requirements for this case study were outlined, while in this subchapter the aim is to justify this case.

The single-format retailer IKEA, as a traditional physical retailer and with the business philosophy of "we do our part, and you do yours" (IKEA, 2016), is selected as sample in form of a case study to reflect on customer value creation & co-creation. The philosophy of IKEA is an important factor for justifying it as the suitable case study. Since this implicates that customers and IKEA have their own role and responsibility in the shopping process this needlessly is in line with value co-creation. In addition, IKEA's business model based a low customer maintenance by providing products but the customer has to do a fair share by themselves the company could consider a shift to create value on other attributes than the product itself. This is in line with the

requirement that the core value of the retailer should, to a certain extent, relate to value co-creation between customer and retailer.

Another reason for the selection of IKEA as case study is implied by the fact that the in-store business model, single-format store design to lead the consumer through the whole store according to M. Dubakina (Assistant to Global Retail & Expansion Manager at IKEA) (personal communication, February 25, 2016). Which is somewhat in contradiction with the implementation of a time saving mobile self-checkout solution. As mentioned before, all in-store points where the company and customer interact can be used to create value. Due to globalization, which was addressed earlier, product offerings in the retail sector becoming more and more similar. This means that retailers need to look for new opportunities to create value. Technological developments and providing more service in addition to their initial offer in the form of products can be of aid in this process (Saarijärvi, Kannan & Kuusela, 2013). This satisfies the requirement that the elected case has not yet implemented a mobile self-checkout solution and can provide rich explorative insights.

Not only online business is competitive, IKEA also is looking for uniqueness and prestige over physical retailers through creating competitive advantage since the physical stores are a huge part of IKEA's strategy (Hansson, 2016). In addition, IKEA is aware of the innovator's dilemma by Clayton Christensen (1997) where market leaders will not survive a certain shift, e.g. Nokia and Kodak who were almost too big and neglecting to face the challenge of innovation (Hansson, 2016). Furthermore, IKEA is looking for a solution to address the pain point of negative shopping experience, such as wasting time by waiting in line at the checkout according to S. Azad (Deputy Store Manager at IKEA Wembley) (personal communication, March 7th, 2016) and A. Castor (Easy Buying Leader at IKEA) (personal communication, April 7th, 2016).

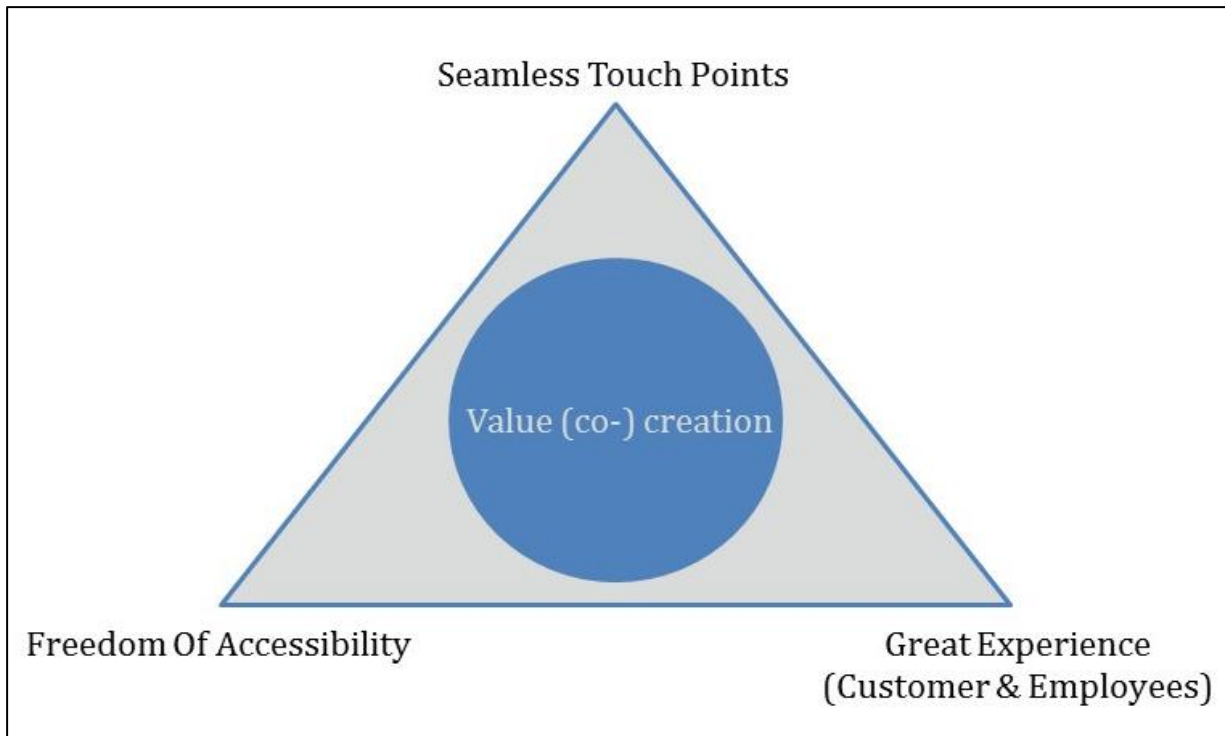


Figure 6: Martin Hansson (Head of Retail at IKEA)

Furthermore, according to Hansson (2015), head of retail at IKEA, the main focus areas for the retail environment are respectively: seamless touch points, a great experience for both customer and employee and freedom of accessibility. The researchers argue that (co-)creating new value can be positioned in the midst of this spectrum. As outlined in the introduction, seamless touch points or ways to interact with the customer can contribute to enhancing the overall experience. In addition, a mobile self-checkout solution goes hand in hand with the freedom of accessibility, which gives the customer the ability to checkout according to their convenience. These considerations established a common interest in the subject of value co-creation through mobile self-checkout solutions between the researchers and IKEA, exemplified by the case study, which contributes to the requirement regarding the access to resources and interview opportunities in order to conduct this research.

3.3 Research Design

The previous chapters presented the approach for this research based on a case study. The research design subsequently will provide an in-depth elucidation on the required data needed to conduct this research. Thereafter, the reasoning for the method of data collection will be presented along with the tools and environment this method utilizes.

3.3.1 Data needed

In order to assess the feasible options in terms of suitable mobile self-checkout systems for large retailers, which contribute to value co-creation, there is a need necessity for both primary and secondary data. Primary data will derive from this research as an outcome and will be considered as undiscovered and original data (Glass, 1976). Whereas secondary data will be obtained through re-analysing existing data in form of facts and figures, internal organizational reports and public research according to Hultman (2016).

As mentioned before, various research points out that mobile self-checkout is a positive innovation for the shopper experience of physical stores (Andriulo, Elia & Gnoni, 2015; Fernandes & Pedroso, 2016; Demirci Orel & Kara, 2014). This form of secondary data can be valuable, if relevant, to provide the foundation on how consumers perceive this innovation in terms of in-store customer experience. Therefore, there is no reason to include this as part of the primary research since it will be repetitive. In addition during the initial meeting with C. Bates (Customer Experience Manager at IKEA) (personal communication, February 25, 2016), it became clear that internal knowledge on this subject is available upon request. This significant amount of varied data regarding in-store innovations and customer experience, which is already available to the researchers, will be considered as secondary data.

Since this research will not only focus on the consumer's willingness to accept this innovation for a more efficient shopping experience but in addition the applicability in a large physical retailer based on customer requirements, it is the latter aspect that lacks research. Considering the fact that this research subject originates from the lack of research on how a large physical retailer can adopt mobile self-checkout solutions to enhance customer experience, there is also a need for data from the company's perspective. This (not yet available) data will be needed as primary source of data in order to solve the research question from the company's perspective. To gain a better understanding from the perspective of IKEA towards mobile self-checkout solutions it is essential to obtain insights from a strategic point of view as well as the in-store perception, which for example can take form as thoughts, visions and constructs on this matter. Within this primary data collection there will be a distinction between an internal and external perspective on the primary data, which will be elaborated on more in the method of data collection.

3.3.2 Method(s) of data collection

As mentioned earlier, this research follows an abductive approach by generating a theory out of the research, based on previous research and theory, to provide opinions to towards a specific problem statement, which will rather elaborate with words than

numbers (Bryman & Bell, 2011). Since this research is in need of opinions and meanings towards a phenomena the use of objects would not suffice, however people do due to their ability to attribute meaning to a matter (Bryman & Bell, 2011). This requires an in-depth data collection in order to be generalized to a theory than rather generating a general opinion from a population, according to Sörgärde (2016). Yet, the appropriate method of collecting the data for this kind research does not require to be measured to find applicable solutions. Thus, it is essential to underline that this analysis follows a qualitative methodology and is to be distinguished from a quantitative approach (Bryman & Bell, 2011).

3.3.3 Sampling

As mentioned before the requirement of the primary data is to understand the underlying meanings and opinions instead of a general opinion. To frame a pool of people that can contribute valuable data, the research makes use of sampling. In this case snowball sampling is applied, which does not aim to show representability of a population rather a form or theoretical sampling. This has implications, however, for the sample range, which in the case of qualitative research will not be defined due to complex nature of the data gathered. Since theoretical sampling is in alignment with the explorative nature of this research, in order to come up with a concept or theory about an existing issue, it can be argued that snowball sampling is a suitable method of data collection. The strategy behind snowball sampling is to initially make contact with a small collective of people, which on their turn will refer the researchers to other 'relevant' contacts and so on (Bryman & Bell, 2011).

In practice for this research snowball sampling will occur from both an internal as well as external perspective. In this case this implies that internally the first point of contact will be the contact person within IKEA who will refer the researchers to relevant other contacts within the company. From an external perspective, the supervisor from Lund University is able to refer to independent experts in the field of customer experience within the retail environment. Both internal and external are appointed sources of data collection and will be evaluated by the researchers in order to assess relevance to the data needed. The main argument for this deliberate decision is an attempt to gain rather subjective primary data on this issue from multiple perspectives. On a final note, the time restraint of ten weeks in combination with the accessibility of the internal and external data will have a restrictive effect on the data collection.

3.3.4 Qualitative interviews

Due to the in-depth requirement of the data needed for this research, qualitative interviews, which primarily account for rich and detailed data, are a compatible

approach to 'access' the data needed. In addition, qualitative interviews allow the researchers to ask follow-up questions to interviewees, providing a deeper understanding of the intended subject or uncover data that was not accounted for beforehand (Bryman & Bell, 2011).

Since the empirical data collection is aimed to get an internal as well as an external perspective on mobile self-checkout solutions, as enhancement of value co-creation and customer experience. Both perspectives will be aimed to gather different insights, and thus data, in order to solve the research question. Therefore, as distinction is made between internal and external interviews, based on the purpose and the insights each perspective can provide. To ensure that the insights from the company and customer's perspective are comparable, both will be presented with an identical interview guide around the topics that will be discussed.

IKEA co-workers

The internal interviews with IKEA co-workers aim for a more specific topic from the employee's perspective, depending on the role of the interviewee within the company, in order to collect data from multiple departments on this issue. Since interviews are conducted with employees from different departments, it will allow the research to gain rich data from different perspectives within the company. However, since all were interviewed on the same topics, the insights can help to point out both relations and dissimilarities between the distinct departments on the matter of mobile self-checkout solutions.

Customers

Secondly, interviews will be conducted with customers at the IKEA store in Wembley, London. By interviewing both the customer and the company, this research aims to uncover the point of value co-creation. Subsequently the intention is to position a mobile self-checkout solution as a value creation tool based on the perspective of both sides within the firm-customer relationship. In order to realize this, the researchers needed to understand the motivations, experiences and visions from the customer in an attempt to assess what creates value from their perspective. By adopting the conceptual BOSS-model this research will reflect upon the attributes like benefits and obstacles that customer's express during the interviews.

External experts

Finally, external experts in the field of customer experience within the retail environment will be interviewed to gain a broader understanding of value creation in physical retail stores for customers. The aim with these interviews is to gain a better understanding of a general topic to collect as much data as possible, therefore unstructured interviews can aid in fulfilling this requirement (Bryman & Bell, 2011). The reason to introduce this third perspective as part of this research is that both the company and customer's perspective are based on their personal experiences. With this

is mind the external experts can provide a bird's-eye perspective based on their (academic) current knowledge, which is not in great lengths affect by personal experiences yet more on recent research and academic reasoning. In addition, these experts can bring up relevant theories or models that were not yet discovered or outlined by the researchers in the theoretical framework.

A suitable method for these interviews is that one of a semi-structured nature, which can account for rather rich data on a more specific topic. In addition, this method has a substantial chance to uncover personal views and experiences on the pre-defined topics according to Sörgärde (2016). The interviews will be recorded unless the interviewee does not agree to these terms, in that case live transcription will be conducted during the interview. Furthermore, the names of the interviewees can be changed due to privacy reasons; this will be confirmed with the interviewees before the interview. The names are in this case not of value, it is rather the position within the company or title, which contribute to the increased preeminent nature of the source. Anonymity can even contribute to people behaving more open about expressing their opinions. On a final note, the aim for the interviews is to have one hour of available time per interviewee. This allows the researchers to cover the general topics of the interview and to go more in depth in search for underlying motives. Analysing the gathered data from the interviews will follow the approach where interviews on continues basis will be conducted until the saturation of information is reached. Since this research is not aiming to measure a certain statement or hypothesis the researchers are more inclined to gather as much unique data as possible. This approach is partially in alignment with Bryman and Bell (2011) their theory on analytic induction, which also adds up to the inductive approach for this research.

3.3.5 Interview environment and tools

As mentioned previously there are three parties involved during the qualitative interviews, IKEA co-workers, customers at IKEA and finally external experts. The majority of the IKEA employees and all of the customers were interviewed at the Wembley store in London. The motivation behind this decision is that recent research shows that in the United Kingdom there was increase of fourteen percent in 2014 when it comes to self-checkout installations, only trailing the United states (Retail Banking Research, 2015). This is in line with the customer's readiness to adopt the mobile payment innovation (Deloitte LLP, 2015), which can be performed on these self-checkout systems. Finally, IKEA as case-study conjointly recognizes this increase of mobile payment solutions and self-checkout solutions in the United Kingdom according to C. Bates (Customer Experience Manager at IKEA) (personal communication, February 25, 2016). The following overview will briefly describe the environment in which these interviews were conducted.

IKEA co-workers

The majority of these interviews took place at the IKEA office in London where the researchers arranged a private room for these interviews. The reasoning behind this is that the employees might respond in a rather open fashion when not in company of other co-workers or their superiors. The interviews were arranged according to the convenience of their schedule to prevent time constraints, which can lead to a rushed and uncomfortable interview.

Customers

All the in-depth interviews with IKEA customers occurred in the IKEA Wembley store, London. The interviewees received a meal coupon as an incentive; with that in mind the researchers chose the restaurant area a most suitable place for the interviews. Reasoning behind this is that the restaurant is half-way through the store and customers might be inclined to take a break from their shopping trip at this point. Furthermore, during the interview the interviewees were shown several pictures regarding (mobile) self-checkout and scanning solutions (see Appendix III). The reasoning behind using these pictures is as tool to enhance confirmability, which will be addressed later in this chapter regarding rigour. The pictures were shown towards the end of the interview to ensure that the shown solutions on the pictures would not influence the interviewee's 'natural' perception on mobile self-checkout solutions beforehand.

External experts

The interviews conducted with the external experts were all conducted via Skype considering the inconvenient geographical location. Since these experts reside in Gothenburg, Stockholm and Helsingborg it would be inefficient, considering the limited period of this research, to conduct these interviews face-to-face.

3.4 Data Analysis

Analysing the gathered data from the interviews will follow the approach where interviews on continues basis will be conducted until the saturation of information is reached. Since this research is not aiming to measure a certain statement or hypothesis, the researchers are more inclined to gather as much unique data as possible. This approach is partially in alignment with Bryman and Bell's (2011) theory on data analysis, which also adds up to the abductive approach and analysis of qualitative data to construct theory (Timmermans & Tavory, 2012).

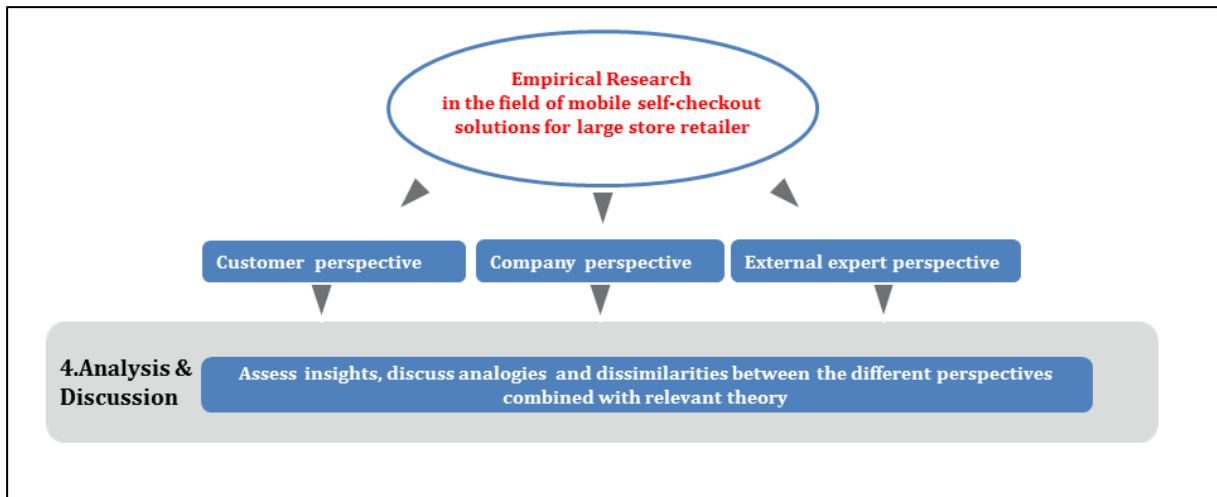


Figure 7: Data analysis overview

As can be seen in figure 6, this research will analyse the empirical data from the three different perspectives that previously have been outlined. By categorizing the insights according to the different empirical data sources, it enables discovering relations between the different perspectives and point out any dissimilarities. Since the empirical data gathering is closely related to the theoretical framework, the analysis will utilize these existing theories to identify and uncover new insights. The newly generated BOSS-model will suffice as a tool to identify attributes from the insights. These attributes, however, can be interpreted in various ways therefore there is an added value of having two researchers, which both are able to pick up on attributes as obstacles and benefits. Yet, it should be noted that during interviews it could occur that interviewees mention synonyms of these attributes. The researchers have a rather broad mind-set when it comes to the definition of these attributes in order to be able to identify mentioned attributes even in equivalent terms.

Therefore, the approach of the analysis will consist of identifying insights according to the attributes from the BOSS-model and outline the interpretation of these insights – what does it mean? After analysing the findings and discussing relevancy to the theoretical framework the research will present its main findings. These main findings will convey theoretical implications by adding new insights to existing theories and present new theories in the research related fields. In addition, practical implications can be utilized by retailers that are comparable to the retailer, which is exemplified as case-study in this research.

3.5 Rigour of this research

Qualitative research focusses on a deep and rather specific understanding of a phenomenon within a certain context, which makes rigour in this type of research critical. Thomas and Magilvy (2011) describe that rigour to qualitative research is what reliability and validity are to quantitative research. Guba and Lincoln (1985) first outlined rigour as part of qualitative research in their model regarding trustworthiness in qualitative research. Since everyone as part of the audience will have their personal experiences, opinions and perspectives on any matter It is to point out that from philosophical standpoint it is not possible to present a research that would be perceived as 'one single truth' by all (Thomas & Magilvy, 2011). However, the researchers will attempt to gain the confidence and trust from the reader by presenting transparent and independent findings. The following four aspects as part of, the previously mentioned, trustworthiness theory in qualitative research will shed light on the different aspects of rigour.

3.5.1 Credibility

Credibility in the case of qualitative research is the analogue for internal validity in quantitative research and is, according to Guba and Lincoln (1985), an attribute to ensure truth-value. In the build-up to the research analysis, enhancing credibility can be achieved by gathering data from multiple sources (Baxter & Jack, 2008). In the case of this research, data will be gathered from the perspective of the company as case study, customers and external experts in order to satisfy some degree of credibility towards the reader.

3.5.2 Transferability

Guba and Lincoln (1985) describe transferability towards qualitative research, as the equivalent to external validity within quantitative research. In this case of qualitative research, transferability relates to what extent the results of this research can be generalized or conveyed to different circumstances or setting (Bryman & Bell, 2011). Since this research focusses on a large retailer, it can be argued that the findings of this research can be a valuable asset for comparable large physical retailers. The empirical data that will be collected from the customer interviews can provide insights in the attitudes and value-creators in terms of shopping experience. With this perspective, there is a possibility that the findings of this research can also apply to other large physical retailers. However, it should be noted that assessing the likeliness of transferability is up to the reader to decide if the setting of the study can be transferred a particular context (Kuper, Lingard & Levinson, 2008).

3.5.3 Dependability

Dependability in qualitative research tries to accomplish to a certain extent what reliability adds in quantitative research (Guba & Lincoln, 1985). Within quantitative research, this refers to degree of replication, if a particular research would be conducted again would it yield the same results. It should be noted that in qualitative research a repeatability factor is not established due to the rather explorative nature of this research form. However, Thomas and Magilvy (2011) point out that dependability in qualitative research can be enhanced by outline the research method and process in a rather transparent manner.

3.5.4 Confirmability

Confirmability will be reached once credibility, transferability and dependability have been established according to Guba and Lincoln (1985). In practice this means thoroughly reassessing the data as part of this research which is commonly referred to as data audit. In addition, an implication for confirmability is the degree of preconception that the researcher(s) bring into the analysis (Thomas & Magilvy, 2011). Since both researchers in this case do not possess any in-depth knowledge on the subject of this research, it could mean that their level of prejudice will only minimally influence the confirmability of this research. Another measure that can enhance confirmability, according to Thomas and Magilvy (2011), is rather to follow than lead the interviews with a reflective attitude to clear up any lack of clarity. This translates well in the semi-structured interviews of this research, which are of an explorative nature and emphasize on letting the interviewee lead the interview to some extent (Bryman & Bell, 2011). On final note, confirmability through reflectivity is aimed to be achieved by presenting pictures towards the end of the customer interviews. This is done in order to ensure that both the interviewer and interviewee were on the same page when discussing the issues of mobile self-checkout solutions and to potentially clarify the perception through these images.

3.6 Research limitations and implications

Despite the researchers dedication, thoroughness and commitment towards this research it should still be noted that limitations can affect this research. First of all, the limited time frame of ten weeks gives the researchers enough space to work with a specific case-study however a multi case-study, which could have ensured more transferability, is not realistic. In relation to the restricted time frame the researchers were not able to receive all the requested internal data from the case-study company.

For instance, due to internal processing and assessing if this information could be used in a research that became public domain after being published. Another limitation occurred during the research process a pilot project regarding self-checkout arose, which was scheduled to be tested in the IKEA Wembley store in June. However, this was not within the time spectrum of this research yet could have added value insights through various methods like in-store observation. Finally, the empirical data gathered for this research mainly originated from the United Kingdom due to the advanced stage of mobile payment and mobile self-checkout solutions. This has as limitation that that these results cannot be applied to another country without consideration. due to the cultural differences in the adaptation process in the service environment (Burt, Johansson & Thelander, 2011).

3.6.1 Reflection on the ethical and political dimensions of the research design

Ethical and political implications of this research both occur due to signing a confidentiality agreement with IKEA as case study. This agreement is in regards on how to handle sensitive and valuable information, which for example addresses the use of sales figures and how these cannot be published. In addition, the majority of available research documents are not to be used as reference in a direct way. Including data from these internal documents should be through an interpretive nature where the researchers will conclude in self-curated phrases. This research, in the form of a thesis, will become public property will be published according to the guidelines of Lund University which can be characterized as a political dimension of this research. Therefore, establishing an understanding with IKEA, as case-study, to review the final research before publication is part of the agreement. Finally, both the employees of IKEA as well as the customers were given the option to participate anonymously in the interviews to ensure a moral and ethically correct approach.

3.6.2 Reflection on the potential weaknesses of the research methodology

In order to conduct a transparent thesis research the researchers are aware and communicate possible weaknesses or limitations. Firstly, the qualitative data collection method through interviews opens the possibilities to gather in-depth data however, these findings will have limits in terms of generalizability. Nonetheless, this can be considered as a limitation it is not a weakness in this particular research since the aim is to provide an in-depth understanding of a specific (practical) problem statement instead of generalizing a measurement. Secondly, limitations can be experienced in the time available for interviews since the interviewees will participate during working hours. Thirdly, in-depth qualitative interviews can be considered as a rather subjective data

collection method and has the pitfall to generate non-relevant data due to the explorative nature of questioning. This means that the researchers need to be aware of information saturation or other forms of irrelevancy when performing the data audit as mentioned previously in the chapter regarding rigour.

4 Analysis and Discussion

The first main part of this section contains of an overview and analysis of the most relevant insights from the three perspectives of customer, retailer (represented by IKEA's internal experts) and-external expertise on the field of this research matter. All of them reflect up on the possibilities and critical aspects of value (co-)creation through a mobile self-checkout solution to provide their individual insights in order to help answer the research question of this paper. The next main part of this chapter will firstly focus on uncovering and discussing relations between the distinct perspectives, common-grounds and relevant dissimilarities. Secondly, this chapter examines the insights in relation to the stated theory of value (co-)creation, customer experience and SST's. During the discussion, reflectivity is applied on the analysis towards the BOSS-model and miscellaneous, later to be identified, elements of the theoretical framework.

4.1 Multi-perspective analysis

As stated in the methodology, a distinction is made between the different viewpoints when the categorizing the insights of the analysis.

4.1.1 Customer insights

The first part of this analysis is focusing on the insights from a customer point of view, which was gathered through semi-structured interviews at the IKEA store in Wembley, London. This perspective is of importance for this research in order to shed light on the customer as part of value (co-)creation and customer experience to get a better understanding of their behaviour in-store. Table 1 shows an overview of the conducted interviews where fictional names were used for anonymity purposes.

Customer interviews	
<i>Julia</i>	Age: 31 Length: 49 minutes
<i>Jacqueline</i>	Age: 44 Length: 51 minutes
<i>Alexandra</i>	Age: 33 Length: 55 minutes
<i>Claire</i>	Age: 31 Length: 59 minutes
<i>James</i>	Age: 35 Length: 64 minutes

Table 1: Overview of customer interviewees

During the interviews, one of the discussed topics was the interviewee's customer and shopping experience at IKEA. Alexandra defined her overall shopping behaviour as:

"I don't mind to walk around the whole store because I like to get inspiration and most of the time I'm not in a hurry when I go to IKEA" ... "So sometimes I come just for one thing but I go home with other new things that inspired me when I saw it." - Alexandra

Alexandra outlines that she is taking her time when she is shopping at IKEA. Even if she only has one product in mind, she is taking her time to get inspired by other products. In comparison, James defined his personal shopping behaviour as follows:

"Most of the time when I go to IKEA I will be here for at least one or one and a half hour because I want to go to the office part, get candles and might wanna go to the kitchen area. It feels like a day out every time I'm here maybe because I also have a break at the restaurant." - James

Both James and Alexandra are enjoying the hedonic form of experience when shopping at IKEA and have the premeditated intention to take their time while shopping there. On the contrary, Claire defines her shopping behaviour as:

"Well I normally go to IKEA on the moments when it is less crowded like Monday or Tuesday mornings when I just need a few things. But it really depends on if I just need something quickly or take my time to go and see everything there is." - Claire

This shows that Claire occasionally shares the shopping behaviour of James and Alexandra by taking her time. In addition, she reveals that there are moments when she visits consciously the store at less crowded times for a swift visit, due to the fact she is just looking for a few products. A final perspective on the general experience in terms of shopping behaviour at IKEA comes from Julia:

“When I go to IKEA it is a planned trip, so I will take my time. I like to walk around get ideas and inspiration. However, a few times I felt I had to wait too long [at the checkout area]. Waiting 10 minutes, that is perfectly okay for me but I think it shouldn't be much longer than that.” - Julia

Like the other customers, there are instances when Julia is taking her time visiting the IKEA store. In addition to the other interviewed customers, she also points out that there are times when the checkout queues were too long from her point of view, even if she has no objections waiting a few minutes to the checkout. Approaching the matter of waiting time in large format retail stores, all the interviewees pointed out that it influences the shopping experience in a negative way. Their common opinion is represented through the perception of a too long waiting time. They believe this leads to a negative overall shopping result, which can cause the customers to leave the store without buying the items they were intended to. In the eyes of the customers, there are various reasons which causes shopping disappointments and long waiting times:

“I left a couple of times over the years, mainly in the weekends, when the lines were just too long and I left the stuff that I wanted to buy... I don't mind waiting a few minutes but in occasions it just gets crazy.” - Claire

According to Claire, she experienced negative shopping when it has been more “chaotic” in the store, which has led to longer waiting times. This is in alignment with James, who points out that long waiting time is an issue for him, but emphasises that this is results of IKEA's insufficient service:

“I have to admit a couple of times I left the store without the products I intended to buy because of the long queue at the cashier, I think that I'm probably not the only one who has ever done this if you know what I mean? IKEA has all these people coming to their store to buy their products, it is a big lost for them if they make us just leave without buying anything because of this [waiting time].” - James

According to James statement, a negative shopping experience is caused by the combination of having a too long waiting time (which perception can differ by each customer) and the impression that the retailer does not value the customer's effort. Another aspect that creates a negative shopping experience is when spending waiting time in an untidiness environment. In case of IKEA, this has been addressed directly towards the checkout area:

“People say we are going to pop to IKEA. But, you never just pop to IKEA! I do not mind waiting so much but it is so messy at the checkout area. It really gets me. Also, I think one of their main problems is the checkout area. I think you should find ways to speed that up.” - Jacqueline

The perception of time is highly valued by the customers, regardless of the shopping motivation and expected outcome, for example. just to browse around in the store or having a goal with the visit. All interviewees pointed out that a waste of time is mainly perceived in the checkout area by waiting in line. Furthermore, according to James, customers have a tendency to assess their own time as valuable, which also reflects upon the estimated outcome of visiting a retail store:

“I think that people nowadays don’t have time for anything anymore and certainly don’t want to waste their time waiting in line. So a store should be happy with people already taking the time to go to their store and it would be a huge missed opportunity if people leave without spending any money because the queue is too long or that they have to wait too long for an employee to ask their questions” - James

James points out that waiting in line appears to him as a ‘lose-lose’ situation, where it is the retailer’s responsibility to turn it into a ‘win-win’ condition for the customer and the company.

When approaching the area of digital implementation within a retail environment the attitude and experience of the interviewees differed a lot compared to each other. When James was asked how he perceives IKEA in terms of digital innovation, he pointed out:

“Well the most frequent places where I already pay with my mobile are Boots, Burger King, Pret and I used it once at the Apple store” ... “The technology does exist of mobile scanning and payment because I use it at other stores too, that is what I mean with IKEA needs to keep up with the digital developments.” - James

This statement shows that the customer is aware that the technology service for mobile self-checkout is present. Furthermore, he even points out that he is already using this kind of payment solution in other stores. This particular customer is already adapted to mobile self-checkout services and providing such a solution would not be adding value towards his shopping experience rather than support customer satisfaction. When Alexandra mentioned her shopping behaviour with the use of self-service technology in general, she revealed:

*“I already use self-service checkout like in Tesco and some Sainsbury stores. I always have the feeling that it is faster than coming into a store that has normal checkouts.”
- Alexandra*

This response is in line with James, who pointed out that he is already using mobile self-service checkout to some degree. Alexandra specified that her motivation to use the self-service checkout is to be ‘faster’. Later on in the interview with James, he was also asked how he would describe his experience with the mobile checkout in general and he revealed:

"Most of the time when I pay with my smartphone it is quick and convenient." - James

With this statement, a connection can be seen with what Alexandra previously defined as 'faster' what James mentions as 'quick'. These keywords are both indicating that they are inclined to use (mobile) self-service checkout because of the advantage of time efficiency, in comparison to the normal (cashier staffed) checkout. On the contrary, Julia pointed out the following about her perception of mobile self-checkout usage:

"I never tried the self-checkouts [at IKEA] because it always ends up to taking longer [than the staffed cashier]. Someone always messes up when I tried it at a different store." - Julia

Perception on (mobile) self-checkout usage varies from customer to customer based on their previous experience. Julia specified that she has been using self-checkout in the past and due to her negative experience, it has been contributing to her general negative perception towards this type of checkout.

Towards the end of the interviews, two examples, in form of pictures (see Appendix III), of 'self-scanning and pay' were presented to the customers. The first option was to use an external device provided by the retailer, whereas the second option was to use their own mobile phone to scan and pay for the products. One customer pointed out the following about these two solutions:

"Well why spend money on hiring or buying external devices if customers can use their own phone that they have on them anyway? Almost all of them have cameras anyway and there is already an IKEA app. Also people might trust their own phone that they have picked themselves more than an external scanning device through which they need to pay."

- James

This statement points out that most of the customers brings their own mobile device that possess functions such as scanning. Therefore, the question remains, if external devices would be redundant. In addition, the issues of security were brought up and elaborated upon with the motivation to use the own mobile device since it is a more personal item than an external device. Another customer addressed a different issue with the external scanning devices:

"IKEA to me is very modern so mobile self-checkout is a better solution than the self-scanning devices which are more an older standard" ... " Also Ikea would need thousands of these scanners and I don't think that is very convenient." - Claire

Claire questions the logistics of these external scanners in large retail stores like IKEA, due to their high customer flow. In addition, she perceives the external self-scanning devices as technology from the past and that using mobile devices for scanning and payment is a superior option. Another insight on this topic was gathered from Alexandra

during the interview. She made the following remarks when she was presented solely the external device for scanning and payment:

“That looks nice, especially when you can pass the normal queue [at the checkout]. Yeah that is something I would try, does not look very difficult” ...” Would there be an option to pay with mobile too?” - Alexandra

Alexandra points out that external scanning devices would be advantageous if it means that the checkout process will be more swift. However, she subsequently wondered if paying via a mobile device would be also an option. After presenting the picture of using a mobile phone to scan and pay, her response was.

“I think that the phone is better than the store scanner because you always have your phone on you anyway and the payment is connected to my phone.” - Alexandra

After seeing both self-service solutions, Alexandra underlined that scanning and paying via a mobile phone would be the preferred option. The remarks about having the mobile phone always with you, is corresponding to what was mentioned earlier by James. An added benefit of using the mobile payment solution, for example via Apple Pay, can be seen in the fact that the user has to set up a customer profile only once but is able to use it for various occasions.

Approaching the topic of mobile self-checkout and its potential benefits, all interviewees emphasized that they own and use a mobile device. They also revealed that they would be willing to try out such in-store payment solution, due to the outweighed advantages. One of the main drivers in the eyes of the customer, besides being faster during their shopping, can be identified in the increasing freedom of shopping:

“Of course shopping gets faster with this option [mobile self-checkout]. You clicking while going along, so in the end all you do is just pay and then go. You are in control, that is definitely an advantage.” - Jacqueline

Jacqueline points out that she would engage in a mobile self-checkout solution in order to be in control of her shopping. She estimates increasing freedom during her shopping as an advantage and is therefore willing to invest the effort of learning how to engage with new technology in retail stores. Another motivation driver of using a mobile self-checkout solution can be found in the customer’s perception of enjoying the product scanning, which is emphasized by three of the interviewees:

"I would certainly try that [mobile self-checkouts], I think it could even be fun to just scan all the products with your own phone. I like it because I will be in control of the shopping and also the payment afterwards that gives me as customer all the freedom." - Claire
*"I use them [self-scanning devices] because it's fun. Scanning and the sounds are fun."
- Jacqueline*

"Being able to scan in the store by yourself, I can imagine, it can be more fun than watching the cashier scanning your products. It would be great if there would be a system that can scan your products where you also can ask for assistance from someone at IKEA and pay right away." - James

However, after pointing out the motivation of engaging in a mobile self-checkout solution from the customer's perspective, it is to highlight that customers are estimating time as the most important variable for using an in-store payment solution:

"The self-checkout is a really great thing. If I have a small amount of items, I rather go to the self-checkout. However, if have a big or a lot [items] I rather go to the cashier. Checking out is rather a time thing then service. Cashier or self-checkout, it's really a time thing whatever is quicker." - Jacqueline

"I have no problem with doing the scanning myself, I see it more as a benefit rather than a burden as long as it takes less time [than the normal checkout]." - Julia

Besides the perceived benefits in the form of checkouts and customer experience, the interviewees also brought up some obstacles on the matter of engaging in new service and technologies. These issues derived from both personal experiences as well as envisioned thoughts. In one of the instances, the following remark came up:

"Actually it was my bank who told me about Apple Pay, so I gave it a try and now I am using it everywhere I can to be honest." ... "It was very easy to learn and use, but I believe that is needed, I don't understand any technical terms so it should be explained in an informal level so to say." - Claire

Aside from the fact that this customer revealed that she was introduced to mobile payment through her environment, she also specifies that technology services such as mobile payment should be easy to learn. She points out that she prefers to be taught in an informal level rather than with complicated technical terms. The following customer revealed that:

"If tech is accepted by rest of the people I would accept it too. But I hope it would be simple. If we talk about mobile self-checkout I would appreciate simple instructions on how to pay with self-checkout [within the app]." - Julia

Due to the coherence with previous comment from Claire, it is to point out that the 'environment' also influences to use of the mobile self-checkout. In order to assess, if the customer would be inclined to adopt a new technology, Julia continued:

"I think in practice self-checkout makes perfect sense, but I would appreciate more assistance [from the store staff] on how it works. I don't want be the one who holds up the line. It's kind of a proudness." - Julia

Hence, a mobile self-service solution requires that to be easy to use and understandable. Yet she revealed that it would be appreciated to have assistance from the store staff, due to the fear of holding up the line for other customers. In addition to that, it was point out that the willingness of the customer to adapt to new technological services is rather low:

"I personally think the IKEA-app is not very useful in order to use a lot. I tried it once [few months ago] and I didn't like it. The scanning function was not really working and the design of the app was hard to understand. So I just went without it. I won't use it again."
- Alexandra

According to the statement, customers are inclined to try a provided company's app only once. If the company cannot provide a satisfying service, for example by not being user friendly, it is difficult to get the customer to reconsider to use the mobile application again. Furthermore, in order to use such a service the customer also has to know about its existence. This can be exemplified by following statements that is showing that the interviewees lack of an app from IKEA:

"I would appreciate an IKEA APP where I can just scan the products I want and also if I could pay directly in the end. That would help!" - Jacqueline

"I didn't know that IKEA had an app"... "What I would expect [from the app]? Well I think making a shopping list before I come here would be great and also scanning the products like you showed me on the picture before." - Claire

Even if retailer have already launched a mobile application, with the previous mentioned desired attributes, it points out that the promotion of such service is essential in order to make the customer using it. Another obstacle was identified through James when he stated the following:

"I have to say that I don't have a lot of issues when paying with my phone but if I have to point something out, some stores just accept a limited amount of cards for mobile payment. So sometimes I am forced to use my credit card where I would have liked to use my debit card." - James

From previous revelations of this customer, it became clear that James is already actively using mobile payment and self-checkout systems in various stores. He points

out that he rarely encounters any issues. However, the fact that some stores are restricting him to use a specific card for payment can be seen as a hindrance. James would like to have the option to use the card he finds most suitable, not the retailer. This could imply that the customer is seeking for more freedom during the shopping. Alexandra highlighted another disadvantage due to the restrictive amount of items:

“The problem I encounter sometimes is that when I go to the self-checkout the store staff [at IKEA] tells me I have too many products to use the self-checkout. I mean, I understand when I have big things because the self-checkout is very narrow, but if I have just 10 small items it would be nice to checkout as fast as possible.” - Alexandra

On occasion, Alexandra is not able to use the self-service checkout due to the amount of products in her cart, which she perceives as negative. However, she shows an understanding of not using the self-checkout in the case that of buying larger items, due to the lack of convenient through a narrow path. Furthermore, the customers emphasized their concern and around security aspects:

“It is quite new for me as well [to have the option of mobile payment] and to be honest, I am a bit afraid about it. I am worried about this because it is the internet, it is data that is in ‘the air’. I rather use my card. But I do online banking on my computer. It is so much easier and convenient. Nobody goes to the banks anymore.” - Jacqueline

She points out that even though she is used to online banking she questions if mobile payment is secure enough in order for her to use it. However, she uses online banking, which applies to a similar concept as mobile self-checkout, without any worries due to the fact she is used to it. Furthermore, she continues on this matter by outlining:

“I like the scanning [via self-checkout] but I would like to have both options to pay directly [via mobile or with card on the self-checkout. I am not really adjusted to the mobile paying yet.” - Jacqueline

This insight is in line with her previously stating her worries about the security around mobile payment. However, with this insight it becomes clear that she has not adjusted to mobile payment yet, which could be caused by the questionable security from her perspective. However, having both options, staffed and self-service checkout, would have her preference. Finally, Jacqueline raised the issue about usability through stating:

“The only thing that could happen [by operating a mobile self-checkout service] is if you don't use it properly you could end up paying for something twice.” - Claire

This reflects on the earlier insights gathered from other customers who are of opinion that using such a mobile self-checkout solution should be easy to use and comprehensible.

4.1.2 Company insights

The second part of the analysis presents ‘internal’ perspectives of the company IKEA by elaborating their view on the subject of value (co-)creation and customer experience in general as well as in relation to mobile self-checkout solutions. The interviews were held in Sweden and the U.K. due to their exclusive expert knowledge, which were estimated beforehand as beneficial in order to answer the research question of this paper. Insights from the perspective of these internal experts were used to creating an understanding of what has been done or what will be done as well as what is the perception of previous mentioned subjects. Table 2 provides an overview of the conducted interviews regarding to the different interviewees, their internal position at IKEA and total length of the interviews.

Company interviews	
<i>Mohammed</i>	Position: Checkout Specialist at IKEA U.K. Length: 39 minutes
<i>Vera</i>	Position: Future Leader Program at IKEA U.K. Length: 46 minutes
<i>Kristin</i>	Position: Communications and Store Layout manager at IKEA U.K. Length: 42 minutes
<i>Andreas</i>	Position: Easy Buying-Process Manager at IKEA Sweden Length: 61 minutes

Table 2: Overview of company (internal experts) interviewees

Andreas who holds the position of Easy Buying Process Manager at IKEA, states that IKEA is aware of the digital change in the retail environment. He identifies the following predictions on retail for the near future:

“We [IKEA] have more and more visitors [in-store]. But we can also see that we lose some visitors because it is easier to swap to online retailers or people just simply don't have the time for spending too much time at the physical retailer. People value their time more and more. Even when they come now, they not come [to the physical store] in 5 to 10 years.”-
Andreas

IKEA is aware of the fact that the customer values time more than they used to, in addition the estimate this trend is to increase even more. Having this in mind, Andreas points out that IKEA proactively tries to embrace the impact of this trend:

We [IKEA] tried to invest in more cashiers and home deliver. Home delivery means for the customer no waiting time at all. So we are working on providing a better service and offer more and more alternatives. Also, we try to merge the online and offline more and more.

We have the idea that customers come to IKEA to get inspiration and then 'clicks here' and they will get their order delivered to their home within the next 3 days." - Andreas

Andreas specifies IKEA's strategy is to engage in new ways to make shopping in-store more convenient and faster for the customer. He identifies an increasing merge of the online and offline channels, which is mainly referred to as Omni-channel. Emphasizing to make use of this trend rather than avoiding the merger of online sources with a physical retail store. A staff member of the future leader program Vera points out, there are other possibility for IKEA to increase convenience and be more attractive for the customer:

*"We will be testing in-store payment in the different departments but those scanners [mobile scanning devices] will be the same as we have now at the self-checkout area" ... "It would be even more convenient to offer mobile self-checkout at these in-store point."
- Vera*

Vera identifies opportunities to stay competitive as a physical retailer through SSTs. This means she believes letting the customer do more on its own, within a given structure or process, will increase convenience. Andreas points out that IKEA has a strong focus on the customer's attitude, behaviour and want to know what the customers desire:

"We [IKEA] had some previous attempts to attack waiting times by providing self-checkouts, more cashiers and offer home delivery. We see positive response from our customers. We can see that from our personal survey and as well from the increasing use of self-checkout. So yeah it is positive." - Andreas

According to Andreas, providing different checkout solutions is perceived as positive by the customer, especially if the self-checkout gains popularity as a checkout solution. Further he outlines that IKEA also investigates the customer's mobile use:

"Our research shows that 98% of our customers have a smartphone at IKEA and one-third uses it even in the store." - Andreas

The fact that IKEA explores this field confirms the previous statements of IKEA that they are interested in merging online and offline more together. It also confirms that integrating the customer mobiles device somehow in the shopping journey could be possible since almost everyone owns such a device and one-third is already using it within IKEA. However, Vera points out that IKEA as to engage to the individual needs of checking out by different customers:

"I still think that we should keep two kinds checkouts, both the traditional ones and the faster mobile self-checkout, depending on the sort of the customer and give them the freedom to choose." - Vera

Vera believes, providing different options of checking out will increase the customer satisfaction by giving the customer the freedom and the control to choose how they want to end their shopping. Furthermore, she points out providing new ways or faster ways to checkout, has to come with assistance or guidance provided by the retailer, in this case IKEA:

"In the beginning we would need co-workers going through the new mobile self-checkout to make the familiar with this new technology." - Vera

IKEA also identifies different intrinsic motivations for their customers to come to their stores. Kristin who works as a communications and store layout manager at IKEA Wembley, U.K. points out:

*"We have different types of customers here like people who want to spend the whole day and people who do not even want to be here or just want to go through the store fast."
- Kristin*

According to Kerstin IKEA has two main customer shopping attitudes. One the one hand IKEA has customers who provide a lot time for their shopping and want to get inspired or on the other hand, they want a specific product now and in the most efficient way as possible. This is in alignment with Andreas who stated:

"There are all kind of customers. Some of those customers know exactly what they want and they go directly to that area. There is a discussion in some stores about shortcuts. But in general we [IKEA] are now very open to let the customer choose where they want to go. The customers are telling us that they do not want to walk 20 minutes to find a single product. So we are aware that we have to open up [in the store] in order to give the customer more freedom during their shopping. In the [IKEA] U.K. they even talk about providing a second entry in the exit area [of IKEA stores]." - Andreas

Andreas points out that IKEA wants to engage with both customer attitudes by, again, providing the customer with the possibilities and freedom to create the own individual shopping experience. He also mentioned that IKEA is looking constantly for more way to increase and improve these possibilities.

According to secondary data from the previous chapters of this research, the biggest potential of increasing customer satisfaction in a physical retailer environment is located at the checkout area. This statement is in alignment with IKEA by having a strong focus on improving that particular part of their physical stores, which is pointed out by Kristin:

“The checkout area here is the biggest problem of the store, most customers get frustrated there when it is really busy.” - Kristin

Vera emphasizes that IKEA should try new ways to create innovative solutions, which are more up to date in order to decrease the dissatisfaction in the checkout area:

“We want to test something new, I mean it is 2016 and we still have to use traditional checkout for the majority of the time at the IKEA store.”- Vera

Andreas points out that IKEA is aware of the situation and important steps were already taken to improve the checkout area:

“We measured the time at the checkout and we have been much better in that area like 3 years ago. But we know the customer expectation does not increase in comparison. We have to orient yourself on the customer's expectation, which is getting much higher. Waiting in line and not being efficient are drivers of dissatisfaction.” - Andreas

Andreas emphasizes the fact that even IKEA improved in the checkout area, the customer perception, demands or standards of checking out increased even more. However, IKEA makes comparison to their achievements rather from a customer's expectations point of view than comparing what did they achieve in contrast of previous periods. Improving the checkout area, IKEA also believes in innovative idea to speed up the waiting times as Mohammed a checkout specialist at IKEA Wembley, U.K states:

“We are checking different checkout options, for example we are planning to do, when the customer is waiting at the checkouts, having a cashier scanning the items and we are also going to have another cashier dealing with the next customer at the same time. So we will double the transaction.”...“But yeah, mobile self-checkout [via customer mobile] is definitely where we are want to go.” - Mohammed

According to Mohammed, IKEA is aware that various possibilities in combination with technology to create more convenient and time efficient solutions for the customer to checkout. However, he confirms that a mobile self-checkout would be the most interesting solution for the company itself as well as for the customer in order to improve the checkout, with the attributes convenience and time efficient area. Other internal experts also share the point of view that mobile self-checkouts would be beneficial for the customer:

“It would be ideal to have the customers scan their products already in the store so at the checkout they just have to pay maybe with random security checks” ... “Pay as you go would significantly reduce the queue, because scanning is mostly holding up the queue.” - Vera

“It [a mobile self-checkout system] would enable our customer to be more flexible in the store to have more freedom. The negative side could be some security issues, for example prevent stealing or data security.” - Andreas

Believing in the fact that a mobile self-checkout would be more beneficial than a disadvantage. Andreas points out that there still some obstacles to overcome by implementing such a payment solution. He underlines that IKEA first have to find answer about issues such as data security to before launching a mobile self-checkout solution for their customers. In addition to that, Kristin points out that the design of such a payment solution should be simple and easy to understand for to customer in order to engage with the new technology:

“Sometimes we even help at the self-checkout because they do it for the first time, so I think if we would implement mobile self-checkout there should a simple but clear hands-on guide with it.” - Kristin

Kristin’s statement is in alignment with Andreas who additionally specifies that payment will not add to the customer’s shopping experience. Yet gives IKEA the possibility and resources to focus on providing a better customer experience in other areas of their shopping tour:

“We [IKEA] have some drivers of dissatisfaction, waiting times when I have to pay or goods are not available and so on. But payment as such, will hardly give me [as a customer] a great experience. That is a hygiene factor, it should be easy and convenient. So if the self-service paying tool would work well we then could put more focus on giving the customer the actual experience with great home furnishing and a great meeting with the staff.” - Andreas

He further continues providing a mobile self-checkout would only remove barriers for the customer in order to visit the IKEA store but not add any value in form of customer experience:

“We [IKEA] don't see the payment process as a driver of satisfaction. That's more meeting the staff or getting inspired by the furniture. Mobile self-checkout would more remove barriers but not increase the shopping experience.” – Andreas

4.1.3 External expert insights

The last part of the analysis consists of the perspective from external experts on the subject of value (co-)creation in relation to customer experience. These interviews were held via video-call due to the efficiency regarding geographical location and time

constraints. Insights from the perspective of these experts were used to relate to a broader spectrum of both theory and practice on the previous mentioned topics.

<u>External expert interviews</u>	
<i>Martin Moström</i>	Position: Strategic advisor - shopper marketing at Retail House - Shopper Marketing Agency Length: 51 minutes
<i>Johan Hagberg</i>	Position: Associate profession at School of Business, Economics and Law, Göteborg University Length: 40 minutes
<i>Anette Svingstedt</i>	Position: Senior lecturer - Department of Service Management and Service Studies, Lund University Length: 48 minutes

Table 3: Overview of external expert interviewees

Martin Moström who is a strategic consultant at Retail House - Shopper Marketing Agency mentioned the following about the predictions on retail for the near future:

“I think the physical retailers will still remain important but they have to make it more efficient and offer customer experience which lacks online.” - Martin Moström

From this perspective, retailers need to look for added value, over the online stores, for their customers in order to make it worthwhile for them to still visit the physical store. Subsequently he emphasized:

*“Retailers have to rethink the role of the [physical] store, it was made to be a physical distribution centre and now it must be about experience and/or brand experience.”
- Martin Moström*

This could be interpreted as that not only retail should find new ways to create value for their customers yet also reevaluate the purpose of the physical store in relation to this newly created value. On this topic, Johan Hagberg who is associate professor in marketing at the University of Gothenburg provided the following insight on the topic of development and changes within the retail environment:

“The general trend is that online and offline will merge more and more. Mobile self-checkout is a part of a longer development process, which is in alignment with the desire of more self-service. This is already going on for years and years.” - Johan Hagberg

This signifies that, retailers are looking at integrating both the online as well as the offline attributes. In addition, there is a need identified in self-service (technology) which is already going on for years. Mobile self-checkouts can be considered as factor in this increasing demand for self-service technology yet the process to fully adapt to it will take some time. This was elaborated later through:

“Self-service in general, that is a long process of transformation in retailing as such. Usually that is not something you do in a very short period of time to transform it. It is a longer process that requires adapts and adaptations between the consumers and retailers.”
- Johan Hagberg

Both the consumer and retailer are part of the transformation process when it comes to adapting to self-service solutions in the retail environment. Furthermore, Anette Svingstedt who is senior lecturer within Service Management and Service Studies at Lund University revealed:

“We did a study on a similar topic [as this research] but more in a broad sense about mobile phones, customers and in-store behaviour and it became clear that almost everyone has and uses their mobile phone in one way or another in the store.” - Anette Svingstedt

In addition to the insight mentioned earlier, the increased demand for self-service solutions, the majority of customers are using their mobile phone in one way or another when in the store. After which the following statement described more in detail what this mobile phone usage in the store and what means for retailers:

“It is important to understand, for retailers, what kind of support the customers need while they use their mobile phone in-store.” - Anette Svingstedt

Understanding how the customer uses their phone in the store and what they require from the retailer in order to be beneficial to their usage can be considered as points of thought in relation to this research.

4.2 Critical discussion/reflection of the multi-perspective analysis

This discussion will assess the insights from the analysis while outlining analogies and dissimilarities between the distinctive perspectives combined with further implications. In addition to that, this section reflects upon the interpretation of the insights and findings in relation to the existing theories around value (co-)creation and SST's.

The checkout area was one of the key subjects during the interviews with customers as well as the company. The previous chapters of this study already pointed out that the checkout area has the largest potential to increase customer satisfaction for physical retailers, this statement is in alignment with the insights from the customer's perspective. They revealed to encounter a rather negative experience with the checkout area due to queues and waiting times. In some occasions, the customers clearly stated that they left the store without purchasing the products they were intended to buy, due to the unsatisfactory waiting times at the checkout. It was also pointed out that waiting in line is perceived as even more negative if other external factors, e.g. untidiness or a disorderly environment, are not in order. This has implications on the customer experience as well as missed sales opportunities.

IKEA however touched upon this issue by defining the checkout area, during a large customer flow, as one of the biggest pain points of the store. Having that in mind, retailers have to address this perceived 'pain' of excessive waiting times before it turns into a dissatisfaction driver. IKEA in this case does acknowledge this and is looking for solutions to increase the shopping experience of the customer and make it as convenient and efficient as possible. This process can be reflected upon the BOSS-model, which uses key activities from the retailer's perspective in order to remove obstacles from the shopping experience of the customer. Though in order to remove these obstacles and create benefits, the retailer needs to be aware of what it is that their customer perceives valuable (e.g. time efficiency).

The customer insights provided an important revelation in terms of expectations concerning the checkout area. Foremost, the checkout should be a fast and convenient. It is to point out that there are different perceptions on the term 'fast' which are based on the time spent in the store. Through this research, it became clear that the time spent in store is in correlation with the time a customer is willing to wait at the checkout area. This implies that a customer who spends a whole day in the store has a different perception on 'fast' compared to a customer who spends half an hour in the store.

In addition, it was stated due to the current technological development of digital transformation, that traditional checkouts are not perceived as progressive. This could be seen as a sign or customer demand with the urge to test something 'new' in the retail store environment. Another perceived obstacle when it comes to issues of the checkout area was outlined, through the customer's feeling that the retailer does not value their time and effort during the shopping process. IKEA as exemplified retailer in this case mentioned that several options are being evaluated and tested, aside from mobile self-checkout, to speed up the checkout process. For example, a double staffed checkout queue where cashiers in turns can take care of scanning and payment process to speed up the process. However, it became clear that the long-term solution would require a form a SST to relieve staff while increasing the speed of the checkout process. Furthermore, if the customer does not perceive this 'new' development as added value,

it can have a negative impact on the customer perception of the retailer's value proposition.

On the subject of SST's and mobile payment solutions, the majority of customers stated that they already have been introduced to SST or mobile payment at least in one form or another when shopping. The customer pointed out that they encountered a mix of positive and negative experience within the two services. It became clear by reflecting upon the customer motives, besides trying out new technologies in the retail environment, that value-in-context plays an important role. If a customer has encountered prior negative experiences with SST's or mobile payment, regardless of the company and environment, the perception towards trying out a similar service can be rather sceptical.

This previous experience however, is out of the retailer's control yet can form an obstacle from the customer's perspective. According to the value proposition canvas, 'pain relievers' need to address this issue to overcome this negative experience. However, if the retailer decides to develop a 'pain reliever', the value proposition canvas does not provide a clear outlining of the implications for the retailer. Therefore, the BOSS-model incorporates key activities to fill this gap from perceiving a problem to taking action. An example in this case could be through providing assistance with new SST's to ensure that the customer enjoys an untroubled experience.

SST implicates that customers have to scan and (possibly) handle payment themselves as key activity. However, the ratio between obstacles and benefits is excelled by benefits, due to in-store experience, which according to the BOSS-model implicates that it can co-create a form of value. In addition to that, IKEA also states an increasing use and positive response of self-checkout from their customers. This might be not a new insight, based on the already widely installed SST's (e.g. self-checkouts) by various retailers. Nonetheless, this insight becomes current by pointing out that value co-creation also applies to mobile self-checkouts solutions. Experts on this matter expressed the urgency of identifying what kind of support a customer needs when using mobile self-checkout in-store in order to contribute to a better customer experience. It is to point out that, the consumer and retailer have to be both part of supporting the transformation process in order to be beneficial when it comes to adapting to self-service solutions in the retail environment. This is in alignment with the meaning of value-in-use in the current literature.

From the perspective of IKEA, who defined different intrinsic motivations for their customers to come to the physical stores. Some customers visit their store with knowing exactly what they desire, go directly to that area and wish to leave as fast as possible, whereas others take their time to get inspired and browse around in the store. These two kinds of customer mindsets are in consistence with the previous described customer segments in chapter two, being utilitarian and hedonic shoppers.

Through this research, customers pointed out that their shopping attitude is dynamic according to their individual current situation (e.g. time restriction) and pursued goal (e.g. only buying one specific item). This implies that it is impossible to make a clear distinction of an individual customer by defining him/her just as utilitarian or hedonic shopper. However, through this research, a correlation could be identified of shoppers with predominantly utilitarian mindset and certain weekdays (e.g. Monday or Tuesday) when it is presumed as less crowded. Nonetheless, providing a customer service for all shoppers, retailers have to reflect on common customer requirements (e.g. in-store assistance) and individual customer segment (utilitarian and hedonic) requirements in order to create satisfaction. This result is in contradiction with the business model canvas (Osterwalder and Pigneur, 2009) and shows the lack of being a too general model. It emphasizes to rather think in segment requirements to build customer relationship, which would not be suitable for a fundamental service as a mobile self-checkout system.

The customer prefers using their own mobile device for the payment process, instead of an external provided device from the retailer. It was pointed out that the customer brings their mobile device anyway, which enables features like scanning and make the use an external device redundant. This is in line with the statement from IKEA regarding the fact that 98% of their customers have a mobile phone with them when visiting the store. However, it should be noted that implementing such a self-service technology is a long process of transformation according to experts in this field. Positive aspect of letting the customer scan their items via mobile was the increase of shopping experience.

Based on the ratio approach between benefits and obstacles the customer is willing to do more by themselves (e.g. scanning and payment) in order to enjoy the benefit of being faster. In addition, the customer perceives the scanning as 'fun' and entertaining. They pointed out that engaging with a mobile self-checkout solution could contribute to enjoy having control and freedom in regards to their shopping experience. The customers specified this increasing freedom during their shopping as an advantage. This is in contradiction to IKEA's perception on mobile self-checkout and customer experience. They outlined that mobile self-checkout would only decrease obstacles for the customer to visit their stores yet not a customer experience on itself. Reflecting the two perspectives, a case could be made that introducing new 'entertaining' technology could be perceived as an increased shopping experience as long as it possesses the 'entertaining' factor. However, as soon as the provided technology achieves a high level of saturation, the customer might not perceive it as shopping experience anymore rather expects it as standard service. Therefore, in the end providing a mobile self-checkout solution could indeed only lower the barriers to visit the physical retail store rather than being a driver of customer experience. Nonetheless, the external experts emphasize that

retailers have to reflect on the role of their physical stores by mainly providing customer experience rather than only provide and sell commodities.

However, the mobile self-checkout solution should be time efficient, convenient and somehow joyful. Nonetheless, it is to point out that the foremost reason to choose self-checkout remains related to being faster.

When addressing the mobile self-checkout design, the customers specifies the attributes ease of use and the perception of usefulness as important in order to adapt to such a service. However, it has to be specified that ease of use differs per person and is mainly influenced by (technical) knowledge and the subjective norm in terms of their (social) environment. In the case of environmental influences, some customers stated that they already use their phone for checking out at other stores and do not require any assistance. However, others would appreciate having the option to call for assistance when introduced to new technology.

By offering the customer support, where needed, it could speed up the adoption process of new technology. This perspective is shared by IKEA who acknowledges that a certain segment of their customers will require assistance when presenting new technology in the form of mobile self-checkout. The environment, besides knowledge, does also affect the acceptance process of new technology. Some customers were identified as rather progressive and were experimenting with (mobile) self-checkout on the initial encounter. Other customers specifically mentioned that they rather wait, until their social environment uses and accepts it or see other customer having positive experiences with new technology in the store itself. It is to underline, that the customers are mainly willing to try a provided company app only once. If the retailer cannot provide a satisfying service, for example by being user-friendly, it is difficult to bring the customer to the point of reconsidering to use the mobile application again. Thus, retailer should rather launch a fully functional mobile application with the previous mentioned attributes, instead of responding fast to the customer's demand by providing an App without a well-developed concept.

Even though customers perceive mobile self-checkout in general as added value and enhancement of their shopping experience, there are some implications that arose during this research.

One concern customers addressed was, what would happen to the staff that is operating the traditional checkout currently. This points out that despite the increased benefits of a mobile self-checkout option, customers expressed uneasiness with staff losing their job on the account of technology. It seems however that both the company and the customer propose a like-minded solution. The customer suggests that the relieved staff at the checkout can contribute in other areas of the shopping experience. IKEA advocates that if the mobile self-checkout tool works accordingly, the relieved staff can

meet the customer at other touch points in the store. This shows that not only are the customer and company looking for benefits for themselves yet also consider social-ethical implications. This research reveals a correlation between the selection of a checkout option and the amount or size of items a customer intends to purchase. For example, some customers revealed that when they have the intention to buy large products or a lot of items they would prefer to still have the option of the staffed checkout. Therefore, it should be noted that customers would prefer to have the opportunity of both SST, in terms of (mobile) self-checkout, and traditional staffed checkouts. Another reason for this can be found in sociodemographic characteristics, for example age range of customers or even to people with a certain income or occupation. For example, the CFI Group (2014) pointed out that 67% of the shoppers between 18 and 34 years are mobile application users. However, the older the customer, the more rapid the decline in the usage of mobile devices as shopping tools. With the lowest point being only 9% when over the age of 74. From IKEA's perspective, there are also signs that point towards the usages of both checkout options. Since they identified different type of customers in their store, having both options will contribute to more freedom in customer experience.

Both the customer as well as the company brought up the issues of security around a mobile self-checkout solution. From a customer's perspective, the main issue in regards to security are the implications of mobile self-checkout systems on their privacy and personal data. However, recent research from the CFI Group (2015) pointed out that 70% is very confident in the retailer's ability to assure privacy when it comes to personal information. A case could be made that technology acceptance is a graduate process that needs time in order for the customer to feel at ease and confident about security. This is also collaborated by one of the customers who outlined the initial resistance towards online banking yet now uses it on a day-to-day basis. However, it might be in the company's best interest to be transparent and reassure their customers of the security measure it takes.

Another research of the CFI Group (2015) on the topic of enhancing cross-channel shopping experiences, addresses the issue of data breaches. This research shows that data breaches can have a rather negative effect on future spending of customers. Even when the customer is not directly affected by a data breach yet still confronted with the incident, 22% of the customers state that they will stop shopping at the retailer who was compromised by a data breach. The TAM-model could enjoy a modification by taking impacts like these into account, especially with the digital transformation that is current.

From the perspective of the company there are also concerns regarding security when implementing a mobile self-checkout solution. Shoplifting is considered as the main issue that needs to be addressed before implementing such a technology on a large scale, since there will be limited store staff involvement with this checkout solution. Ideal scenarios were discussed during the interviews, which included for example 360-degree

scanners. These scanners would be able to scan the content of a shopping bag and compare it with a receipt. However, these 360-degree scanners are in the development phase according to the company yet other possibilities may lie in the use of weighing scales. Hernandez (2016) discusses the usage of these scales where the customer accumulates their desired products by weighing the products to finally scan the weight and price the scale displays. The scanning in this case is done via the corresponding App on a mobile phone, which recognizes the price and weight on the scale.

5 Conclusion

The purpose of this thesis as well as the white spot in literature was defined by exploring the possibilities and critical aspects of mobile self-checkout to enhance value creation and customer satisfaction for physical retailers. In order to relate this research to practice, besides theoretical considerations, this study addressed the topic by working with a suitable case study. Through assessing the current literature in the theoretical framework and outlining a methodological approach for the empirical data gathering, the researchers were able to address the research questions of this study: *How can value be (co-)created between a big box retailer and its customers through a mobile self-checkout solution?*

5.1 Answering the research question

In order to answer the research question of this study, it is important to outline how the customer defines value when it comes to a mobile self-checkout solution. The three main drivers to make mobile self-checkout valuable for the customer can be defined as easy to use, time efficient (in comparison to the staffed checkout) and joyfulness. From these aspects, the customer identified time efficiency as the foremost reason to adapt to this new technology. This study points out, that implementing new services to speed up waiting times shows customers that the retailer values their time.

The customer expects from the retailer, in terms of a mobile self-checkout solution, assistance during the adaptation process of new technology and presents an inviting user-friendly design. Furthermore, there is a correlation between using a mobile self-checkout solution and the amount or size of items, which should be considered and addressed accordingly by the retailer. However, retailers need to be aware of the prior experiences a customer might have with other stores. It is to point out that this previous experience can be out of the retailer's control. Although it is their responsibility to provide assistance and a user-friendly mobile self-checkout solution, which also aims to overcome previous negative experiences.

This study has shown that a provided mobile self-checkout solution should engage and be feasible for both customer segments of hedonic and utilitarian. This is due to fact, that by offering this kind of general service, it has to be attractive to all customers in order to

create an all-over satisfaction. Mobile self-checkout should not replace traditional checkout rather supplement it, due to increasing shopping freedom and sociodemographic characteristics.

Retailers should be aware of what happens with their cashier staff before implementing a mobile self-checkout solution. Even though customers are looking to enjoy more benefits during their shopping experience, they do reflect on changes from an ethical perspective. If there is no clear or negative perceived answer, it could turn benefits into obstacles. This can have a counterproductive result on enhancing the customer experience and harm the company's reputation. Furthermore, providing a mobile self-checkout solution the retailer has to ensure that all security aspects are sufficient and communicated in a transparent way.

The main finding of this thesis is, that a mobile self-checkout solution is perceived as beneficial by all parties involved. If the retailer can deliver the attributes user-friendly and assistance around a mobile self-checkout solution, it can contribute to enhancing the customer's experience. Based on the ratio approach between benefits and obstacles the customer is willing to do more by themselves (e.g. scanning and payment) in order to enjoy the benefit of being faster. In addition, customer perceive more freedom when they adapting to a mobile self-checkout solution, since they have the feeling of being in control. If the retailer can meet the previously mentioned customer expectations, mobile self-checkout can be considered as the coalescent point where the retailer and customer meet to co-create value.

5.2 Theoretical contributions

According to the best of the researcher's knowledge, this research is the first that investigates the correlation of three value (co-)creation, customer experience and self-service technology (SST) in order to assess the possibilities and critical aspects of implementing a mobile self-checkout system for physical retail stores from theoretical point of view. Herewith, this research does more than just covering the white spot in the literature but also opens up a completely new discussion on the interweaving of SST and mobile payment solutions in the retail environment. The outcome of this research provides a better understanding of the matter through conducting the research from a three-dimensional perspective (customer, retailer and 'external experts') in order to create a more complete picture. The outlining of differences, common grounds and independent views towards the three previously mentioned theoretical areas of this research, has never been done before.

This study has shown that that value (co-)creation is a central aspect of SST's, in specific mobile self-checkout. The research points out that the customer, retailer and external

expert in the field of value (co-)creation in the retail environment have mainly similar opinions of the service of SST's, which could be beneficial in order to collaborate and develop a mobile self-checkout solution in order to increase customer satisfaction. Determining the concept of value creation for the mobile self-checkout solutions, the definition value-in-use and value-in-context are essential, due to close co-creation of customer and retailer. SST's and mobile self-checkout is excelled by benefits, due to in-store experience. Whereas customers define mobile self-checkout as a customer experience, some retailer could define it as a tool to only lower the barriers for the customer to come to the store. Customer experiences within mobile self-checkout are defined through joyfulness (fun to scan items) having control and giving the customer more freedom through their shopping (can choose how to do payment process).

In addition to the existing theory, this study contributes a model as outcome from the theoretical framework, to plan and structure a qualitative research in the field of value co-creation for future research. The developed Boss-model presents a spectrum with value co-creation as the core between the standpoints of company and customer. Besides the customer and company there are external factors that affect the value co-creation spectrum in the form of individual and common obstacles and benefits.

Finally, theoretical contribution will occur to society in general since this master thesis research will become public domain after being published by Lund University, due to the guidelines of the university. Therefore, this research contributes the academic sector as well as society as a whole by providing the possibility to deepen their knowledge in the above elaborated field of research.

5.3 Future Research

This research focussed on a rather specific topic and uncovered new insights which also apply to a broader theoretical and practical sense. Therefore, the following recommendations for future research were defined regarding value (co-)creation through SST usage in the retail environment.

Future research, which will explore the target group for a mobile self-checkout solution, should consider the differences in addressing early adopters or laggards. A reason to target early adopters is that they are rather open to trying new technology. However, by addressing laggards it could mean that all the segments are inclined to accept new technology. This research also uncovered that there is a relation between the time a customer spends in the store and how long he or she is willing to wait at the checkout area. Since this additional insight and not the focus of this research, future studies can focus on the correlation between these factors and possible implications on customer experience.

From a company's perspective, several questions remain to be resolved in assessing what the obstacles for companies are to implement mobile self-checkout. Evaluate if there are just technological barriers that prevent implementation or if there are other important factors at play. The security implications of a mobile self-checkout solution are a suggested topic for future research. Based on this research one security implication can be identified in privacy of personal data. For example, what kind of measurements would make the customer more at ease regarding their privacy and security of personal information? From a company's perspective the implications of shoplifting with a mobile self-checkout solution needs to be investigated.

Another consideration for future research can be found in the sociodemographic variation of the customers. A suggestion for future is to determine how to address the older customer segment, which might not be as adaptable to new technology as the younger segment. Besides sociodemographic considerations, future research is suggested to investigate the effect of culture on the design and acceptance of mobile self-checkout solutions. Since this research was conducted in the UK, which is a rather progressive area when it comes to mobile payment and SST usage, future research can consider a similar research in other countries with distinctive cultural backgrounds. In regards to ethical implications, future research can build upon customer and company's ethical concerns on the store staff being replaced by technology. Recommendation on this matter could be to conduct a study on how the checkout staff can be re-positioned within the store and be a benefit to both the customer and company.

It should be noted that mobile self-checkout currently is considered an enhancement of customer experience because of the rather progressive nature. However, it is possible that over time mobile self-checkout becomes the standard and is not considered as customer experience anymore. Further studies are required to establish if there is a turning point where mobile self-checkout goes from customer experience to standardize and if a lack of this standardized technology will result in customer dissatisfaction.

Finally, future research should assess if the elements of this research are still valid in the future context, due to the constant evolving elements over time.

6 References

- Andajani, E. (2015). Understanding Customer Experience Management in Retailing. *Procedia-Social and Behavioral Sciences*, vol. 211, pp.629-633
- Anderson, G. (2014). Walmart's Scan & Go is a no-go, *RetailWire*, 14 August, Available Online: <http://www.retailwire.com/discussion/17713/walmarts-scan-and-go-is-a-no-go> [Accessed 15 Apr. 2016]
- Andreu, L., Sánchez, I. & Mele, C. (2010). Value co-creation among retailers and consumers: New insights into the furniture market. *Journal of Retailing and Consumer Services*, vol. 17, no. 4, pp.241-250
- Babin, B., Darden, W. & Griffin, M. (1994). Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research*, vol. 20, no.4, pp.653-654
- Bäckström, K., & Johansson, U. (2006). Creating and consuming experiences in retail store environments: Comparing retailer and consumer perspectives. *Journal of Retailing and Consumer Services*, vol. 13, no. 6, pp.417-430
- Bakos, J. (1991). A Strategic Analysis of Electronic Marketplaces. *MIS Quarterly*, vol. 15, no. 3, p.295
- Bălășescu, M. (2013). The Influence Of Innovations And Technology On The Future Of Retail. *Bulletin of the Transilvania University of Brasov. Series V: Economic Sciences*, vol. 6, no. 2, pp.9-14
- Baxter, P. & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers . *The Qualitative Report*, vol. 13, no. 4, pp.544-559
- Beck, N. & Rygl, D. (2015). Categorization of multiple channel retailing in Multi-, Cross-, and Omni-Channel Retailing for retailers and retailing, *Journal Of Retailing And Consumer Services*, vol. 27, pp.170-178
- Berthon, P. & John, J. (2006). From Entities to Interfaces: Delineating Value in Customer-Firm Interactions, *The service-dominant logic of marketing: Dialog, debate, and directions*, pp.196 -241

Bughin, J., Chui, M. & Johnson, B. (2008). The next step in open innovation. *McKinsey Quarterly*, vol. 4, no. 6, pp.1-8

Burt, S., Johansson, U. & Thelander, Å. (2011). Standardized marketing strategies in retailing? IKEA's marketing strategies in Sweden, the UK and China. *Journal of Retailing and Consumer Services*, vol. 18, no.3, pp.183-193

Bustillo, M. & Fowler, G.A. (2009), Wal-Mart Sees Stores as Online Edge, *The Wall Street Journal*, 15 December, B1

Carbone, L. & Haeckel, S. (1994). Engineering Customer Experiences, *Marketing Management*, vol. 3, no.3, pp.8-19

Carù, A. & Cova, B. (2003). Revisiting consumption experience a more humble but complete view of the concept. *Marketing theory*, vol. 3, no. 2, pp.267-286

CFI Group (2014). Retail Satisfaction Barometer 2014 [pdf] Available at: <http://cfigroup.com/resources/industry-studies/retail2/retail-satisfaction-barometer-2014> [Accessed 4 May 2016]

CFI Group (2015). Retail Satisfaction Barometer 2015 [pdf] Available at: http://cfigroup.com/register?file=downloads/CFI_retail_satisfaction_barometer_2015.pdf [Accessed 4 May 2016]

Chesbrough, H. (2010). Business Model Innovation: Opportunities and Barriers. *Long Range Planning*, vol. 43, no. 2-3, pp.354-363

Chih-Hung Wang, M. (2012). Determinants and consequences of consumer satisfaction with self-service technology in a retail setting. *Managing Service Quality: An International Journal*, vol. 22, no. 2, pp.128-144

Christopher, M., Lowson, R. & Peck, H. (2004), Creating agile supply chains in the fashion industry, *International Journal of Retail & Distribution Management*, vol. 32, no. 8, pp.367-376

Clark, T., Osterwalder, A. & Pigneur, Y. (2012). *Business Model You: A One-Page Method For Reinventing Your Career*, London: Wiley

Colby, C. & Parasuraman, A. (2003). Technology still matters never mind the doomsayers: E-services are alive, well, and positioned for growth. *Marketing Management*, vol. 12, no. 4, pp.28-33

- Collier, J. E. & Kimes, S. E. (2013). Only if it is convenient understanding how convenience influences self-service technology evaluation. *Journal of Service Research*, vol. 16, no. 1, pp.39-51
- Condliffe, J. (2015). You Can Now Pay at Wal-Mart Using Your Mobile, *Gizmodo*, 10 December, Available Online: <http://gizmodo.com/you-can-now-pay-at-wal-mart-using-your-mobile-1747267405> [Accessed 14 April 2016]
- Coughlan, A., Anderson, E., Stern, L. & El-Ansary, A. (2006). Marketing channels. Upper Saddle River, N.J.: Prentice Hall.
- Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, vol. 13, no. 3, pp.319-340
- Davis, F., Bagozzi, R. & Warshaw, P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, vol. 35, no. 8, pp.982-1003
- Deighton, J. & Kornfeld, L. (2009). Interactivity's Unanticipated Consequences for Marketers and Marketing. *Journal of Interactive Marketing*, vol. 23, no.1, pp.4-10
- Deloitte LLP, (2015). Britain poised for mobile payments revolution. [online] Available at: <http://www2.deloitte.com/uk/en/pages/press-releases/articles/mobile-payments-revolution.html> [Accessed 12 May 2016]
- Denzin, N. & Lincoln, Y. (2005). The SAGE handbook of qualitative research. Thousand Oaks: Sage Publications
- Echeverri, P. & Skålén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation, *Marketing Theory*, vol. 11, no. 3, pp.351-373
- Eisenhardt, K. (1989) Building Theories from Case Study Research, *Academy of Management Review*, vol. 14, no. 4, pp 532-550
- Ericsson (2012). 10 hot consumer trends 2013. Consumerlab [pdf], Available at: <http://www.ericsson.com/res/docs/2012/consumerlab/10-hot-consumer-trends-2013.pdf> [Accessed 21 Mar. 2016]
- Ericsson (2015). Networked lifestyle rapidly becoming mainstream, Available Online: http://www.ericsson.com/news/151112-networked-lifestyle-rapidly-becoming-mainstream_244069644_c [Accessed 21 Mar. 2016]
- Ericsson, D. & Sundström, M. (2012). Value Innovation and Demand Chain Management- keys to future success in the fashion industry, *Nordic Textile Journal*, pp.83-90

Gentile, C., Spiller, N. & Noci, G. (2007). How to Sustain the Customer Experience: An Overview of Experience Components that Co-create Value With the Customer, *European Management Journal*, vol. 25, pp.395-410

Goworek, H. & McGoldrick, P. (2015). Retail marketing management. Harlow, United Kingdom: Pearson

Grönroos, C. & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation, *Journal Of The Academy Of Marketing Science*, vol. 41, no. 2, pp.133-150

Hansson, M. (2015). Lecture 9: IKEA Multichannel, BUSN36, powerpoint presentation, LUSEM Lund, 18 November 2015

Haumann, T., Quaiser, B., Wieseke, J. & Rese, M. (2014). Footprints in the Sands of Time: A Comparative Analysis of the Effectiveness of Customer Satisfaction and Customer-Company Identification over Time. *Journal of Marketing*, vol. 78, no. 6, pp.78-102

Heinonen, K. & Strandvik, T. (2015), Customer-dominant logic: foundations and implications, *Journal of Services Marketing*, vol. 29, no. 6-7, pp.472-484

Heinonen, K., Strandvik, T., Mickelsson, K. J., Edvardsson, B., Sundström, E., & Andersson, P. (2010). A customer-dominant logic of service. *Journal of Service Management*, vol. 21, no. 4, pp.531-548

Helkkula, A., Kelleher, C. and Pihlstrom, M. (2012). Characterizing Value as an Experience: Implications for Service Researchers and Managers. *Journal of Service Research*, vol. 15, no. 1, pp.59-75

Hernandez, W. (2016). New York company debuts pure mobile-only grocery checkout, 18 January, *mobilepaymentstoday*, Available Online: <http://www.mobilepaymentstoday.com/articles/new-york-company-debuts-pure-mobile-only-grocery-checkout/> [Accessed 4 May 2016]

Hilton, T., Hughes, T., Little, E. & Marandi, E. (2013). Adopting self-service technology to do more with less. *Journal of Services Marketing*, vol. 27, no. 1, pp.3-12

Holbrook, M. B. (2005). Customer value and autoethnography: subjective personal introspection and the meanings of a photograph collection. *Journal of Business Research*, vol. 58, no. 1, pp.45-61

Ikea.com. (2016). Together we save money - IKEA. [online] Available at: http://www.ikea.com/ms/en_US/the_ikea_story/the_ikea_store/the_ikea_concept.html [Accessed 10 Apr. 2016]

Johnston, R. & Kong, X. (2011). The customer experience: a road-map for improvement. *Managing Service Quality*, vol. 21, no.1, pp.5-24

Kallweit, K., Spreer, P. & Toporowski, W. (2014). Why do customers use self-service information technologies in retail? The mediating effect of perceived service quality. *Journal of retailing and consumer services*, vol. 21, no. 3, pp.268-276

Keeling, K., Keeling, D. & McGoldrick, P. (2013). Retail relationships in a digital age. *Journal of Business Research*, vol. 66, no.7, pp.847-855

King, W. & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, vol. 43, no. 6, pp.740-755

Kozinets, R. (1999). E-tribalized marketing? the strategic implications of virtual communities of consumption. *European Management Journal*, vol. 17, no.3, pp.252-264

Kuper, A., Lingard, L. & Levinson, W. (2008). Critically appraising qualitative research. *British Medical Journal*, vol. 337, pp.687-692

Lee, C., Tsao, C. & Chang, W. (2015). The relationship between attitude toward using and customer satisfaction with mobile application services, *Journal Of Enterprise Information Management*, vol. 28, no. 5, pp.680-697

Lee, H. & Lyu, J. (2016). Personal values as determinants of intentions to use self-service technology in retailing, *Computers in Human Behavior*, vol. 60, pp.322-332

Lee, H. J. & Yang, K. (2013). Interpersonal service quality, self-service technology (SST) service quality, and retail patronage. *Journal of Retailing and Consumer Services*, vol. 20, no. 1, pp.51-57

Lee, H. J., Jeong Cho, H., Xu, W. & Fairhurst, A. (2010). The influence of consumer traits and demographics on intention to use retail self-service checkouts. *Marketing Intelligence & Planning*, vol. 28, no. 1, pp.46-58

Lewis, J., Whysall, P., & Foster, C. (2014). Drivers and Technology-Related Obstacles in Moving to Multichannel Retailing. *International Journal of Electronic Commerce*, vol. 18, no. 4, pp.43-68

Lin, J. & Chang, H. (2011). The role of technology readiness in self-service technology acceptance. *Managing Service Quality*, vol. 21, no. 4, pp.424-444

Lincoln, Y. & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, Calif.: Sage Publications.

Lindič, J. & Marques da Silva, C. (2011). Value proposition as a catalyst for a customer focused innovation. *Management Decision*, vol. 49, no. 10, pp.1694-1708

Lizhu, D. & Hodges, N. (2012). Consumer shopping value: An investigation of shopping trip value, in-store shopping value and retail format, *Journal of retailing and consumer services* vol. 19, no. 2, pp.229-239

Martin, E. (2016). Mobile-Enabled Self-Checkout Concept Generates Buzz, *Mobile Marketing Watch*, 18 January, Available Online: <http://mobilemarketingwatch.com/mobile-enabled-self-checkout-concept-generates-buzz-64726/> [Accessed 11 May 2016]

Mashable (2016). The Swedish store with no cashiers lets you use a cellphone to do late-night shopping, Available Online: <http://mashable.com/2016/02/29/swedish-store-cashiers/#gij.5tn5kqs> [Accessed 12 May 2016]

McColl-Kennedy, J.R., Gustafsson, A., Jaakkola, E., Klaus, P., Radnor, Z.J., Perks, H. & Friman, M. (2015). Fresh perspectives on customer experience. *Journal of Services Marketing*, vol. 29, no. 6-7, pp.430-435

McCracken, H. (2011). Apple Store Self-Check Out: Shopping, Perfected, *TIME.com*, 11 November, Available Online: <http://techland.time.com/2011/11/11/apple-store-self-check-out-shopping-perfected/> [Accessed 04 May 2016]

Meertens, L. O., Iacob, M. E., Nieuwenhuis, L. J., Van Sinderen, M. J., Jonkers, H. & Quartel, D. (2012). Mapping the business model canvas to ArchiMate. *In Proceedings of the 27th Annual ACM Symposium on Applied Computing*, March, pp.1694-1701

Meuter, M. L., Ostrom, A. L., Roundtree, R. I. & Bitner, M. J. (2000). Self-service technologies: understanding customer satisfaction with technology-based service encounters. *Journal of marketing*, vol. 64, no. 3, pp.50-64

Mouri, N., Bindroo, V. & Ganesh, J. (2015). Do retail alliances enhance customer experience? Examining the relationship between alliance value and customer satisfaction with the alliance. *Journal of Marketing Management*, vol. 31, no. 11-12, pp.1231-1254

Muhtaroglu, C., Demir, S., Obali, M. & Girgin, C. (2013). Business Model Canvas Perspective on Big Data Applications. *In: 2013, IEEE International Conference on Big Data. IEEE*, pp.32-37

Murphy, T. (2000). *Web rules*. Dearborn, IL: Dearborn

- Narver, J., Slater, S. & MacLachlan, D. (2004). Responsive and Proactive Market Orientation and New-Product Success, *Journal of Product Innovation Management*, vol. 21, no. 5, pp.334-347
- Newlands, D. and Hooper, M. (2009). The global business handbook. Farnham, Surrey, England: Gower
- O'Cass, A., Song, M. & Yuan, L. (2013). Anatomy of service innovation: Introduction to the special issue, *Journal Of Business Research*, vol. 66, no. 8, pp.1060-1062
- Orel, F.D. & Kara, A. (2014). Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*, vol. 21, no. 2, pp.118-129
- Osterwalder, A. & Pigneur, Y. (2009). Business model generation. Amsterdam: Modderman Drukwerk.
- Osterwalder, A., Pigneur, Y., Bernarda, G. & Smith, A. (2014). Value proposition design: how to create products and services customers want. London: Wiley
- Pantano, E. (2014). Innovation drivers in retail industry. *International Journal of Information Management*, vol. 34, no. 3, pp.344-350
- Parasuraman, A. (1997). Reflections on gaining competitive advantage through customer value. *Journal of the Academy of marketing Science*, vol. 25, no. 2, pp.154-161
- Parasuraman, A. & Grewal, D. (2000). The Impact of Technology on the Quality-Value-Loyalty Chain: A Research Agenda. *Journal of the Academy of Marketing Science*, vol. 28, no. 1, pp.168-174
- Peterson, R & Balasubramanian, S. (2002). Retailing in the 21st century: reflections and prologue to research. *Journal of Retailing*, vol. 78, no. 1, pp.9-16
- Pinchot, G. and Pellman, R. (1999). Intrapreneuring in action. San Francisco: Berrett-Koehler
- Pokorná, J., Pilař, L., Balcarová, T. & Sergeeva, I. (2015). Value Proposition Canvas: Identification of Pains, Gains and Customer Jobs at Farmers' Markets. *AGRIS on-line Papers in Economics and Informatics*, vol. 7, no. 4, pp.123-130
- Prahalad, C. K. & Ramaswamy, V. (2013). The future of competition: Co-creating unique value with customers. Boston, United States: Harvard Business Press

Prahalad, C.K. & Ramaswamy, V. (2004). CO-CREATION EXPERIENCES: THE NEXT PRACTICE IN VALUE CREATION, *Journal Of Interactive Marketing*, vol. 18, no. 3, pp.5-14

Prindle, D. (2016). This automated store in Sweden doesn't have any human employees — only a smartphone app, *Digital Trends*, 29 February, Available Online: <http://www.digitaltrends.com/cool-tech/sweden-app-enabled-automated-store/> [Accessed 2 May 2016]

Reimers, V & Chao, F. (2014). The role of convenience in a recreational shopping trip, *European Journal Of Marketing*, vol. 48, no. 11-12, pp. 2229-2230

Retail Banking Research, (2015). Strong year for self-checkout in western Europe and Japan. [online] Available at: http://www.rbrlondon.com/about/SCO_Press_Release_220715.pdf [Accessed 12 May 2016]

Reynolds, J., Howard, E., Cuthbertson, C. & Hristov, L. (2007). Perspectives on retail format innovation: relating theory and practice. *Intl J of Retail & Distrib Mgt*, vol. 35, no. 8, pp.647-660

Rigby, D. (2011). The Future of Shopping, *Harvard Business Review*, vol. 89, no. 12, pp.64-75

Roggeveen, A. L., Tsiros, M. & Grewal, D. (2012). Understanding the co-creation effect: when does collaborating with customers provide a lift to service recovery?. *Journal of the Academy of Marketing Science*, vol. 40, no. 6, pp.771-790

Saarijärvi, H., Kannan, P. and Kuusela, H. (2013). Value co-creation: theoretical approaches and practical implications. *European Business Review*, vol. 25, vol. 1, pp.6-19

Sabherwal, R., Jeyaraj, A. & Chowa, C. (2006). Information System Success: Individual and Organizational Determinants. *Management Science*, vol. 52, no. 12, pp.1849-1864

Shankar, V. & Yadav, M. (2011). Innovations in Retailing. *Journal of Retailing*, vol. 87, pp.S1-S2

Shaw, C. and Ivens, J. (2005). Building great customer experiences. Houndmills, Basingstoke, Hampshire: Palgrave

Shen, J. and Eder, L.B. (2009) Exploring intentions to use virtual worlds for business. *Journal of Electronic Commerce Research* , vol. 10, no. 2, pp.94-103

- Smith, J. B. & Colgate, M. (2007). Customer value creation: a practical framework. *Journal of marketing Theory and Practice*, vol. 15, no. 1, pp.7-23
- Sood, A. & Tellis, G. (2011). Demystifying Disruption: A New Model for Understanding and Predicting Disruptive Technologies. *Marketing Science*, vol. 30, no. 2, pp.339-354
- Sorescu, A., Frambach, R., Singh, J., Rangaswamy, A. & Bridges, C. (2011). Innovations in Retail Business Models. *Journal of Retailing*, vol. 87, pp.S3-S16
- Taghizadeh, S., Jayaraman, K., Ismail, I. & Rahman, S. (2016). Scale development and validation for DART model of value co-creation process on innovation strategy. *Journal of Business & Industry Marketing*, vol. 31, no. 1, pp.24-35
- Taylor, E. (2016). Mobile payment technologies in retail: a review of potential benefits and risks. *Intl J of Retail & Distrib Mgt*, vol. 44, no. 2, pp.159-177
- Teixeira, J., Patrício, L., Nunes, N., Nóbrega, L., Fisk, R. & Constantine, L. (2012). Customer experience modeling: from customer experience to service design. *Journal of Service Management*, vol. 23, no. 3, pp.362-376
- Thomas, E. & Magilvy, J. K. (2011). Qualitative Rigor or Research Validity in Qualitative Research. *Journal for Specialists in Pediatric Nursing*, vol. 16, no.2, pp.151–155
- Timmermans, S. & Tavory, I. (2012). Theory Construction in Qualitative Research: From Grounded Theory to Abductive Analysis. *Sociological Theory*, vol. 30, no. 3, pp.167-186
- Tynan, C., McKechnie, S. & Hartley, S. (2014). Interpreting value in the customer service experience using customer-dominant logic, *Journal of Marketing Management*, vol. 30, no. 9-10, pp.1058-1081
- Vargo, S. and Lusch, R. (2004). The Four Service Marketing Myths: Remnants of a Goods-Based, Manufacturing Model. *Journal of Service Research*, vol. 6, no. 4, pp.324-335
- Vargo, S. L., Maglio, P. P. & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European management journal*, vol. 26, no. 3, pp.145-152
- Varma Citrin, A., Sprott, D., Silverman, S. & Stem, D. (2000). Adoption of Internet shopping: the role of consumer innovativeness. *Industr Mngmnt & Data Systems*, vol. 100, no. 7, pp.298-299
- Venkatesh, V. and Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, vol. 39, no. 2, pp.273-315

- Verhoef, P., Kannan, P. & Inman, J. (2015). From Multi-Channel Retailing to Omni-Channel Retailing. Introduction to the Special Issue on Multi-Channel Retailing, *Journal Of Retailing*, vol. 91, no. 2, pp.174-181
- Verhoef, P., Lemon, K., Parasuraman, A., Roggeveen, A., Tsiros, M. and Schlesinger, L. (2009). Customer Experience Creation: Determinants, Dynamics and Management Strategies. *Journal of Retailing*, vol. 85, no. 1, pp.31-41
- Wahba, P. (2015). Walmart Launches its Own Mobile Payment System, *Fortune*, 10 December, Available Online: <http://fortune.com/2015/12/10/walmart-mobile-payment/> [Accessed 02 May 2016]
- Wang, C., Harris, J. and Patterson, P. (2012). Customer choice of self-service technology: the roles of situational influences and past experience. *Journal of Service Management*, vol. 23, no. 1, pp.54-78
- Weijters, B., Rangarajan, D., Falk, T. & Schillewaert, N. (2007). Determinants and Outcomes of Customers' Use of Self-Service Technology in a Retail Setting. *Journal of Service Research*, vol. 10, no.1, pp.3-21
- Whetten, D.A. (1989). What constitutes a theoretical contribution?, *Academy of Management Review*, vol. 14, no. 4, pp.490-495
- Woodall, T. (2003). Conceptualising 'Value for the Customer': An Attributional, Structural and Dispositional Analysis, *Academy of Marketing Science Review*, vol. 2003, no. 12
- Woodruff, R. B. (1997). Customer value: the next source for competitive advantage. *Journal of the academy of marketing science*, vol. 25, no.2, pp.139-153
- Xu, C., Peak, D. & Prybutok, V. (2015). A customer value, satisfaction, and loyalty perspective of mobile application recommendations. *Decision Support Systems*, vol. 79, pp.171-183
- Zhou, R. & Soman, D. (2003). Looking back: Exploring the psychology of queuing and the effect of the number of people behind. *Journal of Consumer Research*, vol. 29, no. 4, pp.517-530
- Zhu, Z., Nakata, C., Sivakumar, K. & Grewal, D. (2007). Self-service technology effectiveness: the role of design features and individual traits. *Journal of the Academy of Marketing Science*, vol. 35, no. 4, pp.492-506

Zhu, Z., Nakata, C., Sivakumar, K. & Grewal, D. (2007). Self-service technology effectiveness: the role of design features and individual traits. *J. of the Acad. Mark. Sci.*, vol. 35, no.4, pp.492-506

Zolnowski, A., Weiß, C. & Bohmann, T. (2014). Representing Service Business Models with the Service Business Model. 2014, 47th Hawaii International Conference on System Sciences (HICSS), *IEEE*, pp.718-727

Appendix I - Interview guide customers & company

Pre-interview

- Introduction of interviewers.
- Explain purpose of research study and interview and process.
- Agree to record this interview?
- Agree to personal data in research (e.g. age, gender but change name) and using statements from the interview as input for the research?
- Any questions beforehand from the interviewee's side?

Interview (pool of questions):

1. IKEA general questions

- How do they experience the IKEA store while shopping
- Likes/ dislikes about the store (design)
- What is the benefit to shop at IKEA over other retailers? → Follow up: what is your view on doing part of the shopping exp. yourself in order to maintain low prices?

2. Mobile usage in physical stores questions

- Do you use your mobile phone when shopping?
- How do you use your phone when shopping?
- What do you like what do you dislike about using the mobile phone?
- What are you missing from retailers in order to make the use of a mobile phone while shopping even better?
- Do you think IKEA is well prepared with their multi-channel (online/offline) to their customer?
- Do you use your mobile phone in the IKEA store? If so, which purpose?
- Any experience with using the IKEA app?
- What could IKEA improve to make using the mobile phone in-store more friendly?

3. (Self)-checkout questions

- How do you normally check out at big retail stores?
- Why do you use this specific check out choice?
- Have you ever used a self-checkout system?
- Motivation to change behaviour in terms of checkout options? (lazy to change)

- How do you experience the waiting times in the checkout area at IKEA?
- What do you think of the current self-checkout at IKEA?
- Do you think that the IKEA store-layout is suitable for a fast self-checkout system?
- What could IKEA improve to make using the mobile self-checkout in-store friendly?
- Mobile self-checkout vs. external scanning devices (show pictures).
- What do you think are the implications (obstacles) of using a mobile self-checkout system?
- What are the advantages for mobile self-checkout; what do you want to achieve or do you seek by using a mobile self-checkout?
- How would you describe your part/job of using a mobile self-checkout?
- What should IKEA do to make sure you would at least try it out/ use such and payment option?

Post-interview:

- Thank the interviewee for participation.
- Any remaining questions from the interviewee's side?
- Provide the meal coupon as appreciation (in case of customer interview)

Appendix II - Interview guide external experts

Pre-interview

- Introduction of interviewers.
- Explain purpose of research study and interview and process.
- Agree to record this interview?
- Agree to personal data in research (age, gender & name) and using statements from the interview as input for the research?
- Any questions beforehand from the interviewee's side?

Interview (pool of questions)

1. Purpose of this research and intended contribution
 - a. Payment situation at physical stores: Customer is in charge of value creation (value-in-use concept) BUT provider (IKEA) may influence the customer value creation process & serve as a co-creator by providing a faster and easy accessible paying solution. E.g. mobile self-checkouts
 - b. Offering a mobile self-checkout could lead to added value for customer. However, no qualitative knowledge about:
 - i. If IKEA customer wants it, how and to what extend
 - ii. What are the main attributes for them besides easy to use, compatibility and usefulness to create a positive affection

1. What is his/ her experience within Retail?
 - a. Senior lecturer or Researcher:
 - b. Journals:
 - c. Current research:
 - d. Relevant contacts for us regarding to our research purpose:

2. Past or current experience in the field of Value (co-)creation?
 - a. How would he/she define value creation, value-in-use creation (joint sphere)?
 - b. Does IKEA differ in direct and indirect interaction of value creation from other companies?
 - c. Shift from companies towards more value creation, any examples?

3. Past or current experience in the field of Customer Experience/ Omnichannel?
 - a. Future Development of Omni-Channel:
 - b. Biggest Challenges to realize it in big-box retail environment:

4. Past or current experience in the field of (Mobile) Self-Checkout systems?
 - a. Past or current relevant try's or projects within these fields?
 - b. What does she thinks are the main challenges for mobile self-checkouts?
 - c. Any companies she knows which are 'far ahead' in this field?

Post-interview:

- Thank the interviewee for participation.
- Any remaining questions from the interviewee's side?

Appendix III – Pictures during the interviews

Example of external scanning devices



Examples of mobile scanning and payment



Examples of mobile scanning and payment - Checkout

