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MSc in Marketing and Consumption

The Digitalization in Swedish Grocery Stores

How does digitalization in Swedish grocery stores frame shopping practices?

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1.Introduction

With the advancement of technology, life changes rapidly, and the Covid-19 pandemic has accelerated this tremendously. The closures, restrictions imposed, social distancing, and the limitation of access to physical stores due to the Covid-19 pandemic have led to changes in lifestyle, a difference in customers' buying journey, and more use of technology in retail (Roggeveen and Sethuraman, 2020). Thus, the use of technology in retail is no longer seen as a choice; on the contrary, it has become an essential means of survival for retailers.

Recent research showed that achieving various technological solutions had become a vital competitive advantage for retail sales even before the pandemic (e.g., Blázquez, 2014; Dennis et al., 2012; Poncin and Mimoun, 2014). These developments include many technologies such as smartphones, handheld scanners, and self-checkout services. A smartphone is a central tool in shaping everyday shopping practices (Fuentes and Svengstedt, 2017; Spaid and Flint, 2014). In addition, self-checkout service has become a popular option in supermarkets (Orel and Kara, 2014). Besides this, handheld scanners in the retail sector are expected to increase in future (Williams, 2015, cited in Grewal et al., 2020). Therefore, we focus on these tools in our study as essential components of shopping – at grocery stores, specifically.

Many researchers have taken the Bitner (1992) model as the cornerstone of their research in retail (Fuentes et al., 2017). Bitner articulated the "servicescape" perspective in "trying to bridge the gap between environmental psychology and marketing" to produce future insights into how consumers interact with their physical environment (Rosenbaum, 2005:257). He defines the following environmental dimensions that collectively make up the service domain: smell, music, temperature, sign, symbols, spatial planning, and social interactions. Bitner's model assumes that the service domain is the primary focus of influencing customer perceptions, leading to specific customer responses (Bitner, 1992). However, consumer culture theorists have challenged this view of service scenes (e.g., Kozinets et al., 2002; Sherry, 1998). In their opinion, a store environment is a place where certain types of experiences and behaviors are evoked. Thus, it is co-created by the movement of people, interacting with the place and with others. The consumer is "the audience and the artist at the same time" (Sandikci and Holt,1998, p. 310 cited in Fuentes et al., 2017).

The cultural perspective introduced the symbolic and collective cognitive structures and shared knowledge that enables and benefits agents from their interpretation of the world and their behavior. Within the broad spectrum of cultural theories, one subarea focuses on *practices* to understand social life. A practice generally could be a habit, expected action, or way of doing something. Several practices may combine to form a single practice. Every practice, no matter how simple, has many meanings, sayings, and actions.

Retail shopping is primarily classified as a social practice (Christensen and Røpke, 2010). Practice theory contributes effectively to understanding and analyzing consumer behavior in the retail sector (Kumbargeri and Sinha, 2017). According to Elms et al. (2016), many studies (e.g., Jackson and Holbrook, 1995; Meah and Watson, 2013) have shown that grocery shopping is a skilled, multifaceted practice that is intertwined socially and with real-life (Elms et al.,2016). Simultaneously, practice theory enables researchers to analyze consumption patterns and how these styles diverge in networks of social change (Halkier and Jensen, 2011). Besides this, it allows us to understand consumption as ongoing achievements at the intersection of diverse practices and social relations (Ibid). Consequently, researchers have been able to conduct empirical studies in ways that differ from those prevailing in consumer culture (Ibid). Hence, we can say that practice theory is the proper perspective to study digitalization's framing of the practices in the grocery sector. We relied on a few versions of practice theory as a perspective for the study, focusing on Shove et al.'s (2012) study.

Empirically, this study relied on a qualitative research method. This method helps explain and understand social phenomena by studying the behavior of individuals and getting to know them closely (Cacciattolo, 2015). Semi-structured interviews and personal observations were used to achieve the greatest possible benefit. Combining these two methods allows researchers to delve deeper and dive into the research topic (Thompson, 2000). In the methodology section, there is a detailed explanation of the process.

Our paper attempts to contribute to the retail literature by answering the following research question: **How does digitalization in Swedish grocery stores frame shopping practices?** In other words, we try to discover how consumers interact with digital devices during shopping in supermarkets.

This paper is structured in the following way. Chapter Two provides the theoretical background upon which the research is based. Chapter Three gives a detailed explanation of the method of study that we followed. Chapter Four details the analysis, appending it to the section of the findings we extracted and the discussion that reinforces them. Finally, the entirety of the research is summarized in the conclusion, Chapter Five.

2.Theoretical Background

2.1 Practice Theory

2.1.1 Overview

Practice theory is not a single theory. Instead, multiple versions of theoretical readings meet at points of interest in implementing social action and crystallizing and adapting such processes in social life. (Halkier et al., 2011). For example, Reckwitz (2002) defines a practice as

a routinized way in which bodies are moved, objects are handled, subjects are treated, things are described, and the world is understood. To say that practices are 'social practices' is indeed a tautology: A practice is social, as it is a 'type' of behaving and understanding that appears at different locales and at different points of time and is carried out by different body/minds. (Reckwitz 2002: 250)

The notion of the routine character of practices appears at nearly every turn in Reckwitz's description of practices and their central position as a social site. This is clear from his description of practice: "a routine type of behavior consisting of several elements interconnected with each other, forms of physical activities, and forms of mental activities" (Halkier et al., 2011).

Additionally, "Ordinary consumption is best understood in terms of concepts like habit, routine, constraint, and so on and can be summed up as a recognition of the conventional nature of consumption" (Randles and Warde, 2006:226, cited in Halkier et al., 2011:4). Warde (2005) states that as cases of consumption are characterized by their collective, traditional, and routine nature.

Furthermore, often the performance of a practice in a familiar way is not fully conscious. This is because practices have some stagnation on the one hand, while, on the other hand, practice theory emphasizes processes like habituation, routine awareness, and traditions (Warde, 2005).

Warde (2005) argues that agreements of the practices are usually in conflict. Some practitioners still conform to the previous rules of behavior. In contrast, others try to replace traditional beliefs with new prescriptions, as is the new generation's case. Hence, practice contains seeds of constant change as people adapt to infinite situations. However, performance in the same practice is always the same (Warde, 2005).

2.1.2 The elements of practice (meaning, materials, and competencies)

Practices result from interaction, connection, and complementarity between three main concepts: materials, competences, and meanings. First, "materials" include all things: infrastructures, tools, devices, and the body itself. Second, "competences" include all forms of understanding and practical knowledge. Third, "meaning" represents the social and symbolic importance of participation (Shove et al., 2012). These three elements and their interlinked relationships are necessary conditions for a practice to exist and survive. The renewal of links and the shifting states of integration may lead to the emergence of new elements, which in turn may result in the emergence of new practices (ibid).

Furthermore, the stability of practices and routines should not be understood as an endpoint. Instead, we should understand practices as stable and continuous if similar elements are repeatedly linked together in similar ways (Shove et al., 2012). Additionally, practices may relate to other practices or form bundles

or complex combinations, depending on their common location or coexistence (ibid). For example, there are several practices involved in shopping at a supermarket: using the shopping cart, placing goods inside, using a handheld scanner, and paying with a regular cashier or by self-checkout service, and so on. All these practices are linked together. For instance, the presence or absence of a self-checkout service will determine the payment method, which can eliminate the payment via the typical cashiers, thus fundamentally changing the form of shopping. Besides, this service requires a shopper who has sufficient skill and a reason motivating a preference for this payment method.

As mentioned previously, if the links exist, the practice exists and continues – but what happens if these links are broken? In fact, Shove et al. (2012) argue that when links are broken and forms of practice evolve, the materials, meanings, and forms of competencies disappear in distinct ways. The elements vanish with little or no effect or remain in a dormant state or take a new opportunity for life inside and outside of other practices, meaning they become part of other practices. Besides this, the fading of a practice and the breakdown of the bonds between the elements do not mean the death of these elements. Materials, meanings, and competencies have a life that extends before and after the moment of integration. We can say that the remnants of past unconnected practices surround us.

2.2 Smartphones and Consumer shopping behavior

The introduction of smartphones into shopping practices is a part of the ongoing digitalization of the retail trade (Hagberg et al., 2016). New surveys and studies suggest that smartphones are being integrated into everyday shopping practices (Holmes et al., 2014; Spaid and Flint,2014). Smartphones help consumers scan products, create shopping lists, read shopping blogs, check product availability, compare prices, and much more, either in the store or outside the store (Fuentes et al., 2017); they have become central to performing everyday shopping practices (Fuentes and Svengstedt, 2017; Spaid and Flint, 2014). Besides, smartphones in general are advanced technological devices that allow for multiple uses. For instance, Spaid and Flint's (2014) study shows that smartphones can function as shopping and social device managers. They are used to make individual shopping businesses more social.

Mobile devices, especially smartphones, are changing the nature of shopping and dealing with servicescape (Hagberg et al., 2016). The literature that considers the servicescape as a controlled space no longer applies, given that their theorization does not account for contemporary aspects of retail. The servicescape no longer forces people to act according to its content, and retail designers are not the only ones who shape servicescape and expect them to respond as planned. With the advent of smartphones, the relationship between servicescape and consumers has changed. The consumer interacts with and participates in designing servicescape. Consumers integrate smartphones into shopping activities, reshape

servicescape, redraw store boundaries, and redistribute agency in the process (Fuentes et al., 2017). In other words, the use of smartphones is reshaping the servicescape in stores and changing the relationships between consumers, retailers, and stores.

2.3 Self-Checkout Service

Self-checkout service is one of the self-service technologies. It has attracted high interest from retailers, especially for groceries (Leng and Wee, 2017), and has become popular in supermarkets (Orel and Kara, 2014).

Despite the great importance of self-checkout services, studies so far have only provided a limited understanding of how self-checkout service operations affect shopping practices and customer experiences in stores (Bulmera et al., 2018). Besides, consumers see self-checkout services as part of the overall customer service experience in the retail store (Leng and Wee, 2017); this necessitates understanding the situations and contexts that lead to the use of self-checkout service in addition to its broad cultural and social significance (Bulmera et al., 2018).

The literature mentions many of the features and factors that drive customers to adopt self-checkout services, for example speed, ease of use, and age (e.g., Leng and Wee,2017; Orel and Kara, 2014). Other studies have mentioned the effects of social interaction, anxiety, and stress in self-checkout service (e.g., Leng and Wee, 2017; Bulmera et al., 2018). Our study focuses on some of the following aspects that may attract consumers to or prevent them from using self-checkout services.

1- *Speed of the transaction.* Studies indicate that transaction speed is one of the most critical factors affecting the satisfaction of clients who adopt self-service technology (Fernandes and Pedroso, 2017). The speed of service delivery is the leading and most noticeable feature of the self-service system because it reduces the estimated time that the customer spends to exit (Marzocchi and Zammit, 2006). It can also be assumed that self-service technology is an alternative channel for consumers who want to reduce the estimated time for service (Lee et al., 2013).

2- *Ease of use.* This is related to the perceived effort by the customer to use a new service effectively and enjoy it (Timmor and Rymon, 2008). Many marketing researchers have indicated positive relationships between ease of use and adoption of a new service (Orel and Kara, 2014). Besides, the first use of a self-checkout service is considered the most difficult for shoppers, after which it becomes easier (ibid). Moreover, supposing a customer feels that a self-checkout service is complex, he/she may have feelings of anxiety and uneasiness about appearing foolish in front of others (ibid). According to Leng and Wee (2017), self-checkout services are the most difficult to use among self-service technologies. In addition, most of the

complaints reported about self-checkout service were associated with the difficulty of using when purchasing more commodities and when an item did not contain a barcode and needed to be weighed (Orel and Kara, 2014).

3- *Age*. According to Leng and Wee (2017) and Orel and Kara (2014), recent studies confirm that younger age groups represent the majority of users of self-checkout services while shopping at supermarkets. This may be due to their high degree of acceptance of technology in general because consumers who have positive attitudes towards technology are more likely to use self-checkout services (Leng and Wee, 2017).

4- *Preference for human interaction*. Leng and Wee (2017) state that recent studies have suggested that consumers with a higher demand for human interaction are less likely to adopt self-checkout services. They prefer traditional payment methods because of their human interaction preferences, not because of their resistance to technology. This indicates that older consumers are less likely to use self-checkout services (Leng and Wee, 2017).

(**Note**: Previous literature used the **"need"** for human interaction. We replaced **"need"** with the expression **"preference,"** believing that it is more appropriate in this context).

2.4 Handheld Scanner

A handheld scanner is a tool that gives customers the ability to scan products during a shopping trip and then pay for their purchase on departure (Williams, 2015, cited in Grewal et al., 2020). The use of handheld scanners is expected to rise in the retail sector in the future (ibid). Despite this, the effect of the adoption of these tools on sales remains unclear (Grewal et al., 2020). One of the main advantages of using handheld scanners is the promise of shortening the shopping period (Grewal et al., 2020). Nevertheless, Vuegen et al. (2019) find that shoppers who want to end their shopping journey quickly do not use it and suggest that they may not be aware of such a benefit (Vuegen et al.,2019).

Using handheld scanners can help consumers stay within their budget (Van Ittersum et al., 2013, cited in Grewal et al., 2020) and thus buy less. However, Grewal et al. (2020) claim that reviewing prices and finding discounted items may increase the likelihood of buying for consumers. Besides, a handled scanner gives shoppers pleasure during the shopping trip, leading to an increase in shopping trip time (Grewal et al., 2020), thus increasing purchases.

Drawing on this theoretical framework, we discovered in this study how digitalization frames the practice of shopping from the supermarket. We traced various shopper activities in the supermarket made

possible by smartphones, self-checkout, and handheld scanners. We examined how shoppers interacted with these devices and how these interactions lead to important changes in the supermarket shopping experience.

3.Methodology

This research is based on the qualitative research method of collecting data and information necessary for analysis to answer the research question. According to Cacciattolo (2015), one of the advantages of qualitative research is that it is concerned with the nature, interpretation, and understanding of social phenomena by studying the behavior of individuals and getting to know them closely. In fact, in qualitative research, multiple methods are used to access data and information, such as interviews, personal observation, and focus groups.

In this paper, we used a combination of semi-structured interviews and personal observations. We tried to take advantage of both methods, which increase when combined. Although interviews and personal observation are two different approaches, they facilitate a deep understanding of the studied topic (Lee, 1993). Thompson (2000) found that these two methods allow the researchers to immerse themselves in the research topic. Besides this, interviews and observation help researchers to stay close to the phenomena under study, allowing for a comprehensive understanding of the behavior of individuals (Goodwin and Horowitz, 2002). This ethnographic method is not new in retail studies (see, for example, Fuentes et al., 2017;). According to Fuentes and Hagberg (2013), this method helps understand consumer behavior inside or outside the store.

As mentioned above, semi-structured interviews are used because they are flexible and allow participants to report unexpected problems through open questions (Fuentes and Hagberg, 2013). Furthermore, the flexibility of this type of interview allows the interviewer to pursue a series of less structured questions that enable the discovery of matters raised spontaneously by the interviewees (Berg, 2009).

Some scholars have criticized interview methods. For example, Cacciattolo (2015) argues that interviewees may feel that they are undergoing examination and thus be less willing to open up than if they were observed in their natural environment. Furthermore, respondents may exhibit socially desirable behavior rather than presenting how they usually behave in their daily lives, which can negatively affect research results (Latvala et al., 2000). On the other hand, some scholars argue that personal interviews have more advantages than disadvantages. For example, Denzin and Lincoln (2008) argue that personal interviews are characterized by support for two-way communication because the interviewee can ask the

interviewer questions and ask for explanations and clarifications. Likewise, the interviewer can ask any additional questions or inquiries to understand certain parts in greater detail.

Observation is one of the most important ethnographic research methods in the social sciences (Ciesielska et al., 2018). The observation method helps to observe the behavior of consumers within their physical surroundings, which enables the researcher to evaluate the behavior of individuals, draw conclusions and comment on interactions and relationships (ibid). According to Bryant (2015), observation is a method of collecting data by observing the behavior of individuals within a specific field of research. Moreover, observation helps the researcher understand and capture the context in which people interact and thus provides researchers with a greater ability to open up and extrapolate instead of inferring context (ibid). According to Ciesielska et al. (2018), observation is categorized into participant observation and the non-participant observation. We have conducted both participant and non-participant observations. In participant observation, researchers seek to immerse themselves in a specific culture or society to gain a deep internal understanding of that society. Meanwhile, in non-participant observation, the researcher tries to understand the world, relationships, and interactions in a new way. Non-participant observation helps in analyzing consumer behavior better by observing it without subjects realizing, so they do not change their behavior to suit the researchers (Furaiji and Łatuszynska, 2012).

The observation may also be direct or indirect. In indirect observation, the observer views the events that happen at the moment of their occurrence, while in indirect observation, the researcher relies on other people's observations, recordings, or videos (Ciesielska et al., 2018). Kostera (2007) believes that by applying a direct non-participant observation, a researcher can get closer to the field of research. Silverman (2019) has highlighted several different questions that must be considered when making and writing notes from the observations, such as What do people do? and How do they do it? What does the researcher see happening here? What was learned from these observations? And why were they included in the research? What is the relevance of what is happening with the research topic?

Declercq (2000) argues that the problem with personal observation is bias. Participant observation by the observer may lack objectivity, which may lead to biased interpretations. This may push the researcher to exclude some data to verify only his or her perspective (Denscombe, 2014). Moreover, Thompson (2000) argues that observing an individual requires more time and costs and is a constant concern for researchers. In turn, personal observation is characterized by its ability to study and analyze the behavior of individuals who are unable to respond genuinely to other methods such as interviews (Bryman, 2004). Furthermore, personal observation contributes to the extraction of data from the natural environment of individuals (Tellis, 1997).

According to Denscombe (2014), it is common to combine these two methods, given that both are compatible. The observation directs the researcher to make necessary inquiries to interlocutors (ibid). In turn, the interviews help explain the meaning of what the researcher observes (ibid). This method also enhances research results by accessing various data sources (Ogbonna and Harris, 2002). Furthermore, the data generated helps to understand social phenomena from different sites, reflecting positively on the research results Denscombe (2014). Ethnographic observations of participants and non-participants that we made in Swedish grocery stores in Gothenburg and Borås allowed us to examine and document how digital tools are being used in in-store shopping contexts. It was beneficial to note what consumers used in the store and how they interacted with the store's digital environment. In turn, ethnographic interviews allowed us to understand how shoppers frame the use of digital tools and how they do so within the store.

At the beginning of the research, we conducted six non-participant ethnographic observations between March 3 and 4, 2021. The observations were made in a number of small, medium, and large Swedish grocery stores in the cities of Gothenburg (Lidl Linnegatan 41, Hemköp Frölunda torg, and Willys Hvitfeldtsplatsen 1) and Borås (Ica maxi Trandögatan 16, Stora Coop Enedalsgatan 10, and Willys Ålgårdsvägen 3). The observation period was 30 minutes. Through these initial observations, we discovered that some behavioral aspects of consumers could only be fully understood through active participation in real life and a better experience of their daily lives (Ciesielska et al., 2018). As a result, we conducted the interviews and later participant observations (shop-along) in different grocery stores. This method helped us search for the things mentioned in the interviews when making observations and vice versa (Fuentes et al., 2017).

Ten semi-structured ethnographic interviews were conducted at the end of March 2021 with people from these countries: Sweden, Poland, Greek, Eritrea, Iraqi, and Finland. The ages of the participants (six women and four men) ranged between 21 and 67 years. The goal was to obtain data from different ages and nationalities. The interviews were conducted face-to-face, except for one via telephone, accounting for the interviewee's fears of the spread of Covid-19. The interviews lasted between 25–49 minutes. According to the interviewer's preferred language (English, Swedish, and Arabic), we used three official languages when conducting the interviews. An interview guide was created that contained an introduction and 24 open-ended questions. We used the interview guide to ensure consistency between the different interviews (Fuentes et al., 2017). The interview guide included question types such as those beginning How..., What..., and Tell me... These kinds of questions aimed to generate consumer experiences appropriate to the research topic in a manner that could be easily understood by the interviewers (Bäckström and Johansson, 2017). The interviews focused on the contexts of using digital devices while shopping in grocery stores, such as smartphones, online shopping, social media, mobile apps, and other devices. In addition to general questions

and narration of events, we tried to derive a general overview of each person's daily habits and the determinants of his buying behavior.

Nine of our interviewees agreed to being observed during one of their shopping trips in the grocery stores, and one declined due to fears related to the Covid-19 pandemic. We accompanied people to retail stores and took ethnographic notes. In the analysis section these observations are referred to as "shop-alongs". Some of these observations were consistent with what the interviewers said during their interview, and others were inconsistent. The method of ethnographic observation allowed us to discover things that were not disclosed in the interviews. These discoveries were among the most prominent benefits that we obtained through making these observations. In addition, the observation allowed us to understand how shoppers use the digital shopping tools in their real shopping environment (Fuentes et al., 2017). In addition, we took some photographs for documentation.

Combining the interviews and observations helped to provide the research with a rich amount of data that would be used later in the analysis and discussion processes, in turn answering the research question: How does digitalization in Swedish grocery stores frame consumer buying behavior?

The research ethic

Research ethics is an essential part of all research preparation stages. These ethics seek to guide the researcher to do what is morally and legally acceptable. According to Bickman and Rog (2009), scientific research is built through multiple steps, and these ethics are essential in all these stages due to the potential for ethical problems at each step. The availability of research ethics is essential in the stages of collecting and analyzing data and reporting results. Data must be collected ethically, analyzed scientifically, free of bias, and results must be reported objectively (Parveen and Shawkat, 2017). We worked hard to enhance research ethics at every stage of the research. For example, interviews were conducted with participants based on informed consent. We have maintained privacy, anonymity, and confidentiality of participants and data (Jensen, 2011). We gave the participants the right to withdraw from the interview, the freedom not to answer any question they did not want to answer, and the right to refuse using the recording device. In addition, we explained to the participants the topic of the research and the purpose of conducting these interviews (see Appendix). Moreover, we managed the data in a way that did not harm anyone and was honest. We stored it to provide access to colleagues and the public to avoid tampering with data and preserve credibility.

The method of analysis

Qualitative content analysis is a qualitative analysis methodology for analyzing and interpreting data (Schreier, 2014). The ability to reduce data to concepts that describe research phenomena is an important condition for successful content analysis (Hsieh and Shannon, 2005). The research question defines what data should be abstracted and what exactly should be analyzed (Elo and Kyngäs, 2008). In the abstraction criteria, concepts are precisely constructed and focus on data that describe these concepts by analyzing them and answering the research question (Elo et al., 2014). Qualitative content analysis can be used in two different ways – inductive and deductive (ibid) – and includes three main stages: preparation, organization, and reporting results (ibid). Data is open-coded in the inductive content analysis, and categories are created (Elo and Kyngäs, 2008). We used the inductive content analysis approach in this paper due to the rich data obtained through interviews and observations and the nature of the descriptive and open questions that we asked the participants. According to Elo et al. (2014), inductive content analysis helps to analyze answers to open questions easily.

The research quality (trustworthiness)

Trustworthiness is vital in all qualitative and quantitative research. Several trustworthiness assessment criteria have been proposed for qualitative studies (Sandelowski, 1995). The main feature of these standards is to support trustworthiness by reporting content analysis (Elo et al., 2014). Pilot and Beck (2012) suggested four alternatives to assess the trustworthiness of qualitative research: credibility, dependability, conformability, and transferability. Strengthening trustworthiness in qualitative research should take place at all phases of content analysis.

For the preparation phase, we chose a method of combining interview and observation to ensure obtaining rich data that enhanced the reliability of the content analysis (Graneheim and Lundman, 2004). Unstructured interviews and open and descriptive questions helped us obtain unstructured data highly appropriate for inductive content analysis through open coding and conceptualization. In the sampling strategy (selecting participants), we focused on taking participants from several cultural backgrounds and with different age groups to obtain as realistic data as possible to help analyze the content and answer the research question. Although there is no ideal sample size for conducting qualitative research (Elo et al., 2014), we considered ten interviews and observations sufficient to obtain data appropriate to the research content.

In the analysis section, we provided a detailed explanation of how to code and create concepts for the organization phase. We believe this enriches the research with trustworthiness and helps the reader easily

track and understand the analysis processes (Elo et al., 2014). We went back to the data repeatedly to check if the interpretation of the data was correct (Cavanagh, 1997). In the inductive content analysis, we emphasized the reliability of the analysis by continually verifying the representativeness of the data (Thomas and Magilvy, 2011). The research method helped us match the results. Interviewing, followed later by participant feedback, was an excellent way to ensure the accuracy of the information provided by the participants. Thus, the data was interpreted objectively (Polit and Beck, 2012).

Although it is difficult to report results for the reporting phase, we reported results in an organized and accurate manner. We gave special consideration to how to report links between data and results. Moreover, we used quotations when necessary to enhance the credibility of the results (Polit and Beck, 2012). These citations indicate the link between the results and the data. We linked each key concept to a citation to increase the reliability of content analysis and reporting of findings (Elo et al., 2014). We tried to increase the reliability by describing the method of analysis precisely (ibid). We believe this will help the reader to infer how reliable the results are.

(**Note**: in some of the interview transcripts, we made some linguistic corrections to ensure that the content is delivered to the reader clearly).

4. Findings and Analysis

Our analysis and discussion revealed two main findings. First, smartphones and self-checkout services play a significant role in framing the consumer shopping practices in Swedish supermarkets. They could be categorized as unconscious habits and routines in the grocery shopping practice. In addition, price sensitivity and value play an essential role in developing habits and routines. Also, the practice elements (meaning, competences, and materials) function as significant enablers for integrating and confirming specific techniques in the shopping practice. Second, buying food from the supermarket is still a social experience. It may be an important reason why many Swedish supermarket consumers refrain from adopting various technological solutions that may lead to losing the meaning of this experience, such as buying food online even during the circumstances of the Covid-19 pandemic. Another important reason for low levels of online shopping of groceries is that most consumers are not accustomed to waiting for food, i.e., ordering one day and collecting or receiving it several days later. This was apparent even before Covid-19. Most consumers think it is more convenient to visit a supermarket instead of ordering online.

Below we analyze and discuss our findings in four sections. The first section includes descriptions of shoppers' use and interaction with smartphones, self-checkout, and handheld scanners. The second section focuses on understanding the practices. It starts with a discussion of habits, routines, and unconscious use and analyzes the practice elements – materials, meanings, and competences – and how they interact. The

third section highlights how price sensitivity and value enable and stabilize the development of habits and routines. The fourth section details how social experiences and expectations of grocery shopping might enable or hinder the integration of technology in the practice of grocery shopping. We conducted the entire analysis from the practice theory perspective, directly in some parts and indirectly in others.

4.1 Use of shopping technologies in supermarkets.

Smartphone

Smartphone use has become possible in all aspects of life. All participants described smartphones with positive words and expressions, as they have become an essential part of their lives. For example, Jan, Ali, Erini, and Maher said they could not live without them. In addition, our interviews and empirical observations revealed various uses of smartphones: for communication, work, entertainment, price comparisons, and payment. Additionally, taking a handheld scanner, besides a smartphone, works as a source of product information.

Despite the increasing importance of smartphones, many participants reported barely using them in a supermarket shopping context. For example, Sari claimed the following:

> **"I use the mobile phone and browse for a little while or talk to friends or family, but inside the supermarket I put it in my pocket. Sometimes my mom calls to talk to me. I tell her, I will call you back because I am with my husband in the supermarket" (Sari, 52).**

However, when conducting field observations on Sari's shopping trip, we noticed that Sari used her smartphone to check out the handheld scanner from its dock via the Ica Maxi app.

> Sari opened the ICA Maxi app. She slid her smartphone across the screen, picked up the handheld scanner, put it on her cart, and started shopping. (Shop-along, Sari)

In addition, our observations revealed the use of smartphones within social interactions in supermarkets and the impact of these social interactions via smartphones on the servicescape, especially the contact with store employees. The shoppers move rapidly in the store and are thus less likely to be affected by the internal store environment, such as advertisements or displays of goods. Customers often avoid communicating with employees, which may be due to their preoccupation with performing more than one task simultaneously, such as talking on the phone or looking for and picking up the goods. In contrast, the use of smartphones increases consumers' social shopping experience by allowing them to communicate with people elsewhere

(Fuentes and Svingstedt, 2017). Our results match Elms et al.'s (2016) finding that using a smartphone while grocery shopping enhances the social experience and reduces interaction with store employees.

> While walking inside the store, a woman in her thirties was observed talking on her mobile phone during shopping. She was very busy with her mobile phone while shopping. She moved quickly between the shelves and picked up her products. She avoided talking to store employees or other customers. She used a barcode scanner. She looked happy. She collected her products and headed to self-checkout. (Observation, Stora Coop, 2021.03.04)

Moreover, our observations witnessed how this communication allowed for the purchase of products that had not been planned to buy, as happened to Ali when he talked to his mother on the phone while he was at the grocery store.

> Ali called his mother and asked her if she wanted anything from the supermarket, and she asked her son to buy cheese and juice. (Shop-along, Ali)

The notes mentioned above illustrate that using smartphones while shopping inside the supermarket enables the shopper to engage in a social shopping experience that may extend outside the boundaries of the place and may introduce distant people into the shopping experience. Furthermore, shopper interaction decreases within the store environment due to the multiple tasks that the shopper performs at the same time.

Moreover, people use smartphones to compare prices and check the weekly offers inside and outside the supermarket. These uses can lead the consumer to visit more than one supermarket in the same journey to pick up the best offers. For example, Sari, who is price-sensitive, talked about using her smartphone for this. Sari said,

> **"We try to buy our needs with offers. I think this is very important for the household budget. Sometimes I use coupons in the supermarket as well. I have some of them, would you like to see them? Yes, I want that. These are pasta sale coupons; it gives the holder a 5 kronor discount on a package of pasta. There is no specific supermarket to shop at. We prefer Ica Maxi and City Gross, but we shop at other places if we find offers" (Sari, 52).**

In our field observation, we noticed the effect of this use on her shopping journey, which extended to several grocery stores.

In summary, the use of smartphones in grocery shopping contexts changes shopping practices. The consumer has more power through the ability to access content via the Internet (Samarhan, 2016). In addition, the smartphone allows users to communicate while shopping and exchange experiences. Hence, customer loyalty to a particular store becomes difficult. This is in line with the finding that 58 percent of

consumers who use a smartphone while shopping either delay or buy elsewhere [(Duncan and Roche, 2012, cited in Samarhan, 2016)](#).

Self-checkout Service

In general, our interviews and observations found that a self-checkout service could be the last step in the supermarket shopping journey for many consumers, and it appears to be an easy tool for them. In our field observations, we noticed that many shoppers went directly to the self-checkout service, even if there was almost no line for the traditional cashier. Most of them looked confident and skilled in dealing with self-checkout services.

Our analyses also confirmed the claim that the first time using a self-checkout service was the most difficult [(Orel and Kara, 2014)](#). Mikael talked about the difficulties in using the self-checkout service for the first time and how the self-checkout became a habit for him after this experience. He said,

> **"In the beginning, I faced difficulties, but now it is so easy [...] It is a habit to me now to go and use self-checkout" (Mikael, 39).**

Additionally, our participants indicated that the enormous challenge of using self-checkout is to scan the commodities that do not have a barcode and/or need to be weighed, plus the goods that are not registered in the system, which is in line with [Orel and Kara's (2014)](#) study. As Jan in our study explained,

> "**During my use of the self-checkout, one of the purchases was not registered on the system. I tried a lot to scan the product, but I could not" (Jan.20).**

These difficulties may cause the shopper to resort to the traditional cashier, as happened in one of our field observations. Maher emphasized his negative feelings towards food shopping and his happiness because he could pay via self-checkout and end the shopping trip as quickly as possible. In our shop-along, Maher bought a cake, and then he went directly to the self-checkout to pay. He tried more than once, but he could not. It appeared that there was a problem with the registration of the cake. Maher did not ask for help from the staff; instead, he went directly to stand in the traditional payment queue.

We did not find any link between age and the use of the self-checkout service. This contradicted [Leng and Wee's (2017)](#) and [Orel and Kara's (2014)](#) claims that recent studies confirmed that younger people are groups represent the majority of users of self-checkout services while shopping at supermarkets because of their higher degree of acceptance of technology. Our participants, who described themselves as technology adopters, regardless of age, stated that they had no problem dealing with self-checkout. However, in our interview with Calle, a retired teacher, who described himself as a person far away from technology, age seemed to be a barrier for him adopting the self-checkout: he said, **"I only tried once, and I was so slow."** He

used it only once, and he did not repeat it because of his feelings of anxiety and uneasiness about appearing foolish while using the self-checkout in front of others (Orel and Kara, 2014). This correlates with the finding that self-checkout is the most difficult to use among self-service technologies in stores (Leng and Wee 2017).

In contrast, Bosse, 67 years old and a technology adopter, had no problems dealing with the self-checkout service but preferred human interaction when grocery shopping. This aligns with Leng and Wee's (2017) study that people who want more human interaction are less likely to use a self-checkout service. They use self-checkout services because they prefer human interaction, not because of their resistance to technology (Leng and Wee, 2017). Their study also indicates that older people are less likely to use self-checkout services because of the preference for human interaction (ibid). Nevertheless, the choice for human interaction may not always correlate with age. Ali, the 21-year-old student, preferred the regular cashier because of its human touch. He said,

> "**When I have enough time and want to buy many products, I do traditional shopping. This makes me happier. I talk to employees, other customers" (Ali, 21).**

Moreover, we saw many older people using the self-checkout service during our field observations; this supported our belief that consumers of all ages might use it. This led us to believe that persons, at any age, with a high degree of acceptance of technology might use a self-checkout service because they have positive attitudes towards technology and thereby are more likely to use it. Other circumstances, such as the number of purchased goods and the presence or absence of goods without a barcode (Orel and Kara, 2014), could limit or enable the use of self-checkout service. Hence, the age of the practitioner is not the most important element for using of self-checkout service.

Handheld scanners

Our analyses were unable to determine the main reasons for using the handheld scanner. This confirms previous indications that these reasons are unclear (Williams, 2015, cited in Grewal et al., 2020). However, it turned out that a handheld scanner could be a helpful tool for controlling the purchase, which could be one of the main reasons for using it. Eirini and Susanna were price-sensitive, and both mentioned the handheld scanner as a purchase-control tool. Eirini said, **"I have control over the purchase; I can see how much I am spending."** Besides, in our observation with Sari, we saw how Sari used the handheld scanner during the whole shopping journey. This is in line with Van Ittersum et al.'s (2013) claim that the handheld scanner enables consumers to stay within their budgets (Van Ittersum et al., 2013, cited in Grewal et al., 2020).

Furthermore, we did not find any link between the speed of shopping and handheld scanners. On the contrary, consumers who wanted to speed up the supermarket trip did not use it. Six participants said they used handheld scanners while shopping, but no one described the handheld scanner as a tool to speed up the buying process. Besides, in our observation with Maher, who expressed his hate for food shopping and his desire to end the shopping as soon as possible, he did not use the handheld scanner to shorten the time but instead tried to pay via self-checkout service. This assures Vuegen et al.'s (2019) claim that shoppers who want to shorten their shopping time do not use handheld scanners and contradicts Grewal et al.'s (2020) claim that one of the main advantages that might pay off using handled scanners is the promise of shortening the shopping trip.

Moreover, our interviews and empirical observations illustrated that the presence of hand scanners in grocery stores plays an important role in the adoption of its use by consumers. We noticed that consumers who often shopped at small grocery stores without hand scanners did use them and did not talk much about them during our interviews, unlike consumers who shopped at large grocery stores with hand scanners. Six out of ten interviewees told us that they used a hand scanner during grocery shopping trips and often shopped at grocery stores that provide hand scanners, while the remaining four participants often shopped from other small grocery stores that do not provide hand scanners. However, this does not mean that all shoppers who shop at major grocery stores use a handheld scanner. Our observation on Ica Maxi consumers showed the following:

23.5% of the shoppers used a handheld scanner (observation, Ica Maxi, 2021.03.03).

We can say that the use of the handheld scanner is related to the existence of the practice elements (Shove et al.,2012): the availability of the scanner in the supermarket (material); its function as a tool that controls the purchasing (meaning); and the ability to use the tool (competence), as demonstrated in our observation of Sari.

4.2 Framing shopping practices

Habits, routines, and the unconscious use of technology

Smartphone use during supermarket shopping can be a routine and unconscious practice. The importance of smartphone in people's lives and their versatility has made people use them in supermarkets routinely and unconsciously. All participants emphasized the increasing importance of using the smartphone and their overuse in various areas of life. However, they reported almost never using their

phones during supermarket shopping. Ali said, **"For groceries, no, I do not use the mobile phone."** Eirini confirmed,

> **"I use it mostly when I want to know more about a specific product. That is it,**
>
> **not more [...] I do not like using the phone because I want to have contact with**
>
> **the surrounding" (Eirin, 28).**

However, in Eirini's shopping trip, we noticed that she checked her smartphone more than four times during the six-minute shopping. When we asked her after the observation about this, she confirmed that she did not compare prices via her smartphone or talked to somebody; rather, she checked it and put it back in her pocket. This proves the subconscious and routine nature (Warde, 2005) of using smartphones. Even if the consumer does not need to use the phone, she/he usually unconsciously checks it, as practice theory confirms of the unconscious nature of practice. Thus, we can conclude that the smartphone, whether used or not, is a part of the shopping practice of the supermarket.

Our analysis shows that the self-checkout service has become a routine and habit for many consumers in Swedish supermarkets. Several interviewees mentioned self-checkout service as a final shopping step in the supermarket. Eirini said, **"Then I go to self-checkout and pay with my card."** Some explicitly mentioned paying this way as a habit for them: Mikael emphasized, **"It is a habit to me now to go and use self-checkout."** This ensures the routine processes of habituation and awareness (Warde, 2005) of using the self-checkout service. Also, during our observations, we noticed that many shoppers went straight to self-checkout service even when the line for the typical cashier was empty or nearly empty. This means that paying by self-checkout service is likely to be preferred because it is a habit and because of the traditional and collective nature (Warde, 2005) of the payment via self-checkout service, which has become widespread among Swedish consumers.

By contrast, our interviews and observations reveal that using handheld scanners has not become a habit or routine for most of our participants in shopping at supermarkets, as is the case with a smartphone and self-payment service. One of the main reasons might be that there is no handheld scanner in the supermarkets that they frequent, which could directly affect the collective and traditional nature of the practice mentioned by Warde (2005). In other words, we noticed that all participants who did not mention handheld scanners frequented supermarkets that did not have handheld scanners. Thus, the lack of these and consequent unfamiliarity might lead such consumers not use it even if it is available in a supermarket. In one of our field observations, we noticed that few shoppers used the handheld scanners despite their abundance. Still, there may be other reasons that limit the use of handheld scanners.

On the other hand, participants who did mention their use of handheld scanners were found to frequent supermarkets that did provide this tool. However, most of these participants did not use it during our shopping trips with them. Besides, they did not talk about the handheld scanner as a part of their regular shopping trips at the supermarket, most of them mentioning using it only occasionally. Hence, using a handheld scanner did not become a habit or a routine for them.

However, using a handheld scanner seemed to be a habit for Sari, who was price sensitive. During our field observation with her, we found that Sari immediately took this tool.

Furthermore, the smartphone is directly related to the handheld scanner routine, as it is required to check them out of their docks for use. During our field observation, Sari used the ICA Max app to get the handheld scanner, although there was more than one way to it, such as using a driving license or an ICA Max card. This supports Reckwitz's (2002) claim that practice is a routine way of handling things. It also emphasizes that a single practice consists of several practices simultaneously (Shove et al., 2012). Sari routinely used her smartphone to get the handheld scanner that she used as a valuable tool for shopping.

Material, Competence, and Meaning

Practice arises and continues because of the availability of three elements: material, competence, and meaning, as well as the interconnection between these elements (Shove et al., 2012). Therefore, the development of a practice of smartphone use, for example, depends on the availability of materials (the smartphone and the internal environment of the grocery store that supports the operation of the smartphone), the meaning (the social and symbolic importance of the smartphone to the consumer), and the competence (the skill and ability of the consumer to use it).

All participants reported having smartphones (materials), and most Swedish grocery stores offer a suitable environment for operating smartphones (Wi-Fi) and mobile applications (materials). Besides, our participants stated that they had no problems using smartphones and were skilled at doing so (competence): they used it in many ways for different purposes. For example, Bosse, 67 years old, used his smartphone to write and save his shopping list, he said, **"I use the smartphone to create a shopping list on Google keep"** (Bosse, 67). Susanne also used a smartphone to pay or browse grocery store offers. This variety of smartphone applications in a grocery shopping context demonstrates the competence of consumers in using smartphones.

Our interviews found that smartphones have significant meanings for people. Some participants described it as lifestyle, and others considered it an essential part of life. Sofia stated that she could not live without it, while Susanne said, **"The mobile phone has become an important part of our life, or perhaps the whole**

life." Moreover, Eirini openly announced how she became addicted to her smartphone: **"I can say that I am addicted to it."**

On the other hand, our participants showed positive emotions regarding grocery shopping trips, which they liked to do. Buying from a supermarket represented a social activity and a social journey for them. For example, Sari described her grocery shopping trip as follows:

> **"I like to go shopping for food and clothes. Usually, my husband and I go to the supermarkets and buy what we need." (Sari, 52).**

Therefore, using smartphones is linked to grocery shopping through the correlation between practices through meanings, materials, and competence. Competence and materials are present, as previously explained. Besides this, the meaning of the smartphone as a social tool and the meaning of shopping at a supermarket as a social experience link the practices of using a smartphone with the grocery shopping practice. In other words, consumers who consider the grocery shopping experience a social experience often use the smartphone to communicate and exchange experiences in the store. For example, during our observation of Maher, he communicated with his mother and sent her pictures of cakes:

> Maher said that he wanted to buy a cake. We went to the sweets section. He took some pictures of some types of cakes and sent them on his mobile**.** He said, **"I sent it to my mother so that she could choose what she likes" (shop-along, Maher).**

Our interviews and observations showed that customers use self-checkout services depending on the availability and interconnectedness of the three elements: meaning, competence, and materials (Shove et al.,2012). And the absence of any of these three elements leads to the disruption of the practice and transference of the other elements to be part of other practices (Ibid). The participants expressed their positive feelings about the self-check service. Some of the interviewees used words such as "love," "amazing," and "like," in their description of the self-checkout service. Eirini expressed, **"love it, I like it".** It could be that these feelings are the result of the speed that the self-checkout service provides to the consumer. For example, Maher said, **"I think it is amazing, so good because normally I am not in the queue".**

Moreover, in a self-checkout service, the perceived speed exceeds human interaction preferences (Leng and Wee 2017). Even those who show a preference for social interaction and buy in the traditional way turn to a self-checkout service if there is a long line, in order to save time. Bosse, for example, emphasized his preferred use of a typical cashier, but that he always chooses the fastest option:

> "**I do self-checkout if there is a long queue for traditional payment and if the shelf-checkout is not crowded. To stand in a queue, it is not that good" (Bosse, 67).**

On the other hand, the absence of perceived speed may change the payment method (losing the meaning), thus canceling the payment through the self-checkout service and moving towards the traditional cashier. Sofia, who reported using the self-checkout, stated that she did use the traditional way if she felt it would be faster:

> **"This morning I went to the cashier […] there was nobody, so I thought, she will**
> **do it faster than me. I always want to go fast" (Sofia, 47).**

From the previous example, we can consider the meaning of self-checkout service as being a tool that provides a faster checkout from the supermarket as the most crucial enabler that drives consumers to use it. That is in line with [Marzocchi and Zammit's (2006)](#) finding that perceived speed is the most important feature that drives consumers to use something or not.

Furthermore, practices to avoid theft by a store may negatively affect the use of a self-checkout service. On the one hand, these practices are mainly related to shopping at the supermarket [(Shove et al.,2012)](#). On the other hand, taking such actions may hurt consumers' feelings, as happened with one of our participants. Eirini found it a nuisance when her purchases were checked at the self-checkout. She was forced to take the products out of the bag and put them back in, she said,

> **"I go to self-checkout and pay with my card. The problem is when they come and**
> **ask to check your stuff. I get really angry with them because I have already put my**
> **stuff in the bag, and I have to take it out and put it back in the bags" (Eirini, 28).**

This might push Eirini to abandon the self-checkout service and switch to the traditional payment service as [Shove et al. (2012)](#) argued that the elements of meaning, materials, and competence must be present in order for the practice to continue.

In our field observations, we found that a large percentage of supermarkets offer self-checkout services. We also saw how shoppers use the self-checkout service with skill and confidence. In addition, during the shopping trips with participants, they were familiar and experienced in dealing with this tool. For example, Mikeal finished the checkout process from the self-service service in less than two minutes despite having many products. However, the failure of the self-checkout devices or the loss of efficiency led to the disruption of using these services. In contrast, a new practice has emerged that directs the shopper to the traditional payment method, as happened to Maher:

> Maher tried to pay by self-checkout, but he could not scan the items due to a problem.
> He took his purchases and paid for them traditionally." (Shop-along, Maher).

From this example, we also found that losing any element of the self-checkout service (material, competence, or meaning) can lead to the cancellation of the practice and create a new practice that changes the framing of the shopping practice (Shove et al., 2012).

Our analyses revealed that the existence of the handheld scanner in the supermarket, this tool's meaning to the consumer, and the availability of the required skill among shoppers are what mainly drive the adoption of this tool. As previously mentioned, this tool seemed unfamiliar to our participants who shopped from supermarkets that did not offer handheld scanners. The absence of this tool led to the absence of its use (Shove et al., 2012).

Moreover, we found that the participants who talked about using a handheld scanner shopped at supermarkets offering this tool. However, the use of handheld scanners for these participants was limited; they mentioned that they used it only sometimes, confirmed in our observations, where we noticed that most of them did not use it. It could be that this tool is not mainly used because it has no meaning for these participants. For example, on one of their shopping trips, we saw that Jan used a self-checkout service, which is the most difficult to use among self-services technologies (Leng and Wee 2017), and he looked skilled and confident. Consequently, Jan was unlikely to lack the competence needed to use the handheld scanner given that he works in the field of technology and web development, and the tool was available in the supermarket; thus, it was the absence of meaning for Jan that prevented him from using it.

In contrast, shoppers for whom the handheld scanner had a meaning adopted this tool as a part of their routine. As mentioned earlier, Eirini and Sari were price sensitive. Both considered a supermarket shopping trip successful when finding the best offers at the best prices. Sari said,

> **"I consider my shopping trip a success when I am not spending a lot of money**
> **on my purchases and bring everything I need" (Sari, 52).**

Eirini expressed her love for this tool because it gives her control when purchasing from supermarkets. This indicates that the tool has a high value for Sari and Eirini, which drives them to use it during their shopping trips. Additionally, they both usually shop from ICA Maxi, which provides handheld scanners. Furthermore, in our observation with Sari, we noticed how she used the handheld scanner efficiently. Hence, the existence of meaning, material, and competence led to using the handheld scanner, which directly contributed to framing the shopping at the supermarket.

We also noticed through our interviews and experimental observations that the competence element plays an important role in using the handheld Scanner in the grocery shopping context. Shoppers who have the competence and ability to use the handheld scanner often use it in the context of grocery shopping if

both the material and meaning elements are present. In contrast to those consumers who do not have this competence and skill, these consumers often avoid using it even if the meaning and material elements are available to them. In her interview, Sari spoke proudly of her skill in using the handheld scanner; this skill makes her the one who uses this tool throughout the shopping trip and not her husband. Sari said,

> **"I think it is a great way to shop. I always use it. My husband does not prefer**
> **to use it. He is afraid of mistakes such as scanning the product twice or more,**
> **and thus paying the price more than once" (Sari, 52).**

4.3 Price sensitivity, perceived value, and grocery shopping practice.

Our analyses showed that price sensitivity and value develop and stabilize habits and routines. We mentioned earlier that two of the participants were price-sensitive, and they usually compared prices before and during shopping at supermarkets. Sari and Eirini believe that shopping from a supermarket is successful when they buy all the goods that they want at the best price. Sari and her husband visit several supermarkets in their supermarket shopping journey to find the best offers. Sari searches and compares the weekly offers, either via smartphone or the weekly supermarket ads that arrive at her home. She and her husband compare prices and plan the shopping trip. In the supermarket, she also compares goods' prices, and the handheld scanner is the best tool for her to achieve this purpose. Furthermore, as previously mentioned, the handheld scanner helps Eirini watch her purchases and control her spending. Thus, this tool has become an important tool for Erini and Sari during the shopping from supermarkets, which has prompted them to use it frequently. Consequently, using this tool has become a habit and routine for them. This was clearly demonstrated, as mentioned earlier, in Sari's behavior during our observation with her.

We also found that the practice elements, meaning, competence, and material (Shove et al., 2012) work as enablers for integrating and stabilizing the use of specific techniques in shopping practice. Our analyses revealed that the handheld scanner has an important meaning to Eirini and Sari. Eirini expressed her feelings about this tool by using the verb "love." Additionally, we found that Sari and Eirini had the skill to use this tool. Sari spoke proudly of this, allocating her the role rather than her husband, who was afraid of making mistakes. In addition, both Eirini and Sari mentioned that they often shopped from ICA Maxi, which provides handheld scanners to its customers. Hence, perceiving a meaning in the handheld scanner, having the required competence to use this tool, and shopping from supermarkets providing it all worked as enablers to more strongly incorporate and stabilize using handheld scanners in Sari's and Eirini's shopping at the supermarket.

The practice of shopping from supermarkets contains seeds of constant change (Warde, 2005). We noticed how the existence of the smartphone changed the nature of the relationship between the shopper

and the store's environment, particularly regarding interaction with employees. We also noticed how the self-checkout service had changed the form of shopping. The consumers no longer need to go through the typical cashier and communicate with the cashier employee; simply, they can pay. Moreover, using the handheld scanner makes the shoppers busy during the shopping trip from the supermarket. In addition, it shows us how although shopping constitutes one practice, it also differs between people in the same group (Warde, 2005).   In other words, the shopper's use of any of the previous technological tools leads to a change in shopping practice. Despite this, shopping from the supermarket remains the same, in the broad sense, as buying the groceries that consumers need.

4.4 The social experience of shopping at the supermarket

Meanings are an essential part of grocery-shopping practices. Some participants expressed their hate for shopping, and others described it in terms of love and pleasure, but everyone referred to the social aspect in different ways. Maher reported hating buying food, but went with his mother and his wife to the supermarket. Meanwhile, visiting the supermarket gave Sofia and Susanna happiness, especially with company:

> **"When I have the time, I go on a shopping trip that includes several grocery stores**
> **[…] get in my car and go to my mother and take her with me" (Susanna, 56)**.

For Sari, shopping for food is not just buying food; it is a trip that she plans for, and she and her husband visit several supermarkets on the same trip. This is in line with practice theory which emphasize the social nature of consumption in general (Warde, 2005) and emphasizes the conditions surrounding the practical implementation of social life (Halkier et al., 2011).

We also found that smartphones allow shoppers to take part in social shopping experiences that may extend outside the boundaries of the place. During the observation of Maher, he spoke to his mother and sent her pictures of cakes from inside the City Grove store to share the opinion of the cake that he would buy. Maher brought his mother to the place and let her share the shopping experience: she became an essential component of the trip. In fact, Maher looked happy; he was smiling while talking with her.

On the other hand, talking to his mother cut off the interaction between Maher and the surrounding environment. He did not notice the employee who greeted him, and he did not return his greeting; Maher was there and not there. The smartphone allowed Maher to socialize and have a unique shopping experience by bringing people distant from the place to share the shopping experience with him. In contrast, we found how preoccupation with talking on the smartphone reduced interactions with the store's physical environment, especially with store employees. This is consistent with Fuentes et al.'s (2017) findings, which

confirm that using the smartphone enhances the social shopping experience on the smartphone and reduces social interactions with store employees.

All participants also bought online products such as clothes, car parts, and upholstery, but only two of them announced that they had bought food online – in that case, only once, and they did not want to do it again. Mikael had bought food online once: he and his girlfriend were infected with Covid-19, so he had to, but he admitted that he would not buy online again, mainly because of the presence of a supermarket near him. Bosse had also purchased food online once because of his conviction that buying food online would protect him from the risk of infection by Covid-19. However, he also did not think he would repeat the experiment, as the procedures were fairly long and complicated:

> **"It was okay […] I bought them on Monday night, and I had to go on Wednesday**
> **to pick them up. So, I had to plan more. It was a long process" (Bosse, 67).**

Bosse and Mikael did not talk about their social needs and did not confirm that this need could be the hidden reason for preferring in-person shopping, but Eirini, who hates buying food, was clear why she refused to buy food online. She wanted to see people, and that is what the supermarket provided for her:

> **"I prefer to buy things physically, in general, because I think you can have**
> **contact with different people as well" (Eirini, 28).**

The interviewees talked about different reasons that prevented them from buying online, and even those who had experienced buying food online announced that they would not repeat it. The large number of our participants that refused to buy food online confirmed the statistics, which assert that despite the increase in the percentage of buying food online (from 2% in 2019 to 4% in 2020), this percentage is still small compared to other sectors (årsgenomsnitt, e-barometern, 2020). From this we can conclude that shopping at the supermarket, despite all the technological developments that have taken place, still maintains its primary character as a social experience (Christensen and Røpke, 2010).

5. Conclusion

We attempted in this paper to contribute to retail literature by examining how digitalization in Swedish supermarkets frames the shopping practices at the supermarket. Furthermore, this study could be useful for grocery retailers, especially in Sweden. It helps understand the impact of the digital environment – how consumers interact with digital technology inside the store, which encourages developing a digital environment that suits consumers.

Our analysis revealed the important roles of smartphone and self-checkout services in shopping at Swedish supermarkets. Using smartphones and self-checkout services is a habit for many Swedish

consumers; they use them routinely and unconsciously. In addition, price sensitivity and value play an essential role in developing habits and routines, pushing some customers to adopt using new technology (the handheld scanner). Besides this, we demonstrated the possibility of integrating smartphone, self-checkout, and handheld-scanner uses into the grocery shopping practice. In grocery shopping, the smartphone works to allow the customer to take part in a social shopping experience over the phone and reduces interaction with the store's physical environment. For example, we saw how the use of the smartphone could become part of the shopping practice, when the necessary elements (materials, meanings, and competences) to use the smartphone in grocery shopping is present. In addition, smartphone use in the context of grocery shopping can add social dimensions through conversations with people located elsewhere. At the same time, the smartphone use reduces interaction with the store's physical environment. Furthermore, we found that the widespread use and integration of the self-checkout service in performing grocery shopping in-store re-framed the shopping practice. Consumers are no longer forced to stand in line; they can finish their shopping journeys in the supermarket more quickly and efficiently. However, practices to avoid theft might make consumers upset, which may lead to limited adoption of self-checkout service; thus, supermarkets should think of other methods to avoid theft that do not affect the customer and the use of self-checkout service negatively. For the handheld scanner, we found that integrating this technology into the shopping from the supermarket has positive effects on price-sensitive customers. A handheld scanner enables consumers to control the purchase. In addition, the availability of handheld scanners in grocery stores is crucial for customers to combine its use with their grocery shopping practice.

Finally, we conclude that digital tools, such as smartphones, self-accounting, and hand-scanner re-frame shopping practices in supermarkets by adding new social dimensions, avoiding standing in queues, and enabling the price-sensitive customer to control purchase.

Future research

We believe that grocery retailing needs more research related to providing digital solutions that facilitate customers' shopping in supermarkets. Preferably, these solutions should increase the interaction between the customer and the physical environment of the supermarket. In addition, we believe that there is a need to conduct more research on the relationship between the handheld scanner and price-sensitive customers, given the role of the scanner in knowing and comparing the prices of products before the actual purchase. Another venue for future research would be to include other geographical areas with a different retail structure, e.g., rural areas with fewer options to buy groceries online as well as offline, to better understand how digital technology interact with shopping practices in different retail contexts.

6. Appendix

Interview guide

Welcome!

In the beginning, in my name and on behalf of my colleague, I would like to thank you for answering our invitation and for your valuable participation in this research. I have already told you about the research topic, and now I am adding some details

 My colleague and I generally study digitalization in grocery stores in Sweden. Today, we are talking about various topics, first, information about you in general, then moving to other topics; food, supermarkets, technology, and social media. Certainly, we will touch on the Covid-19 pandemic, which is affecting all of humanity.

I have to mention that your privacy is saved, your name is kept, and we will mention you in the search under a pseudonym. Besides, as I mentioned to you previously, I am recording the interview. No one will listen to the recording, except my colleague and me. If there is any question that you do not want to answer, do not hesitate and tell me, and directly we will move to the next question. If you have any questions about anything, I hope you will also inquire without feeling shy. You have the right to withdraw and cancel the interview at any time.

Questions

1. Tell me about you? How old are you, your work, your hobbies? How would you describe yourself as a whole?

2. How do you spend the weekends and free time in general?

3. How do you spend your summer vacation?

4. What are the things that you enjoy most in life?

5. Tell me, how has the Coronavirus affected your personal life?

6. What does food represent to you?

7. Tell me about your eating habits and cooking routines in your life?

8. What does it mean, for you, to go and buy food from the store?

9. Tell me about your journey to the supermarket in detail?

10. How would you describe a successful shopping experience to me?

11. What do you think of Swedish supermarkets?

12. Do you interact with the store employees?

13. Where do you usually shop? And why?

14. What do you think about the self-checkout service? Does self-checkout make shopping activities easier or more difficult and why?

15. What do you think of buying from the supermarket's website, app, or social media? Do you have previous experience? If the answer is yes, tell me about it. If not, tell me the reasons why you are preventing it.

16. Tell me a story that happened in the supermarket to you, and you think I should hear it.

17. Tell me about the smartphone phone in your life?

18. Do you use the smartphone while shopping? How do you use it? What is the most important part of using it?

19. How do you use the internet in your daily life?

20. How do you see the online buying experience?

21. What does social media mean to you?

22. Many people share their daily lives and some of them share their food on social media; what do you think of this phenomenon?

23. Can social media influence your buying options or decisions? If yes, can you give a story that happened to you?

24. If there is anything that you think is important to talk about and that I have overlooked, I hope you tell me about it.

In the end, we would like to thank you for your participation in this interview

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