Artificial Intelligence in Customer Service:

* A Study on Customers’ Perceptions regarding IVR Services in the Banking Industry

Authors: Emil Åberg & Yeshodeep Khati
Tutor: Soniya Billore
Examiner: Anders Pehrsson
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Abstract

Authors: Yeshodeep Khati & Emil Åberg
Tutor: Soniya Billore
Examiner: Anders Pehrsson

Title: Artificial Intelligence in Customer Interactions: A Study on Customers’ Perceptions regarding IVR Services in the Banking Industry

Purpose: The purpose of this paper was to explore consumer perspectives on automated IVR customer services.

Design/methodology/approach: This research paper was conducted qualitatively, where the researchers developed a framework and a suggested model based on existing research and collected primary data from eight interviews with open-ended questions. The collected data was coded so that the researchers could spot patterns in the responses which were then discussed in relation to previous studies. Based on the results of the data analysis the developed model was also discussed and revised.

Findings: The findings of this study suggest that consumers are skeptical towards IVR telephone customer service and believe that the service quality would be lower than regular telephone service. The findings do however show that consumers are willing to try to adjust to new technology as long as there are alternatives if they are not satisfied.

Research implications: Managers should focus on delivering quality service to all of their consumers and therefore need to consider how well their services can fulfill the needs of their consumers. If the quality of the technology cannot provide the service that is expected there is still a need for regular telephone customer service or else the company might suffer in the long run.

Originality/value: This study is, to the best of our knowledge, the first to explore the topic of customers perceptions of AI in customer service.

Keywords: IVR, AI, Customer Service, Banking, Customer Satisfaction, Wait time, TAM, Technology Acceptance Model, Sweden
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Yeshodeep Khati

Emil Åberg
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1. Introduction

This chapter will include the chosen subject for the thesis, its implications, and its scope. The chapter will further lead to the problematization of the ongoing issues within the chosen topic.

1.1 Background

Customers want prompt access to the companies from which they do regular business with (Anton, 2000). As customer base increases, firms deal with an overwhelming amount of inquiries regarding their products and services which requires specific skills to tackle individual issues, thus, task relocation is required to ease off the workload (Li et al., 2017). In retrospect, companies using phone lines as the first line of service used to have two service groups, the first one being junior agents designated for basic service handling and the senior agents with an advanced set of skills used for providing solutions to advanced problems (Aksin et al., 2007). Since the customer didn’t know which category they belonged to, the junior agents handled categorizing customers and subsequently, routing to the senior agents, this also meant more additional cost for hiring manual agents (Aksin et al., 2007; Li et al., 2017). Firms have moved away from this traditional method by incorporating modern technology which subsequently has a profound impact on service industry (Zeithaml & Bitner, 2003). This continues to develop significantly by enabling both customers and employees to deliver and receive an efficient service (Bitner, 2001). One example of this is the use of Artificial intelligence (henceforth referred to as ‘AI’) as a tool for communication and customer service to relocate task to a designated personnel. It enables the use of the advance routing schematics where the system provides automated problem-solving dialogues and uses a routing process appropriate for incoming calls (Joseph et al., 2004). He explains by adding that ‘The routing process determines the probability that the automated system will resolve the problem and also determines an expected hold time for the customer to reach the manual dialog. The routing process uses this information to determine how the call should be routed.’ AI has its usefulness and application in numbers of concepts, but AI’s central idea revolves around providing viable, automated solutions to problems which would otherwise require human intervention (Negnevitsky, 2005). For example, according to McCartan-Quinn et al. (2004) 80 percent of calls in prime Nordic banks such as Nordea and Swedbank make use of a form of AI, a voice activated response system for callers as the first line of communication where callers go through automated Interactive Voice Recognition
(henceforth referred to as ‘IVR’) service. The said benefits of technology like IVR according to foundational studies conducted by Kelley (1989) is to serve as a service tool to tackle uncertainties and reduce costs as they can be used as a standard frontline service that reduces heterogeneity prevalent in customers. For example, customers seeking any technical support could be routed to a technician whereas customers seeking taxation queries could be routed to a financial consultant, saving both cost and time for the company. The predecessors to modern-day IVR are the touch-tone IVR where high quality recorded interactive scripts are used and customers provide answers by pressing the keys on their mobile phones (Corkrey & Parkinson., 2002). However, customers are wary of the cluttered user interfaces (UI) present in many IVR systems and despite that, companies continue to use it because hiring manual agents have higher costs (Tatchell, 1996; Aksin et al., 2007). This gave rise to modern-day IVRs which is integrated with speech-enabled schematics. These systems allow users to speak words (for example, ‘say weather report’, ‘say number’) which eradicates the problem of clusters of a menu that pop up when using a touch-tone IVR (Suhm et al., 2002; Corkrey & Parkinson, 2002). In most recent years IVR has developed even further, where companies today can implement a self-service version of IVR, where the consumer can have a human-like conversations and no actual customer service representative is needed (Nuance, 2018). With the expansion of technology, IVRs have seen a substantial growth in recent times and is expected to grow in the coming decade. Firms in 2005 alone invested in about $1.2 billion in IVR services, by 2009, it doubled to $2.7 billion and is expected to be $3.5 billion by 2022 (Global Industry Analyst, 2018).

Technological advances have shifted the dynamics of how firms manage their customers. As state above, the banking sector particularly have seen increased use of technology in recent years, mainly because of the shift to relationship marketing to stay competitive(McCartan-Quinn et al., 2004; Chakiso, 2015). However, IVR is not free of drawbacks. As more companies adapt to this system as their front line customer recipient, problems such as queue and wait times are still prevalent (Kim et al., 2013a; Armony & Constantinos, 2004). Davis & Heineke (1998) emphasize the importance of the relationship between customer wait time to the perception of service quality and its impact on customer satisfaction. The waiting time is one of the first and core interactive experience customer faces when dealing with the firm and has its subsequent impact on overall customer satisfaction (Chase & Dasu, 2001; Bielen & Demoulin, 2007). Since face-to-face, customer-employee interaction is not possible when
using mobile devices, companies still need to uphold the utmost customer satisfaction when using IVRs (Joseph et al., 2004; McCartan-Quinn et al., 2004).

Despite being hailed as state of the art service technology, many customers have found themselves complaining about the technology itself. The core idea of IVR is mainly speech recognition, report on the accuracy of speech-enabled schematics are only successful around 82-85% (Rolandi, 2007). This translates to users repeating words one or twice every ten utterances. The cumulative issues of IVR and its subsequent effect of a demanding service business can have an adverse effect on consumers’ satisfaction thus, it is imperative to look into the some of the hitches consumer experience during their IVR and set the key difference compared to the standard regular service.

1.2 Problem Discussion

Several studies stress the importance of customer satisfaction in the banking sector (Manrai & Manrai, 2007; Sweeney & Swait, 2008). However, despite all the importance on customer satisfaction, it has been argued that the use of IVR benefits the company more than the customers, and more businesses are adopting IVR service, especially prime Nordic banks in Sweden (McCartan-Quinn et al., 2004). Sweden, as a very first country, established customer satisfaction barometer on a national level (Anderson, 1994). The said barometer helps enhance economic performance by keeping customer satisfaction as its key area of concern among prime business firms. Increased customer satisfaction help retain customers, increase revenue stream, enhance reputation and helps business prosper all in all. However, the commitment to customer satisfaction in relation to the benefits of IVR for companies, rather than its customers, creates a discrepancy between the two philosophies. With the evolution of AI becoming more and more advanced, many companies see the benefits of using AI to cut costs (Aksin et al., 2007). However, it may be true that AI is efficient and that consumers use it more and more in their everyday life, sometimes without even knowing it, existing literature has not discussed the consumer perspective of automatic customer service.

Every technology has a learning curve. As argued by Bitner (2001), one important aspect of such technology is reliability, as in, how easy is a technology to use. This leads to the Technology Acceptance Model. The Technology Acceptance Model (also referred to as ‘TAM’) suggests that two main beliefs of the user determine their acceptance towards a certain type of technology (Davis et al., 1989). These two beliefs are perceived usefulness and
perceived ease of use. Based on this, it can be argued that consumers’ willingness to engage with new technology depends on how easy it is to use and how beneficial it will be to the alternative option. As stated before, research within the field of AI and customer service has shown both positive and negative sides of the technology. From the perspective of the company, the ability to help customers faster and at lower costs is a great opportunity (Davis & Heineke, 1998), but very few studies provide evidence from the consumers’ perspective. AI-technology can also increase service quality by using knowledge of the specific consumer and adapt offerings and solutions automatically (Rekha et al., 2016; Vanneschi et al., 2018). However, studies also suggest that personal interactions and relationships between the customer and a service provider can influence the customer satisfaction (Medler-Liraz & Yagil, 2013; Fullerton, 2014).

One of the key issues of IVR is the lack of human interaction. Söderlund (2016) state that a mere presence of another human being, direct or indirect has a profound impact on a customer’s overall evaluation of the firm and their subsequent satisfaction. These findings can be related to a study by Slowiak (2014) who suggest that in some settings, telephone service can be perceived as better if the service provider speaks with an appropriate tone and has a deeper understanding of the customers’ needs, which can be argued is much harder task for an automatic response system than an actual person. It should also be mentioned that customer telephone services often have to deal with dissatisfied or frustrated customers, and the service recovery that an actual person can provide is likely better than if it is automatically provided, since a computer system today do not have the same knowledge of human emotions and relationships as an actual human being (Leung & Kwong, 2009). There is also research that shows that consumers are negative when it comes to downsizing within companies and that the reduced labor costs may not cover a decrease in customer dissatisfaction in the long run (Williams et al., 2011).

As different types of IVR provide different types of engagement between the computer system and the consumer, it is possible that consumers see some types of IVR-interactions as useful, whereas other types are less useful. The importance of customer satisfaction, loyalty, and strong customer relationships is prominent within the field of marketing research, but further research within the field of customer service and its technology is needed, as there are arguments that customers can react both positively and negatively towards IVR customer service (Dean, 2008; Ellway, 2016).
When it comes to Swedish consumers, research has shown that they are experienced when it comes to technology and self-service (Nilsson, 2007). However, as stated before, certain services or products are of higher importance to the users, and therefore they might expect higher service quality. The banking industry is a good example of such an industry, as they deal with their customer’s finances. It is argued that banks need to provide high-level products and services to maintain their customers, which could be problematic in the case of automated IVR services, as it is suggested that these types of services can cause frustration and dissatisfaction (Zineldin, 2005; Bontis et al., 2007). Thus, existing literature scarcely touches on how Swedish consumers perceive the use of automated IVR service within the banking industry. The findings of this study could help companies within the banking industry to understand customer perspectives on IVR customer service and help them adjust and adapt their strategies to cut costs without running the risk of harming the customer satisfaction, customer loyalty, and customer relationships.

1.3 Purpose
The purpose of this paper is to explore consumer perspectives on automated IVR customer services.

1.4 Delimitations
Due to the broadness of the topic of customer service and IVR, the researchers have decided to delimit this study to IVR telephone customer service within the banking industry in Sweden. Furthermore, the authors have decided to focus on practical theories such as customer satisfaction, wait time and technology acceptance and have excluded personal and psychological factors that may be the causing effect of the respondents opinions or perceptions. Furthermore, the study has been delimited to a smaller sample so that the researchers can discuss the subject in-depth and with open-ended questions with the respondents, with the aim to create a deeper understanding of their perceptions.

1.5 Research Questions
- How do consumers perceive the quality of automated IVR telephone customer service compared to regular telephone customer service within the banking industry?
- What advantages and disadvantages do consumers perceive of automated IVR telephone customer service within the banking industry?
2. Literature Review

This chapter will introduce a literature review where existing literature within Customer Service, Banking Industry, IVR, Customer Satisfaction, Wait time and the Technology Acceptance Model is presented and critically discussed.

2.1 Banking Industry

Yip & Bocken (2018) state that banks today are seeing the benefits of becoming more digitized. By decreasing the number of human interactions, the banks can be more efficient in terms of costs, service speed, and sustainability. However, Lee et al. (2017) argue that employee engagement and the productivity of front-line employees may influence consumer satisfaction. This was backed up by Valmohammadi & Beladpas (2014) who argue that communication between the bank and its customers is crucial for the bank to be able to deliver high-quality services. They also state that the banks need to have clear strategies on how they collect this type of information from their consumers so that their needs are fully understood.

Madan et al. (2015) discussed the relationships between banks and their consumers. They argue that consumers today are becoming more and more knowledgeable and that they require more personalized offerings from their banks. Madan et al. (2015) argue that to create long-term relationships, banks need to focus on generating trust and commitment between both parties since that will lead to loyalty. Chu et al. (2012) further add that customer satisfaction is a key part of creating loyalty and that customer satisfaction is generated through delivering high-quality services. Adding to this, Chen (2013) stated that banks need to prioritize their consumers and that they can allocate their resources so that all customers can get satisfactory service. He argues that customers can be categorized into premium customers, general customers, and static customers. The premium customers usually require higher levels of service quality to be satisfied, however, they are much fewer in numbers, whereas the static customers generally have lesser service needs. Thus, banks could allocate more resources for the services provided to their premium customers, medium level of resources for the services provided to their general customers and a lower level of resources for their static customers that require less service (Chen, 2013).
When looking at European bank customers, it has been found that loyalty is dependent on several factors. Koutsothanassi et al. (2017) argue that customers differentiate between physical and interactive parts of customer services, but that both parts are important for the perceived service quality. Furthermore, it is argued that the interactive part of the customer service is related to the employees that provide the service and that this part of the service quality is usually evaluated after the consumption of the service (Koutsothanassi et al., 2017). They also argue that customer loyalty is related to switching barriers within the banking industry, which means that customers that stand to lose benefits, have few alternatives, or high switching costs are less likely to switch to a competitor (Koutsothanassi et al., 2017). Persson (2013) argue that consumers can be influenced to adjust their behavior in a way that increases the efficiency of the bank and their services. He argues that if the customers that do routine tasks such as cashing checks or paying bills can receive lesser or faster service than more resources can be allocated to the more complex and profitable customer cases, which can be related back to the three groups of customers that were presented by Chen (2013). Persson (2013) argues that customer loyalty can be achieved even with cost reductions in the service process if the alternative service process is developed so that the consumers can learn and adjust to it.

Based on these theories it is unclear how customers will perceive a change in how customer service is delivered from their banks. Some studies indicate that consumers in the banking industry may be less satisfied and more likely to leave if the service is not personalized and of high quality (Madan et al., 2015; Valmohammadi & Beladpas, 2014) whereas other researchers suggest that consumers are open to adjusting and that some customers might require less service (Chen, 2013; Persson, 2013). This paper will try to clarify if, and how, IVR customer services can be implemented in the banking industry.

2.2 Customer Service
Telephone customer service representatives’ aim to fulfill customers’ needs by going through their consumption portfolio, executing standard problems solving protocols by using their acquired routine knowledge and skills to increase sales and retain customers (Günes et al., 2010). Thus, it requires the designated personnel to be ambidextrous as a telephone call recipient (Raisch & Birkinshaw, 2008). The aforementioned articles positively nod towards customers’ susceptibility towards individual level interaction predicted by past studies (Sajeev & Rust, 1998; Asim & Mela, 2003). This type of interaction allows a more interpersonal
customized experience which is crucial in building/elevating trust and prolonging relationship between the customer and the firm (Cannon & Perreault, 1999; Gwinner et al, 2005). Thus, the central idea of an effective customer service representative is to respond to incoming calls, enter data, provide product/service as well as relevant information in a friendly and knowledgeable manner (Sargent & Frenkel, 2000). The optimum performance outcome of a telephone customer service representative is to leave their customer satisfied after their interaction (Moshavi & Terborg, 2002).

In a traditional business practice, listening to your consumer base has been the central idea to measure satisfaction. Woodruff et al. (1983) stated the importance of satisfaction which is often closely related to listening to your customers and help them achieve their organizational goal and purpose. Monroe (1990) state the importance of service value in relation to satisfaction where he states that a service value is greater to a customer when the perceived benefits of a related service relative to the sacrifices customers are willing to make. These include customers’ cognitive perception of a quality of the service minus the sacrifices such as time, monetary and non-monetary experiences. One of the top priorities of the modern banking sector is to deliver a top service quality. Hence, service quality in the banking sector is reliant on ‘employees behavior and their interaction with the customer’ (Martelo-Landrogeuz & Martin-Ruiz, 2016). Service quality in the banking sector includes prompt delivery and reduced wait time as customers oftentimes indulge themselves in more valuable tasks than to wait for their turn (Janakiraman et al., 2011). McGuire et al. (2010) refer to this cost as perceived wait time. Additionally, Martelo-Landrogeuz & Martin-Ruiz (2016) conclude in their study that even in a regular customer service, customers’ service evaluation is greatly influenced by the degree of the promptness of the service.

In brief, regular customer services offer a more humane experience, compared to IVR services, which comes with the benefit of customizable experience if it is needed. Several studies have discussed the importance of delivering a personal and high-quality customer service experience to generate customer satisfaction and long-term relationships (Günes et al., 2010; Moshavi & Terborg, 2002). However, existing literature has not considered how the customer perspectives will change if advanced IVR is implemented, replacing regular customer service. There are some advantages to IVR for the customers, which could create positive perceptions of the service type (Janakiraman et al., 2011). However, it is still unclear how consumers will receive the implementation of the technology due to the decrease in
human interaction and customized experience. This paper will try to clarify how consumers perceive the quality of IVR compared to regular telephone customer service.

2.3 Interactive Voice Recognition (IVR)

IVR’s evolution is the result of service sectors incorporating self-service technologies. This is the result of modern-day technology where customers can, for example, book and print own tickets, use gas stations or grocery stores checkouts. These technologies are incorporated using various interfaces that enable users to make payments without a direct involvement of an affiliated employee (Meuter et al., 2000). Based on similar philosophies, IVRs were designed for customers to interact independently of the presence of personnel. Earlier versions of IVR mainframe were limited to instructions led by their subsequent button press, which would then lead to the required service. The beginning of the millennium saw rapid technological growth hence, an advanced form of IVR began its foothold where instead of pressing buttons, it allowed to choose language recognition service (Lee & Lai, 2005). More strides have been made in this technology to make for a more efficient system where some of the previous restrictions in the system have been eradicated to provide more open-ended solutions (Gorin et al., 1997; Lee & Lai, 2005). For example, customers, instead of being limited to respond ‘yes’ or ‘no’, are asked an open question like ‘How may I help you?’ and then the response from the customer is picked up by the system (be it ‘billing’, ‘technical’ or ‘others’). In the most recent versions of IVR, the idea is that the IVR is able to give full answers to the customers questions without an actual human being involved in the call (Fluss, 2009; Robertson et al., 2016). There are challenges for customers’ sometimes when using IVRs, however. Customers and their chain of thoughts could interfere with remembering the information which is why some of the IVR have options to repeat the process again, long instructions and answers can lead to a cumbersome experience, especially when relying on human memory. There is also a linear experience where options are sequenced one after another, and the user has to go through the hassle of waiting for the right option, in mistakes, they end up backtracking and so on (Ellway, 2016).

Despite the widespread adoption of IVR in many business organizations, Bitner (2001) suggest ignoring the cost-saving temptations to provide a single channel for a more personal communication channel for customers. One of the major benefits of providing a personal human communication channel is enhanced customer satisfaction as it’s important for business in the service sector (Lundahl et al., 2009). Bitner (2001) further adds that there are
two prominent factors that a self-serving technology is dependent upon (dependability and user-friendliness). One of the prominent studies of IVR in banking was conducted by McCartan-Quinn et al. (2004) where the involvement of IVR was used only towards normal customers and only key higher net worth customers were given access to human services. This system resulted in both the employees and customers dissatisfied with the application of the system, where customers often felt a sense of discrimination when asking for a direct contact number. In support of the study, Dean (2008) proposed a model explaining the frustration of customer with IVR where respondents claimed that they’d rather prefer contacting human agents and that the technology favored the company more than its customers.

Existing theories have explained how organizations can benefit from self-service and how consumers today have adjusted to these types of technologies. However, the implementation of more advanced IVR services specifically is relatively new, and existing research within this type of technology is limited and scattered. There are some indications that consumers are adaptive and might see the benefits of the technology if it is dependable and trustworthy (Bitner, 2001). However, other studies suggest that this type of technology is something that consumers do not want and that its cost savings are only beneficial for the organizations (Lundahl et al., 2009; Dean, 2008). This paper will try to clarify what advantages and disadvantages that consumers see when it comes to IVR in customer services.

2.4 Customer Satisfaction & Wait Time

Maister (1985) was one of the first few to raise interest in the field of customer’s perception of wait time. Additional researchers based on his studies categorized wait time into two, Occupied and Unoccupied wait time. This had pronounced impact on customer satisfaction, for instance, a negative impact of prolonged unoccupied wait time resulted in customers withdrawing the line (Katz et al., 1991; Taylor, 1994; Friedman & Friedman, 1997). Services are different than physical commodities and therefore, waiting lines were subject to uncertainty because of sudden fluctuating demands (Fitzsimmons & Fitzsimmons, 2004). Subsequently, Meyer & Schwager (2007) state that customers emphasizes immensely on the outcome of the service experience thus, service organization should put additional effort in providing value whenever there is customer interaction.
The impact of waiting time has its influence on the perception of quality in a host of service sectors, such as profit and non-profit organizations, manufacturing businesses and service operations (Davis & Heineke, 1998; Nie, 2000). Customers’, while choosing a service provider, consider the benefits against the money, effort and psychic cost of consuming the service (Bielen & Demoulin, 2007). Thus, customers in case of poor services and long waiting times withdraw all their business activities with the company (Sarel & Marmorstein, 1998; Bielen & Demoulin, 2007). Therefore, customers use the length of the waiting time as a gauge to whether or not indulge themselves in patronizing activities with a company.

Psychological factors play a significant role in determining wait time. People’s perception of wait time was significantly increased by their attention to the wait time (Zakay, 1989). Additionally, in an extensive study on emotions during wait time conducted by Hui et al. (1998), they stated that a caller goes through series of emotion throughout extensive waiting during a call where they often go through feelings of anger, frustration, and anxiety. It is a common form of assumption in service literature and industry that, an efficient and effective service performance results in consumer satisfaction and loyalty, however, ‘emotions’ pervasively influence decision-making process for the customers (Lerner et al., 2015) as prior studies have stressed the importance of emotions in evaluation of satisfaction (Oliver, 1997; Medler-Liraz, H., & Yagi, 2013). Numbers of studies conducted on customer experience bring forth the importance of emotion in relation to satisfaction (Bonnefoy-Claudet & Ghantous, 2013; Hosany & Prayag, 2013) however, the studies conducted were limited to the tourism sector. According to Kotler & Keller (2009), customer satisfaction is ‘a person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with his/her expectations’. A study conducted by Lundahl et al. (2009) concluded that the two dimensions of service management, technical and functional, have a significant impact on customer satisfaction. The study was conducted between the banks and their stakeholders. This study was supplemented by De Keyser and Lariviere (2014) where they state that both the functional and technical aspect of service quality has a positive impact on consumer happiness. Aforementioned studies highlight the functional and technical aspect and their significant impact on customer satisfaction when executing a top quality service.

In a study conducted by Zeelenberg & Pieters (2004), customers that were left dissatisfied expressed their feeling through behavior. This resulted in customers quitting their interest in the firm. This has severe repercussions in a firm’s profitability. And with the rise of digital
communication, words of negative influence can spread rapidly and can have deep impacts on an organization’s reputation, especially when customers are left with a negative experience (Babin & Harris, 2012). A study conducted by Hoffman & Bateson (2010) showed that customers were likely to talk to at least nine other people about their bad experience with a service of an organization. Oliver (1981) first introduced the expectation-disconfirmation theory where customer satisfaction was determined by their perception/expectation of the service to the actual confirmation/disconfirmation of the service. This determined their level of satisfaction. Satisfaction is an immediate process that comes directly after consumption. Customers are satisfied when expected service falls on par with the received service (Culiberg, 2010). Additionally, in a study conducted by Anderson et al. (1994) on consumer satisfaction within Swedish market, they emphasized the importance of customer satisfaction in relation to service. Their study concluded that the firms with high consumer satisfaction reap a greater economic return in a long run.

Based on the theories presented from previous studies, the authors of this paper will try to explore if customer satisfaction and wait time has any influence on how consumers perceive IVR customer service.

2.5 Technology Acceptance Model

Davis et al. (1989), who presented the original TAM (see Figure 2.5), explain that the technology acceptance model uses user characteristics and perceptions to predict the users’ intention to use a computer system. Based on perceived ease of use and perceived usefulness, the user forms an attitude towards using the computer system which leads to the behavioral intention to use (Davis et al., 1989). The TAM is playing an important role in research since technology and software has been developing rapidly over the last decades. Even though consumers are more used to technology these days, it is still as important as ever to predict their perception of a computer system to ensure that they will actually use it. According to Wallace & Sheetz (2014) users sometimes may not fully understand how a computer system should be used, and therefore perceived ease of use and usefulness lower than they would if they adapted and used the service fully. This indicates that the provider needs to emphasize the benefits of the system or else there is a risk that the user tries to use the system as little as possible (Wallace & Sheetz, 2014). In existing literature, the TAM has been used to predict consumer behavior and it is stated that the TAM has been accepted in many settings regarding computer systems like word-processors, e-mail, voice-mail, and e-commerce (Koufaris,
However, existing literature also emphasizes the importance of human interaction when it comes to service, where consumers who struggle with the service have a higher preference for human interaction in the service process, further indicating the importance of high perceived ease of use and perceived usefulness (Immonen et al., 2018).

Perceived ease of use refers to which degree the user of a system expects the usage to be simple and free of effort (Davis et al., 1989). Contrary to what was stated by Wallace & Sheetz (2014), Varma & Marler (2013) argue that experienced computer users do not necessarily have higher attitudes towards, or intentions to use, a new type of technology system. However, Wallace & Sheetz (2014) discussed use and adaption towards the specific new technology whereas Varma & Marler (2013) focused on usage of previous existing systems. What can be argued based on this is that a new type of technology can have a high or low perceived ease of use from a user independent of the users’ experience of other types of technology. Hauk et al. (2018) found that age affects the users’ perceived ease of use, but not for perceived usefulness or intentions to use. This means that older users may have lower perceived ease of use of a system which harms their intentions, but the perceived usefulness is not affected by age. Thus, providers must consider if the developed system is to be used by older people and if they will perceive the system as easy to use (Hauk et al., 2018). Another aspect of perceived ease of use is presented by Mathieson & Keil (1998) who state that ease of use is related to what type of tasks the system is developed to do. They argue that the developers usually fail to acknowledge that the system may have problems in how the system fits the type of assignments it is supposed to do, and that simply changing the interface may not affect the perceived ease of use. Examples of issues with task/fit could be that there are too many steps to go through to complete a task or that the steps are too complex which makes the use of the system inefficient (Mathieson & Keil, 1998). Saadé & Kira (2007) also suggest that even though society is adapting more and more to technology, some people still
feel anxiety towards using computer systems and that anxiety may have an influence on perceived ease of use (Saadé & Kira, 2007).

Davis et al. (1989) define perceived usefulness as the belief that a system will increase the users’ performance in an organizational context. However it may be true that the TAM was originally developed to fit organizational contexts, the model is today considered to be applicable to many types of contexts (Koufaris, 2002). In a consumer context, perceived usefulness can be said to be the consumers’ belief that the system will increase the users’ performance compared to the previous/alternative way. For example, it could be that e-commerce is faster, cheaper and/or more efficient than going to an actual store (Koufaris, 2002). It could also apply to the purchasing process, delivery or customer service where the technology could be perceived to improve or limit the consumers’ performance (Davis et al., 1989). Just like the perceived ease of use, perceived usefulness can be related to anxiety (Saadé & Kira, 2007; Scott & Walczak, 2009). Scott & Walczak (2009) argue that a user’s computer self-efficacy, which refers to the users’ judgment of his ability to use a certain computer system, will affect their acceptance of the computer system. The study was conducted in an organizational setting, but the findings that suggested that the user needs to be clearly instructed on how to use the system could also be applied to a consumer setting (Scott & Walczak, 2009). These findings can also be related to the previous suggestions from Wallace & Sheetz (2014) who argued that the provider needs to clearly present the advantages to the user to make them understand the benefits of using the system.

Within existing literature, there are several different extensions or modifications of the TAM. Pantano & Di Pietro (2012) found four research areas that needed further research on technology acceptance among consumers. These concerned the technical skills of the consumer, how the technology relates to the needs and wants of the consumer, how consumers can be involved in co-creating technological systems and how a technological system can be applied on different contexts to generate profits (Pantano & Di Pietro, 2012). These findings are further backed up by Scott & Walczak (2009) and Stern et al. (2008) who suggested that affinity towards computers and perceived technical abilities affect the consumers’ willingness to use a particular system. Legris et al. (2003) argue that the intentions to use a technology system vary depending on which stage in the implementation process is being considered. Legris et al. (2003) also argue that one of the major issues with the original TAM is that it uses self-reported use of a system, rather than actual usage. This is
of importance, as self-reported use may not necessarily measure acceptance or implementation of the system. The modified TAM from Szajna (1996) also removed the external variables that influence perceived usefulness and perceived ease of use from the model, since this part can be complex and is not needed to predict intentions to use or actual usage (Szajna, 1996). The influence of age was previously discussed from a study by Hauk et al. (2018) and it is also mentioned by Thong et al. (2011) who further argue that social influence and facilitating conditions (support to use the system) also affects the users behavioral intentions towards a technological system (Thong et al., 2011). These models could be used for more complex investigations where the researcher investigates the effects of personal characteristics on technology acceptance. However, if the intention is to investigate the perceptions of using a technology and to predict intentions to use, the external factors and personal characteristics are not needed (Szajna, 1996).

Based on existing literature, this paper will use the TAM as a basis when trying to understand consumers’ technology acceptance of IVR in telephone customer services. The implementation of the TAM in this paper will be further explained in the next chapter.
3. Conceptual Framework

This chapter will explain the core theories that will be used in this study, as well as present a suggested conceptual model of these theories and assumptions that suggest how they might interact.

3.1 Theories and Assumptions

The Technology Acceptance Model will be used as a basis for the researchers when creating their assumptions and the suggested conceptual model. Attitude toward using will be central in this model as it connects theories about customer perceptions with their intentions to use. Attitude toward using is an individual’s positive or negative feelings toward a product or service and how it will perform its expected tasks (Zhu & Chang, 2014). Basically, the consumer perceives the value of a product or service by comparing the pros and cons and forms an attitude (Kim et al., 2013b). Furthermore, it is argued that Attitudes toward using can be based on either perception of a technology or actual experiences that the user has encountered (Jackson et al. 1997). It is suggested that Attitudes toward using influence consumers intentions to use a product or service and that attitudes toward using is influenced by perceived ease of use and perceived usefulness (Davis et al., 1989; Wang et al., 2011).

Customer Satisfaction refers to how well a product or service lives up to the expectations of the consumer (Kotler & Keller, 2009). Customer Satisfaction is important since it helps organizations to create and maintain long-term relationships with their customers. If a customer is frustrated, angry or disappointed in the provided product or service, there is a risk that the consumer talks negatively about the company with their friends and family, and thus harming the reputation of the company (Hoffman & Bateson, 2010). There is also a risk that the consumer will switch to a competitor (Zeelenberg & Pieters, 2004). Customer Satisfaction towards a service can be divided into two dimensions; technical and functional. If the service is to be perceived as high quality, both the technical and functional aspect of it needs to be of high quality (De Keyser & Lariviere, 2014). Based on this, we assume that:

Assumption 1: If the customer satisfaction is high, the consumers’ have a positive attitude towards using the technology.
In relation to the Customer Satisfaction, the authors of this paper have used Wait Time as one of the key concepts. Wait time has in previous literature been discussed as occupied and unoccupied wait time. Occupied waiting time is when the customer is provided with something to do while waiting, for example getting a quiz or listening to information about the company. Research has shown that consumers perceive occupied wait time as shorter than unoccupied wait time, where you just have to wait (Maister, 1985). In telephone services, wait time has been argued to be a common source of consumer dissatisfaction (Lerner et al., 2015). If the wait time is too long, customers can be frustrated, angry or feel anxiety which in the long run will lead to a perceived lower quality of the service. Since customers will not stay with the company if the quality of the service is too low in relationship to the price, consumers have a lot of power since they could easily switch to a competitor (Bielen & Demoulin, 2007). Based on this we assume that:

**Assumption 2:** If the wait time is perceived as short, the consumers’ have a positive attitude towards using the technology.

Perceived usefulness is explained by discussing how efficient the technology is and if it is considered better than the alternatives (Davis et al., 1989). It is argued that consumers today prefer talking to a real person in customer service interactions and that the perceived usefulness is dependent on how open the user is to try it (Wallace & Sheetz, 2014). Perceived ease of use is explained by discussing the users’ experience and how easy and effortless the technology is to use (Davis et al., 1989). Previous research suggests that elderly people might struggle with adapting to new technologies and that some people feel anxiety when using new computer systems (Hauk et al., 2018; Saadé & Kira, 2007). Attitudes and Intentions to use is explained by discussing the user’s opinion of the technology and if they intend to use it or use other alternatives if possible (Davis et al., 1989). Based on this, we make the following assumptions:

**Assumption 3:** If the technology is perceived as useful, the consumers’ have a positive attitude towards using it.

**Assumption 4:** If the technology is perceived as easy to use, the consumers’ have a positive attitude towards using it.
Assumption 5: If the consumers’ have a positive attitude towards the technology, they have a positive intention to use it.

3.2 Conceptual Model
Below, a suggested conceptual model (See Figure 3.2) is presented. The researchers have used the TAM as a basis, suggesting that perceived usefulness and perceived ease of use influence attitude toward using which in turn influence intentions to use. Since the purpose of this study is to explore perceptions, the authors removed the external variables from the original TAM model (See Figure 2.5) as it was suggested by Szajna (1996) that these variables were not needed when looking at perceptions. Furthermore, the researchers have decided not to explore actual usage, as this is a technology that is relatively new and has yet to be fully implemented in many settings. Furthermore, the authors of this paper have decided to focus on the relationship between perceived usefulness and attitudes, and not between perceived usefulness and intention to use, which was presented in the original TAM (See Figure 2.5). This is due to the fact that this is a qualitative study where it cannot be concluded that perceived usefulness directly influence intentions to use unless perceived usefulness and intentions are high but attitudes are low. Instead, we suggest that perceived usefulness influence attitudes which in turn influence intentions to use.

Additionally, the authors of this paper have implemented two additional variables that are suggested to influence attitude toward using. First, Customer satisfaction, which consists of several aspects that could influence attitude toward using, such as technical aspects, functional aspects, overall service quality and word of mouth (De Keyser & Lariviere, 2014). Secondly, Wait Time, which is a concept that discusses efficiency and the negative emotions that could be caused by slow customer service. It is argued in previous literature that long wait time can cause consumers to switch to a competitor whereas if the wait time is short consumers will be more satisfied with the organization (Bielen & Demoulin, 2007; Lerner et al., 2015). Thus, in line with previously mentioned assumptions, the authors suggest that Customer Satisfaction and Wait Time influence the consumers’ attitude toward using a service (See Figure 3.2).
Figure 3.2. Suggested Conceptual Model. (Own).
4. Methodology

This chapter presents the chosen methods of this study, as well as justifications for how the researchers conducted the research and each of the chosen methods. The chapter will also present an operationalization of the concepts presented in the previous chapters and how they will be used to collect data.

4.1 Research Approach

According to Bryman & Bell (2011), the authors are the one that decides the choice of research methodology based on their research approach. The research approach then dictates how the chosen subject will be treated for its empirical investigation. There are three main concepts of research approach, Inductive, Deductive and Abductive and that, the study can be either qualitative or quantitative (Saunders et al., 2009). Depending on the context and scenario, it is under the authors’ decision with which approach they should conduct the study. It is also essential that authors consider the ontological and epistemological understanding so that it gives a clear pathway for better understanding the phenomenon they are going to scrutinize for their study (Bryman & Bell, 2011). Epistemology deals with the knowledge building process that justifies how knowledge can be extracted for the research purpose (Saunders et al., 2009). They state that there are three major paradigms for epistemology which are positivist, interpretive and critical. Positivist research, which is conducted with the assumption that reality is objective, is independent and can be explained by quantifiable measures. However, an interpretive research tries to understand reality by assuming that all knowledge is a social construct and thus is subjective.

This study will consider the interpretivism as the chosen paradigm as the study takes individual’s perspective into account. Thus, this will help understand the chain of thoughts, actions and in an organizational and social (Malhotra & Birks, 2006).

4.2 Qualitative Research

There are two primary research approaches, Qualitative and Quantitative (Bryman & Bell, 2011). There are significant differences between them, mainly regarding the data collection process and the type of research itself. Quantitative research relies on analysis of large amounts of data and testing relationships and using pre-established theories to understand a phenomenon and based on that make conclusions. In qualitative research, however, data
collection is used to form a theoretical understanding of a phenomenon (Malhotra & Birks, 2006). There are also significant differences on how data is collected in these two research methods. Qualitative research data collection oftentimes involves interviews, focus groups, document inspections and observation of a phenomenon/behaviors whereas quantitative studies involve data collection through surveys, questionnaires or databases where these numbers are converted into quantifiable measures (Creswell, 2014).

The authors believe that understanding the experience will be crucial for this study. Therefore, the authors have decided to use qualitative research as their research approach. As Merriam & Tisdell (2016) state, the main objective of qualitative research is to get a greater understanding of a phenomenon, put the interpretation into meaningful concepts and discuss the way people ‘interpret their words’. This study intends to understand the various individuals’ perception of a phenomenon. As Bryman & Bell (2011) explain a qualitative approach will help the researchers to acquire a thorough understanding of the chain of thoughts among the respondents and how they perceive certain features or situations.

4.3 Research Design

It is important to identify what research design to go with while conducting an empirical study (Bryman & Bell, 2011). Research design enables the researcher to achieve their objectives by providing them a framework to work with. There are mainly five kinds (guidelines) of research designs. According to (Bryman & Bell, 2011), they are Experimental, Cross-sectional, Longitudinal, Case study and Comparative designs. Saunders et al. (2009) suggest that research design can be explanatory, exploratory and descriptive as well.

For this paper, the authors decided to follow an exploratory research design, since the purpose of the study is to explore consumer perceptions rather than explaining or describing relationships. Furthermore, the authors of this paper decided to follow a cross-sectional design with a comparative perspective. This means that the data was collected only once, unlike a longitudinal study where the data would have been collected at different occasions to look at development and changes in the data. The researchers did not collect data from different samples to discuss cultural differences between different groups of people. They did, however, discuss comparisons between different technologies and services with the respondents during the data collection, which gives the researchers an opportunity to discuss and compare different perceptions in the analysis and discussion chapters.
4.4 Data Collection Method

According to (Bryman & Bell, 2011), the data collection method should fall in line with the nature of the empirical investigation, for example, qualitative data collection is of more inductive, exploratory and rational in nature where authors work closely with the participants involved. This usually includes focus groups, interviews or content analysis. According to Bryman & Bell (2011), there are three types of interviews when it comes to data collection. They are structured, semi-structured and unstructured interviews.

For this paper, researchers decided to use semi-structured interviews where interview guidelines were developed and pre-tested in order to ensure the optimum coverage of subject, by making sure all the question and topics were addressed (Ghauri & Grønhaug, 2010). One of the benefits of conducting live face-to-face interviews is the accuracy of the answers, which are spontaneous and open up for broader and more unexpected answers. This process helps extract answers which are less filtered compared to other forms indirect data collection and the nature of answers will be a direct consequence of interviewee’s personal experience (Bryman & Bell, 2011).

4.5 Sampling

According to Saunders et al. (2009) sampling plays a vital role as the entire integrity of the empirical investigation relies on it. Thus, it is important the selected subgroup has some sort of relevance to the larger population (Bryman & Bell, 2011) According to Bryman & Bell (2011), there are two types of sampling that empirical papers use, probability and non-probability sampling. As the name suggests, the probability is randomized and everyone in the population have an equal probability of being selected, whereas non-probability sampling eradicates the element of randomness and doesn’t give an equal chance of selection (Bryman & Bell, 2011).

For this study, the samples are selected in accordance with the intention to extract relevant information and thus, the researchers used non-probability sampling. The authors aimed to find respondents who had some experience with some type of IVR. This means that anyone, who may or maybe not be tech savvy but have gone through the process of automated IVR services and their experiences will be taken in to account. The sample population mostly consisted of acquaintances who had some form of account in a Swedish bank (For example,
Nordea, Swedbank). The table below (see Table 4.5) show the age and gender of each respondent, as well as the interview length and interview date.

Table 4.5. Respondent data. (Own).

<table>
<thead>
<tr>
<th>Respondent number</th>
<th>Gender</th>
<th>Age</th>
<th>Bank</th>
<th>Interview time (minutes)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>26</td>
<td>Swedbank</td>
<td>26</td>
<td>2018-04-27</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>35</td>
<td>Swedbank</td>
<td>33</td>
<td>2018-04-27</td>
</tr>
<tr>
<td>3</td>
<td>Female</td>
<td>24</td>
<td>Nordea</td>
<td>22</td>
<td>2018-04-27</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>54</td>
<td>Swedbank</td>
<td>31</td>
<td>2018-04-28</td>
</tr>
<tr>
<td>5</td>
<td>Female</td>
<td>31</td>
<td>Handelsbanken</td>
<td>27</td>
<td>2018-04-28</td>
</tr>
<tr>
<td>6</td>
<td>Male</td>
<td>25</td>
<td>Swedbank</td>
<td>25</td>
<td>2018-04-29</td>
</tr>
<tr>
<td>7</td>
<td>Male</td>
<td>38</td>
<td>Swedbank</td>
<td>23</td>
<td>2018-04-29</td>
</tr>
<tr>
<td>8</td>
<td>Male</td>
<td>26</td>
<td>Handelsbanken</td>
<td>25</td>
<td>2018-04-30</td>
</tr>
</tbody>
</table>

4.6 Quality Criteria

The quality criteria refer to the transferability, confirmability, credibility, and dependability of the study. Transferability signifies one of the most important criterions of a study (Bryman & Bell, 2011). It stresses the usefulness of the study in regards to its results and conclusion as well as the correctness of the study and whether it can be utilized in another context (Ghauri & Grønhaug, 2010). For this paper, the research scope was narrowed down the banking sector and all the concepts and participants involved were tied to this field. The application of IVR and its purpose is similar in other areas as well. Thus, the findings from this study on IVR should provide solutions to companies seeking to provide a quality service to its customers. The study will also be made public through recommended outlets in order to maintain the external validity and be made available to those involved and interested in the results. As intended previously, doing so will help create a roadmap for future studies in similar fields.

The second quality criteria, conformability, ensure that the study is not influenced by personal biases and values of the researcher conducting the study (Bryman & Bell, 2011). The researchers in this study made sure that the subject matter of the study was not influenced by personal values and that, the study was intact within its investigation sphere. The objectivity of the study was the utmost priority and all the material and data collected were viewed from an objective perspective. This allowed no space for personal biases or values deters the quality of the study. It was particularly emphasized by the authors to keep an objective stance which subsequently, allowed maintaining the element of variety while conducting the study as objective constructive criticism played a common theme.
The credibility criteria simply refer to how believable the findings are. It is the way in which the research is carried out in essence of good practice and wellbeing, and is handed out to the eligible members of the studied field for their confirmation to ensure the authors understanding of the subject matter (Bryman & Bell, 2011). To ensure the credibility of the study, the authors agreed in using multiple theories where several theories were looked into to decide what could be prominent in explaining the phenomenon and also to get the complete understanding of the scenario. Furthermore, the set of respondents included people of varying age, gender, and background with relevant experience with the concept. Lastly, all the primary and secondary cited sources were peer-reviewed journals which were substantial in maintaining the credibility.

The last criteria, dependability, refer to the integrity of the paper. The data enables to draw consistent conclusion given the similarity of the context of the study (Bryman & Bell, 2011). This will later serve as a genuine foundation for other future research (Bryman & Bell, 2011). In this study, all answers were typed into document format as the interview was taken place. This allowed the researchers to instantly write answers word for word. According to Ghauri & Grønhaug (2010), a great deal of subjective judgment is involved while observation and translation of a data. This may lead to inconsistency of the data. This arises in numbers of context while collecting data, for example, categorizing an open-ended question. The authors made sure that all the observation were in line with the theoretical framework, that no bias was involved and referred back to the document that had respondents answers typed in word for word.

4.7 Ethical Considerations
Ethics are the moral grounds and principles that researchers should emphasis in order to maintain the safety of those involved in data collection (Ghauri & Grønhaug, 2010). Ethical consideration is a universal concept that an individual should be considerate of in all social settings. However, special consideration should be given when reading an individual’s observations and personal attitudes towards certain subjects (Bryman & Bell, 2011). Thus, authors must strive that no future complications arise for the participants involved, by maintaining the anonymity of the participants. There are a total possible of 29 different ways in which participants can be harmed in while conducting data collection process, be it physically, mentally or harming their future prospect (Bryman & Bell, 2011).
To ensure the safety of participants in this study, the researchers fully informed them of terms and conditions of being involved in data collection process. They were also provided with relevant information regarding the study and their confidentiality was made evident to them so that the data collected were clean and transparent without any filters. The authors also ensured to be as careful, professional and hospitable as possible so that respondents felt comfortable during the data collection process. A clear interview date was established in accordance with the time of the respondents which ensured their full devotion to the process. The participants were ensured that the results of the study would be presented to them to ensure that no deception was deployed to manipulate the results.

4.8 Pre-test
To ensure that the research is valid and provides useful answers, a pre-test should be conducted (Bryman & Bell, 2011). One of the reasons of doing a pre-test for a qualitative study of this kind is to discover potential problems in the categorization of the data that will be collected (Cooper & Schindler, 2014). The authors of this paper conducted their pre-test by doing short interviews with potential respondents, where the developed interview guide was discussed. The potential respondents consisted of people that were easily available to the researchers and that were of the right characteristics to fit the sample frame. The respondents gave feedback on how they interpreted the questions and how they would answer them. Based on this feedback any questions that were unclear, or interpreted in the wrong way, were revised.

4.9 Data Analysis Method
To analyze the collected data the researchers choose to use coding as their method. Cooper & Schindler (2014) state that coding is advised when the researchers do not have hypotheses to answer and when the researchers try to understand the respondents personal opinions and natural expressions. When using open-ended questions, the researchers must wait to code their collected data until after the data collection, since the responses may vary much between respondents (Cooper & Schindler, 2014). Bryman & Bell (2011) state that coding requires that the researchers critically study and process the collected data to prepare it for analysis.

The authors of this study started by going through the collected data and sorted out all data that was not relevant to the study. Secondly, the authors marked all the relevant data into
labels, also known as “codes”. When all data were labeled with codes, the researchers went through all labels that were constructed in the previous stage, these were then categorized once more into themes. These themes and labels were then used to spot indications and patterns in the data that the researchers used when analyzing their primary data. Saunders et al. (2009) state that researchers can use codes that are either prepared based on the theoretical framework or based on the collected data. The researchers of this paper developed their codes based on the collected data since it would be more open to additional findings or explanations that were not suggested by the theory. However, all questions were developed with existing theories as a base, which means that all answers could in some way be related back to that theory.

4.10 Operationalization

Below, a developed operationalization table is shown (see Table 4.10). In the table, the authors have defined each theory that is to be used in the data collection and questions that are developed to measure these concepts.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>References</th>
<th>Questions</th>
</tr>
</thead>
</table>
| Customer Satisfaction | Customer Satisfaction can be defined as a consumer's pleasure or disappointment when he compares the performance of a service with his expected expectations. Customer satisfaction in this case can be categorized into two parts of service management; Technical and Functional. | Kotler & Keller (2009)  
Lundahl et al., (2009)  
De Keyser & Lariviere, (2014)  
Babin & Harris, (2012)  
Hoffman & Bateson (2010) | - Do you think this type of technology provide satisfying responses?  
- Do you think the technology is advanced enough?  
- Do you think the technology is functional enough?  
- Do you discuss positive and/or negative experiences of this type of technology with other people? |
| Wait Time          | Wait time refers to the time a consumer must wait to get response from an organization or service provider. Waiting time can be | Maister (1985)  
Katz et al., (1991)  
Taylor, (1994)  
Friedman & Friedman, (1997)  
Bielen & Demoulin, (2007) | - Do you consider wait time when choosing which brand to buy from?  
- How do you think this type of technology affect |
<table>
<thead>
<tr>
<th>Perceived Usefulness (TAM)</th>
<th>Perceived Usefulness refers to a consumers’ belief that the use of a certain type of technology will increase their performance compared to the alternative options.</th>
<th>Davis et al., (1989) Koufaris, (2002) Sheetz, (2014)</th>
<th>- Do you think this type of technology is more efficient for you than alternative methods?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Ease of Use (TAM)</td>
<td>Perceived Ease of Use refers to which degree a certain type of technology will be simple for them to use and free from effort.</td>
<td>Davis et al., (1989) Mathieson &amp; Keil (1998) Saadé &amp; Kira, (2007)</td>
<td>- Do you think this type of technology is easy to use and require little effort from you?</td>
</tr>
<tr>
<td>Attitude Toward Using (TAM)</td>
<td>Attitude Toward Using is a part of the Technology Acceptance Model which explains if the user has positive or negative opinions about the technology.</td>
<td>Davis et al., (1989) Varma &amp; Marler, (2013) Immonen et al., (2018) Wallace &amp; Sheetz, (2014)</td>
<td>- What is your opinion on this type of technology? - What is your opinion on this type of technology for this type of industry/service?</td>
</tr>
<tr>
<td>Intention to Use (TAM)</td>
<td>Intention to use is a part of the Technology Acceptance Model which explains if the user uses or intend to use a certain type of technology.</td>
<td>Davis et al., (1989) Wallace &amp; Sheetz, (2014) Varma &amp; Marler, (2013) Stern et al., (2008) Legris et al., (2003)</td>
<td>- Are you experienced in using this type of technology? - If yes, for what type of industry/services? - Do you use or intend to use this type of technology?</td>
</tr>
</tbody>
</table>
5. Empirical Data

This chapter will present the empirical data that was collected during the interviews and refined during the coding process.

5.1 Customer Satisfaction

Satisfaction as a multidimensional concept for this particular instance was characterized by the sophistication of technology and its subsequent contextual usage, which unfortunately had an adverse effect on the respondents’ experience. Many respondents were hesitant towards having to use the A.I. because of the drawbacks that come with the technology. There were claims of using A.I. as a front to keep customers stalling and keeping them deprived of the basic services which otherwise could have been solved much promptly had there been a human interaction. This showed that the respondents perceived the A.I. to be more useful for the bank personnel than for the customers themselves, questioning the purpose of A.I. The respondents most interestingly were not clear to draw the line between whom the A.I. was serving for. The general consensus among respondents was negative regarding their interaction with the A.I. Respondent 1 stated: ‘No, it’s a way to keep you stalling, so people get bored and hang up. They save money because of the AI.’

There were far and few instances of respondents being incredibility satisfied with the A.I. service, mainly because of not having to go through the same procedure over and over again. Once they had to explain something, they didn’t have to repeat it again and again, contrary to a human interaction where transferred calls to different department required explaining the users’ problem all over again. But some respondents raised the question about the integrity and vulnerability of the A.I. system and raised concern about giving your personal, oftentimes, sensitive information such as personnel number. They were concerned about the unforeseen repercussions that could arise by giving information to an A.I. Their concerns were related to the technology and its maturity stage, where several respondents claimed that the technology is still in too early stages to deal with matters such as handing out your personal information. Respondent 7 stated: ‘Yes, it could definitely be better in the future. It has advantages over regular service. Wait time, opening hours, not having to talk to a real person if you’re tired or in a bad mood.’
The respondents claimed that they found the A.I. most useful depending on the context they were calling in for. For example, making an after-hour call, were instances when A.I. proved most effective, but those instances were rare occasions. But more often than not, the respondents claimed the A.I.’s basic functions were still minimal and didn’t do much in solving their problems and that, for complex issues, they’d rather talk to a human technician than go through processes of an A.I. Several respondents raised concern about the A.I. and its usage among elderly people and said that its purpose may be rendered obsolete. One of the more traditional respondents claimed that the technology was not catered enough to help traditional elderly people. Respondent 2 stated: ‘We (younger people) are following the technology but not the old people.’

Most of the respondents were forthright about sharing their negative experience with this technology, be it with their family members, colleagues or close friends. The positive and negative sentiment of the A.I. usage among respondents, mostly their negative experiences were not kept suppressed whatsoever. They claimed that they have at least once shared such negative experience of their interaction but the A.I. had never left a remarkable impression to any of the respondents to express their delight among their acquaintances. Respondent 6 stated: ‘Yes I probably would discuss negative experiences. Positive, maybe if I’m surprised by the quality of AI-service.’

### 5.2 Wait Time

When it comes to wait time, the respondents claimed that it was not an issue for them when choosing their bank. However, the main reasons for this were that they don’t have a lot of questions or contact with their bank. One respondent had a contact person at the bank to which she could call if she had questions about for example loans, others mainly claimed that they do their banking businesses by using an app or internet service. During the interviews, some of the respondents were open to switching banks if they were dissatisfied with the wait time or customer service and argued that in that case, they might consider the wait time and service quality when choosing their new bank.

When asked how they think AI-technology would affect wait time, compared to regular telephone service, the respondents were generally positive towards the idea of IVR. The respondents could see the advantages of AI since it gives the company the opportunity to answer more calls at a time and that they could have longer opening hours which could give
the customer more flexibility on when to call. However, there were also some concerns that were brought up. Firstly, it was mentioned that it could be faster to talk to a real person since some errands have a certain complexity to them that a real person might understand better than an AI. If the caller needed to state their errand several times only to be directed to a real person, then the call would be slower and cause frustration. Respondent 8 stated “It (IVR) would be faster I assume since the IVR-technology could answer many calls at the same time. But maybe it would be slower if a lot of people need to be redirected to a “real” person if the company has fewer staff members.”. Thus, the respondents were not certain that the AI could provide answers for everything, and that this sometimes could cause even longer wait times if there were fewer regular staff members that could answer calls and a lot of people needed to get help. However, for simple and regular questions they were all positive that an IVR customer service could significantly reduce wait time.

Most respondents claimed that they tend to cancel their call if it turns out that the wait time is too long. Depending on what type of errand and how much time they had when they called, it seems they were willing to wait for a few minutes, but not longer. Respondents mentioned that they treat different calls in different ways. Sometimes they try to call to check how long wait time it is and sometimes they give it a shot during a lunch break or just before closing to see if they can get a quick answer, otherwise they will try again when they have more time. As stated before, it is also suggested that some errands are considered more important or urgent depending on what type of product or service the call concerns and customers are more willing to wait if the call is of higher importance to them.

When it comes to the discussion about occupied and unoccupied wait time the respondents had similar responses. They argue that they do not care for occupied wait time, where the company provides the caller with something to do while waiting to get a response. It was mentioned a few times that they do however want to know their place in the queue and how much more time they must wait to get service. For example, respondent 5 stated “I prefer hearing queue time or amount of people before. Usually, you can calculate/estimate a time then. Usually, I don’t care about occupied waiting time. I don’t want to hear other stuff.”. Similar points were given by other respondents, indicating the importance of letting the respondent know when they will get service, or else they may become frustrated or cancel their call. However, it was also briefly mentioned by some respondents that they are not sure how they react to occupied wait time, as it may affect their perception of the wait time.
without them knowing it. Respondent 8 stated: “…maybe it feels like it’s going faster if there is some sort of entertainment or occupation during the wait?”.

5.3 Technology Acceptance

All respondents had some experience when it comes to AI in telephone services. Most commonly they had experienced the type where an automated voice gives you options and then asks you to press a certain button on your phone to choose an option. There were also experiences of the type of IVR where you are asked to state your purpose and then the AI connects you to the correct department. When it comes to banking, however, there was much less experience in this type of technology. Respondent 7 did state that “Yes, my bank has a telephone service where you can do your accounts and similar without talking to a real person. I have not used it in many years though”, which indicate that the type of technology is available through some banks in Sweden but that the users prefer other options. Respondent 5 stated that “I usually don’t have errands that I can’t do with internet-banking or app-banking.”. This can be connected back to previous answers since most respondents claim that they don’t usually have a lot of contact with their bank. The answers here also indicate that consumers prefer doing their bank tasks online or by using an app and do not wish to call the bank unless it is the only option.

When it comes to the consumer’s opinion on using IVR customer service in banking, the responses were mostly negative. When asked to compare regular telephone customer service with IVR customer service within the banking industry, the respondents generally preferred to talk to a real person than an AI. The arguments against the IVR were that banking errands could be sensitive or require up-to-date information such as interest rates, where the respondents would feel safer to trust a regular person than an AI. It was also mentioned that some discussions with banks could require a lot of information before the question can be answered and that it could be frustrating if the AI does not completely understand your problem and you have to repeat yourself over and over. Respondent 5 stated: “It works for more general questions, but if you require regional help or need to provide a lot of information before you can even ask the question, then people will get irritated by it because it will be slower and more obstacles along the way.”. Among the positive parts of IVR, in this case, where opening hours and availability, since many banks today have closed or limited the opening hours at their offices which make it harder for the customers to contact the bank if they need to. It was also mentioned again that IVR customer service could provide useful and
fast service for simple and regular questions and that it will likely be better and better in the
future, but that it has too many limitations today.

When the respondents were asked whether they used or intended to use this type of service if
it was offered by their bank, most answered that they were open to trying it. Some argued that
they would try it for easier questions and then decide how they liked it based on the
experience. Again, the advantage of shorter wait time was brought up several times. However,
it was also argued that there could be a learning process for the consumers as well for this
type of technology and that older and people who are not good with technology might
struggle and dislike it. It was also argued that if it does not work and if there are no other
options, consumers might consider switching banks. Respondent 3 stated “If it was the only
option I would try it a few times if I needed service or if I only had some small task. But if it
does not work and the bank can’t provide me solid service I might consider switching bank.”.
Overall, the answers for this question indicate that the consumers do not completely trust that
an IVR customer service could provide customer service as good as a regular telephone
customer service and that not everyone is willing to learn and adapt to technology.

When asked to compare if IVR customer service is more efficient than regular telephone
customer service, the respondents provided similar answers as earlier. If the technology is
well developed and advanced enough to understand the consumer it could be a time saver
since the caller could get faster service. However, the respondents suggested that this type of
technology would require a lot of patience and be very frustrating for some users, especially
older people and those who are not used to technology.

When asked about if they perceived the technology as easy to use and if it would require little
effort of the users, the respondents generally stated that it would be easy to use and that it
would not require a lot of effort from the users. The arguments here were that no company
would implement a system like this without making it easy for the majority of their users and
that the company would know how easily customers can get frustrated at poor customer
service. The respondents also mentioned that they consider themselves as used to technology
in general and that something like this would be developed so that even those who are not
used to technology could use it. However, it was also brought up that the consumers would
need to be open to learning about this type of technology for it to work. Several respondents
also discussed that there needs to be an alternative in the form of regular telephone customer
service so that everyone can get help if they can’t manage to talk to the AI or if it can’t provide useful responses. Respondent 6 stated: “If I have complex questions and want to talk to a real person I would want that option immediately because I know that the AI cannot provide solid responses for everything at this time.”. Thus, the respondents still had some skepticism towards the technology and emphasized the need for alternative telephone customer service.

When asked to compare IVR customer service and regular telephone customer service in terms of how easy they are to use and if they require little effort from the customer, most answers were positive to the IVR customer service. Again, given that it is well tested and developed before it is put to use. Same as earlier, the responses were that the AI could give fast and efficient responses and reduce wait time compared to regular telephone service. Among the advantages of the IVR customer service, respondent 7 stated “I would like to skip to talk to a real person sometimes, and I hate ques. It sounds simple and efficient.”. However, among the negative comments were that AI could not completely replace a real person because real social interactions can be used to create better understanding when you need help. Here it was stated by respondent 8 that “I think it is easier to talk to a real person though, I trust them to understand me more correctly than an AI. Social interactions are more complex than automatic responses” whereas respondent 3 stated that “I don’t want to explain my problem several times for 20 minutes to get a 20-second answer. It needs to be smart and efficient.”.
6. Analysis

This chapter will discuss the empirical data in relation to the assumptions and model developed in the Conceptual Framework.

6.1 Assumptions

Based on the Technology Acceptance model and the conceptual model that was developed for this paper, the authors believed that consumers attitude towards the technology would act as a bridge between their intentions to use it and their perceptions of the characteristics of the technology. However, when analyzing the empirical data it was seen that the respondents generally had a negative attitude towards the technology, but that they were still positive that they would use it or give it a try.

If we start by looking at Customer Satisfaction, it was found that most respondents believe that they would not get satisfying responses and customer service from an IVR telephone customer service. They did, however, see some advantages of it, such as faster responses. They also had some belief that the technology could be well developed and work well in the future. If we look at Assumption 1: “If the customer satisfaction is high, the consumers’ have a positive attitude towards using the technology.” it could be argued that there is some relationship between customer satisfaction and attitudes towards the technology that needs to be further researched. The findings of this study, however, do not suggest that consumers have a positive attitude towards IVR telephone customer service or that they believe that the technology can provide satisfying service.

When it comes to wait time the respondents generally argued that the queue time would be shorter if the company use IVR telephone customer service since the company could answer more calls at a time and have better opening hours. Even though the respondents generally perceived wait time as shorter for IVR, some arguments were made that they the actual interaction in the call could be slower if the AI could not understand you as well as an actual person. Assumption 2: “If the wait time is perceived as short, the consumers’ have a positive attitude towards using the technology”, cannot be supported based on the empirical data in this study, since the respondents were somewhat positive regarding wait time but had a slightly negative attitude towards the technology. However, since the answers were positive
towards both wait time and the consumers’ intention to use the technology, it could be argued that there is a relationship between perceived shorter wait times and intention to use.

Regarding perceived usefulness, the respondents were somewhat positive. The arguments were mostly that wait times would be shorter and therefore make the process more efficient, both for the consumers and the organization. However, these arguments were generally made under the conditions that it would be well developed. It was also argued that some respondents such as elderly consumers or those who have complex problems may struggle with this type of technology. If we look at Assumption 3: “If the technology is perceived as useful, the consumers’ have a positive attitude towards using it” it can be argued that there could be some relation between these theories, as some respondents claimed that it could be inefficient and less useful in some cases. However, when the respondents argued from their own point of view, their perception was generally that the technology would be efficient for them. Thus, we would argue that there could be some relationship between perceived usefulness and attitudes towards using it and that further research is needed. We would also argue that there is a relationship between perceived usefulness and intentions to use, as there were positive arguments for both these theories as well.

As for the perceived ease of use, the respondents were generally giving positive responses. They did argue that there would still be a need for regular customer service as well, but most arguments were made that this type of technology would be easy to use if you are open to learning and that it would be fast and efficient if it is well developed. Looking at Assumption 4: “If the technology is perceived as easy to use, the consumers’ have a positive attitude towards using it.” we cannot argue that there is a relationship between perceived ease of use and attitudes toward using the technology. However, similar to the previous theories, it can be argued that there is some relationship between perceived ease of use and intentions to use.

As previously stated, the respondents generally had a negative attitude towards the technology and that they prefer regular telephone service over it. Contrary, the respondents still claimed that they would use the service if it was provided, or at least give it a try before discarding the idea. Assumption 5 stated: “If the consumers’ have a positive attitude towards the technology, they have a positive intention to use it.” which cannot be confirmed based on the empirical data that was collected for this study. Since attitudes were brought into the suggested model for this paper, it could be argued that attitudes do not always affect intentions to use.
However, as stated earlier, the findings of this study do suggest that wait time, perceived usefulness and perceived ease of use do have some relationship with intentions to use.

Looking specifically at attitudes, it could be argued that consumers would use this type of technology despite having a somewhat negative attitude towards it, however, consumer attitudes are still important since negative attitudes towards customer service could be a factor contributing to the customers switching to a competitor. The fact that consumers may accept a service or a part of a service even though they don’t completely like it does not mean that customers will be satisfied and stay loyal to the company in the long run. In this case, it should also be mentioned that many respondents claimed that they don’t contact their bank very often and that they, therefore, could accept that the customer service is a bit simple or of lower quality.

6.2 Revised Model

Based on the analysis presented above, the researchers have created a revised model (see Figure 6.2) based on the findings of this study.

![Figure 6.2. Revised Model. (Own).]
7. Discussion

This chapter discusses the findings from the empirical data and the analysis in relation to previous research that was presented in the literature review.

As stated by past articles, IVR’s main contribution was mainly cost reduction for business organizations, including banks. IVR’s end goal, however, was not fulfilling enough to leave customers satisfied (McCartan-Quinn et al., 2004). From the majority of responses, the implementation of IVR was simply not versatile enough. There were key factors that played a prominent role in dividing the differences in IVR and regular customer service and their subsequent effect on consumers’ satisfaction.

One of the key aspects of IVR was the reduction of waiting time, which several articles positively nods towards as a prominent facet in determining satisfaction (Lundahl et al., 2009; De Keyser & Lariviere 2014). However, the respondents were discontent with the wait time as their expectation with the use of a machine was much higher. Wait time also seemed to be the major cause of their frustration. Their discontent was determined by the length of the wait time where longer wait time meant immediate withdrawal from the conversation. This was a common consensus among entire respondents. As stated by Bielen & Demoulin, (2007), customers in case of poor services and long waiting times withdraw all their business activities with the company.

They clearly preferred a human interaction and stated the benefits of talking to a real human and the speed in which their problems have been solved in the past. This could possibly be because of the speed in with the trained staffs work and their professional skill in resolving issues as (Martelo-Landroguez & Martin-Ruiz, 2016; Raisch & Birkinshaw, 2008) states that professional staffs in the service sector are trained to solve issues as quickly and efficiently as possible. Furthermore, those who had trouble with modern technology insisted on having a human interaction rather than with an A.I., as (Immonen et al., 2018) found in their study that consumers struggling with this kind of service would much prefer a human interaction.

Although respondents acknowledged the context of the call, despite working well at times, the inconsistency between varying wait times played a significant part. This could possibly mean that the status quo of the system is itself in an early stage of its development, or at least the way its implemented needs to be sorted out. Added to this, is the study by Legris et al. (2003)
as they point out that the intention to use the technology is dependent on the stage at which the technology is at. Additionally, these immediate onsets of respondents were also concerned about elderly customers who are less acquainted with the technology. As Hauk et al. (2018) explicitly mention in their study that the elderly population oftentimes perceives this kind of technology uneasy to use. This particular age group felt like they were missed out of this current trend possibly because of keeping up with current technology can be daunting to some (Saadé & Kira, 2007).

While the concept of IVR seemed like an always available, time-saving technology on the surface, on a deeper level, many respondents view the system as a shallow front line service with limited accessibility. The respondents were vocal about their discontent with the system and were not afraid to share their experience with their acquaintances as Hoffman & Bateson (2010) suggest that people are not afraid to talk about their bad experiences in service organizations with others. Although many respondents were positive to the idea of IVR, they couldn’t fully grasp the end goal of IVR and to whom it benefited the most, mainly because of the inconsistencies with the technology. This could possibly be because of the lack of communication from the company side to make it evident for the customer base about the limitations of the IVR. As pointed out by Wallace & Sheetz (2014), the provider needs to emphasize the benefits of the system, or else there is a risk that user tries to avoid the system.

However, despite the respondents positivity and vested interest in learning the technology given, when it worked majority of the time, some of the respondents were still skeptic in sharing some of the personal information to a machine which is still at the early stages of its life cycle, especially when it came to their life’s savings. This may be important because, if they talk to a human respondent, any mistakes could be directed to a liable individual instead, and that there was a sense of trust between them. This sentiment could be tied to any business sectors oriented towards providing the service. Any sensitive information regarding their stakeholders should be treated with caution.

The below table (see Table 7.1) shows some of the key differences the consumers pointed out between IVR and regular service. The dissection is made with the theories that were used in the paper which allows highlighting some of the key aspects, pros and cons, as well as key aspects incorporated in both types of services. While IVR excelled in quick and prompt
services for basic inquiries, they were frustrating to use in a more complex scenario, as Pantano & Di Pietro (2012) argue that it is the technology should be catered to understand the specific needs and wants of the consumer. Regular customer service benefits from the human aspect of interaction such as trustworthiness, sharing of responsibility and professional personnel resolving issues with relevant expertise, but the lack of availability/opening hours is the key issue with them.

Table 7.1. Comparison IVR Telephone Customer Service & Regular Telephone Customer Service. (Own).

<table>
<thead>
<tr>
<th>Theory</th>
<th>IVR Telephone customer service</th>
<th>Regular telephone customer service</th>
</tr>
</thead>
</table>
| **Customer Satisfaction** | • Better Opening Hours  
• Time-Saving  
• Slow Answering  
• Might Struggle with complex questions.  
• Need further development | • Can handle most questions  
• Less frustrating and repetitive  
• More satisfying  
• Longer telephone queues  
• Shorter opening hours |
| **Wait Time** | • Better Opening Hours  
• Could answer more calls at a time  
• Slower during the actual interaction | • Better answers  
• Faster when talking to a real person.  
• Shorter opening hours/availability |
| **Technology Acceptance** | • Efficient if consumers are open to learning.  
• Efficient if consumers are used to technology.  
• Less trusted with sensitive information.  
• Less trusted to understand information-heavy subjects.  
• Old people may struggle.  
• Takes patience.  
• Can cause frustration.  
• Need regular telephone service as an alternative. | • More trustworthy.  
• Easier to create understanding and trust when interacting with a real person.  
• Understands more complex and information-heavy subjects.  
• Can help all customers, even those who are not used to technology.  
• Less efficient for small problems.  
• Can have long wait times |
8. Conclusions

In this chapter, the research questions are answered and the conclusions of the study are presented.

Based on the findings of this study it can be argued that customers are open to learn and adapt to IVR telephone customer service as long as it is advanced enough so that it can provide adequate customer service. Customers using the services currently are in doubts about the benefits of the system and are left without a choice. Leading to this it was found that customers are skeptical towards the quality of AI-driven customer service as it is today, however, they do believe that it will be better in the future and they have accepted that there will be a change in technology.

When looking specifically at the banking industry the findings of this study suggest that consumers usually don’t have much interaction with their banks, but when they do they prefer to talk to a regular person over an automated response. This is due to the fact that the consumers believe that the AI-provided responses could misinterpret the caller or lack the latest information which could cause frustration that would not have been caused if the call was responded by a real person. There is a clear lack of communication from the company side to relay the benefits of using the IVR to its customers, and this could potentially affect their relationship with their banks. The cause and effect appear to be companies taking liberty in cutting cost and generating profits rather than providing a satisfactory customer service. Providing a satisfactory customer service is the quintessential aspect in creating and maintaining customer loyalty and various literatures highlight the synergetic effect of loyalty in retaining new and old customer. Thus, it is important to see the degree and extent to which IVRs are able to provide a satisfactory customer service. It should also be mentioned that consumers consider banking services to be of high importance since they would not let someone who they don’t trust to take care of their money, and therefore they expect customer service to be of high quality as well. The consensus of using the technology has been the choice pushed by the company rather than what their consumer asked for. In addition to the issue were the elderly age groups that felt left out using the IVR as a challenge. This entire set of customer base largely felt left out because they are not as prompt in using new technology as their younger selves. This issue clearly needs rectifying from the company side. The opportunity to not have to wait in telephone queues, and to be able to contact their bank at
later hours than they normally could, was emphasized by the respondents in this study. Despite the use of the AI and expectation of reduced wait time, it did not form a satisfactory consensus. The issues linger mainly because of the inconsistent wait time between the calls.
9. Limitations, Implications & Future Research

This chapter will conclude the study with showing the implications of the findings, as well as discussing the limitations of the study and giving directions future researchers within the area of Customer Service.

9.1 Managerial Implications

From this study, there are several implications that could be of importance for managers. First of all, the companies should clearly communicate the benefits and the limitation of the technology to its customers before getting them into any business transactions. The authors of this study suggest that organizations thoroughly test and control the quality of the technology before it is implemented. Any questions or problems that the AI will struggle with could cause frustrations among the consumers, possibly leading to negative word-of-mouth or ultimately losing customers. In order to maintain optimum customer satisfaction, companies should consider that their cost-cutting methods are not at the expense of customers leaving unsatisfied. They should strive for striking a perfect balance between satisfactory IVR services which are cost effective as well. This will allow for a greater transparency for their customer base. An efficient and satisfactory service is the foundation for creating loyalty and maintaining a strong relationship. It is also important that the AI is well updated so that customers will not receive inaccurate information which is likely to damage the trust towards the organization. Managers also need to understand the importance of human interaction and how some people are less open to learning to adjust towards new technologies. Therefore it is suggested that organizations should keep regular customer service as an alternative at first, so that elderly customers, and those who are reluctant to technology, can be provided with good customer service. It is likely that the need for regular customer service will decrease more over time, as the IVR technology gets even more advanced and consumers adjust and see the benefits of it.

9.2 Limitations

There were a few limitations to this study that needs to be mentioned. First of all, this study was conducted qualitatively with a small sample, which means that there is no guarantee that the responses can be generalized towards the full population. Furthermore, the study was limited to the banking industry and a specific A.I. used within the industry. This means that the responses from this study are aimed towards IVR customer service for the banking
industry and that if another industry was chosen it is possible that the respondents would express other opinions or ideas. Lastly, the study was limited to the Swedish market, which means that consumers from other countries may have different perceptions of the technology, depending on culture and technology experience.

9.3 Future Research

The authors of this paper suggest that future studies should look at consumer perceptions on IVR customer service within other industries as it is likely that consumers have different opinions and expectations regarding customer service depending on what type of product or service they have purchased. Other studies should also consider cultural differences and test if the study would have had different findings in other countries. Another aspect that needs further discussion is age, as there were indications in this study that perceptions may differ between age groups. Lastly, future studies should consider if there are other variables than wait time, customer satisfaction, perceived usefulness and perceived ease of use that could influence consumers’ attitudes and intentions to use a specific type of technology. The present study also opens up for future researchers to quantitatively test the different variables and models that were discussed.
10. References


Appendix I – Interview Guide

Introduction
Automated IVR telephone services can work in several different ways. The idea of the technology is that you as a user/customer make a phone call to your service provider, in this case, a bank, and an Artificial Intelligence directs your call. This can either be through letting you press a certain button depending on what type of service you require, but it can also be a voice recognition that listens to what you say and either connects your call to the right person, or the AI will respond itself if possible.

Questions
Q1 - Do you think this type of technology provide satisfying customer service?
Q2 - Do you think the technology is advanced enough to understand you as a customer?
Q3 - Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
Q4 - Do you discuss positive and/or negative experiences of this type of technology with other people?
Q5 - Do you consider wait time within customer service when choosing your bank?
Q6 - How do you think this type of technology affect wait time compared to regular telephone service?
Q7 - Do you tend to leave if the wait time is too long?
Q8 - Does your perception of wait time differ between Occupied and Unoccupied wait time?
Q9 - Have you used this type of technology?
Q10 - If yes, have you used it in relation to banking services?
Q11 - What is your opinion on this type of technology for banking services?
Q12 - What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
Q13 - Do you use or intend to use this type of technology if your bank would offer it?
Q14 - Do you think this type of technology is more efficient for you than regular telephone service?
Q15 - Do you think this type of technology is easy to use and require little effort from you?
Q16 - Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
Appendix II – Coding Scheme

**Satisfaction**
Q1 - Slow, frustrating, not satisfying, need development,
Q2 - Not for complex questions, quick, responsive, better in future, not advanced enough
Q3 - Depends on situation, time-saving, better opening hours
Q4 - Yes if experience is bad/good and/or surprising

**Wait time**
Q5 - No. Usually not much contact with bank.
Q6 - Could answer more calls, a real person is faster, better opening hours,
Q7 - Yes. Depends on errand/urgency. A few minutes are ok.
Q8 - Mostly no. Prefer info about queue time or queue length.

**TAM**
Q9 - Yes in some form. “Press one for…” etc.
Q10 - Mostly No, other options such as online or app-banking.
Q11 - Mainly negative. Some advantages like opening hours.
Q12 - Prefer regular. Hard to discuss sensitive and information-heavy subjects with AI.
Q13 - Would try. Depends on experience. Easy questions only.
Q14 - Not for old people. Takes patience, frustrating, short wait time. If it works ok.
Q15 - Mostly Yes, willing to learn or used to tech. Real person as an alternative is needed.
Q16 - Mostly yes, if it is well developed, fast and efficient. Shorter queues.

*Table II. Coding Themes. (Own).*

<table>
<thead>
<tr>
<th>Theory</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Satisfaction</td>
<td>Negative, Frustrating, Slow, Time Saving</td>
</tr>
<tr>
<td>Wait Time</td>
<td>Positive, Shorter, Better availability,</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>Neutral, Positive if it works, Negative for old people</td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>Positive, Open to learning, Alternative service is needed</td>
</tr>
<tr>
<td>Attitude Toward Using</td>
<td>Negative, Prefer regular, Few advantages</td>
</tr>
<tr>
<td>Intention to Use</td>
<td>Slightly positive, Would try, Some previous experience</td>
</tr>
</tbody>
</table>
Appendix III – Interview Transcriptions

Respondent 1 – Female, 26

Do you think this type of technology provide satisfying customer service?
No, it’s a way to keep you stalling, so people get bored and hang up. They save money on the staff. I don’t get satisfied when you get 10 of those number, press this press this and you press gain and again, so you never reach to the person you want to talk to or takes longer.

Do you think the technology is advanced enough to understand you as a customer?
Sometimes I do, in some cases, like if it is a bill question. Instead of pressing they come up with a question, you just say the purpose of the call. So that it makes it a more humane experience rather than going through the hassle of pressing numbers.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
It saves time, I don’t need to explain myself all over again to different people. When you talk on the phone they ask “wait a minute we will transfer your call”, you explain again and they keep transferring. In that case, you get to the exact expert, which is what you want.

Do you discuss positive and/or negative experiences of this type of technology with other people?
Yes, when I’m angry. Having to wait for 24 minutes for just one question is annoying and I discuss my experiences with other people. I definitely discuss with family and friends. No complaints with the company however.

Do you consider wait time within customer service when choosing your bank?
I never thought about the wait time in banks. Savings, funds and interest are more important than wait time in a bank.

How do you think this type of technology affect wait time compared to regular telephone service?
Not sure there will be much difference actually, they always find another way to make people wait. Before you used to listen to background, you never knew what place in queue you were at, now you know your queue number but it is still queues.

Do you tend to leave if the wait time is too long?
Yeah, even if it is important, I will call back later, but it depends on how much time you have. If its 5 or 10 minutes, it is ok, but if it is more than 20 mins, and the system tells you, then I will hang up. But there are some places that call you back but not sure with the banks.

Does your perception of wait time differ between Occupied and Unoccupied wait time?
No that has never happened to me that I can recall.

Have you used this type of technology?
Yes.

If yes, have you used it in relation to banking services?
Yes. But it is only a simple version. You press a button and get directed.
What is your opinion on this type of technology for banking services?
It depends. In a huge bank this might help, but if it is a small bank, you shouldn’t use it at all. If they do use it, they use it to save themselves time and money, because even if you get there, you still need to identify yourself because there are some many steps in between.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
Even if you have robot, it will still not be able to do your job regardless of time. But one advantage is that I would rather be angry with the robot than a real person. But that is it.

Do you use or intend to use this type of technology if your bank would offer it?
Don’t think it is more efficient, but it is easier to accept it because of the reduced wait time. I would probably use it sooner or later.

Do you think this type of technology is more efficient for you than regular telephone service?
I think it is. But when I think about my parents, they are still new to the technology and they might struggle. But for myself I don’t really care.

Do you think this type of technology is easy to use and require little effort from you?
If I think of this technology instead of regular telephone service, I personally think it is easy.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
Yeah, I think so because it would be much simplified so that everyone could use it.
Respondent 2 – Female, 35

Do you think this type of technology provide satisfying customer service?
No, I don’t believe it is satisfying at all, it wasn’t like that 10 years ago, they are manipulating. They know your personal number. So, we don’t have any privacy anymore. I would rather talk to a human.

Do you think the technology is advanced enough to understand you as a customer?
No, it’s not advanced enough, it takes time, takes your patience. 10 years ago, it wasn’t like that and it worked anyway. So, it’s just now I feel like it breaches my privacy.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
No, it is not functional, because it doesn’t work on old people. We are following the technology but not the old people.

Do you discuss positive and/or negative experiences of this type of technology with other people?
Yes of course. I said it to my workplace, where I meet older persons, every day I meet someone. And I also complained about it to my parents.

Do you consider wait time within customer service when choosing your bank?
I choose a bank only because I thought it would be best for my bank businesses. Wait time doesn’t matter.

How do you think this type of technology affect wait time compared to regular telephone service?
Maybe it will be faster once is a while but not always. Maybe it is faster to call, but it is still better to call to a human.

Do you tend to leave if the wait time is too long?
It has happened, sometimes you have to wait 32 minutes, then I would hang up. If it is more than 10 minutes I think I will hang up to be honest.

Does your perception of wait time differ between Occupied and Unoccupied wait time?
I think if you hear some music, then the time goes faster.

Have you used this type of technology?
Yes. I have used “press 1 for…” and similar.

If yes, have you used it in relation to banking services?
Yes I have. My bank has a system where you direct your call by pressing numbers.

What is your opinion on this type of technology for banking services?
They took away my bank office, so I have to call. I would rather not have to call but I have no other choice. It is what it is.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
If I could choose, I would rather stick to regular telephone service.
Do you use or intend to use this type of technology if your bank would offer it?
No, strict no. There are people that are unemployed, why don’t you teach people and employ them as service person? That would save more.

Do you think this type of technology is more efficient for you than regular telephone service?
No, it is not easy at all, it takes a lot of time. It takes my patience. To me it is ok, but not to all people.

Do you think this type of technology is easy to use and require little effort from you?
I’m used to talk to a human and I would rather talk to a human in the future as well.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
Yeah, it is. But I can’t say the same about my parents because they are old people.
Respondent 3 – Female, 24

**Do you think this type of technology provide satisfying customer service?**
No, not for everyone, because when you are older you would not know how to drive with the technology.

**Do you think the technology is advanced enough to understand you as a customer?**
Yes, I think it can understand me, but older people might have problems cooperating with it.

**Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?**
Regular telephone service is much better off course, you can’t compare them.

**Do you discuss positive and/or negative experiences of this type of technology with other people?**
Yes, I do. It irritates me this thing with phone services. I start talking and complain to the people on the phone when they connect me to one. I would say to people that I’m tired of this.

**Do you consider wait time within customer service when choosing your bank?**
Yes, I do. I would choose the bank that has people that work and can help me fast.

**How do you think this type of technology affect wait time compared to regular telephone service?**
Yes it is a big difference. You don’t have a waiting time, and you don’t have a queue. You save time.

**Do you tend to leave if the wait time is too long?**
Sometimes. It differs a lot for me.

**Does your perception of wait time differ between Occupied and Unoccupied wait time?**
Yes it is a bit easier if someone is talking or there is music around.

**Have you used this type of technology?**
Yes, but I don’t prefer calling when I need customer service.

**If yes, have you used it in relation to banking services?**
No I have never.

**What is your opinion on this type of technology for banking services?**
If you think of the technology it is good, but if you think about people who are not used to technology then it is not good.

**What is your opinion on this type of technology for banking services if you compare it to regular telephone service?**
Hm. I don’t know. I just feel that it is easier to talk to a real person.

**Do you use or intend to use this type of technology if your bank would offer it?**
If it was the only option I would try it a few times if I needed service, or if I only had some small task. But if it does not work and the bank can’t provide me solid service I might consider switching bank.
Do you think this type of technology is more efficient for you than regular telephone service?
No I think they are the same, they have the same function, but with advantage that they give you the service at once.

Do you think this type of technology is easy to use and require little effort from you?
Yes, I think so. It should be developed to be easy.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
I don’t want to put in a lot of effort and talk a lot. I don’t want to explain my problem several times for 20 minutes to get a 20 second answer. It needs to be smart and efficient.
Respondent 4 – Female, 54

Do you think this type of technology provide satisfying customer service?
I don’t know for sure. I think so. To some extent at least.

Do you think the technology is advanced enough to understand you as a customer?
No, because the technology can’t and understand you as a customer, so the technology cannot make me satisfied.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
Generally no. But it depends of the context and if it’s an easy question. Then it could work.

Do you discuss positive and/or negative experiences of this type of technology with other people?
In my workplace I would, yes. I don’t talk to anybody else about it. If it is a negative experience I don’t think complaining to other people about it does much help.

Do you consider wait time within customer service when choosing your bank?
No, I don’t really think about it.

How do you think this type of technology affect wait time compared to regular telephone service?
I don’t know, the process of it could take of my private time instead of someone just answered at once.

Do you tend to leave if the wait time is too long?
Yes. I’m not spending my time waiting for service.

Does your perception of wait time differ between Occupied and Unoccupied wait time?
No. It’s the same damn time. The waiting time is still the same.

Have you used this type of technology?
Yes. Most people have used some sort of IVR I think.

If yes, have you used it in relation to banking services?
Yes, but only once.

What is your opinion on this type of technology for banking services?
I don’t know. But well, I don’t think I would have an opinion about it. If they make it work than it is fine I guess.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
My opinion is that I think that it saves time. But it depends on the kind of service you are looking for. If it is just a regular normal customer service then its fine but if you are looking for something specific it would probably not work that well.

Do you use or intend to use this type of technology if your bank would offer it?
Yes, i would use it, why not?
Do you think this type of technology is more efficient for you than regular telephone service?
Yes, it probably is.

Do you think this type of technology is easy to use and require little effort from you?
Yes, but older people complain about pressing buttons during calls at my work a lot.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
No I don’t think so, but I think it depends how you are as a person. There are advantages and disadvantages for both.
Respondent 5 - Female, 31

**Do you think this type of technology provide satisfying customer service?**
Yes. But it will be frustrating in some cases while technology updates. It might not understand you in the beginning. Could be same with human interaction but tech is easy to be frustrated at.

**Do you think the technology is advanced enough to understand you as a customer?**
For simple tasks it is, but it cannot do everything you need today, but there are possibilities in the future.

**Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?**
Usually you still have to be connected to someone else, so tech can help you come to the right person, and you might not have to repeat your errand to several people. Savings for companies are good in the long run. As long as it is tested before implementation so that it actually works I think it is a good solution.

**Do you discuss positive and/or negative experiences of this type of technology with other people?**
Yes it happens. If it was an interesting experience.

**Do you consider wait time within customer service when choosing your bank?**
No. Had I been disappointed with my previous bank then I might have thought about it when switching. I usually don’t have much contact with my bank.

**How do you think this type of technology affect wait time compared to regular telephone service?**
Depends on how many the company can answer at the same time in relation to costs and compared to a regular person. It is positive that it could work in non-working hours as well.

**Do you tend to leave if the wait time is too long?**
Depends on the errand. Do I know that I have time then I would probably stay. If I call during lunch or something like that I usually leave. Last 10 minutes before closing is good, because fewer people call then. They are usually stacked at opening time.

**Does your perception of wait time differ between Occupied and Unoccupied wait time?**
I prefer hearing queue time or amount of people before. Usually you can calculate/estimate a time then. Usually I don’t care about occupied waiting time. I don’t want to hear other stuff.

**Have you used this type of technology?**
“Name your errand” and “Press one for…”, “Press your number and we call back”. I hate the last one. They say “I will call you at 10” and then they don’t call at the time they said. If you state an exact time then follow that, because people might prepare to answer at that point!

**If yes, have you used it in relation to banking services?**
No. In my case, I have a contact at the bank who I call directly, when discussing loans etc. I usually don’t have other errands that I can’t do with internet-banking or app-banking. I don’t really believe I would use a “telephone bank” even if it was better than you are now. It just does not feel as safe as in-person or app with mobile bank-ID.
What is your opinion on this type of technology for banking services?
Banks could use it for better opening hours, because they don’t have long opening hours so if you lose your bank-card or easier things like that, this could be useful.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
I’m not sure my bank has regular customer service. The entire bank has one common customer service. Works for more general questions, but if you require regional help or need to provide a lot of information before you can even ask the question, then people will get irritated by it because it will be slower and more obstacles along the way.

Do you use or intend to use this type of technology if your bank would offer it?
Maybe, depending on my questions. I would definitely try it if because there would be no wait time. But would I not be satisfied with the results? That would determine my perception of it for the future. Some things that changes, Interests etc, or if I want something posted to me, a person would be up-to-date on this but can I trust the AI to be?

Do you think this type of technology is more efficient for you than regular telephone service?
Yes, but it is hard to say. But as said before, open 24/7, does not require education, shorter queues. But older customers would probably not be comfortable or trust this, so they might hate it.

Do you think this type of technology is easy to use and require little effort from you?
It depends. The AI needs to quickly determine if it can help me or not. Otherwise I would have to repeat things and then be connected and wait and repeat again. How can the AI cope with a consumer that is not good at the subject? If I discuss banking I don’t understand everything that my bank-agent talks about. In that case it would be helpful to ask a real person etc.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
Again, it depends on how good it is. I don’t want to be frustrated because an AI can’t understand me. That won’t happen as easily with a regular person. Regular service is easier. It just is.
Respondent 6 - Male, 25

Do you think this type of technology provide satisfying customer service?  
Maybe in the future, I think many companies are rushing it and will provide bad service for a few years while the technology is developing.

Do you think the technology is advanced enough to understand you as a customer?  
Only for basic standard questions. Not for more complex problems with third-parties involved.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?  
No. I believe that the call would usually be faster with a real person. There is often some small “twist” to your need for service that a real person can answer better than computers.

Do you discuss positive and/or negative experiences of this type of technology with other people?  
Yes I probably would discuss negative experiences. Positive, maybe if I’m surprised by the quality of AI-service.

Do you consider wait time within customer service when choosing your bank?  
Not really. I don’t speak much with customer service with my bank today. If I had loans and needed much service it might be a factor.

How do you think this type of technology affect wait time compared to regular telephone service?  
Hopefully faster, otherwise it is pointless, right? But if it does not work well enough than it could be longer, since you first talk to AI and then real person.

Do you tend to leave if the wait time is too long?  
Yes, if I believe that I can get faster response another time or through e-mail etc. Otherwise I stay if I have the time.

Does your perception of wait time differ between Occupied and Unoccupied wait time?  
Not that I know of. I would rather get a time frame so if there is long queue I can do something else meanwhile.

Have you used this type of technology?  
Only in simple form. “Press 1 for this” for example.

If yes, have you used it in relation to banking services?  
No. I usually don’t call my bank. I use online-banking.

What is your opinion on this type of technology for banking services?  
Could work for simple tasks and questions, but I would not use it for discussing my finances or loans and similar things.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
Same as previous question. Good if it is faster, but some questions I would want to discuss with a real person that I can trust.

**Do you use or intend to use this type of technology if your bank would offer it?**
Maybe as an alternative for some situations where online-banking cannot help.

**Do you think this type of technology is more efficient for you than regular telephone service?**
In general yes. But it depends on the type of questions and how good the AI is. Because it can be frustrating if it does not understand you or provide bad responses.

**Do you think this type of technology is easy to use and require little effort from you?**
Depends on how complex it is. For “press one for…“-situations it works fine. But if I have complex questions and want to talk to a real person I would want that option immediately, because I know that the AI cannot provide solid responses for everything at this time.

**Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?**
No, but it might be faster if there is a queue. If I have a problem/question I would still prefer a normal person if it is not a long wait time.
Respondent 7 – Male, 38

Do you think this type of technology provide satisfying customer service?
Maybe. But it could be annoying as well. It depends on how well it is developed and tested.

Do you think the technology is advanced enough to understand you as a customer?
Not now. But in the future, yes I strongly believe that it will be.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
Yes, it could definitely be better in the future. It has advantages over regular service. Wait time, opening hours, not having to talk to a real person if you are tired or in a bad mood.

Do you discuss positive and/or negative experiences of this type of technology with other people?
I would probably discuss both very positive and very negative experiences.

Do you consider wait time within customer service when choosing your bank?
No, I rarely contact my bank so I never thought about that.

How do you think this type of technology affect wait time compared to regular telephone service?
I hope it would be faster. That would be the main advantage of AI service.

Do you tend to leave if the wait time is too long?
Yes, I usually call and “test” if there is short queue or not, otherwise I call back later.

Does your perception of wait time differ between Occupied and Unoccupied wait time?
Not really. I don’t care about information about the company etc. I just want service.

Have you used this type of technology?
Yes, “press one for” and similar.

If yes, have you used it in relation to banking services?
Yes, my bank has a telephone service where you can do your accounts and similar without talking to a real person. I have not used it in many years though.

What is your opinion on this type of technology for banking services?
It could be good, but I definitely prefer an app/internet-bank. Would only use this for like customer service and not pay bills and stuff.

What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
No special opinion for banking. Same as earlier, it could be good in the future, but sometimes you need to talk to a real person. It would be more efficient.

Do you use or intend to use this type of technology if your bank would offer it?
Probably not. Maybe if I had a simple question or no other choice, but otherwise no.
Do you think this type of technology is more efficient for you than regular telephone service?
Yes, it would be, if it can answer my questions. It would save time for simple tasks, but maybe not for advanced things or problems.

Do you think this type of technology is easy to use and require little effort from you?
Yes usually it would be. I am used to technology and how to use things like this, and I assume it would be well developed and tested before put in use.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
Yes. I would like to skip to talk to a real person sometimes, and I hate ques. It sounds simple and efficient.
Respondent 8 - Male, 26

Do you think this type of technology provide satisfying customer service?
At this point, no. It sounds efficient for the company, but I believe there will be many flaws in it at first, before they can make it work.

Do you think the technology is advanced enough to understand you as a customer?
In the future yes and maybe for easy things today. But I would not want to discuss health-issues and similar with this type of technology. I don’t trust it that much.

Do you think the technology is functional enough to help you as a customer, compared to regular telephone service?
No. I believe there will be a lot of misinterpretation from the IVR which a person would understand you better. Regular customer service will always be better.

Do you discuss positive and/or negative experiences of this type of technology with other people?
Maybe if it was something new that I had not experienced before. Otherwise I would probably not.

Do you consider wait time within customer service when choosing your bank?
I did not really choose my bank. I had it since I was a small child. If I choose bank today maybe it would be a factor.

How do you think this type of technology affect wait time compared to regular telephone service?
It would be faster I assume since the IVR-technology could answer many calls at the same time. But maybe it would be slower if a lot of people need to be redirected to a “real” person if the company has fewer staff members.

Do you tend to leave if the wait time is too long?
Depends on urgency, type of product/service and if I’m calling while at work or home.

Does your perception of wait time differ between Occupied and Unoccupied wait time?
I don’t think so, but maybe it feels like it is going faster if there is some sort of entertainment or occupation during the wait?

Have you used this type of technology?
Not the advanced type. I have done “what do you want to talk about” and then you state your purpose of calling. But not having a full call with a computer.

If yes, have you used it in relation to banking services?
I don’t remember. I can’t remember ever calling my bank. Not even e-mailing them.

What is your opinion on this type of technology for banking services?
Skeptical, but could work maybe in the future. But if I have questions about savings, loans, and interests and so on, then I would not trust an AI as much as I would trust a real person. When it comes to your savings and bank accounts you want to feel safe.
What is your opinion on this type of technology for banking services if you compare it to regular telephone service?
I would definitely prefer to talk to a real person if I had serious problems with my bank tasks. If it was small things, maybe, but I think those things would be easier solved using e-mail or chat. The chat could be AI because writing should be easier for a computer to interpret than actual speaking.

Do you use or intend to use this type of technology if your bank would offer it?
I would definitely try it. I am not convinced that it would work, but if it is implemented and it works then I would change my opinion.

Do you think this type of technology is more efficient for you than regular telephone service?
It could remove wait time and have better opening hours. But it could be frustrating or slow if it does not work smoothly or understand the user.

Do you think this type of technology is easy to use and require little effort from you?
The things I have tried before has been fairly easy, but sometimes frustrating. I am skeptical, but if it is well developed and AI is better than I believe then it could be good. I expect customer service to be easy to use and free of effort.

Do you think this type of technology is easier to use and require less effort from you compared to regular telephone service?
The only advantage I can see is wait time. I think it is easier to talk to a real person though, I trust them to understand me more correctly than an AI. Social interactions are more complex than automatic responses.