Bachelor Thesis

Unmanned Stores In Sweden

A Quantitative Study On Enhancers And Inhibitors
According To The Swedish Generation Z

Author: Oscar Johansson & Pontus Andersson
Supervisor: MaxMikael Wilde Björling
Examiner: Clarinda Rodrigues
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Oscar Johansson                      Pontus Andersson
Abstract

Authors: Oscar Johansson & Pontus Andersson
Supervisor: MaxMikael Wilde Björling
Examiner: Clarinda Rodrigues

Title: Unmanned Stores In Sweden - A Quantitative Study On Enhancers And Inhibitors According To The Swedish Generation Z

Introduction: Since the start of the digital age back in the 70s, digital technology has become a main tool for us humans to work, communicate, and enjoy ourselves on a day-to-day basis. The major push that set this new chapter of human life was due to the first military-manufactured computers of the time. The usage and development since then have grown exponentially all across our lives, affecting everything from hospital visits in Hong Kong to a late-night shopping experience in Stockholm. This leads us to today, where businesses are taking technological advances every day to keep their customers happy and satisfied, but also setting the bar higher and higher between their competitors. Some store owners have even figured out that physical human presence is not even needed in physical stores. The benefit is that the upkeep costs drop and almost no employees are needed; this is beneficial for small store locations in sparsely populated areas. In Sweden, it has become a huge problem that small towns and villages slowly die due to high upkeep costs for store owners. With these unmanned stores, the trend could change to the possessive. However, it is also pressured by the very technology-demanding Generation Z. Setting pressure on this retail sector to keep up and find the right way to proceed with their businesses in a way that fits Generation Z’s demand long term.

Purpose: This specific study will try to explain how different enhancers and inhibitors affect consumer acceptance according to Generation Z for this store concept in Sweden. The researchers of this thesis believe that this study is needed because of the vast growth of unmanned stores and the lack of research it has, especially in Scandinavia.

Methodology:
In order to answer the research question, nine different hypotheses were created with different inhibitors and enhancers derived from previous research. Furthermore, a combination of online and face-to-face questionnaires was conducted, whereby 133 valid respondents were collected. The data was then analyzed with the help of a multiple regression analysis.

Conclusion:
From this research, it can be concluded that for the investigated enhancers: high levels of technology readiness, usefulness, and enjoyment were all factors affecting Gen Z’s acceptance of unmanned convenience stores. Furthermore, that lack of human interaction affects Gen Z’s
resistance towards unmanned convenience stores. These results can be used for future research and for companies targeting Gen Z to shop at unmanned convenience stores.

Keywords: Technology-Based Self-Service, Technology Readiness, Technology Acceptance Model, Generation Z, Unmanned Stores, Digitalization, Retail Industry.
1. Introduction

In the introduction chapter, the authors begin by discussing the background and introducing the main concepts for this research. The chapter also consists of a problem discussion regarding how this research will contribute to future research, as well as managers operating in the field of smart retail. Based on the previous research presented in this chapter, a research gap, research question, and purpose are developed. The chapter ends with the delimitations to explain the scope of this thesis.

1.1 Background

From using bows and arrows to capture nourishment and hammers to build our roofs. The use of tools has become a big part of our evolution as humans. This is especially true when talking about the information age, also known as the digital age (Tucci 2014). The term digitalization has become a huge building block for businesses in the ongoing digital age. It is when businesses, with the help of digital technologies, can change and provide new value and revenue-producing opportunities. In other words, the usage of digital tools is a way to operate the business more digitally (Gartner n.d). According to a study by Sava in 2022, the growth of digital transformation in business processes has been growing, and it will probably keep doing so for the upcoming years. It is essential for businesses to use these digital tools. One key advantage is the resilience it gives to adapt and solve unforeseen problems (Motivity Labs n.d). One such problem was the Covid-19 pandemic which spread a shockwave across our society as a whole, nonetheless the businesses. This changed everything, both in the ways how we humans work and how we could evolve from this (LaBerge 2020)—pushing the business world over a tipping point of transformation forever.

In Swedish society, the idea of digitalization has been a part of the way of driving businesses for decades, resulting in high international rankings. One such ranking is the Digital Economy and Society Index, also known as DESI, which is a ranking index provided by the European Commission. DESI has been showing and categorizing Sweden among its neighboring countries as high-performing in the sense of digitalization (European Commission 2022). Not only does the business spectrum of Sweden quickly adapt to using digital tools, but the same goes for the average citizen. According to Svenskarna och Internet (2020), approximately 96% of Swedish citizens above 12 years of age use the Internet. A percentage that seems to be growing each year. One of the reasons why this is a growing number has to do with the growing usage of smartphones, which also is a growing tech product amongst the Swedish people (Svenskarna och Internet 2017). This is something that has affected how businesses, especially retailers, act toward their customers, concludes Handelsrådet (2017) in a research report. They stated that it had affected digital and physical retail by adopting the customers’ vast mobile usage.

Under the Berlin blockade in the late 40s, a new way of conducting supply orders was developed by using telex (Britannica 2023). Telex was a common tool to send and receive
messages from both the military and commercially (CHM n.d). This was later seen as the birth of the term *E-commerce*. It is defined as a way of conducting business and maintaining relationships between businesses and consumers. The growth of e-commerce came after the release of the world wide web and has since grown side by side with technological advancements (Britannica 2023). When it comes to Sweden, a clear pattern of growing usage is shown by Salesforce Sweden (2021). The consumption value in the e-commerce industry has been increasing 80 times between the years 2003 and 2019. An estimation of the value was set at 310 billion SEK in 2019. showing the vast popularity of this still-growing business industry, at least when it comes to the Swedish market.

This digitalization has put significant pressure on physical stores to approach and adapt to the Omni channel, to combine different methods to reach and work with their customers. By combining different tools, a retailer could enhance the customer experience and provide better general service (Purcărea 2016). For the retailers who still desire to not adapt to the general technical advancements, the future could be dark. By combining offline and online, the results could be vastly positive, says Clawson (2019). All this has led to a significant digitalization increase in these physical retail stores (Anitsal and Paige 2006). This has given rise to the term *Technology-based Self-service*, also known as TBSS. Technological machines such as ATMs are one of the tools that stand under the definition of TBSS, a way for customers to do services independently by themselves. For retailers, TBSS could be everything from self-scannings and self-checkout, making the customer’s journey more or less independent (Wang 2007). A more independent consumer has resulted in a more positive and satisfied one, says Anitsal and Paige (2006). Not only does the customer feel that way, but the same feelings seem to be for the service providers as well. The usefulness of TBSS, especially self-checkout technology, does not only provide usefulness, concludes Oghazi et al. (2012). A sense of enjoyment was also shown in their conducted study. This, in turn, with the growth and development of technology, has now turned into an essential building block for the modern retail industry. Not only that, it is being pressured by rivals, new technology, high expectations, and external courses such as the Covid-19 pandemic (Bradley et al. 2021).

The way TBSS and other new up-to-date digital tools have significantly impacted how the retail sector acts. This, in turn, has led to a forever going competition in who has the best technology to offer, leading to new TBSS development. This puts more pressure on retailers’ focus to make them divine the future and how retailers, in the best manner, could adapt to TBSS (Marzocchi and Zammit 2006). However, not all surrounding TBSS seems to be clear yet, depending on whom you ask. TBSS today is still unclear in the fact of finding the right balance between self-service and traditional service (Nice CXone 2022). The answer today seems to depend on whom you ask. Approximately 53% of businesses believe that they have satisfied customers with their self-service offerings. Today, however, only 15% of consumers seem to agree with that. When it comes to self-service options, about 81% of customers seek more than what is already offered. Meanwhile, 40% of the businesses believe they have enough. However, by understanding the vast growth of the unmanned store concept, it can be
determined whose opinion weighs the most. The customer’s interest in self-service could most likely have a correlation to the expected growth of unmanned stores. In 2019 the unmanned convenience store market was valued at 67.48 million USD and is expected to reach 1,640.32 million USD by the year 2027 (Business Wire 2020). Moreover, the definition used to describe an unmanned store is “… a store format where customers can carry out their errands without involvement of service personnel due to fully automated payment solutions.” (Lundin and Paridon 2022, Abstract). Tagwerker-Sturm (2021) described it further as stores that are mostly tiny and with a small assortment consisting of daily needs. The entirely digitized systems generate the popular option for store owners to have open 24 hours a week. They are often located in high-frequency locations or in rural areas. The customers of these stores simply shop by themselves without any human interactions with the help of the in-store technology and their mobile devices. This gives a more efficient experience, where customers just have to pick their chosen products and go, all thanks to the automatic payment process (Denuwara, Maijala, and Hakovirta, 2021). When it comes to Sweden, the attribute of service around-the-clock seems to stand out as one of the main reasons why the popularity and demand for these stores are growing, concludes Hernell (2021) in a study. The growth is apparent in Sweden; as many as 40 unmanned stores have been opened between the span of September 2021 and May 2022. Since late July 2022, the total number of unmanned grocery stores in Sweden has reached 130 (Davidsson 2022).

The growth behind the success of unmanned stores is due to plenty of reasons. One such is the effect the concept has on the Swedish countryside, states Karin Brynell, CEO of Swedish Groceries (Davidsson 2022). She described that the accessibility of these stores in these sparsely populated areas had made a good impact on the locals of that area. This part of the population is, by European standards, relatively huge. About 21.6 of Sweden’s population lives in the urban countryside (Glesbygdsverket 2007). This is the primary geographical location for unmanned stores, according to Edvin Johansson, the founder of the first Swedish unmanned retail chain “AutoMat.” It is crucial to keep the focus on these locations so that the success of this idea can grow even more onwards (P4 Västmanland 2023, 01:15). The growth of this concept has also sparked interest in one of the biggest and oldest grocery stores in Sweden, Coop (Coop n.d) and Ica (Ica Gruppen n.d). Johan Berg, responsible for “Ica to Go,” believes in the continuous growth of self-servicing stores. Berg has an expectation of adding 50 new unmanned convenience stores to their already existing number of 30 (Österberg 2022). Other potential factors as to why people in this field estimate high growth potentials could, according to Hernell (2021), be because of the already high level of digitalization the Swedish business world possesses today compared to other countries. According to IMD, Sweden ranks third in the Digital Competitiveness Ranking, which takes countries’ extent and adoption of digital technologies leading to transformation in business models and such (IMD n.d). Hernell (2021) also further explained that the new concept of unmanned stores could likely be a rescue for physical stores in Sweden. A rescue from the growing e-commerce presence in the retail world, e-commerce often stands in the spotlight of the subject of business digitalization.
1.2 Problem Discussion

1.2.1 Theoretical Problematization

The phenomena of unmanned stores have been studied in multiple aspects since Amazon released Amazon Go in 2018 (Lundin and Paridon 2022). At this point in time, there were still uncertainties about whether this concept would spread across the retail field, although studies did indicate that there were potentials in cost-savings (Polacco and Backes 2018). Today multiple retailers all over the world have adopted these self-serving applications to different degrees. Because of this rapid adaptation, new insights and factors have been researched in this area, including the consumer's perspectives and attitudes. In regard to consumers' perspectives, Oghazi et al. (2012) determined three different factors that constantly affect the consumer's viewpoint and attitude toward Technology-based Self-service. These three factors are perceived usability, usefulness, and enjoyment.

The factors presented by Oghazi et al. (2012) are based on the Technology Acceptance Model (TAM) in a combination of self-service attributes. The TAM is defined as a model used for measuring an individual's tendency to adopt a particular technology. According to the TAM model, this is based on the individual's perceived ease of use and perceived usefulness (Widyawan and Santosa 2017). The model is frequently used in research (Chang and Chen 2021), and it is not unusual for researchers to make tweaks and additions to the model in the same way that Oghazi et al. did (Widyawan and Santosa 2017). Closely related to the TAM model is the Technology Readiness model (TR), which is described as an indicator of how a person's attitude and beliefs toward innovative technology (Lin, Sher, and Shih 2007).

The degree to which extent TR and TAM affect a consumer's attitude toward unmanned stores has been discussed with some controversy. The majority of previous research presented in this study did find the different dimensions of the two models to be of great importance in this field of study. However, some of them highlighted the need for further development of the models to truly be able to understand the consumer's behaviors and attitudes, whereby additional factors were included (such as perceived enjoyment and Technology paradoxes) (Chang and Chen 2021; Zhang and Park 2022). On the other hand, there have also been researchers indicating how low TR levels do not affect the resistance towards unmanned stores (Lundin and Paridon 2022). This controversy among researchers implies that further research is needed regarding this question.

Apart from TR and TAM, other factors influencing enhancers and inhibitors towards unmanned stores have been identified. Firstly Lundin and Paridon (2022) found self-image incongruence as a major inhibitor. In this context, the concept relates to how a person's self-image (i.e., personality or beliefs) does not correlate with the image of the innovative technology unmanned stores. Which in turn leads to resistance towards the concept. Furthermore, they found that performance risk and lack of satisfaction also play big roles as inhibitors towards the concept. The performance risk refers to the uncertainty and risk associated with
performance-related aspects. The satisfaction factor is also mentioned by Wu, Ai, and Cheng (2019), who point out how experiential satisfaction, in combination with confidence and desire, all positively affect experiential loyalty. In addition to the experiential outcomes, Mansurov and Rosengren (2017) mean that expectations also play a major role in whether a consumer will accept TBSS.

Another highly discussed inhibitor of unmanned stores is the lack of human interaction. Likewise, TR and TAM, also this factor has received some controversy regarding to what extent it actually affects consumer resistance. The majority of research presented in the literature review highlights this factor as important in this field (White, Breazeale, and Collier 2021; Evanschitzky et al. 2016; Lundin and Paridon 2022; Zhang and Park 2022). However, Songmee et al. (2021) mean that this factor is not particularly important when it comes to Gen Z. This is because, according to their results, this generation has less need for human interaction in their shopping experience and more often prefers the use of self-service applications. This result was further strengthened by Kim et al. (2021), who also found that Gen Z has less need for human interaction. However, this differs when it comes to security measures. The different results covering this factor indicate that further research is needed to fully understand the impact of the lack of human interaction in relation to Gen Z.

Furthermore, Seifert and Charness (2022) stated that Gen Z is overall more grateful and willing to use technology-based self-service applications. This result does correlate with Röjås and Ahlström (2018), who states that Gen Z’s attitude is overall positive towards unmanned stores and TBSS. This might be due to the fact that this generation has lived among innovative technologies most of their lifetime. Further correlating with Mansurov and Rosengren’s (2017) statement regarding how Gen Z has a much higher level of knowledge in technology. Although Gen Z seems to be positive toward unmanned stores, this generation also seems to have high expectations toward these retailers. This might be because of how easy it is to access the internet, and thereby comparing unmanned stores to the whole world (Röjås and Ahlström 2018).

1.2.2 Managerial Problematization
The fast growth of digitalization is something that affects the retail industry to a large extent and must therefore be considered by every company in this field. There is no option to settle down; instead, there always needs to be further development in digital knowledge to be able to match the competition (Mostagel et al., 2022). This is extraordinary in the retail field due to the big shift into e-commerce, whereby traditional retailers are facing significant problems. Some experts in the field describe the situation as a “retail apocalypse” whereby retailers are ruled out or forced to enter online retail (Helm, Kim, and Riper 2020). However, Hernell (2021) believes that the somewhat new concept of unmanned stores can potentially be the rescue for physical retailing, at least when it comes to the Swedish market, which is already ahead in digital retailing compared to a worldwide perspective.
Nonetheless, there are multiple problems that are related to self-service applications and unmanned stores. As specified in the theoretical problematization and further strengthened by Hernell (2021), the lack of human interaction is a problematic factor influencing the resistance towards unmanned stores in Sweden. The study shows that out of those avoiding unmanned stores, 71% felt the need for service, while 43% wanted to meet people when visiting a store. It appears that the need for service is a known problem among companies working with self-service, and this is something that companies are constantly working on by improving their technology (Bronsten and Johansson 2011). The ease of use is also used as a marketing tool among companies using technology-based self-service (24-sju 2023), further indicating that this factor is a known problem.

Another highly discussed problem is the safety issues associated with unmanned stores. First and foremost, it is pretty easy for customers to steal products, and this has shown in the last few years. Also, vandalism is a considerable risk that comes with no staff available (Lindblom 2022). Today companies are aware of these problems and are working with different systems to avoid such incidents. This is mainly managed through alarm systems, recording devices, and keycard locks only available for registered customers (Butiksnytt n.d). However, there are different perceptions of the safety problems in terms of theft. While some companies have significantly suffered from theft, Johan Berg, responsible for Ica to Go, mentioned that the company has increased security in their unmanned stores compared to their manned stores. He further states that there even tends to be a smaller number of thefts in their unmanned stores (Lindsten 2023). Further on, safety problems related to the customers’ safety are also essential to consider in unmanned stores. For instance, what if someone gets injured while no staff is available? For this problem, companies are today working with surveillance systems and alarm systems available for consumers to use (Lindblom 2022).

A qualitative study by Denuwara, Maijala, and Hakovirta (2021) presents how managers perceive the challenges and opportunities for unmanned stores from a global perspective. The interviews indicate that one of the main success factors is being located close to the customers. This is something that correlates with Brynell’s earlier statement regarding the importance of keeping unmanned stores in the countryside of Sweden (Davidsson 2022). Furthermore, one of the main challenges from the different companies’ perspectives is that there is uncertainty in economic benefits. This a somewhat shocking discovery, considering that the interviewees were operating in the smart retail field (Denuwara, Maijala, and Hakovirta 2021). Connected to this is also Bronsten and Johansson’s (2011) surprising discovery regarding how the sales manager they interviewed seemed to have a particularly vague perception of consumers’ attitudes towards their technology-based self-service. Furthermore, they described that the manager interviewed could only answer based on her own and other staff members’ observations, which shows the importance of further research in this field.

According to the sales manager for Menigos, the main reasons for investing in unmanned stores are to be cost-efficient and, at the same time, provide a great consumer experience (Pihlblad
u.d). However, as mentioned above, there appear to be uncertainties in both of these areas, according to operating managers (Denuwara, Maijala, and Hakovirta 2021; Bronsten and Johansson 2011). This is perhaps due to the relatively new nature of unmanned stores, in combination with earlier researchers often targeting the market from a broad perspective. As later discussed in the literature review, there are multiple aspects affecting different customers’ attitudes towards Technology-based self-service, for example, age or cultural differences (Seifert and Charness 2022; Awe 2018). By targeting a specific customer group, the data will provide important insights for managers and other stakeholders. This could be useful when managing, developing, and marketing to attract the specific customer group of Gen Z. Furthermore, Hyken (2022) made a study that shows how Gen Z and Millennials have a much higher will to use self-service compared to Gen X and Boomers. The study also indicates that these younger generations expect and want to see further development of self-service alternatives. Reed (2022) refers to Hykens’ data and points out the importance of understanding your targeted customers, especially when it comes to different generations. She further describes how it is essential to invest in self-service applications and to lay the groundwork for being able to meet Gen Z’s expectations in the future.

1.2.3 Research Gap
Conducted research in the field of unmanned stores is limited and often directed toward economic and sustainability aspects. There is, therefore, a lack of research regarding consumer perceived barriers towards the stores (Lundin, Paridon 2022). As shown in the problem discussion, there are studies covering motivational factors influencing customers to visit unmanned stores (Chang and Chen 2021). However, this study, and other research touching on the acceptance towards smart retailing, are often conducted in Asia. This is perhaps due to the early adoption of technology-based self-service in this geographical area (JLL 2018). This delamination creates a problem in terms of cultural differences not being considered. A manager or researcher in this area might not be able to rely entirely on data from another country. Something that has been proven to be the case is the acceptance towards self-service technology between Swedes and non-Swedes (Awe 2018).

Although Lundin and Paridon (2022) conducted a study related to perceived barriers in this market, there is still further research needed. Firstly they did not cover the enhancers for unmanned stores, and the age gap in their data is broad, covering everyone that is 18+ years old. Gen Z is the utmost crucial generation to consider, not only because they will gain more buying power in the upcoming years but also because this generation is shown to have high expectations regarding TBSS in the future (Reed 2022). Lundin and Paridon (2022) included less than 44 respondents from Gen Z in their data. This is too vague, especially considering this particular generation's needs and attitudes are the most important to understand in this field (Reed 2022). Based on this research gap, this study will focus on explaining the enhancers and inhibitors towards unmanned stores perceived exclusively by Generation Z. Furthermore be directed towards the Swedish market and thereby contribute to further geographical areas covered in this research field outside of the Asian markets.
1.3 Research Question
This research will contain one research question that is based on the presented research gap in 1.2.3.

* How does the underlying enhancers and inhibitors affect individuals of Generation Z’s acceptance towards unmanned convenience stores?

1.4 Purpose
The purpose of this study is to explain the enhancers and inhibitors that Generation Z has towards unmanned convenience stores in Sweden. The researchers are going to achieve this through a quantitative study, in which they collect data from the survey posted on Facebook and collected face-to-face.

1.5 Delimitations
As previously stated in the background, there is a difference between unmanned stores and TBSS, whereby TBSS is a broader concept, which occasionally can include human-to-human interaction if needed (Wang 2007). However, this thesis is specifically going to cover unmanned convenience stores and not TBSS as a whole. Furthermore, the research is purposefully directed specifically to Sweden (i.e., unmanned convenience stores located in Sweden).

2. Literature Review
This chapter discusses the theoretical framework that this research is based on. Firstly the technology-based self-service is discussed from a broader perspective, and then the specific concept of unmanned stores is analyzed in terms of enhancers and inhibitors. Furthermore, this chapter presents previous research covering Generation Z’s viewpoint on innovative technology and smart retail. Lastly, a summary of the literature review is presented, as well as a research model that explains how the theories will be tested in this research.

2.1 Technology-Based Self-Service
In today's world, we can understand and see the vast usage of technology in the business world and the digital competitiveness between businesses (Chan and Petrikat 2022). The growth of TBSS in the competitive retail industry does not seem to be set by the retailers, says Fuentes, Bäckström, and Svingstedt (2017). The growth is led forward due to the evergoing tech industry, such as smartphone manufacturers. This is thanks to a technological revolution that totally affects all of the electronic industry Alkhubaizi (2017). All of our devices evolve continuously, meaning that the process is not static but rather dynamic in which businesses work within. Signifying that retailers repeatedly need to reconfigure their technologies all the
time and not leave them for destiny (Fuentes, Bäckström, and Svingstedt 2017). This is done by setting additional pressure on updated IT knowledge amongst retailers so that they can face the growing digitalization better (Mostaghel et al 2022). By doing this, more strict and clear routines could be made, making it more innovative and effective. Their research further pointed out the importance for practitioners and executives to match their business model elements with their retail business model. Moreover, the different dimensions within the business model, which are connected to delivery, value creation, and capture, need a holistic approach. Otherwise, the risk of neglecting one or the other could risk an uneven approach in the attempt to fully succeed in working digitized. Not only that, by splitting the dimensions, retailers could retrospectively understand and possibly learn about the development and changes that have come with digitalization (Hagberg, Sundström, and Egels-Zandén 2016).

In an older research study written by Anitsal and Paige (2006), the findings showed that real physical employee presence was deemed as good in the context of customers’ usage of TBSS. However, they noted that this could only be said if the employee is not too pushy or governing the interaction between the customers’ own TBSS interaction. The presence is needed if a customer faces difficulties due to a lack of technical understanding or other technical problems. However, that should be it; less and less unneeded support from employees and more independent usage is the way to operate. Oghazi et al. (2012) added that the attitude the customers have towards the usage of self-service technology could be viewed as perceived enjoyment and usefulness. These two attitudes are set as sub-factors of TBSS characteristics among reliability, which is when personal employee interactions take place or with technological support (Kyu Kim et al., 2022). Between these factors, one seems to stand out. According to Oghazi et al. (2012), enjoyment possesses a more noticeable impact than usefulness on their sample’s intention to use TBSS. Nonetheless, it is still crucial to acknowledge the significance perceived usefulness has in the self-service acceptance process.

In a field study made by Röjås and Ahlström (2018), they studied the relationship and thoughts people had about unmanned stores in Sweden. The results showed that 73% of the respondents who participated in their study had a positive feeling towards the fully digitalized physical stores. In other words, respondents gave out positive attitudes toward the non-human-to-human shopping experience and the digital tools which are taking the physical spot in the customer journey. According to West (2020), the usage of new digital solutions around this product-service system gives out an additional channel for interactions. By this, retailers could generate a more detailed understanding of the customer journey, thanks to the technology surrounding the stores inside. Röjås and Ahlström’s (2018) study also showed differences depending on geographical areas between the city and the countryside. Not only that, but they also concluded that the youth felt better about servicing themselves more or less independently, often by using these unmanned convenience stores. Their conclusion proved that employees are not decisive in the setting of unmanned stores, proving that concept stores like this can operate well without physical presence. However, their study can not be generalized all over the world because of their limitations, and it is nonetheless relevant for this study.
The definition of TBSS is clear by understanding the previous studies referred to here so far. Focusing on Sweden especially, Lundin and Paridon (2022) described the vast growth in the subject all across the Swedish retail sector. Sweden is showing their dominance by keeping up with the advancements that are surrounding the country. The (EU-commission 2021, from Lundin and Paridon 2022) also placed Sweden as a high-performing country. In a study by Nilsson (2018), he described Sweden’s goals to set a completely practical and functional way to make use of electronic communication. Moreover, Swedish businesses should also have good possibilities to use these electronic services as well. All this clearly sets pressure on the retailers and their knowledge, as was concluded earlier by Mostaghel et al. (2022).

A lot of researchers, such as Anitsal and Paige (2006), see the need for new studies containing the subject of TBSS. As an example, Anitsal and Paige stated that the idea of technology-based self-service has been on the rise and will continue to do so futurewise as well. Both described that there is a need to answer the question of how the absence of physical human-to-human service will act on the level of service quality. Their own study focused on finding answers to if retailers could and will succeed in providing quality service and how that non-physical retail concept could look. Moreover, they questioned how the gap between functional- and technological quality could align with retailers when advanced digitalization takes over.

Mostaghel et al. (2022) are curious as well about how the major extension of TBSS could be seen as problematic and dangerous. They pointed out that future researchers should prioritize making a study focusing on security and the potential hazards regarding it, such as hackers. Coming to the general development of technology-based self-service all across the globe, some questions are still unanswered. One of which is how different generations and geographical locations influence the attitudes towards it and its general usability of it (Anitsal and Paige 2006). Not only that, Oghazi et al. (2012) point out that there seems to be a lack of information regarding the cultural differences that affect the attitude as well. Lastly, when it comes to studies conducted in Sweden, the same results show up (Röjås and Ahlström 2018). There is a shortfall of studies pointing out the cultural and geographical relations to unmanned stores, something that needs further attention.

2.2 Factors influencing enhancers and inhibitors towards unmanned Stores

In earlier studies in the field of how technologies related to self-service and unmanned stores are being perceived by consumers, researchers are often referring to two different models: Technology Readiness (TR) and Technology Acceptance Model (TAM) (Widyawan and Santosa 2017). In 2.2.1 - 2.2.3 of the literature review, the authors are therefore going to first explain these concepts and then go into how they affect consumer attitudes and behaviors in relation to unmanned stores. Further on in 2.2.4-2.2.5, the authors will explain further factors influencing enhancers and inhibitors in unmanned stores according to previous research.
2.2.1 Technology Readiness
Parasurman (2000) was the first researcher to propose the theory of Technology Readiness. He did this as a way to describe different individuals' ability to adapt to new technologies. This was essential because, according to his study, new technologies did not necessarily benefit the customers. They could also cause adverse effects such as frustration. In a later study, Parasurman and Colby (2014) developed categories within TR to categorize the different technology-related personalities. The ranking goes from avoiders, skeptics, hesitators, explorers, and pioneers.

However, TR has become more advanced than these categories due to the fact that a technological attribute can evoke both positive and negative feelings simultaneously (Chang and Chen 2021). Therefore Parasurman (2000) determined subdimensions for TR: insecurity, discomfort, innovativeness, and optimism (Figure 1). Insecurity refers to customers' skepticism and distrust towards new technologies, and discomfort is the perceived shortage of understanding and control. This is in contrast to optimism which is an optimistic view of technology whereby users believe it will increase efficiency, flexibility, and control. Lastly, the subcategory of innovativeness refers to a belief that accepting technology could turn the user into a pioneer in the area (Roy, Balaji, Quazi, and Quaddus 2018).

\[\text{CONTRIBUTORS} \rightarrow \text{OPTIMISM} \rightarrow \text{TECHNOLOGY READINESS} \rightarrow \text{INNOVATIVENESS} \]

\[\text{INHIBITORS} \rightarrow \text{DISCOMFORT} \rightarrow \text{TECHNOLOGY READINESS} \rightarrow \text{INSECURITY} \]

**Figure 1**: Technology Readiness (Parasurman 2000)

Wang et al. (2017) epitomize the concept of Technology Readiness by stating that users of high TR are excited, skilled, and comfortable with new technology and do not experience difficulties too frequently. This is in contrast to customers with low TR scores, who are probably going to be skeptical and nervous, which could lead to them avoiding innovative technology.

2.2.2 Technology Acceptance Model
The Technology Acceptance Model has been used frequently in academic research for many years and is also used in more fields outside of smart technologies (Chang and Chen 2021). The model is built upon two different factors influencing whether the consumer will accept and
adopt technologies. These factors are perceived usefulness and perceived ease of use (Chung, Tyan, and Han 2016). Davis, who was the developer of TAM in 1986, meant that perceived usefulness was a measure to what degree a user believed the technology would improve his job performance. Whereas perceived ease of use simply measures to what extent an individual believes the technology to be free from effort. The perceived ease of use is also believed to have a direct effect on the perceived usefulness, making the two variables correlate with each other (Marangunic and Granic 2014). According to the model, a customer with a perception that a particular technology is going to be easy to use and beneficial will develop an acceptance accordingly and thereby use the technology (Widyawan and Santos 2017). Science Davis first released the model, it has developed, and additional elements have been included (Marangunic and Granic 2014). For example, the TAM2 model includes external social factors in the acceptance model (Rahimi, Nadri, Afshar, and Timpka 2018).

The significant difference between Technology Readiness (TR) and TAM is defined as TR being more general of a person's beliefs in technology, while TAM is specified towards a particular technology-based attribute. However, there is no controversy about the two models being highly interrelated. Thereby, apart from the development of TAM, there have also been researchers combining the TAM and TR models. Occasionally referring to this combination as the TRAM model (Technology Readiness into Technology Acceptance) (Figure 2) (Lin, Sher, and Shih 2007).

![Figure 2: Technology Readiness into Technology Acceptance (Lin, Sher, and Shih 2007)](image)

Although researchers use different versions of TAM and sometimes even combine it with TR to understand the consumers' attitudes, the main concept of the acceptance model is still the same. That a consumer's tendency to adapt to a system relies on the consumer's perceived ease of use, usefulness or value of the technology, and the overall perception of the technology (Widyawan and Santosa 2017).

2.2.3 TR and TAM in relation to unmanned stores
When it comes to unmanned stores, the four dimensions of TR coexist in the consumer’s approach to the technology; however, they are independent of one another (Chang and Chen
2021). Meaning that TR works approximately the same way in unmanned stores as with other technology-based systems. Whereby a high level of innovativeness and optimism will contribute to an overall higher level of TR. In contrast to discomfort along with insecurity, that will result in a decline of TR (Parasurman 2000). The important connection between unmanned stores and TR is further strengthened by more recently conducted research, for example, Zhang and Park (2022). They conducted a quantitative study of 310 valid respondents to investigate TR’s impact on unmanned stores from the perspective of people who had already visited one. The results from their study indicate that a high level of TR will contribute to the consumer being satisfied with the technology provided in an unmanned store. Contrary to those with low TR, that will potentially be hostile toward the concept.

Zhang and Park (2022) did, however, indicate that TR and TAM are not enough to fully understand the consumers’ behaviors and attitudes toward unmanned stores. In addition, they included Technology Paradoxes (TP) due to the fact that “Technology is paradoxical as it often contains contradictory qualities simultaneously” (Zhang and Park 2022, p. 2). When it comes to TP in relation to self-service technologies, there are four fundamental contradictions to consider. These are that TBSS can simultaneously be perceived as: efficient and inefficient, create control and chaos, make the consumer feel competent and inept, and lastly, fulfill needs and create problems (Bulmer, Elms, and More 2018). In addition to these paradoxes, Zhang and Park (2022) decided to add the paradox of privacy due to the fact that privacy concerns have expanded dramatically in the retail context (Arli, Bauer, and Palmatier 2018). When setting TR in relation to TP, the result of Zhang and Park (2022) showed that optimism decreased both the paradox of chaos and privacy issues, while innovativeness was shown to decrease the inefficiency paradox. Furthermore, the dimension of discomfort was shown to negatively affect the efficiency and control paradoxes. Interestingly, it did not affect the privacy paradox. In conclusion, their study suggested that retailers need to be aware of the control, efficiency, and privacy paradox to further strengthen the consumers’ attitudes with help from innovative technology.

The results regarding TR made by Zhang and Park (2022) are further strengthened by Chang and Chen (2021), who also found TR to be of absolute importance in the context of unmanned stores. Additionally, they also determined that there is a direct relationship between TR and TAM when it comes to unmanned stores, which correlates with Lin, Sher, and Shih (2007), who pointed out this high interrelation between the two models. However, TAM focuses more on utilitarian motives, and therefore Chang and Chen (2021) included hedonic factors influencing the consumers' attitudes. One of which is perceived enjoyment, which was prominent in terms of hedonic factors. This finding is further strengthened by Oghazi et al. (2012), who pointed out this factor as necessary in terms of consumer attitudes towards TBSS.

Interestingly Chang and Chen (2021) found this hedonic factor to be of even greater importance than utilitarian motivations (perceived ease of use and perceived usefulness). However, they stated that all of these factors could affect each other, which makes each of them
highly important for the consumers' shopping experience. The importance of the hedonic factor of enjoyment is further related to Lo and Wang (2019), who, from 21 qualitative interviews, found the feeling of entertainment to be among the most important factors in unmanned stores. Important to mention is, however, that this study was conducted in Taiwan, whereby the store in question provided technology such as: futuristic arrangements, interactive drinks cabinet, and facial recognition technologies.

When it comes to TR and TAM, there is, however, some controversy as to what extent it affects consumer behavior and attitude in relation to unmanned stores. For instance, Lundin and Paridon (2022) found that low levels of TR did not enhance consumer resistance toward unmanned stores. This study was, however, based on respondents living in Sweden in contrast to the earlier mentioned studies regarding TR. The Swedish inhabitants’ high level of digital competence could, according to their research, be the reason for their outstanding results. To fully understand the impact of TR and TAM in relation to Gen Z’s attitude towards unmanned convenience stores, the following hypotheses were established.

**H1.** High levels of Technology Readiness positively affect Generation Z’s acceptance towards unmanned convenience stores.

**H2.** Low levels of Technology Readiness positively affect Generation Z’s resistance towards unmanned convenience stores.

**H3.** Perceived ease of use positively affects Generation Z’s acceptance towards unmanned convenience stores.

**H4.** Perceived usefulness positively affects Generation Z’s acceptance towards unmanned convenience stores.

In regards to Chang and Chen’s (2021) finding regarding the importance of including the hedonic factor of enjoyment when it comes to consumers’ attitudes toward unmanned stores. This research has established the following hypothesis.

**H5.** Perceived enjoyment positively affects Generation Z’s acceptance towards unmanned convenience stores.

### 2.2.4 Further enhancers and inhibitors in relation to unmanned stores

Even though Lundin and Paridon (2022) did not find TR to be a significant enhancer for unmanned stores, they did find other factors influencing consumer resistance. Their study was constructed to find the most common resistance factor, with help from 172 respondents in Sweden. The results of this study indicate that the potent inhibitor for a customer to visit an unmanned store is the lack of human interaction. This particular factor has been discussed in
plenty of previous research regarding TBSS. Therefore the authors of this paper will further explain this in 2.3.

Hereafter Lundin and Paridon (2022) found that self-image incongruence also plays a significant role as an inhibitor for consumers to visit unmanned stores. The self-image incongruence means that the innovation image a consumer has is contradictory to the consumer’s personal image, such as beliefs and personality. In this case, it was shown that many customers perceived how their self-image did not correspond to the image of unmanned stores, and therefore they showed resistance towards the concept. This finding does correlate with finding from other fields in digitalization. For example, Mani and Chouk’s (2018) research showed a positive relation between self-image incongruence and IoT (Internet of Things) services in the banking field. Furthermore, Lundin and Paridon (2022) found that lack of perceived satisfaction and performance risks also contribute as essential inhibitors. The risk that consumers can feel during TBSS is recurrently discussed as a problem in previous studies. Lin (2022) even states that consumers who have a positive attitude toward the idea of unmanned stores can still be afraid of the uncertainty and risk to the extent that they avoid the concept entirely. Thus, the following hypotheses have been established.

H6. Self-image incongruence is positively affecting Generation Z’s resistance towards unmanned convenience stores.


The experiential outcome of visiting an unmanned store is something Wu, Ai, and Cheng (2019) further investigated by analyzing consumers' psychological states. The massive study of 548 respondents resulted in a determination of a positive correlation between: experiential satisfaction, desire, and confidence, and all positively affect experiential loyalty. Something that correlates with Statthopoulou and Balabanis (2016), who states that consumer confidence should be part of companies' loyalty strategies based on the importance of this factor. Furthermore, Wu, Ai, and Cheng (2019) concluded that new technologies provided in smart retail generate new experiential outcomes, which can be both good and bad. If companies manage to create good experiential outcomes for their customers, then this will create a competitive advantage.

Mansurov and Rosengren (2017) identified how the experience of using TBSS is not the only factor influencing the perceived quality. They further pointed out the importance of expectations and how this also has a direct effect on total satisfaction. This result was based on 125 respondents using TBSS in a Swedish ICA store. However, Hsu (2022) found that expectations are the most important when it comes to accepting TBSS in the form of unmanned stores. This further implies that the expectations regarding performance often are met due to the efficiency and time-saving that unmanned stores can provide.
2.3 The Inhibitor in lack of Human Interaction

The need for interaction in retail refers to customers feeling that human interaction is an essential factor in the shopping experience (Dabholkar and Baggozi 2002, p.188). A lot of customers do not necessarily view the shopping process only as a business transaction. They also appreciate the social benefits of interacting with employees or other customers (Wang et al. 2007).

The challenge in providing human interaction within retail has further been challenged due to TBSS. This is a problem that should not be ignored when moving into TBSS and smart retail. This is due to the fact that the tendency of continuous use reduces if this need is not met (Evanschitzky et al. 2016). Perhaps a factor even more crucial in the context of unmanned stores, where there is a total absence of employees. At least Lundin and Paridon (2022) indicate this when stating that the lack of human interaction seems to be the major inhibitor of unmanned stores. This finding correlates with White, Breazeale, and Collier (2012), who states that people with a high need for human interaction might feel unfairness if this need is not met. This further implies that those customers will choose physical stores instead of TBSS-based stores.

Apart from the social benefits that come from human interaction (Wang et al. 2007), employees do also provide support in terms of situational information. According to Zhang and Park (2022), this could instead be provided by technologies in the form of in-store robots or other technologies that provide a social presence. In this way, information, protection of privacy, maintaining order, and a social presence could all be obtained without actual on-site employees.

However, there is research indicating that unmanned stores will manage to cope with the lack of human contact. This is because the need for this factor is individual; some consumers will preferably do their shopping alone, while others will seek human interaction (White, Breazeale, and Collier 2012). Different age gaps are also shown to influence the individual need for this factor. For instance, in one particular study by Songmee et al. (2021), the results point towards a higher preference for contactless service than human interactions among Gen Z and Millennials. From their results, they also stated that Millennials and Gen Z seem to have a greater interest in innovative technology. This correlates with Mansurov and Rosengren’s (2017) study, which also found Gen Z to be more positive toward smart retail compared to older generations. Gen Z’s interest and positive attitude toward technology is something that Songmee et al. (2017) suggest could have something to do with the result regarding the connection between this generation and the preference towards contactless service.

Apart from generational differences affecting the need for human interaction, it is also essential to mention that the previous research mentioned took place in different locations. For instance,
Lundin and Paridon’s (2022) data were collected in Sweden, whereas Songmee’s et al. (2021) data were collected in South Korea. This might be important because it is shown that origin and cultural factors do affect whether someone chooses TBSS and thereby avoid human contact. Furthermore, it is proven that non-Swedish customers do, to a more considerable extent, choose TBSS over traditional checkouts compared to Swedish customers (Awe, 2018). A finding that largely agrees with Lundin and Paridon (2022), pointing out the importance of human interaction among Swedish consumers.

As shown in this subheading, there are different perceptions of to what extent human interaction is vital for the shopping experience. The majority of previous research mentioned highlighted human interaction as one, if not the most important inhibitor to consider in TBSS and unmanned stores (Lundin and Paridon 2022; White, Breazeale, and Collier 2021; Evanschitzky et al. 2016; Zhang and Park 2022). However, the previous research specifically covering Gen Z’s perceptions of human interaction as a factor in retail proves a less need for this factor (Songmee et al. 2021). This creates some controversy regarding the importance of this factor as an inhibitor and further indicates that further research is needed. Thus the following hypothesis was established.

**H8.** Lack of human interaction positively affects Generation Z’s resistance towards unmanned convenience stores.

### 2.4 Smart retail from a Generation Z perspective

When it comes to scientific research articles that combine the subject of retail-focused TBSS and Gen Z, multiple patterns are evident, thanks to the research provided. However, it is safe to say that the quantity of this research is low. Röjås and Ahlström (2018) made a positive impact on these combined subjects thanks to their study. Their study gave relevant information about how the younger generations sense retail digitalization. They said that the younger a person is, the probability of not being pleased with a given retail service increases. However, the younger generation still feels more grateful and more willing to use TBSS while shopping (Seifert and Charness 2022). This behavior is probably due to the vast amount of technology that has been surrounding them for most or all of their lifetime. Most of the younger people are born with digital privilege. Meanwhile, older generations appear more pleased with the present technology. This is because they have been living a long time without this smart high-tech technology (Röjås and Ahlström 2018). This correlates to what De Witte (2022) said earlier, that Gen Z is the first generation without knowing what life was like with no internet.

When it comes to unmanned stores, the participants of Röjås and Ahlström’s (2018) research gave precise results. It was shown that the youth felt positive toward unmanned stores and TBSS in general. Interestingly, their study also confirmed that the older generation had shown more positive attitudes toward the number of supplies these unmanned stores have, compared to the younger generations. This is most likely due to what these generations compare the
supply with. Röjås and Alström conclude that the youth see and compare local supply in these unmanned stores with the whole world and not only to other local physical stores. All thanks to the easily accessible internet, where Gen Z has been a part of most of their lives, this puts significant pressure on physical stores to keep up on a more broad level than before. Both Avakian, who was interviewed by Fromm (2022) mentioned earlier, along with Röjås and Ahlström (2018), indicated that there is a strong relationship between the younger generation and physical retail stores—potentially correlating to the means that the youth more or less do compare nearby retail stores to ones located nationally and internationally as well. However, age is a factor in this setting which is still vastly uninvestigated, describes Meuther et al. (2005). Nonetheless, the idea is that the younger generation is seen as more knowledgeable and motivational in the setting of TBSS. This corresponds to what Mansurov and Rosengrens (2017) discovered, finding out that the younger generation possesses a much broader level of knowledge in technology.

Kim et al. (2021) conducted another study on this subject, finding that Gen Z remarkably aimed for service without human-to-human contact, although this was not the case when they were seeking security measures. The availability of excellent and robust security is something that Mostaghet al. (2022) described as necessary and is in need of more research. Even though the advancements in digital technology have grown in the retail sector, the level of cyber security seems to be low (Joshi and Akhilesh, 2020). Retailers find themselves lacking the needed equipment to deal with real cyber threats and attacks. This is something that has been going on for a long time and is not seemingly catching up with general retail digitalization. During the Covid-19 pandemic, the situation got even more stressful for retailers to keep up with high-security levels (Nyikes 2021). A result of this weak level of security is that a high level of ransomware attacks is occurring on these retailers, affecting their image and financial situation (Dogan and Edwards 2022). This could have devastating effects on customer security, which simultaneously have an impact on the customer relationship. Kim et al. (2021) gave in evidence that Gen Z is feeling a more excessive interest in safety-seeking compared to Millennials. Indicating that younger customers could be more careful in the digital environment, setting more pressure on retailers not to accept and lose track of their IT security. They need to update their systems and services to set aim and target the attitudes that Gen Z has. To emphasize this, retailers should choose convenience by providing curiosity among the youth. The system of technology should provide an understanding, interest, and the possibilities of using it in a safe way. This is because both convenience and perceived self-determination have important implications for designing contactless services that are very much sought after by Gen Z. Kim et al. describe this as a driver of technology self-efficacy, meaning that retailers who are targeting the youth need to operate their store in a particular manner, in a way that contactless stand as the central part, placing physical service as a secondary supplement.

In a study conducted by Priporas, Stylos, and Fotaidis (2017), a handful of interviews with Gen Z were conducted in the United Kingdom. The interviewees described a belief in a continuous
expansion of digitalization in the retail sector. Expectations were also set on retailers to keep up with this demand in the dynamic and fast-phased business environment. This could be done with new smartphone applications or other similar tools. By doing this, retailers could take account of the implications that technology has on relations internally and externally.

Moreover, it can also assist in accounting transaction security, mentions Priporas, Stylos, and Fotiadis (2017). They continue to point out that retailers need to acknowledge the specific behavior of Gen Z and how it is in this era of smart retailing and online shopping. The interviewees also felt themselves insecure when dealing with this kind of technology at the same time, especially scams and credit fraud. The concerns do not end yet; many of the interviewees described themselves as concerned about the vast growth of technology that could have a negative effect in different ways. Traditional retailers were described by Reinartz, Wiegrand, and Imschloss (2018) as long-time dominant. However, not anymore; the threats of e-commerce and other smart technologies that have been expanding quickly, correlating to what the interviewees of Priporas, Stylos, and Fotiadis study described. However, to solve this, retail stores need to retain the growth of digitalization because of the significance it has on Gen Z’s buying behavior (Priporas, Stylos, and Fotiadis 2017). Equating to what Kem et al. (2021) concluded in their study. In another study conducted in Malaysia by Ng et al. (2019), it was found that Gen Z most likely has a unique and different relationship with the technology that surrounds them compared to older generations, especially in a retail environment. This is the reason why it is essential to focus on their attitudes, expectations, and aspects of value that they perhaps could see while using TBSS or other technologies.

All this shows us a pattern in how Gen Z is changing the modern retail setting by how they act in it. This generation is seeking more technological advancements and less physical connection with TBSS than older generations (Röjås and Ahlström 2018). They are more knowledgeable and aware of the risks that digitalization gives, and therefore also particularly careful to weigh out safe TBSS options compared to older generations (Kim et al. 2021). Overall, it is described that this generation is unique in the setting of retail (Ng et al. 2019), putting pressure on retailers to keep up with the tech demand (Priporas, Stylos, and Fotiadis 2017). However, this needs attention, especially when it comes to the technology's safety and security (Kim et al., 2021). The understanding of what Gen Z is seeking is somewhat straightforward; however, some things still seek more research. Ng et al. (2019) felt that one such thing is that more research needs to be conducted on how customer perceptions change depending on specific technologies. An example given is to center on QR scanning and self-service kiosks, which also stands as the foundation of unmanned stores. The UK-based study by Priporas, Stylos, and Fotiadis (2017), on the other hand, conveyed that future research could be undertaken by diverse backgrounds and countries other than the United Kingdom. It was also highlighted that future research could do a more broadened analysis of even smarter TBSS. To find what kind of effects that has on the customer behavioral pattern, and see possible advancements connected to the retail sector future-wise.
Previous research presented in 2.4 highlights the importance of security as a factor when it comes to Gen Z (Kim et al., 2021; Priporas, Stylos, and Fotiadis 2017). A factor that was further highlighted by Zhang and Park (2022) that in 2.2.3 stated the importance of security in terms of privacy concerns. Thus, the following hypothesis has been proposed.

**H9.** Security concerns positively affect Generation Z’s resistance towards unmanned convenience stores.

### 2.5 Summary

The literature review goes by the major points that are of research interest in order for a conclusion to be established. First off, the researchers explored the vast growth of technology-based self-service (TBSS) in the retail industry. TBSS gained its popularity through driven technological advancements (Britannica 2023) and digital competitiveness (Chan and Petrikat 2022). The researchers found what impacts it had on retailers and their customers, also what those impacts resulted in. One such impact was how it influenced customers’ attitudes toward unmanned stores. To study this, models such as Technology Acceptance Model (Oghazi et al. 2012) and Technology Readiness (Lin, Sher, and Shih 2007) are used. They are focused on aspects such as ease of use, perceived usefulness, optimism, and innovativeness of the users, which in this case is the consumers. Additional enhancements and inhibitors involved perceived enjoyment (Chang and Chen 2021), performance risks, self-image incongruence, lack of human interaction (Lundin and Paridon 2022), and security concerns (Kim et al. 2021).

Because of the lack of human interactions in unmanned stores, the traditional retail experience is challenged (Evanschitzky et al. 2016), with generational and cultural differences playing a potential role in it. Thus some researchers emphasize this factor as a major inhibitor (Lundin and Paridon 2022), while others point out that this does not correlate when it comes to younger generations (Songmee et al. 2021). Moreover, the youth are believed to be particularly aware of the dangers that are luring digitally, making them more cautious about digital safety and security. Setting even more weight on the retailer's shoulders, so that they also need to prioritize this (Kim et al. 2021). Nonetheless, research on the perception that Generation Z has of different technologies is still deemed limited. By understanding the literature review, it is suggested that future researchers should study the potential security risks, geographical and cultural influences, as well as the varying impact of human-to-human interaction on customer behavior.

### 2.6 Research model

Figure 3 illustrates the research model of this thesis, with the purpose of summarizing the literature review and the developed hypotheses. As described in the theoretical framework, the hypotheses are influenced by previous research and further developed to match the specific research question for this thesis. By carefully studying the phenomena of TBSS and unmanned stores in relation to consumer behavior, the researchers were able to identify the most discussed
and crucial factors regarding consumer resistance and acceptance. Of course, there are other potential factors that could have been measured. For example, technology readiness is originally based on 16 different items that could have been measured (Parasurman and Colby 2014), with this thesis only presenting four of these. This is mainly because the research would be too expansive and the thesis too long for a bachelor's degree project.

The research model for this research (figure 3) was influenced by Cha (2011). She used a similar model to test if different factors influence whether a consumer will choose virtual or real items to purchase. However, she chose to measure all independent variables to both of the dependent variables, which is different from the approach in this research. This thesis only does this for technology readiness, which is partly because of the limited length of this research project. Although mainly because of the nature of the other variables, whereby they are being presented and measured as either an inhibitor or enhancer, in the previous research discussed in the literature review.

![Research Model Diagram]

**Figure 3**: Research model

3. Methodology

*This chapter presents the strategies, methodologies, and approaches used in addition to explaining how this research has been conducted. The chapter further discusses sampling and data collection, as well as operationalization and survey construction. This is also to inform*
the readers regarding the practical methodology used to conduct this research. Lastly, the quality of the research is presented, as well as ethical and sustainable considerations.

3.1 Research Approach

There are two common approaches when working with scientific papers; inductive and deductive. The main difference between these directions is the way in which the researcher relates his/her research to theories. In an inductive approach, the researcher collects data and determines a result of an observation, which then leads to the development of a theory. This is in contrast to the deductive approach, where the researcher uses already existing knowledge and data to establish theories and derives the existing data into hypotheses. Thereafter, the hypotheses are tested with the new data obtained from the researcher (Bryman and Bell 2011).

The inductive approach is generally used to understand the meaning and get more knowledge about a particular phenomenon (Saunders, Lewis, and Thornhill 2019). This approach is, therefore, often linked to a qualitative strategy (Bryman and Bell 2011). While the deductive approach often is used in a quantitative context, it can appear in a qualitative context as well (Sarshar and Newton 2002). Furthermore, researchers might choose a combination of these two approaches, called the abductive approach. This research approach includes an existing theory and then modifies or builds new theories based on the existing one (Saunders, Lewis, and Thornhill 2019).

In this study, the researchers used a deductive research approach. This is because, as shown in the literature review, there have already been conducted numerous studies regarding the phenomenon of unmanned stores and how these are perceived by different consumer segments. The existing theories are thereby presented in secondary research and will not be determined through empirical findings. The data collection of this study thereby aims to evaluate hypotheses or propositions that are related to already existing research, which is the premise for the deductive approach (Saunders, Lewis, and Thornhill 2019). Furthermore, this research aimed to conduct quantitative data, which was used to accept or reject the established hypotheses. As mentioned above, quantitative research is often linked to a deductive approach (Sarshar and Newton 2002).

In this thesis, the researchers aim to obtain data from a larger sample size. This is because by providing a large sample size and using predetermined responses, the researchers are able to generalize the results. The researchers are able to do this by using a deductive approach combined with quantitative research (Yilmaz 2013). In this case, the researchers were able to generalize the perceived enhancers and inhibitors towards unmanned convenience stores from Generation Z’s perspective and thereby were able to answer the presented research question. Generation Z is a segmented consumer group that the researchers try to better understand. Therefore this research takes its starting point from the general findings in the study field of
TBSS and unmanned stores and then goes towards the particular. Going from general to particular is a deductive way to accomplish a research project (Collis and Hussey 2014).

3.2 Research Strategy

The research design can be divided into three categories regarding methodological choice, and these are: qualitative, quantitative, and mixed methods (Saunders, Lewis, and Thornhill 2019). However, qualitative and quantitative methods are the primary strategies for collecting data (Bryman and Bell 2011). The qualitative method is commonly used in data collection based on, for example, interviews or when categorizing data in a non-numerical manner. This is in contrast to the quantitative method that commonly uses techniques such as questionnaires and then determines statistical findings from these. In conclusion, an effective way to differentiate these two methods is by distinguishing non-numerical data (qualitative) and numerical data (quantitative) (Saunders, Lewis, and Thornhill 2019). However, distinguishing these two methods can be complicated due to the ambiguous differences. Therefore some researchers choose a combination where both methods can be used in a mixed manner, a method often referred to as mixed methods (Bryman and Bell 2011). This mixed method can also be helpful due to the different natures of the two methods, whereby the quantitative method is more structured, and the qualitative method is more unstructured. For example, if a researcher mainly uses a quantitative method, it is crucial that the respondents also answer a couple of more open questions in their own words (Saunders, Lewis, and Thornhill 2019).

As indicated by the research question, this research aims to collect numerical data and analyze this data to be further able to explain the relationship between multiple variables. This enables the study to explain the effect different variables have on the acceptance and resistance towards unmanned convenience stores. Because the quantitative method is used for examining relationships in a numerical approach (Saunders, Lewis, and Thornhill 2019), the research strategy for this thesis is therefore going to be quantitative. Furthermore, as previously stated in 3.1, the hypotheses for this research are based on previous research presented in the literature review. However, the context of this research differs from the previous research and will therefore contribute new knowledge. On the other hand, if this particular field of study had already been conducted, then a qualitative approach might have been more appropriate. This is because of its capacity to determine new variables (Corbin and Strauss 2008). However, this study does not have the ambition to determine new variables, and it is therefore not a limitation to exclude a qualitative or a mixed method. Also correlating to the choice of a deductive approach, this thesis aims to generalize the results to the segmented target group, which can be done due to a quantitative research strategy. It is arguably possible to generalize results based on a qualitative strategy as well. For example, similarities in settings from one research can be applied in other settings and thereby create some generalisability. However, there is still criticism regarding the generalisability of these kinds of studies as a result of the small sample sizes (Saunders, Lewis, and Thornhill 2019).
3.3 Research Design

The research design is considered a framework or an overall plan for how you will gather and analyze the data. Establishing such a framework is crucial to be able to answer your research questions (Bryman and Bell 2011; Saunders, Lewis, and Thornhill 2019). According to Saunders, Lewis, and Thornhill 2019, there are six different types of methodological choices: mono-method (quantitative or qualitative), multi-method (quantitative or qualitative), and mixed-method (simple or complex). The mono-method is appropriate when the researchers are conducting either a quantitative or qualitative approach. The most appropriate choice in this research is, therefore, the mono-method due to the fact that this research is based on quantitative data (Bryman and Bell 2011). Furthermore, the mono-method only uses one technique to gather data. Because this research does not require multiple techniques other than the survey to be able to answer the present research question, it is not a limitation to only collect data through one technique (Saunders, Lewis, and Thornhill 2019).

Furthermore, there are a number of strategies for gathering data, and these are: narrative inquiry, grounded theory, action research, ethnography, case study, archival research, experiment, and survey. In this thesis, the most appropriate strategy for gathering data is going to be through a survey. This is because the data is then gathered through questionnaires, which allows the researcher to collect standardized data from a large number of people in an economically friendly way. This, in turn, leads the researcher to make reliable comparisons and conclusions of the selected population (Saunders, Lewis, and Thornhill 2019). This is favorable considering that the credibility in the context of qualitative research, to some extent, lies in the number of valid respondents that the researchers manage to obtain (Burmeister and Aitken 2012). Furthermore, the survey strategy allows the researchers to collect and then analyze data quantitatively with the help of inferential and descriptive statistics. Therefore It will be easy for other stakeholders or researchers operating in this field to easily understand the presented results and findings (Saunders, Lewis, and Thornhill 2019).

3.3.1 Time Horizon

For the time horizon of the research design, there are two main strategies: longitudinal and cross-sectional. Longitudinal studies follow the same people being studied for a period of time, allowing these types of research designs to study change or development. This is in contrast to cross-sectional studies, which study new people for each interview at a particular time (Saunders, Lewis, and Thornhill 2019). The appropriate time horizon for this thesis is the cross-sectional study. Firstly because this research does not require the researchers to follow the respondents for a period of time, which is the premise for a longitudinal approach, in this study, it is more appropriate to include a larger sample size at a particular time because to answer the research question of this thesis, it is not required to measure changes over time periods. Secondly, the cross-sectional study also allows the researchers to collect a large amount of data relatively cheaply (Lauren 2020).
3.4 Type of Data

There are two types of data collection: primary and secondary data. Primary data are collected in order to answer a specific research problem by using procedures best suited for that research question. Every time such data is collected, it adds to the existing social knowledge. The material is then published and reused by other researchers: it is then referred to as secondary data (Hox, Boeije 2005). Primary data can, for example, be obtained from interviews, questionnaires, focus groups, etcetera. Versus secondary data that can include material such as data obtained from institutions or data from previous research (Saunders, Lewis, and Thornhill 2019).

As indicated in the research gap and literature review, there is a lack of knowledge regarding the enhancers and inhibitors related to unmanned stores from the perspective of Gen Z. Therefore, the data in this research was obtained only from primary data collection. As mentioned earlier, this primary data was collected from a survey in the form of a questionnaire.

3.5 Research Method

A research method is the techniques, strategies, or processes used to collect data for analysis in order to then create a better understanding or find new information on a topic (University of Newcastle Library 2023). There are different types of approaches for a research method, quantitative and qualitative (Bryman and Bell 2011). The qualitative method collects data about emotions, behaviors, experiences, and meanings individuals attach to them. This is done to better understand complex concepts, cultural phenomena, or social interactions and is useful when explaining how or why things have occurred or when interpreting-describing actions and events. This is in contrast to the quantitative method, which builds on numerical data that is measured, ranked, or categorized with help from statistical analysis. This method aims to uncover relationships and patterns and make generalizations. An approach useful for finding how much, how many, how often, and to what extent (University of Newcastle Library 2023).

As previously mentioned in 3.2, this research used a mono-method, quantitative methodology to be able to answer the research question. This is because this research aims to explain the relationship between variables. In order to do this, a regression analysis was conducted to test the hypotheses. Furthermore, to collect the data necessary for this research, the researchers used a survey in the form of a questionnaire.

3.5.1 Survey Strategy

Survey strategies are often preferred by respondents due to how easy it is to understand and explain a survey. It is also beneficial because it is easy for the researcher to gather more significant quantities of data and analyze this information (Saunders, Lewis, and Thornhill 2019). There are, however, different channels that can be used when conducting a survey
(Brynman and Bell, 2019). In this research, the questionnaire was accessed through the online platform Facebook and additionally provided in the form of a face-to-face questionnaire. The reason for choosing this strategy is due to the large sample size needed for valid results. According to Sargeant (2012), in quantitative research, the sample size needs to be large enough to be able to conduct statistical calculations and ensure sufficient capacity to confirm that the results can be trustworthy. There are, however, no clear guidelines for exactly how large a particular sample size should be to make it statistically justified. However, more respondents will contribute to a better understanding of the population (Bryman and Bell 2011).

Furthermore, Green (1991) did develop a rule of thumb for deciding the appropriate sample size. The calculation is that the sample size should be larger than 50 plus 8 times the number of independent variables. This research used eight independent variables, resulting in a minimum sample size of 114 respondents, which for this research was achieved by collecting 133 valid responses.

3.6 Sampling and Data Collection

3.6.1 Selection of Sample
The sample is used to statistically determine something about a population, and there are different ways to select the sample. Probability sampling is when the respondents are randomly selected and are mostly used by a simple random selection method. This indicates that everyone from that population has the same probability of being selected for the survey (Saunders, Lewis, and Thornhill 2019). For this research, it would have been optimal if it was possible to reach out to every individual of Gen Z in Sweden and thereby conduct a probability sampling. However, this would not have been feasible for the researchers, and therefore this survey is forced to conduct a non-probability sampling.

More specifically, this research did use a self-selection survey, which means that each individual chooses their desire to participate in the survey by themself (Saunders, Lewis, and Thornhill 2019). This type of sampling does decrease the generalizability because of the risk that the participants are like-minded in terms of having an interest in the research topic. On the other hand, this perceived interest might also contribute to thoughtful answers (Lundin and Paridon 2022).

3.6.2 Data Collection
As previously mentioned, this thesis used Facebook as a platform to post the questionnaire, which is also why the survey automatically became voluntary. The main reason to use Facebook is that this platform provides the opportunity to reach individuals from all over Sweden. This is highly beneficial for this research; thus, it will better represent the population, compared to if the data were only collected through the face-to-face questionnaire. To further ensure that this research represents the population of Gen Z in Sweden, the survey was posted in multiple Facebook groups. In this way, the obtained data represent people from Pajala,
Stockholm, Luleå, Piteå, Gällivare, Göteborg, Alingsås, Kalmar, Hånger, Linköping, Västra Ämtervik, Malmköping, and Töreboda. According to Percept Research (n.d), an online survey attracts the majority of young people in the first 48 hours, and then they decide whether to become a respondent or not.

Additionally, to further increase the response rate, there was a collaboration with the unmanned store chain 24sju, who agreed to post the survey on their own Facebook page. The responsible researchers also posted the questionnaire on their own Facebook pages, again to increase the number of respondents. The survey was available between the 26th of April to the 3rd of May (2023), adding up to eight days in total. The reasoning behind the choice of uploading the survey on a Wednesday is that this day of the week is one of the days where there is the most engagement by Facebook users (American Marketing Association 2022).

Furthermore, the survey was also conducted in person, whereby the researchers visited different locations in Alingsås and Kalmar. The reason for combining the online data collection with in-person data collection is that the online survey provided on Facebook did not contribute to the required sample size based on Green’s (1991) rule of thumb that was earlier estimated for this research. The data collected in person were later manually transferred into SPSS. Although the researchers used two different data collection methods (online and face-to-face), the exact same questionnaire was used for both occasions. This is in order to minimize the potential risk of different conditions and, thereby, differences in the results between the collection methods. However, there are potential risks and weaknesses with both face-to-face and online questionnaires, and the appropriate choice vastly depends on the nature of the research. For example, face-to-face questionnaires make it easier to ensure the most representative results. However, this is possible with online surveys as well, simply by adding control variables (Szolnoki and Hoffmann 2013).

Strategically locating the survey close to these stores might have provided respondents with a better understanding and interest in the concept. However, the locations were not necessarily close to an unmanned convenience store when collecting the data face-to-face. This was because of the limited number of individuals of Generation Z visiting such a store at a particular time.

3.7 Operationalization and Survey Construction

Operationalization is described as a translation whereby the researchers make concepts into measurable indicators (Saunders, Lewis, and Thornhill 2019). To successfully operationalize the concepts, previous research in this field of study has been carefully studied and used as a framework—this in terms of later being able to develop the hypotheses, variables, and items. Although the item construction has been influenced by previous research, some of the items were adjusted to fit this particular research better.
As presented in the list below, the different hypotheses were calculated based on different numbers of items, from one item to two items per hypothesis. It would have been desirable to add multiple items for each hypothesis to provide higher reliability. On the other hand, it is crucial to keep the length of the survey appropriate. If multiple items were added, there is a risk that the survey would have been perceived as too long, which could have led to routine responses, or that people end the survey before finishing (Quin 2010).

**Table 1: Operationalization**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Questions</th>
<th>Sources</th>
</tr>
</thead>
</table>
| Acceptance towards unmanned convenience stores | A1: Unmanned convenience stores are interesting to me.  
A2: I would probably visit an unmanned convenience store (regardless if for the first time or again). | Self-developed  
Self-developed |
| Resistance towards unmanned convenience stores | R1: “Unmanned convenience stores are not interesting to me.”  
R2: “I would probably be reluctant to use unmanned convenience stores.” | Lundin and Paridon (2022)  
Lundin and Paridon (2022) |
| H1 & H2 | TR1: “New technology contributes to a better quality of life”.  
TR2: “Other people come to me for advice on new technology”.  
TR3: “Sometimes, I think that technological systems are not designed to be used by ordinary people”.  
TR4: “People are too dependent on technology to do things for them”. | Parasurman and Colby (2014)  
Parasurman and Colby (2014)  
Parasurman and Colby (2014)  
Parasurman and Colby (2014) |
| H3 | EOU1:“It would be easy for me to learn how the technology works in an unmanned convenience store (e.g., identification, self-scanning, and payment)”  
EOU:2 “Overall, I think it would be easy to shop in an unmanned convenience store.” | Lundin and Paridon (2022)  
Lundin and Paridon (2022) |
<table>
<thead>
<tr>
<th>H4</th>
<th>PU1: I believe that unmanned convenience stores are useful for me.</th>
<th>Self-developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>H5</td>
<td>PE1: I believe that I would enjoy visiting an unmanned convenience store.</td>
<td>Self-developed</td>
</tr>
</tbody>
</table>
| H6  | SI1: “I see myself as the typical consumer who would shop in an unmanned convenience store”  
SI2: “The image of the typical consumer to an unmanned convenience store reflects me as a person.” | Lundin and Paridon (2022)  
Lundin and Paridon (2022) |
| H7  | PR1: I believe that there is an increased risk that something could go wrong when shopping in an unmanned convenience store. Both mistakes from my part, or the technology itself. | Park and Zhang (2022) |
| H8  | HI1: I would rather get help from an employee instead of using my smartphone or a self-service station.  
HI2: “My grocery shopping experience would not be as enjoyable if I had to use a machine to check out my groceries instead of letting an employee perform the checkout.” | White et al. (2012)  
White et al. (2012) |
| H9  | SC1: I believe there is an increased risk that my personal information such as PIN codes, or bank details ends up in the wrong hands when using the technology in unmanned convenience stores. | Laukkanen (2016) |

As shown in the Appendix (3 and 4), the survey was translated into Swedish. The reason for this is that the survey was conducted in Sweden. Translating the survey is crucial because it gives the respondents an overall better understanding, which in turn leads to more accurate results (Clint 2022). Furthermore, the survey started with three demographic questions and one introduction question. The introduction question was mandatory because the researchers had to make sure that the respondents had read the information and confirmed that they were willing to participate. Furthermore, the age question was mandatory because the researchers needed to know if the respondents were in Gen Z to be able to answer the research question. The other two demographic questions were optional: gender identity and whether the respondent has ever visited an unmanned convenience store. Gender identity was included to make sure of better representability for Gen Z. The question regarding if the participants had ever visited an
unmanned store was included because it would have been interesting to compare the two segmented groups and identify if there were any differences. The positioning of the demographic questions is at the top of the questionnaire because of the impotence of these questions for this particular research. Having these questions at the beginning will ensure a higher response rate for the demographic questions, and it is a great way to introduce the questionnaire in a softer way (SmartSurvey n.d).

3.7.3 Scale
There are different measurement scales that can be used in surveys depending on the nature of the question. These are the nominal scale, ordinal scale, interval scale, and ratio scale (Saunders, Lewis, and Thornhill 2019). For the demographic questions in this survey, the researchers used a nominal scale. Thus these questions were not supposed to be numerically defined or ranked. Additionally, surveys can use the Likert scale, which is opinions as numerical data (University of Newcastle Library 2023). This type of scale provides the respondents to state how much they agree or disagree with a statement (Saunders, Lewis, and Thornhill 2019). This is why this survey uses the Likert scale for the survey questions.

Furthermore, the number of alternatives for this type of scale can vary. In this survey, the researchers choose to have seven alternatives (Appendix 2 and 4). The reason for choosing a 7-point Likert scale is because, when compared to lower-order items, it is easier to use, more accurate, and a better reflection of the respondents' viewpoints. Also, when compared to higher-order items (such as the 10-point Likert scale), the 7-point scale appears to be the best alternative for surveys evaluating, for example, usability (Finstad 2010)

3.7.4 Pilot Testing
The pilot testing (or pilot study) is a tryout for the questionnaire on a smaller scale than the actual survey. In this way, the researchers can get feedback and thereby improve the quality and efficiency of the survey (Anesthesiol 2017). For this research, the pilot testing was conducted by five individuals known by the researchers and in the age category of Gen Z. After they had answered the questionnaire and read the instructions, the respondents were then asked to give feedback on the survey and state how long it took them to finish answering the questions.

From the results, some words that were perceived as challenging to understand could be identified. This finding led to minor changes in the grammatical structure in order to make the questionnaire understandable for everyone. Even though these were minor changes, words, and phrases are crucial to be able to express the meanings of the questions and thereby ensure that the respondents understand the questions in the same way (Pew Research Center n.d). Furthermore, one of the respondents indicated that he perceived the first couple of questions to be more complex than the other ones. This led to a rearrangement in the order of the questions, whereby the researchers chose to provide the more simple questions in the beginning. This was to ensure that the respondents were engaged and interested in the survey (Pew Research Center n.d). Lastly, the pilot testing provided an average timeframe for finishing the survey, which was
approximately four minutes. This information was used to encourage people to participate in the survey.

3.8 Data Analysis

The data collection was transferred to the statistical computer program SPSS in order for the researchers to analyze the data.

3.8.1 Descriptive statistics

Descriptive statistics are used as a tool that summarizes and allocates data in an organized manner so that it can describe relationships between different variables in a sample (Yellapu 2018). It also enables the researcher to describe and compare variables numerically (Saunders, Lewis, and Thornhill 2012) so that vital calculations can be completed (Yellapu 2018). Yellapu (2018) highlights that descriptive statistics is seen as an essential step to take when conducting research; it should also be conducted before making inferential statistical differentiations. Nominal, ratio, ordinal, and interval are different types of variables used in descriptive statistics, along with measures of central tendency, frequency, dispersion, and positions. However, the central tendency and the dispersion are seen as the most commonly used to describe data (Saunders, Lewis, and Thornhill 2009). The researchers have chosen to focus on these two variables. First up comes central tendency, which is most commonly expressed in ways of median, mean, and mode, showing the wide or narrow distribution of values. The median gives out the middle value of a variety of points, while the mean represents the average value, and then there is the mode value which highlights the value that emerges most often (Bryman and Bell 2011; Saunders, Lewis, and Thornhill 2009). The mean is the most commonly used of these three (Manikandan 2011). Repeated samples taken from the same population also have a tendency to have similar means. Therefore it is best to resist potential fluctuations that can occur between samples taken.

Moreover, this thesis presents the dispersion, which the researchers believe is important for this research. Dispersion focuses on displaying how the data is spread out in the central tendency. It can be calculated by both the standard deviation and interquartile range described (Saunders, Lewis, and Thornhill 2009). These are the most frequently used approaches to find and describe dispersion. The interquartile range has an upper and lower range of quartiles; the date is equal to the difference of that specific range. Between both the upper and the lower quartile, the median is located, pointing out the relation between the quartile and median (King and Eckersley 2019). Now to the standard deviation, which is the value of variation near the mean, described as a value average by Bryman and Bell (2011). To evaluate the shape and spread of the distribution that the data has, kurtosis and skewness are used. One of them should, according to (Hair et al. 2018), aim for a normal distribution. Skewness is described by Abdur Rashid (2018) as a symmetry measurement stretching from -1 to +1. The skewness for a normal distribution is zero, meaning that any symmetrical data should have as near zero skewness as possible. It is built of a graph with kurtosis that demonstrates the shape when it peaks and flats out (Hair et al. 2018). The kurtosis often ranges from -3 to +3; values that are
higher or less than that are a form of an extreme value and not normal. Negative values result in a more horizontal distribution which often gives out lesser outliers. The positive one gives out more peaking distributions, resulting in more visually extreme outliers compared to negative values. All this shows that both kurtosis and skewness values should be as close to zero as possible to show a more or less normal distribution.

3.8.2 Coefficient of determination
This research uses a correlation analysis in order to determine the relationship between variables. In other words, to see if changes in one variable will lead to changes in another variable. The correlation coefficient is going to be somewhere between -1 and +1, which represents the relationship between the variables. A value close to +1 indicates a positive relationship, while a value close to -1 indicates a negative relationship. However, a value of 0 means that the variables are entirely independent of each other (Saunders, Lewis, and Thornhill 2019). For this research, the adjusted R squared (R2) was used to get a more accurate view of the relationship between variables. The adjusted R2 is explained in the same way as the correlation coefficient, whereby when R2 is equivalent to 1, there is a perfect correlation. When R2 is equivalent to 0, there is no correlation (Hair et al. 2018). Values between 0 and 0.3 (0 and -0.3) imply a weak correlation, while values between 0.3 and 0.7 (-0.3 and -0.7) are considered a moderate positive (negative) correlation. In addition, values between 0.7 and 1 (-0.7 and -1) indicate a strong positive (negative) correlation (Ratner, 2009).

3.8.3 Regression analysis
Regression analysis is one step ahead of correlation, predicting values of outcomes or dependent variables with respect to potential changes in explanatory or independent variables, says Faizi and Alvi (2023). In other words, this could be described as an alteration measurement of a dependent variable after an independent variable has been changed (Bryman and Bell 2011). The larger the change is, the more significant the independent and dependent variables are in its relationship. Jobson (1991) describes that multiple linear regression is a model that is usually applied to statistical techniques in the case of relating a set of two or more variables. Because this study uses more than one predictor variable, this study used multiple linear regression analysis to test the hypotheses.

When using multiple linear regression, there are five assumptions that need to be satisfied: linearity, homoscedasticity, normality, independence of errors, and independence of independent variables (CFA Institute 2023). Linearity relates to how the changes in the dependent variable relate to changes in the independent variable. This can be influenced by outliers and variables that upset the linearity. To identify outliers and assure linearity, a scatter plot can be used. Another assumption that is best tested through scatter plots is homoscedasticity, which identifies how equal the variance is for the dependent and independent variables (Saunders, Lewis, and Thornhill 2019). This thesis presents the scatter plots in Appendix 5. Normality in the regression relates to how close the data is to a normal distribution. The distribution can be analyzed through a probability plot by comparing the
residuals to a normal distribution. The points should lay close to the normal distribution line; otherwise, there might be problems with normality (Hair et al. 2018). This thesis presents the probability plots in Appendix 6. The following assumption is the independence of errors, which refers to no relationship between the variables and the residuals. This assumption is easily examined by comparing the residuals and fits, whereby the correlation should be equal to 0 (Pennsylvania State University u.d). Lastly, the independence of independent variables is an assumption that refers to no perfect correlation between variables. This is important; thus, multicollinearity would make it challenging to identify the effects caused by individual variables. The collinearity can be measured through correlation coefficients, whereby 1.0 indicate extreme collinearity. As a rule of thumb, the correlation coefficient should not be 0.9 or above. Moreover, collinearity can also be measured through the variance inflation factor (VIF). The VIF test should not be above 10; thus, this indicates high collinearity (Hari et al. 2014). This research measures both correlation coefficients and VIF (table 5 and table 6) in order to ensure the independence of independent variables.

Apart from the assumptions, there is the Beta value, which is a tool for the measurement of linear regression. It shows how a potential change in the independent variable affects the dependent one. Values greater than zero indicate a positive correlation, while those that are less than zero represent a negative association (Bryman and Bell 2011). A highly reliable R-squared is essential; how much so depends on the subject itself (Peterson 2022). Hair et al. (2018) explained that using a 95% statistical significance level implies that the p-value must be less than 0.05; otherwise, the hypothesis needs to be rejected (Bryman and Bell 2011; Hair et al. 2018).

3.9 Quality of Research

Reliability and validity are two important measurements of quality when it comes to business research. Thus, to test the reliability of research, it is essential to know the prominent factors involved to see if a measure is reliable or not. These are stability, internal reliability, and inter-observer consistency. On the other hand, there is validity which refers to the extent to which an indicator precisely measures a concept. There are numerous methods, such as; face, construct, convergent, concurrent, and predictive validity. It is also stated that the issue of measuring validity is to determine whether a measure of a concept actually measures that specific concept or not Bryman and Bell (2011).

3.9.1 Reliability

Reliability is a term for making research trustworthy in a correct manner so that the reader can use the given information. In the case of a quantitative survey, the survey should, if reliable, give out the same results in the case of a later duplication. If that is not the case, possible errors or other mishaps could be at fault for the difference (Yin 2018). When researchers are conducting a survey, it is essential to produce it reliably. The reason for this, according to Crocker and Algina, 1986 (from Thanasegaran 2009), is when research is poorly conducted or
has a too broad amount of content, low internal consistency could occur in these areas. By conducting hypothesis testing and utilizing gathered data from the survey, the statistical measurement called Cronbach’s alpha coefficients could be helpful in calculating and determining the research’s reliability. This by finding the internal consistency that is between the survey questions (Yurdugül 2008).

A higher value of Cronbach’s alpha gives less proof of reliability, says Taber (2018). However, excessive values could, on the other hand, be seen as disagreeable. Especially in the case when testing is used to obtain scientific knowledge and a general understanding of something. What is the value of Cronbach’s alpha to reach for then? According to Nawi, Tambi, Samat, and Mustapha (2020), the optimum value stretches from 0.7, and 1; an even higher value is not always seen as good. A low value, on the other hand, may influence the validity of the gathered data; this could occur due to a lack of respondents attending the survey. As previously stated in 3.5.1, this survey conducted the required amount of respondents for this particular research. Furthermore, there is no agreed minimum value for Cronbach’s alpha to be accepted. However, Hinton et al. (2004) stated that values below 0,5 can rarely be accepted. However, this depends on the number of items used. For instance, more than ten items and a Cronbach’s alpha under 5 are usually unacceptable. All this is something that has been taken into account, providing reliable research.

For this research, multiple variables use two items, and the reliability has therefore been tested for these. Although TR uses multiple items, the two variables regarding TR have not been measured for reliability. This is due to the fact that these two variables consist of four factors (insecurity, discomfort, innovativeness, and optimism) that are not measuring the same thing. Thus Cronbach's alpha does not apply to TR.

3.9.2 Validity
Validity is a debatable term; even though it is seen as an easy-to-understand concept, it all depends on the point of view and the subject (Borgstede, Buntins, and Eggert 2017). However, after ages of debating, validity now is commonly understood as to which degree a test measures what it is supposed to measure (Cattell 1946, from Borgstede, Buntins, and Eggert 2017). Saunders, Lewis, and Thornhill (2012) described that in the case of using a survey, the questions themselves could provide the needed data. Face validity is of use to determine this study’s validity. This is because of the very ease of use and application, especially for surveys ranging from 100 to 200 respondents (Dillman 2009). It also fits researchers that are under time pressure (Saunders, Lewis, and Thornhill 2012). Face validity is defined by Holden (2010) as “... the degree to which these respondents view the content of a test and its items as relevant to the context in which the test is being administered.”. In other words, the term could be described as whether the results of the questionnaire seem to make sense or not (Saunders, Lewis, and Thornhill 2012). In the sense of this research, the researchers have answered the question of face validity through a pilot study (mentioned earlier in 3.7.4), a miniature version of the full-scale study (Teijlingen and Hundley 2002). It is seen as a tool for researchers to
pre-test and understand a specific research instrument (Baker 1994, from Teijlingen and Hundley 2002). In the case of this study, the use of convenience sampling has been chosen based on the ease of use because of the small group of participants needed (Zickar and Keith 2022). Convenience sampling is a term for choosing participants based on ease of availability for the researchers, who could be acquaintances to the researchers.

Moreover, it has been taken into account that more different ways than face validity are relevant for this study. For example, Ahmad and Magariños (2017) said that research has concluded that there are more types of validity. One such is construct validity, a term that also fits questionnaires that provides and test clear and relevant hypotheses to then try to disprove them in different ways possible (Bannigan and Watson 2009). It is defined as to which degree the conclusions can be connected from the operationalization and also the relation between the theoretical model and the measurement (Yilmaz 2013). Taherdoost (2016) describes the same validity as a way to measure how well an idea was constructed or carried through into being a fully operational reality. The term operationalization often occurs in construct validity; it results in a commitment to a set of questionnaire items that will act up as the concepts of the study (Babbie 2004). In other words, it turns abstract concepts into measurable observations (Emmerich et al. 2016) by doing surveys or other data-gathering methods (Babbie 2004). Operationalizing concepts will, in turn, become a construct (Kaur and Mittal 2021). This is something that has been taken into consideration when designing this survey questionnaire. By getting a deeper understanding of this subject, it is ascertained that similar studies have done quantitative questionnaires. Making the researchers more secure in the methodology and in establishing the survey in the best possible manner, maximizing the chance of good construct validity.

The term convergent validity also answers the construct validity by studying how closely these research results are related to other already performed studies. The result should correlate with previous research, although it should not do so with non-similar and unrelated ones (Krabbe 2017). Moreover, by understanding the previous research on this subject, the possibility of additional insertion of criterion validity. According to Saunders, Lewis, and Thornhill (2012) is the ability to make future predictions by the measured questionnaire results. Using measurable questions in the questionnaire could later be used to predict future results. In this case, how the future behavior of Gen Z will be toward unmanned stores? This could be done by collecting the statistical analysis data to see any correlation, for example. For this research, the researchers discuss and compare the results made from the data collection with previous research in the analysis chapter.

3.10 Ethical Considerations

To answer the research questions of this thesis, the researchers have been following a few ethical principles. Firstly, the Academy of Management’s (AoM) code of general ethical conduct was used when handling the information given by the survey respondents (Academy of
Management n.d). The general principles are to be responsible and trustworthy, show integrity by being accurate and honest, and be respectful of people’s dignity and rights. Moreover, the Market Research Society’s (MRS) code of conduct was also seen as relevant here after reading the principles of MRS (2014). Their code of conduct focuses on honesty, confidentiality, consent of the people, and also their well-being while at the same time prioritizing involved stakeholders. Furthermore, MRS stated the need for good independent judgment and ways of protecting their own integrity and reputation as researchers. Both the MRS’s code of conduct and AoM’s code of ethics gave us, as researchers, an excellent guideline to follow so that the study could be conducted and provided in an ethical and trustworthy manner.

First off, the survey is focused on reaching an audience that is over the age of 18 years and younger than 26, which is the span of Gen Z. Even though the generation stretches far younger, this research does not focus on people under the age of 18. Parent supervision and the need for a second juvenile structured survey (Leeuw 2011) are a few reasons why the researchers have decided not to take minors into consideration. The survey obviously contains the main questions. However, it also provides information about this research, such as who the researchers are, the purpose of this study, what the participation will lead to, and contact information. Moreover, it also tells the participants about the integrity, especially that the survey is answered anonymously, how the data was going to be used, and that it is entirely voluntary to participate in this survey. After designing the needed survey for this research, it was set through the pilot study. After that, it was posted in the selected Facebook groups and sent privately to the selected store franchise in this industry.

Moreover, the decided strategic locations were based geographically in a way that ensured a wide data collection all across Sweden. Because of this decision, the researchers contacted these store locations via Messenger and telephone so that they could be informed about this research and asked to participate in the collaboration. The positive response from most of the contacted locations allowed the researchers to send them the survey and other information they needed. The collaboration resulted in them posting the survey on their Facebook profile, reaching their followers. At the same time, the researchers connected to different Facebook groups where members and purpose are directly connected to communities in the chosen geographical location. These groups are all about solidarity, and bringing local people together when it comes to almost everything, even discussions about local businesses (Kleeman 2018). It was essential here on the researcher's part to choose the right fitting groups, respect their rules, and act in a serious manner. The researchers believe that these groups are a perfect place to share the survey, while these local unmanned stores also do the same on their personal Facebook pages. Furthermore, and as described in 3.6.2, the survey has also been conducted in person. For the in-person data collection, the researchers used the same questionnaire and the same information provided in the online survey. Therefore the respondents are provided with all of the required information mentioned above and presented in appendix 1 and 3.
After the survey was done, the gathered information was secured and analyzed by the researchers. When adding up the results, it was the researcher's responsibility to use the data responsibly, accurately, and honestly, which means that no personal implications nor adjustments were to be made that could modify or perturb the result and conclusion. Only after this research is fully completed will it be offered to the chosen stores or to any participants that seek the same—giving them an opportunity to understand and see the outcome of this study so that they could take notes.

The researchers have only asked relevant questions that are needed to formulate a result for this research. Gathering meaningful and crucial information that was structured in a survey-specific order. The first question strived for more personal information, such as gender and age. Here it was made sure that the options were clear and comfortable to answer so that mishaps are limited and satisfaction is high. The demographic questions were crucial for the research question and to make sure the survey achieved a good representation of the population.

3.11 Sustainable Considerations

During all the time that this research thesis has been ongoing, the researchers made sure that much focus was set on sustainability. By conducting the empirical gathering and general writing in a correct manner, the goal of sustainability was achieved. To do this more specifically, the researchers followed the idea of the “triple bottom line,” which is a business economic concept (Miller 2022). It consists of three types of focus areas, which is social, environmental, and economic sustainability.

Social sustainability comes first, in which we, as researchers, had to remain on an excellent social level. Meaning that the researchers needed to perform and act in the correct manner when conducting this research together and with the other individuals that are linked to this research. Social communication required the researchers to be clear in all conditions to prevent potential misunderstandings that could harm the study. One of the main reasons why this was necessary is that both researchers were located far from each other geographically, with no physical contact at all between each other. Environmental sustainability, on the other hand, was as important as the social one. Thus, when the empirical data was collected, no unnecessary environmentally harmful travel was to be done by us. The only way of transportation in the sense of conducting this study was by walking, biking, or taking public transportation. Neither have there been used physical papers, pens, or supplies that are seen as harmful to the environment. The last part of the concept is economic sustainability, which focuses on the use of the spending situation of the research. To be as economical as possible, the researchers have not bought unnecessary supplies, equipment, or services to help with the development of this study. Other more minor expenses, such as bus tickets, stands for each of the researchers. It is noteworthy that the researchers have not proceeded to pay the participants of the survey nor the franchisees; everything is voluntarily done.
4. Results

This chapter presents the results gathered from the analysis of the empirical data. Firstly the representability and descriptive statistics are presented. Secondly, reliability and validity are measured and presented. Thirdly the hypotheses are tested and explained with the help of a regression analysis. Lastly, the degree of explanation is illustrated by measuring the adjusted $R^2$.

4.1 Response Rate and Representability

As shown in Table 2, there were a total of 156 respondents who participated in the survey. Unfortunately, 23 of these respondents were not in the age group of Generation Z and are therefore considered invalid for this research. The researchers did provide information regarding how the researchers only seek respondents from Generation Z, both in the introduction to the survey (Appendix 1 and 3) and in the Facebook posts. Apart from other generations participating in the survey, there were no other respondents that needed to be removed from the survey. Hence the total number of valid respondents used for further analysis was 133.

Table 2 also presents the respondents with previous experience from visiting an unmanned convenience store. For this variable, 72.2 percent had previous experience, and 27.8 percent did not have any previous experience. Lastly, the demographic variables included gender, whereby 61.7 percent were female, and 38.3 percent were male. The survey did include the answers: other gender identities and did not want to answer (Appendix 1 and 3). However, none of these options were chosen by any respondent in this survey.

Table 2: Demographic variables

<table>
<thead>
<tr>
<th>Options</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation Z</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>133</td>
<td>85.3</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>14.7</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>100.0</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96</td>
<td>72.2</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>27.8</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
<td>100.0</td>
</tr>
</tbody>
</table>
4.2 Descriptive statistics

In Table 3, the descriptive statistics are presented for each question. The questions are presented with an abbreviation; however, the complete questions are stated in Table 1. As earlier mentioned, this research used a 7-point Likert scale. The minimum and maximum statistics represent what the lowest/highest rate was for each question. The only question that did not have responses across the full scale was performance risk, whereas no respondent totally agreed with the statement. The mean statistics represent the average answer for each question, which in this case, varies a lot between items. This was expected due to the different nature of the questions and hypotheses. The column std. deviation explains the degree of variation from the mean for each question. In this survey, the highest standard deviation is 1.955 and ranges to the lowest at 0.756.

The skewness statistics and kurtosis statistics are displayed to the right of Table 3. As shown, there are multiple items with exceptionally high values, as well as multiple items with extremely low values for skewness and kurtosis. This can be explained by the very high and low mean values for these questions.

Table 3: Descriptive statistics

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Gender</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>82</td>
<td>Male</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>2.93</td>
<td>1.51</td>
<td>1.875</td>
</tr>
<tr>
<td>R2</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>1.59</td>
<td>1.99</td>
<td>-2.96</td>
</tr>
<tr>
<td>A1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>5.69</td>
<td>1.34</td>
<td>-1.26</td>
</tr>
<tr>
<td>A2</td>
<td>132</td>
<td>1</td>
<td>7</td>
<td>6.11</td>
<td>1.36</td>
<td>-1.93</td>
</tr>
<tr>
<td>TR1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>5.59</td>
<td>1.48</td>
<td>-1.39</td>
</tr>
<tr>
<td>TR2</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>4.41</td>
<td>1.93</td>
<td>-0.35</td>
</tr>
<tr>
<td>TR3</td>
<td>132</td>
<td>1</td>
<td>7</td>
<td>3.28</td>
<td>1.51</td>
<td>1.18</td>
</tr>
<tr>
<td>TR4</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>3.73</td>
<td>1.55</td>
<td>0.10</td>
</tr>
<tr>
<td>EOU1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>6.21</td>
<td>1.44</td>
<td>-2.39</td>
</tr>
<tr>
<td>EOU2</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>8.82</td>
<td>1.75</td>
<td>-3.72</td>
</tr>
<tr>
<td>U1</td>
<td>132</td>
<td>1</td>
<td>7</td>
<td>5.70</td>
<td>1.64</td>
<td>-1.26</td>
</tr>
<tr>
<td>E1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>5.89</td>
<td>1.51</td>
<td>-1.76</td>
</tr>
<tr>
<td>ST1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>5.24</td>
<td>1.33</td>
<td>-0.94</td>
</tr>
<tr>
<td>SD</td>
<td>132</td>
<td>1</td>
<td>7</td>
<td>5.04</td>
<td>1.91</td>
<td>-1.74</td>
</tr>
<tr>
<td>HI1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>7.67</td>
<td>1.82</td>
<td>0.92</td>
</tr>
<tr>
<td>HD2</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>5.07</td>
<td>1.90</td>
<td>1.118</td>
</tr>
<tr>
<td>PR1</td>
<td>133</td>
<td>1</td>
<td>6</td>
<td>1.82</td>
<td>1.29</td>
<td>1.459</td>
</tr>
<tr>
<td>SC1</td>
<td>133</td>
<td>1</td>
<td>7</td>
<td>2.05</td>
<td>1.46</td>
<td>1.536</td>
</tr>
</tbody>
</table>

Valid N (listwise) 125
Note: $R = \text{Gen Z's resistance}, A = \text{Gen Z's acceptance}, TR1 & TR2 = \text{HighTR (high technology readiness)}, TR3 & TR4 = \text{LowTR (low technology readiness)}, EOU = \text{Perceived ease of use}, U = \text{Perceived usefulness}, E = \text{Perceived enjoyment}, SI = \text{Self-image incongruence}, HI = \text{Need for human interaction}, PR = \text{Perceived performance risk}, SC = \text{Security concerns}.$

4.3 Reliability

As previously mentioned in 3.7, some of the hypotheses required multiple items. Therefore it is important that Cronbach's alpha is calculated to ensure that the questions measure the same concept. As earlier stated, the optimal Cronbach's alpha ranges from values between 0.7 and 1.0. As shown in Table 4, there are two variables with a lower Cronbach's alpha than 0.7: Acceptance towards unmanned convenience stores and perceived ease of use. However, when a researcher uses few items, a Cronbach's alpha of 0.5 is considered poor yet acceptable. This is because the number of items influences the value of Cronbach's alpha (Hinton et al. 2004), and this research uses at most two items per variable.

Moreover, the items related to perceived ease of use are cited from Lundin and Paridon (2022), whereby they use these two items to measure the same concept. In their study, Cronbach's alpha was accepted; however, they did use one additional question. Because Cronbach's alpha does not fall below the minimum value of 0.5 applied to this particular research, the research is considered reliable (Hinton et al. 2004).

Table 4: Cronbach's alpha

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance towards unmanned convenience stores</td>
<td>2</td>
<td>0.676</td>
</tr>
<tr>
<td>Resistance towards unmanned convenience stores</td>
<td>2</td>
<td>0.803</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>2</td>
<td>0.534</td>
</tr>
<tr>
<td>Self-image incongruence</td>
<td>2</td>
<td>0.880</td>
</tr>
<tr>
<td>Lack of human interaction</td>
<td>2</td>
<td>0.763</td>
</tr>
</tbody>
</table>
4.4 Regression analysis

4.5.1 Assumptions
As previously stated in 3.8.3, five assumptions were checked before the multiple linear regression was implemented. The linearity and homoscedasticity were checked by scatter plots presented in Appendix 5. Every predictor variable indicated a linear relationship to the dependent variable, and therefore the linearity assumption was satisfied. The homoscedasticity assumption is accepted as well. Thus the scatter plot over the error terms is neither diamond nor cone-shaped. The normality assumption was checked by a probability plot presented in Appendix 6. As shown, there is some derivation from the normal distribution for both resistance and acceptance. This could have affected the linear regression and made the results poor. However, this is only the case when analyzing smaller sample sizes (Kristin and Sainani 2012), and this research is therefore going to accept this assumption for this particular research. The normality assumption will be further discussed in the analysis.

Moreover, the assumption of independence of errors was checked in SPSS. All of the unstandardized residuals were equal to zero when put together. Hence also, this assumption is confirmed. Lastly, the independence of dependent variables was controlled in the correlation table (table 5). As shown in the table, no variable has a correlation coefficient above 0.9. Nighter does any variable have a VIF-value above 10, which indicates that there is no multicollinearity and the assumption can be accepted.

<table>
<thead>
<tr>
<th>Table 5: Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhancers</td>
</tr>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>HighTR</td>
</tr>
<tr>
<td>EOU</td>
</tr>
<tr>
<td>U</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>Inhibitors</td>
</tr>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>R</td>
</tr>
<tr>
<td>LowTR</td>
</tr>
</tbody>
</table>
4.5.2 Hypothesis Testing
When testing the hypotheses, this research used a multiple linear regression analysis which is presented in Table 6. As indicated by the results, perceived ease of use has no significant relationship to Gen Z’s acceptance. Thus it has a p-value above 0.05. However, the other enhancers measured (high technology readiness, perceived usefulness, and perceived enjoyment) do indicate a significant relationship to Gen Z’s acceptance because the p values are less than 0.05. Therefore it is confirmed that H1, H4, and H5 can be accepted while H3 is rejected. The table also displays the beta values, and the highest beta among the enhancers is perceived usefulness. For this variable, β is equal to 0.460, which means that when the perceived usefulness increases by one unit, the acceptance will increase by 0.460 units. The same goes for the other variables, where for every one unit increase in high technology readiness, the acceptance increases by 0.189 units. Moreover, for every one-unit increase in perceived enjoyment, the acceptance increases by 0.344 units.

The inhibitor’s low technology readiness, perceived performance risk, and security concerns all have a p-value above 0.05 and therefore do not have a significant relationship to Gen Z’s resistance. Self-image incongruence does indicate a significant relationship to resistance with a p-value of 0.006. However, it has a negative beta value of -0.253 towards the resistance. This hypothesis aimed to identify a positive relationship between Self-image incongruence and resistance; hence it can not be accepted with a negative beta value. The only inhibitor that does have a significant relationship with resistance is the lack of human interaction, which has a p-value of 0.012. This inhibitor has a beta value of 0.247, meaning that for every one-unit increase in lack of human interaction, the resistance will increase by 0.247 units. Hence the inhibitors H2, H6, H7, and H9 are rejected, while H8 is accepted.

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>St. Err.</th>
<th>Beta (β)</th>
<th>t</th>
<th>p</th>
<th>95% conf. Int.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhancers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HighTR</td>
<td>0.163</td>
<td>0.054</td>
<td>0.189</td>
<td>3.004</td>
<td>0.003</td>
<td>0.056 0.271</td>
<td>1.115</td>
</tr>
</tbody>
</table>

Table 6: Regression model Note: R = Gen Z’s resistance, A = Gen Z’s acceptance, HighTR = high technology readiness, LowTR = low technology readiness, EOU = Perceived ease of use, U = Perceived usefulness, E = Perceived enjoyment, SI = Self-image incongruence, HI = Need for human interaction, PR = Perceived performance risk, SC = Security concerns.
4.5.3 Degree of Explanation

As shown in Table 7, the R squared for the enhancers is 0.548, and for the adjusted R squared, 0.534. As previously discussed in 3.8.2, this research focuses on the adjusted R squared. This means that the included enhancers (high technology readiness, perceived usefulness, perceived enjoyment, and perceived ease of use) explain 53.4% of the variance in Gen Z’s acceptance towards unmanned convenience stores. The inhibitors had an R squared value of 0.199 and an adjusted R squared of 0.168. Meaning that the inhibitors (low technology readiness, self-image incongruence, perceived performance risk, lack of human interaction, and security concerns) explain 16.8% of the variance in Gen Z’s resistance towards unmanned convenience stores.

Table 7: Explanation

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhancers:</td>
<td>133</td>
<td>0.740</td>
<td>0.548</td>
<td>0.534</td>
<td>0.862</td>
</tr>
<tr>
<td>Inhibitors:</td>
<td>133</td>
<td>0.447</td>
<td>0.199</td>
<td>0.168</td>
<td>1.049</td>
</tr>
</tbody>
</table>

4.6 Hypotheses summary

In Table 8, the outcomes of the hypothesis test are displayed, for the enhancers H1, H4, and H5 were accepted while H3 was rejected. For the inhibitors, only H8 was accepted, while H2, H6, H7, and H9 were rejected.
Table 8: Hypotheses Results

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: High levels of Technology Readiness positively affect Generation Z’s acceptance towards unmanned convenience stores.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2: Low levels of Technology Readiness positively affect Generation Z’s resistance towards unmanned convenience stores.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3: Perceived ease of use positively affects Generation Z’s acceptance towards unmanned convenience stores.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4: Perceived usefulness positively affects Generation Z’s acceptance towards unmanned convenience stores.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5: Perceived enjoyment positively affects Generation Z’s acceptance towards unmanned convenience stores.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6: Self-image incongruence is positively affecting Generation Z’s resistance towards unmanned convenience stores.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H7: Perceived performance risk positively affects Generation Z’s resistance towards unmanned convenience stores.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H8: Lack of human interaction positively affects Generation Z’s resistance towards unmanned convenience stores.</td>
<td>Accepted</td>
</tr>
<tr>
<td>H9: Security concerns positively affect Generation Z’s resistance towards unmanned convenience stores.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

5. Analysis

In the analysis chapter, there is a discussion regarding the findings from SPSS. Firstly the demographic statistics and the assumptions will be discussed. Lastly, all of the hypotheses will be discussed in relation to the results and to previous research.

5.1 Demographic Statistics

For the demographic statistics, it was found that approximately 62 percent of the valid respondents were female and 38 percent male. It would have been beneficial to receive a more even distribution between males and females. This is because they represent approximately fifty-fifty of the Swedish population (SCB 2022), which would have made the data more representative. Furthermore and despite the given information regarding how the researchers
only sought answers from individuals of Gen Z, almost 15 percent of the respondents were not in this generation. Unfortunately, this resulted in 23 invalid responses.

There was a high number of respondents who had previous experience with unmanned convenience stores, more specifically 72,2 percent. The reason for this might be that the researchers made sure that every local Facebook group had an unmanned convenience store in that city. The reason for this was to increase the interest of the participants and thereby collect more responses. However, the face-to-face questionnaire was not located nearby unmanned stores. Another reason might be that the survey was voluntarily in the form of self-selection sampling. When using this data collection method, the respondents often have strong opinions and feelings for the topic (Saunders, Lewis, and Thornhill 2019), perhaps making it more likely that an individual will have experience with the concept. There are no statistics for the percentage of Gen Z in Sweden who have previous experience with unmanned convenience stores. However, Hernell's (2021) study showed that only 2 out of 10 Swedes had visited an unmanned store. It is, therefore, essential to remember the high amount of previous experience for the respondents of this research. Thus there is a potential that this could have influenced the results. For example, the perceived usefulness of unmanned convenience stores might be higher than it would have been if there were fewer respondents with previous experience.

5.2 Assumptions

All five assumptions stated in the methodology chapter were confirmed for this research as described in the result chapter. However, the assumption regarding normal distribution did have some problems, as shown by the probability plots in Appendix 6. This could have been a problem if this research had used a small sample size and had large deviations from the normality curve. In this case, it would have been more appropriate to use other data analysis, such as nonparametric tests or bootstrapping. However, even when there are extreme deviations from normality, researchers can still conduct a linear regression analysis as long as the sample size is 80 or above (Kristin and Sainani 2012). For this research, the sample size was 133 respondents, and it is, therefore, safe to make a regression analysis despite the deviations from normality.

Furthermore, non-normality is sometimes perfectly natural. For example, coffee consumption rarely follows a normal distribution. This is because there are many people who never drink coffee, a lot in the low- to middle-consumption, and a lot who consume large amounts of coffee (Kristin and Sainani 2012). As displayed in the frequency tables (appendix 7), the questions received a lot of extreme values (totally disagree or disagree and totally agree or agree). This might have been due to the self-selection sampling, where the respondents usually have strong opinions and a high interest in the topic (Saunders, Lewis, and Thornhill 2019).
5.3 Analyzing the hypotheses

5.3.1 Hypothesis 1
As displayed in Table 8, it is confirmed that high levels of technology readiness will affect Generation Z’s acceptance towards unmanned convenience stores. Meaning that if a consumer feels more optimistic or even innovative regarding new technology, he or she will be more likely to visit an unmanned convenience store. This finding does correlate with Zhang and Park’s (2022) finding regarding individuals with high levels of TR. Whereby they confirmed that high TR would make consumers of unmanned stores more satisfied and optimistic about the concept. According to their study, this is because the high levels of TR enhance all satisfaction and simultaneously make consumers feel more relaxed, confident, and safe.

This finding does also correlate with Röjås and Ahlström’s (2018) research that indicates how the younger generations have an overall positive attitude towards unmanned stores and TBSS in general. Although at the same time, it has higher expectations and is more picky with new retail digitalization. Which they believed could be due to the fact that these generations have grown up with technology. These findings and assumptions do agree with how the respondents of this survey indicated an overall high level of TR, likewise, an overall positive attitude towards unmanned convenience stores.

5.3.5 Hypothesis 2
For this research, it is confirmed that low levels of technology readiness do not affect Generation Z’s resistance toward unmanned convenience stores (table 8). Interestingly this finding does not correlate with Zhang and Park (2022). Thus their results did support a significant relationship between lower levels of TR and dissatisfaction. Based on their paradox test, they concluded that the discomfort weakened the sense of control and increased the sense of chaos. On the other hand, this result does correlate with Lundin and Paridon (2022). Their research did not support a relationship between low TR and consumer resistance.

Furthermore, their study likewise this research was conducted in Sweden, making it a possible reason for the contradictory results in comparison to Zhang and Park’s results. Lundin and Paridon (2022) also mention this, whereby they refer to the high experience and competence that Swedish people have regarding technology. Furthermore, younger generations are also believed to have exceptionally high levels of technology experience (Röjås and Ahlström 2018), as discussed in 5.3.1. Zhang and Park’s (2022) survey included respondents from all generations, while this research only investigated Gen Z. Making this an additional reason for the rejection of this hypothesis.
When analyzing the frequency tables (appendix 7) for the items representing lower levels of TR (TR3 and TR4), it becomes clear that the answers are relatively evenly distributed. Indicating that respondents, for example, think that innovative technology can contribute to a better quality of life and simultaneously think that people are too dependent on technology to do things for them. The items for technology readiness were cited from Parasurman and Colby (2014). However, they used 16 different items to identify an individual’s TR, whereas this research only used four of these. This might have affected the results slightly. However, it is not likely that this factor would have changed the rejection of the hypothesis. This is due to the earlier-mentioned factors regarding geographic location and age.

5.3.2 Hypothesis 3
Perceived ease of use was not accepted to have a significant relationship with Gen Z’s acceptance towards unmanned convenience stores. This result is interesting because perceived ease of use is a part of the Technology Acceptance Model. A model that aims to measure the intention of using innovative technology (Lin, Sher, and Shih 2007). Previous studies have shown this to be an essential factor influencing the intention of using smart retail. For example, Chang and Chen (2021) found perceived ease of use to directly influence consumers’ shopping intentions for unmanned convenience stores. This is according to their study because the factor increases both utilitarian and hedonic benefits—for example, shopping effectiveness, satisfaction, and pleasure.

As displayed in Table 3, the mean values for perceived ease of use are above 6.0 for both items, indicating an extremely high agreement that unmanned shopping is easy. This might be because of the exceptionally high experience Gen Z has with technology overall (Röjås and Ahlström 2018). Additionally, the high previous experience among respondents for this survey might also have contributed to the perceived ease of use. Furthermore, the TAM model and the ease of use factor are specified to measure the use intentions for a particular technology attribute (Lin, Sher, and Shih, 2007). Perhaps Gen Z already perceives the technology in unmanned stores as easy to use, and therefore this factor becomes less critical. If the technology instead had been more complicated or newer, then this factor might have been more vital for the acceptance towards the concept.

5.3.3 Hypothesis 4
The perceived usefulness of unmanned convenience stores is positively influencing Gen Z’s acceptance (table 8). The acceptance towards this hypothesis indicates that when a consumer of Gen Z believes unmanned stores are helpful, he or she will more likely use the concept in the future. This does relate well with most previous research studying the impact of usefulness in relation to unmanned stores (Chang and Chen 2021; Lin, Sher, and Shih 2007; Roy, Balaji, Quazi, and Quaddus 2018). The perceived usefulness of unmanned convenience stores might not be surprising due to the many attributes attached to the concept. For example, the providence of service around-the-clock, which according to Hernell (2021), is highly appreciated by Swedish consumers. Furthermore, the efficient experience (Denuwara, Maijala,
and Hakovirta 2021), and the strategic location (Davidsson 2022), might further improve the perceived usefulness for many consumers.

As previously mentioned, perceived usefulness is one of the factors that might have been influenced by the strategic location of the data collected from online forums. Every Facebook group did have an unmanned store in the represented city, leading to a high level of previous experience from the respondents. The researchers did manage to lower this variable by combining the online survey with a face-to-face questionnaire. However, the previous experience is still above 72%. Hence, it would be interesting for future researchers to conduct a similar study, yet with respondents of lower or zero previous experience.

5.3.4 Hypothesis 5
As shown in Table 8, enjoyment does positively affect Gen Z’s acceptance towards unmanned convenience stores. This finding does correlate with Oghazi et al. (2012), who emphasized the importance of enjoyment as a factor when it comes to consumer attitudes related to TBSS. Furthermore, this result also correlates with Chang and Chen (2021), who also found that enjoyment positively affects shopping intentions toward unmanned convenience stores.

Interestingly Chang and Chen’s (2021) results indicated that enjoyment has an even higher effect on shopping intentions than usefulness. Whereby their beta value for enjoyment was 0,266 and 0,154 for usefulness in relation to shopping intentions. A finding that correlates to what Lo and Wang (2019) stated that the feeling of entertainment is among the most important factors when it comes to unmanned stores. However, this finding does not correlate to the results of this study. Thus the beta value for usefulness was estimated to be 0,460 and for enjoyment 0,344. One possible explanation for this difference is the different geographical locations of the studies. Chang and Chen’s (2021) survey was conducted from BingoBox in China, and Lo and Wang (2019) conducted their data from Taiwan, while this research was located in Sweden. Lo and Wang (2019) did also point out how the unmanned stores they investigated had a lot of entertaining technologies, such as futuristic arrangements and interactive drinks cabinets. This is something that is not provided in Swedish unmanned stores, and in that way, it makes them more similar to traditional convenience stores. However, Chang and Chen (2021) also mentioned that the different factors, both utilitarian and hedonic, could influence one another. According to them, this makes each factor highly important in terms of the shopping experience.

5.3.6 Hypothesis 6
As displayed in Table 8, self-image incongruence did not positively affect Gen Z’s resistance towards unmanned convenience stores. Interestingly it did, however, have a significant relationship to resistance with a p-value of 0,006. The reason why it was still not accepted is that according to the beta value, this relationship is negative -0,253. As displayed in Table 3, the mean values for the items explaining self-image incongruence were both slightly higher than 5. This implies that the respondents did agree that they are the typical consumer of
unmanned convenience stores. In other words, the respondents did not perceive self-image incongruence towards the concept, but rather self-image congruence, which turned out to be an enhancer rather than an inhibitor for this population.

This is an interesting finding considering that Lundin and Paridon (2022) find a significant relationship between self-image incongruence and consumer resistance to unmanned stores. However, their research focused on individuals with no previous experience. This is in contrast to this survey, where approximately 72% had previous experience with unmanned stores. Perhaps individuals who have already visited an unmanned store or regularly visit one will perceive fewer problems with self-image incongruence. However, this is a vastly speculative assumption. The different results could also occur because of the different age gaps investigated, where Lundin and Paridon (2022) focus on every generation. Something that Reed (2022) empathizes by stating the importance of understanding the differences in generations and their different attitudes toward smart retail.

Furthermore, there are previous studies that have confirmed how self-image congruence can have a positive effect on accepting innovative technology. For instance, Kleijn (2005), who identified a positive relationship between self-image congruence and the acceptance towards wireless mobile services. Correlating to the results of this research regarding self-image in the smart retail field.

5.3.7 Hypothesis 7
Perceived performance risk did not positively affect Gen Z’s resistance towards unmanned convenience stores. The hypothesis was, in the practical sense, associated with how the risks of doing something wrong or experiencing faults made by the technology would increase Gen Z’s resistance towards the stores. This finding does not correlate with Lundin and Paridon (2022). Thus they found this factor to be highly important in the resistance towards unmanned convenience stores. However, their survey included respondents from all generations, while this only included Gen Z. One possible explanation for the difference between the results is due to the different age gaps investigated.

As previously mentioned, younger people tend to have more experience and knowledge in technology compared to older generations (Röjäs and Ahlström 2018). This correlates to this research which has exceptionally high mean values for the ease-of-use items. Likewise, the mean values for high Technology Readiness are high for this research. Zhang and Park’s (2022) research indicates that high TR can lead to consumers feeling more confident and relaxed. Therefore the high TR among Gen Z might be the reason why this generation does not worry about performance risks when shopping in unmanned convenience stores.

5.3.8 Hypothesis 8
The need for human interaction was shown to have a significant relationship with resistance towards unmanned convenience stores. It indicates that when this need is not met, GenerationZ
is more likely to avoid shopping at unmanned stores. This finding does correlate with Evanschitzky et al. (2016), who pointed out the importance of this factor as a challenge for companies working with TBSS. It also correlated with White, Breazeale, and Collier (2012), claiming that individuals might feel unfairness if this need is not met and, therefore, preferably shop at traditional stores instead. As discussed earlier in the literature review, Zhang and Park (2022) suggested that this need could be met with technological attributes which are able to provide a social presence, such as in-store robots. In this way, the need for interaction and situational information that employees usually provide could be doable with TBSS.

There is, however, some controversy regarding this need when it comes to younger generations. Songmee et al. (2021), for instance, found that Gen Z was one of the generations which, to a more significant extent, preferred contactless service instead of human interaction. Furthermore, they found that the youth are highly interested in technology and suggested that this could be the reason for their preferences. One possible explanation for the differences between Songmee et al. (2021) results and the results of this thesis is the different geographical locations. According to Awe (2018), non-Swedish consumers do, to a larger extent, choose self-service compared to Swedish consumers in a retail context. Indicating that Swedes have a more significant need for human interaction in the shopping experience. The reason being geographical locations is further strengthened by Lundin and Paridon (2022), who found the need for human interaction to be the most vital inhibitor for unmanned convenience stores in Sweden.

5.3.9 Hypothesis 9
The hypothesis that security concerns affect Gen Z’s resistance was, as shown in Table 8, rejected. The security hypothesis is related to privacy concerns, as this has been highlighted as an essential inhibitor when it comes to Generation Z. However, the results do not correlate with Kim et al. (2021), who empathize with the importance of safety Gen Z has when it comes to digitalization in retail. Further stating that the reason for this is due to the knowledge and awareness Gen Z has of the security risks related to digitalization. This finding was further strengthened by Priporas, Styllos, and Fotiadis (2017). Based on interviews with individuals from Gen Z, they found a perceived concern regarding smart retailing and the security risks that come with it.

Additionally, Zhang and Park (2022) also highlighted security in terms of privacy concerns regarding unmanned stores. Whereby they referred to a study by Arli, Bauer, and Palmatier (2018), who pointed out the drastic increase in privacy concerns in the retail sector. However, Zhang and Park (2022) also found that individuals with an optimistic view of innovative technology will automatically decrease the paradox of privacy concerns. As discussed in the literature review, optimism relates to higher levels of TR. Therefore the high optimism indicated by the respondents of this survey might have contributed to the low-security concerns.
6. Conclusion

In this final chapter of the thesis, the conclusion will be reviewed and presented by the researchers, beginning with answering the central research question. Additionally, the theoretical and managerial implications will be discussed by the researchers. Lastly, the limitations of this research will be marked out, and recommendations for future researchers to take into account.

6.1 Answering the Research Question

By understanding the previous research and ongoing trends of technology, especially in the retail industry. The direction seems relatively straightforward that we are heading towards a more self-serving world due to the recent growth and interest in high-tech service. Mostaghel et al. (2022) and, Priporas, Stylos, and Fotiadis (2017) all agreed on the high pressure that Gen Z sets on retailers today when it comes to the amount and quality of the technology available. The demand for this type of in-store service is growing substantially day by day, in a phase that is almost impossible to keep up with. This makes the technological progress in the retail sector lack essentials such as providing high-security measures, potentially making the demanding generation back away (Joshi and Akhilesh 2020). The lack of study on this specific subject is apparent based on previous research. For example, Röjås and Ahlström (2018) pointed out the lack of study in Sweden. They described the lack of knowledge about how geographical locations could make a difference in how customers behave and think about unmanned stores. Their study also debated how the future could be and how TBSS could evolve further in Sweden. By reading Davidssons (2022) study, clearly shows the growth of the retail concept has been growing immensely in the last few years. All this points out how this study is necessary for navigating retailers, customers, and the society within so that the future is more understandable for all.

Through the empirical research that has been conducted, it is possible to draw a few conclusions. The answered enhancer hypotheses show that high levels of TR, perceived usefulness, and perceived enjoyment of Gen Z individuals all positively affect their acceptance towards unmanned convenience stores. However, it was found that there is no relationship between perceived ease of use and Gen Z individuals' acceptance towards unmanned convenience stores. All of the accepted hypotheses were expected by the researchers. However, the rejection of hypothesis 3 was unexpected in relation to previous studies. This could be due to the digital privilege that Gen Z has been born in, as to what Röjås and Ahlström (2018) said. Meaning that this young generation has another view and deeper knowledge of technology, resulting in a better ability to navigate and solve new technologies than older generations. In other words, the youth have higher TR, which positively affects the acceptance of using unmanned stores. Usefulness and enjoyment, combined with high TR, could be a factor in not feeling the need for perceived ease of use.
Moreover, there are the inhibitor hypotheses that show a different pattern than what the enhancer hypotheses have shown. It is clear that only one of the presented hypotheses is accepted, and the rest are rejected. More specifically, the results show that a lack of human encounters and interaction negatively affects the relationship towards unmanned convenience stores. It further points out that Gen Z is unaffected by low TR, self-image incongruence, perceived performance risks, and security concerns. Sweden is seen as a high-performing country in terms of technological advancement and use (EU-Commission 2021). Perhaps this factor, combined with Gen Z’s high TR level and the high level of previous experience, is the reason for the low perceived performance risks, low-security concerns, and the vague effect of low TR. Interestingly the self-image incongruence was not only rejected as an inhibitor but rather indicated to have a positive effect on Gen Z towards unmanned convenience stores, as discussed in 5.3.6.

To answer the research question: How does the underlying enhancers and inhibitors affect individuals of Generation Z’s acceptance towards unmanned convenience stores? It is safe to say that the results have some similarities with already conducted research in this field, strengthening some already existing points. High levels of TR, perceived usefulness, and enjoyment enhances the acceptance that the Swedish Gen Z has towards unmanned convenience stores. At the same time, perceived ease of use stands out according to the researcher's expectations and prior research due to the lack of effect. Conversely, a lack of interaction between humans is seen as an inhibitor factor. However, low levels of TR, self-image incongruence, perceived performance risks, and security concerns do surprisingly not discourage this acceptance.

6.2 Theoretical Implications

In recent years, the theoretical studies on the subject of unmanned stores have grown intensively. The focus has mainly been on how customers act in the unmanned retail environment and how the technology succeeds in providing the needed service. However, the lack of research in this area is still seen as a significant problem based on what the previous researchers have pointed out (Oghazi et al. 2012; Anitsal and Page 2006; Rőjä and Ahlström 2018; Mostaghel et al. 2022; and Ng et al. 2019). This is evidence of the lack of accessible knowledge for future researchers to solve. Plenty of questions are still in need of answers, such as getting a deeper understanding of how the youth thinks and feels about this store concept on a worldwide scale by stepping up the phase of research, the highly needed pattern of what and how unmanned convenience stores affect its nearest presence. This is the reason why the researchers of the thesis found this subject essential to study. To gather insights and also empirical findings in order to provide the needed knowledge for developing this field of research. Throughout this thesis, the researchers have brought up and collected relevant studies and combined critical designations such as TBSS, TR, TAM, Gen Z, Unmanned stores, Digitalization, and Retail Industry together. These keywords provided a starting point to work with so that new tools could be added later on. Both the secondary and primary data will
provide good tools that the researchers believe are needed for the future of this research subject, both nationally and internationally.

6.3 Managerial Implications

Seeing this provided research thesis from a managerial perspective, it is clear that great awareness about how the Swedish Gen Z feels, thinks, and acts towards unmanned convenience stores in Sweden is given. By pointing out different enhancers and inhibitors of the Swedish youth, it gives out direct indications for the unmanned retail sector. The expansion of unmanned stores both in Sweden and other countries is increasing drastically. By heading that way, it is essential to navigate the way forward in succeeding with growth correctly and efficiently. This is why this thesis stands strong as a good piece of the puzzle in getting to the future goals that the retail sector is reaching. The thesis provides theoretical tools for a comprehensive understanding of unmanned B2C, specifically when it comes to Gen Z. These tools translate to studied enhancers and inhibitors and can be of great value in knowing the future of customer behavior in the TBSS environment. However, it is important to be aware of potential differences that can occur on a broader scale. This means that the empirical findings only scratch the surface of the youth in Sweden. Combining that fact with the lack of research on this subject, it is necessary for retailers in this field to be aware of the complex nature of consumer acceptance in this field.

Not only does the retail sector benefit from these findings, the same goes for the community which is affected by these unmanned convenience stores. If this study provides insights for the retailers, it could hopefully help with growing the presence of these store types. According to what was said by Karin Brynell, CEO of Swedish Groceries (Davidsson 2022), the impact of unmanned stores on the Swedish countryside has positively impacted the locals living there. This is due to the fact that unmanned stores are cheaper to maintain (Pihlblad u.d). Therefore, this study is of great importance for both the retail sector directly and the community indirectly as well. If the retailers could learn from this research and benefit from it by understanding what the youth wants the most. Both the retail landscape and the countryside all across Sweden could begin to evolve hand-in-hand for a better, more convenient, and digital future.

6.4 Limitations and directions for further research

Generally, any quantitative research allows, the idea that stands behind is the idea of generalizing the gathered results with the assessment of findings seen through all the responses and perspectives of the selected sample. In this research, the sample of Gen Z with a non-probability approach of sampling was chosen. The choice of this lies in the researcher's hands, and if other choices were made, it could have significantly impacted the thesis in plenty of ways. It could also play a significant role in how generalizable the findings could be, restricted to a specific group of people. Most likely, this study would clearly have different conclusions if the researchers had chosen to focus on any other generation than Gen Z. Or if
there had been a different approach chosen to collect the data. Although this study takes on a quietly comprehensive national approach to collecting data, the number of participants could have been greater. However, seen from a perspective of time and availability of resources, this could not have been. Giving this all future research an open door for more profound research, gaining more knowledge and width to this subject as a whole.

Other limitations could, for example, be the questionnaire design approach designed and developed by the researchers. The questionnaire survey that the respondents took part in could have been structured in many different ways, with plenty of different questions that could have answered other hypotheses potentially. Conducting this study quantitatively also sets a few limitations, such as lack of depth, flexibility, and interactions, just to name a few. If a qualitative study were to be conducted, a whole other point of view on this subject could have been generated. Future researchers could go deeper into this by conducting individual interviews or focus groups consisting of regular customers and store owners. This can be done future-wise by segmenting the target sample into groups. It can be done both for future researchers that are conducting a quantitative or a qualitative research approach. By doing this, it could generate improved targeting and personalization, and it could also generate more insights to be visible. The final set of limitations is the lack of theory in the subject. This is something that is seen as an external limitation that the researchers cannot solve or change. The only thing the researchers can provide is growth in the researched subject in question. Because of this, it could have sufficed to extract the expected outcome as entirely as the researchers might have wanted. These are all the believed limitations that the researchers have taken notice of. Pointing this out could hopefully be of use to future researchers so that more knowledge can be gained.
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Academic Articles:


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Appendix

Appendix 1. Introduction and information to survey

Thank you for taking your time to answer our questionnaire.
We are two students from Linnaeus University who are writing our degree project in business economics. The purpose with this thesis is to better understand how Generation Z experiences unmanned convenience stores, and to explain enhancers and inhibitors that Generation Z has towards unmanned convenience stores in Sweden. By answering this questionnaire you will contribute with new knowledge to this area of study.

Participation in this study is voluntary, and you can withdraw at any time. It is also perfectly fine to leave personal questions unanswered. The survey is completely anonymous, because we do not gather any personal information, neither do we identify who has answered the questionnaire. We are only going to use the gathered data for the purpose of our thesis, and share the statistics with the collaborating companies.

Unmanned stores is a store concept where there normally are no staff on site. Instead the customer himself is responsible for implementing the payment with help from digital tools, such as self-checkout stations.

Note that we only seek respondents from Generation Z (18-26 years old). The generation actually spans from age 11, however due to research ethics principles you need to be at least 18 years old to participate. Some questions might be perceived as similar which we are aware of, however try to answer the questions as accurately as possible. You answer the questions by rating the following statements from a scale of 1 (strongly disagree) to 7 (strongly agree). Answering this questionnaire will take approximately 4 minutes to complete.

If you have any questions regarding this questionnaire, please contact Pontus Andersson pa222vy@student.lnu.se, or Oscar Johansson oj222gr@student.lnu.se.

Appendix 2. Survey

I have read the given information, and I am willing to participate in this survey.

Demographic section:

Are you in Generation Z (age 18-26)?
Note: This survey is aimed at those in this age-gap. If you are not in this age-gap, please do not answer the questionnaire.

o Yes
o No

Have you ever visited an unmanned store?
For example 24sju, Coop Mini or 24Food.

o Yes
o No
o Do not know

What is your gender?

o Male
o Female
o another gender identity
o Do not want to answer

Try to answer the questions as accurately as possible:

1: Unmanned convenience stores are not interesting to me.

2: I would probably be reluctant to use unmanned convenience stores.

3: Unmanned convenience stores are interesting to me.

4: I would probably visit an unmanned convenience store (regardless if for the first time, or again).

5: New technology contributes to a better quality of life.

6: Other people come to me for advice on new technology.

7: Sometimes, I think that technology systems are not designed for use by ordinary people.

8: People are too dependent on technology to do things for them.
9. It would be easy for me to learn how the technology works in an unmanned convenience store (e.g., identification, self-scanning, and payment).

10: Overall, I think it would be easy to shop in an unmanned convenience store.

11: I believe that unmanned convenience stores are useful for me.

12: I believe that I would enjoy visiting an unmanned convenience store.

13: I see myself as the typical consumer who would shop in an unmanned convenience store.

14: The image of the typical customer to an unmanned convenience store reflects me as a person.

15: I would rather get help from an employee instead of using my smartphone or a self-service station.

16: My grocery shopping experience would not be as enjoyable if I had to use a machine to check out my groceries instead of letting an employee perform the checkout.

17: I believe there is an increased risk that something could go wrong when shopping in an unmanned convenience store. Both mistakes from my part, or the technology itself.

18: I believe there is an increased risk that my personal information such as PIN codes, or bank details ends up in the wrong hands when using the technology in unmanned convenience stores.

Appendix 3. Introduction and information to survey (translated to swedish)
Tack för att du tar dig tid att svara på vår enkät.


Obemannade butiker är ett butikskoncept där det vanligtvis inte finns någon personal på plats. Istället är kunden själv ansvarig för att utföra betalningen med hjälp av digitala verktyg, såsom självutcheckning stationer.


För fler frågor angående undersökningen vänligen kontakta Pontus Andersson pa222vv@student.lnu.se, eller Oscar Johansson pj222gr@student.lnu.se.

Appendix 4. Survey (translated to swedish)

o Jag har läst informationen ovan och är villig att delta i denna undersökning.

Demografiskt avsnitt:

Tillhör du Generation Z (åldern 18-26)?
Notera: denna undersökning är riktad till personer inom detta åldersspann. Ifall du inte är inom detta åldersspann, vänligen avstå från att svara på enkäten.
o Ja
o Nej

Har du någonsin besökt en obemannad närbutik?
Exempelvis 24sju, Coop mini eller 24Food.

Jo  
Nej

**Kön**

Man  
Kvinna  
Annan könsidentitet  
Vill ej svara

**Försök svara så sanningsenligt som möjligt:**

1. Obemannade närbutiker intresserar inte mig.

2. Jag skulle dra mig från att använda obemannade närbutiker.

3. Obemannade närbutiker intresserar mig.


5. Ny teknologi bidrar till bättre livskvalitet.

6. Andra människor kommer till mig för att få rådgivning kring ny teknologi.

7. Ibland tänker jag att tekniska system inte är designade för att användas av gemene man.

8. Människor är för beroende av att tekniken ska åstadkomma saker åt dem.


10. Överlag tror jag att det skulle vara enkelt att handla i en obemannad närbutik.


15. Jag föredrar att prata med personalen istället för att använda min smartphone eller en självcanningsstation. 


18. Jag anser att det finns en ökad risk att mina personliga uppgifter såsom PIN-koder, eller bankinformation hamnar i fel händer ifall jag skulle använda tekniken i obemannade närbutiker. 
Appendix 5. Assumption Linearity and Homoscedasticity

HighTR vs. Acceptance

EOU vs. Acceptance

EOUIV

U vs. Acceptance
Appendix 6. Assumption Normal Distribution

Appendix 7. Frequency tables

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