# Having a Chatbot as a Colleague

A Case Study about Customer Service Advisors
in a Norwegian Bank

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**Preface**

This master's thesis is written as a part of the master programme in International Business at the University of Agder. This is a mandatory part of the programme BE-509 and is worth 30 ECTS credits.

Our personal motivation to write a master thesis about chatbot in the banking industry was due to several factors. Chatbot is a growing trend in business where the importance of this subject acts as a motivation to gain more insights. Both researchers have personal working experience from the bank sector and customer service. Hence, an interest is present for how it affects the employees. We were inspired to look into the human customer service advisors' point of view, which often can be forgotten about when talking about digitalization from a business aspect.

We would like to thank our supervisor Tor Helge Aas for his guidance, feedback and availability during this semester. We would also state our appreciation to the collaborative bank. We are grateful for the opportunity to write with a large recognized bank and for the management's collaborative communication and openness. Lastly, we want to thank all nine customer service advisors for their time spent and insightful thoughts during the interview. This thesis's quality and feasibility has been dependent on all of the above.

# Abstract

Research on digital technologies can provide valuable insight as the digital transformation area continues to grow. Chatbots have received a massively increasing interest in the latest year. The implementation of a chatbot can affect the human customer service advisor's workday. Previous research focuses on different aspects of the chatbot from an organizational or customer perspective. However, there is limited prior research that provides insight into how the chatbot affects the employees. Hence, the thesis had an exploratory approach using the Gioia method to discuss the chatbot's effects by conducting in-depth interviews with customer service advisors in a collaborative Norwegian bank. A new framework was created based on the findings. The chatbot affects the customer service advisors in two dimensions, narrowed down in six categories: (1) it leads to a change in tasks, (2) it affects efficiency, (3) how the chatbot's limited skills can cause frustration, (4) feeling of job security, (5) the degree of ownership the employee has, and (6) how the chatbot is perceived as a colleague rather than a competitor. Based on these findings, a discussion on how the chatbot changes the customer service advisors' role and how it affects the relationship with the chatbot is elaborated. Then, based on the discussion, theoretical propositions are given to each of the categories from the findings. Finally, a framework, conclusion, limitations, and suggestions for future research are provided. The primary contribution of this thesis is to extend the insight into how chatbot affects customer service advisors in the banking industry, as it can be valuable both for the advisor and the organization's business performance.

# Sammendrag

Forskning på digitale teknologier kan skape verdifull innsikt etterhvert som digital transformasjon har fått fotfeste i flere sektorer og industrier. Chatbots i kundeservice har blitt implementert i flere store og små bedrifter globalt. Tidligere forskning fokuserer på ulike aspekter ved chatbot, men ofte fra et organisasjons- eller kundeperspektiv. Det er derimot begrenset litteratur som fremmer innsikten på hvordan chatbot påvirker de ansatte i kundeservice. Implementeringen av chatbot kan påvirke de ansatte i kundeservice sin arbeidshverdag. Denne avhandlingen har derfor en eksplorerende tilnærming ved å benytte Gioia metoden for å undersøke dette temaet. Dybdeintervjuer ble utført med ansatte i kundeservice i en norsk bank. Et nytt rammeverk ble deretter laget basert på funnene. Det ble vist at chatboten påvirker ansatte i kundeservice ved to dimensjoner, som igjen plasseres i seks kategorier: (1) det fører til en endring i oppgaver, (2) det påvirker effektiviteten, (3) hvordan begrensede ferdigheter på chatboten kan skape kundefrustrasjon, (4) følelsen av jobbtrygghet, (5) graden av eierskap til den ansatte og (6) hvordan chatboten oppfattes som en kollega fremfor en konkurrent. Basert på disse funnene blir det diskutert hvordan en chatbot påvirker kundeservice rollen og hvordan chatboten påvirker forholdet den ansatte i kundeservice har til den. Deretter vil teoretiske proposisjoner bli gitt til hvert av kategoriene til funnene. Til slutt vil en rammeverk, konklusjon, begrensninger og forslag til fremtidig forskning bli presentert. Hovedbidraget med denne avhandlingen er å utvide innsikten i hvordan en chatbot påvirker ansatte i kundeservice i bank, ettersom det kan være verdifull for både den ansatte og for virksomheten sine resultater.

# Table of Content

## List of Figures

## List of Tables

# Chapter 1: Introduction

## 1.0 Introduction

The impact of digitalization, such as a chatbot, is affecting and changing the way of customer service in the banking industry (Barakat and Dabbous, 2019). The use of chatbots can automate a personal way of communicating and is an increasing market trend (Wilson, Daugherty and Bianzino, 2017). In simple terms, chatbots can be defined as "*computer programs that interact with users using natural languages*" (Shawar and Atwell, 2007, p.29). In other words, a chatbot intends to provide a human-like conversation between a human user and itself through text or voice (Dale, 2016; Shawar and Atwell, 2007).

There is a current market trend to implement a chatbot as part of a digital transformation strategy. As a result, chatbots have received a massively increasing interest in the latest years (Barakat and Dabbous, 2019; Eren, 2021, Nordheim, Følstad and Bjørkli, 2019; Zumstein and Hundertmark, 2017). Further, human replacement is a heavily debated topic among business leaders, academics, and policymakers (Kornelakis, Kirovm Thill, 2022). One of the reasons for this debate is the advances in artificial intelligence and machine learning and the introduction of advanced chatbots (Brandtzaeg and Følstad, 2017). Furthermore, in today's business environment, a significant number of sectors and industries, such as banking, healthcare, retail and insurance, have taken advantage of the recent artificial intelligence improvements and chatbots are now present in many customer service operations (Waizenegger, Seeber, Dawson and Desouza, 2020). Hence, a reason to investigate different aspects of digital transformation impacts on automation and human replacement.

A large part of the finance sector, especially banks, has implemented chatbots for customer services as chatbots hold prominent potential in terms of cost-saving, service efficiency and customer satisfaction (Nordheim et al., 2019). In most cases, chatbots often serve as the first line of support in a customer service context and provide an easily available source for assistance and information for customer inquiries. Today, several banks in Norway offer their customers to address their inquiries directly to the chatbot before speaking with a human advisor. For instance, a customer might ask the chatbot about the current interest rate for a house loan, and the chatbot will immediately provide an answer. However, if the chatbot

cannot provide a sufficient answer to the customer, the customer will be put in contact with a human customer service advisor.

DNB, Norway's largest bank, managed to reduce a large volume of chat traffic to their customer centers by implementing a chatbot (Boost, 2019). In fact, the chatbot managed to automate half of DNBs chat traffic in only six months. SR-Bank, one of Norway's most prominent banks, states that four out of five questions are successfully answered without human support (Boost, 2020). In addition, the chatbot answers 42% of the total business-customer and business-business support traffic. Chatbots with artificial intelligence are pioneering the digitalization of banks in the Nordics. For instance, Servion (2018, paragraph 4) predicts that *"AI will power 95% of all customer interactions within five to ten years, with consumers expected to eventually prefer interaction with machines over human"*.

There is empirical literature available on the chatbot phenomenon from different perspectives. Dahiya (2017) and Adamopoulou and Moussiades (2020) are among some of the researchers who have investigated the technological aspect of developing chatbots, as the growth of digital transformation is increasing. Further, Brandtzaeg and Følstad (2017) investigated why people use chatbots. The findings identified motivational drivers for the user such as getting efficient help and information in a timely manner. Følstad and Skjuve (2019) researched chatbot experiences from a customer perspective. The findings highlighted the importance of efficient adequate responses to uncomplicated inquiries from the customer, and the user expectations of the chatbot. The article also acknowledges how organizations are increasingly using chatbots in their customer service operations. Moreover, Nordheim et al. (2019) investigated customers' trust in chatbots. The findings suggest that customers trust in a chatbot depends on how the customer perceives its expertise and responsiveness. Prior research also focuses on the organizational perspective on how it can be cost-efficient and how it can increase customer satisfaction by implementing a chatbot in customer service (Nordheim, et al., 2019; Mygland, Schibbye, Pappas and Vassilakopoulou, 2021).

According to Gabčanová (2011) and Jacobsen and Thorsvik (2014), the most valuable asset in the organization is the human employee. A competitive organization is represented by motivated, satisfied, and loyal employees, leading to a growth in effectiveness and improved quality service. Moreover, the performance of employees has a significant effect on whether

the bank reaches its set goals. Therefore, it can be valuable information for the bank to know how a chatbot can affect their employees.

The implementation of chatbots leads to a wide range of changes in different organizations and industries (Boost, 2019). According to Boost (2019), one of the leading companies in chatbot development, chatbots in the banking industry are making milestones rapidly for the customer service in Norwegian banks. Despite the fact that chatbot has had a vast impact on organizations in a customer service context and in light of the debate around automation and human replacement, the academic literature has nearly neglected the customers' service agents and how the implementation of chatbot affects them in their role and daily work (Waizenegger et al., 2020). Work performance and trust can decline if companies cannot prepare and be transparent with the customer advisors regarding changes in their work, daily processes, and practices (Dawson, Karahanna and Buchholtz, 2014). Therefore, this research gap can be problematic for the bank. These issues are highly relevant in a great number of ways which led to this thesis research question.

In light of digital transformation, earlier literature has investigated how digital technology can impact employees' skills, roles, work environment, and work structure (Nadkarni and Prügl, 2021; Vial, 2019). However, there is limited research that investigates how a chatbots impacts the employees (Waizenegger et al., 2020). In a customer service context, a chatbot is more or less implemented to do the same tasks as the human customer service advisors and primarily help the customers and not the employees. Literature regarding chatbots is, as mentioned, dominated by the technological, customer, and organizational aspects (Dahiya, 2017; Nordheim, et al. 2019; Zumstein and Hundertmark, 2017). Previous research, such as Altrock, Mention and Aas (2022) and Waizenegger et al. (2020), acknowledges a research gap in how employees are affected by a chatbot implementation. As a consequence and to the best of the authors of this thesis knowledge, there is not a clear framework or theory that already exists that can be tested to answer this question. Thus, in light of earlier chatbot literature, there was a clear research gap for further investigation around the aspect of customer service advisors who work with the chatbot looking into their perspective in detail.

Insight into how the job of customer service advisors and its needed skills can change due to the implementation and development of a chatbot could be valuable. Therefore, thorough research was conducted to gain a comprehensive perception of this from an employees' point of view. Hence, the research gap led to the following research question:

***How does a chatbot affect customer service advisors in the banking industry?***

This thesis has an inductive approach with an open-ended research question that aims to understand this phenomenon by interviewing customer service agents in a Norwegian bank. As this specific research question lacks previous research, an open approach is needed to interpret the human advisors' perspectives. Thus, this thesis will investigate how the chatbot affects customer service advisors. This can include how their skills, knowledge, and customer service advisors' role are perceived to change. This thesis aims to contribute with essential knowledge about the phenomenon of having a chatbot implemented in customer service. The obtained knowledge can be helpful for organizations that have or will implement a chatbot in their customer service. This thesis will also extend the knowledge by offering theoretical propositions.

The rest of the thesis will have the following structure: chapter two will provide relevant literature on the chatbot that outlines the theoretical background and development. In addition, it will also present earlier relevant studies about the chatbot. Furthermore, the methodology is presented in chapter three, which emphasizes the research design, collection of data, and used data structure. Chapter four presents findings from the interviews leading to the discussion section in chapter five. The discussion will offer a set of theoretical propositions. Finally, the thesis' main contribution is summarized, and topics for future research will be suggested.

# Chapter 2. Related literature and theoretical focus

## 2.0 Literature Review

This chapter will present relevant literature to make a foundation for connecting empirical data, results, and discussion. First, this chapter will explain the methodology for the literature review. Secondly, in order to explain and interpret the collected empirical data, the paper will define relevant terms, such as digitalization, digital transformation, and chatbot. Further, it will look at the historical development of chatbots and their impact on customer service. In addition, it will highlight literature that is closely related to the research question.

## 2.1 Methodology for the literature review

This literature review has followed the suggestions and guidelines from Sekaran and Bougie (2016). In order to get an overview of the research area and relevant academic literature, search engines such as Google Scholar, Oria and Web of science were used. These databases allow for searches in highly recognized academic journals. Nevertheless, several academic papers in the journals also referred to well-known consulting firms. Consequently, this study also had an open mind toward reports from highly reputed organizations.

In the search process, keywords were used to narrow the search for relevant academic articles. Initially, the terms digitization, digitalization and digital transformation were used as keywords. These terms are frequently used interchangeably in existing literature about digitalization (Brennen and Kreiss, 2016; Gong and Ribiere, 2021). The same applies for the terms chatbot, conversational agent and virtual agent in existing literature about chatbots (Dale, 2016). Both search results showed several thousand hits. Hence, to narrow down the number of articles, keywords related to this thesis research question, such as customer service, banking industry, employee, customer service agent, and relationship, were used in different combinations. Nevertheless, the search results still gave a significant number of articles, but it was now further narrowed to our research questions.

Furthermore, to gain an impression of the different articles and their relevance, the title, the abstract, and keywords were analyzed as it presents the study purpose, method, findings, and conclusion clearly and efficiently (Sekaran and Bougie, 2016). If the article was still of interest after reading the title, abstract, and keywords, further reading was conducted to

determine if the article was relevant for this literature review. Additionally, a high number of citations was also preferable as it is often an indicator of quality and its impact on the field (Sekaran and Bougie, 2016).

## 2.2 Digitization, Digitalization and Digital transformation

The global trend, digitalization, is arguably influencing all companies to some degree in today's business environment (Solis, 2017). Nevertheless, there is no commonly accepted definition of digitalization, and several authors have provided different definitions (Gobble, 2018; Gong and Ribiere, 2021; Parida, Sjödin and Reim, 2019). As mentioned, the terms digitization, digitalization and digital transformation are frequently used interchangeably in existing literature (Brennen and Kreiss, 2016; Gong and Ribiere, 2021).

In its simplest form, Rachinger, Rauter, Müller, Vorraber and Schirgi (2018, p. 1145) argue that "*digitization (i.e. the process of converting analogue data into digital data sets) is the framework for digitalization, which is defined as the exploitation of digital opportunities.*". Further, Hess, Matt, Benlian and Wiesböck (2016, p. 124) define digital transformation as "*the changes digital technologies can bring about in a company's business model, which result in changed products or organizational structures or in the automation of processes*". Thus, the implementation of a chatbot and its impact on the organization represents a severe change and is a part of a digital transformation (Barakat and Dabbous, 2019).

Vial (2019) conducted a literature review of digital transformation and summarized the current knowledge on digital transformation into a framework (see figure 1). The framework is based on 282 papers and articles about digital transformation.
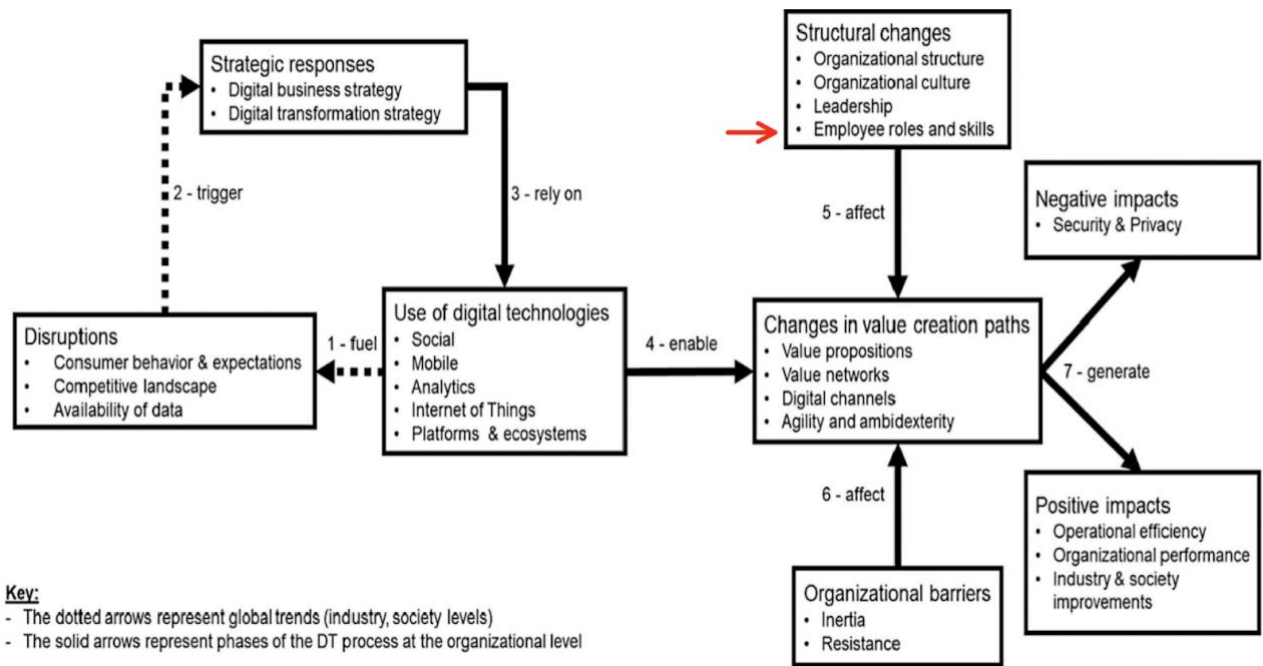
Figure 1: The digital transformation process. Adapted from "Understanding digital transformation: A review and a research agenda". By Vial, G. (2019). *The journal of strategic information systems*, 28(2), p.122.

The framework describes the digital transformation process and includes eight components. First, the framework shows how *the use of digital technology* in society and different industries leads to *disruptions* that initiate *strategic responses* from organizations. Further, the framework highlights that the implementation of digital technology leads to *changes in value creation* which also cause *structural changes* and *organizational barriers.* Furthermore, The framework demonstrates that the structural changes and organizational barriers also affect value creation. Therefore, it is necessary to deal with the barriers and embrace the structural changes. Last, the new value creation results in both *positive* and *negative* impacts for the organization in a digital transformation. This thesis will further focus on how digital transformation can impact and affect employees, illustrated by the red arrow in figure 1 above.

According to Stief, Eidhoff and Voeth (2016), digitalization or digital transformation provides a significant amount of possibilities. By implementing and adopting digital technologies, organizations can enhance the effectiveness and efficiency of their business operations and

processes, increase market reach and flexibility and improve their competitiveness (Stief, Eidhoff and Voeth 2016).

## 2.3 How digital transformation affect employees

The framework created by Vial (2019) shows that digital transformation affects employees' roles and skills (see figure 1). Nadkarni and Prügl (2021) found that digital transformation leads to changes in the daily work environment and argue that it affects work structures, workplace requirements and job roles. In addition, several studies have investigated how digital technology can lead to various forms of automation (Neumeier, Wolf, and Oesterle, 2017; Vial, 2019). Automation can be defined as "*the execution by a machine agent (usually a computer) of a function that was previously carried out by a human*" (Parasuraman and Riley, 1997, p. 231). Jacobsen and Thorsvik (2019) argue that the complexity of the task decides whether a task can get automated. Furthermore, Dremel, Wulf, Herterich, Waizmann and Brenner (2017) argue that digital transformation does not remove the need for human capital but leads to more complex business cases. Therefore, the employees need to depend more on their analytical skills (Dremel et al., 2017). However, digitalization's impact on human replacement will be presented later in this chapter.

Further, implementing new digital technology into an organization can support and aid employees and lead to more efficient work processes, consequently increasing productivity (Nadkarni and Prügl, 2021). Moreover, Schraeder, Swamidass and Morrison (2006) found that employees who see the new technology as a tool that can help them solve their job tasks are more likely to use the technology and develop a positive human-technology relationship. Nevertheless, those employees that are not able to use the new technology and not able to handle the rapid changes that digital transformation can bring to the organization may feel left behind (Nadkarni and Prügl, 2021). In fact, employees who see the new technology as a threat in light of being replaced by it will not support the change and impede the implementation process and use of the new technology (Schraeder et al., 2006). In addition, Kohli and Johnson (2011) found that digitalization could also lead to a continuous growing gap in skills between established employees in the organization with low digital experience and newly hired employees with a digital understanding.

According to Hanelt, Bohnsack, Marz and Marante, (2021), digital transformation depends on the technology's awareness. In addition, digital transformation leads to changes for the employees. Therefore, the employees should be informed regarding the implementation of the new technology in order to have a positive attitude towards the technology. The individual worker should therefore have access to information. Furthermore, Vial (2019) emphasizes two strategies the management should have when implementing a digital transformation; an informative-down approach and an informative-up approach. The first strategy highlights how the management should provide information about the transformation to the employee. The second strategy focuses on the opportunity for the employee to give information or feedback to the management. Hence, lay the foundation for collaboration and coordination between the different participants in the digital transformation.

## 2.4 Views of digitalization and automation in light of human replacement

Digitalization has been one of the most influential drivers of work automation, which has led to changing or eliminating job functions (Ilsøe, 2017). Consequently, the debate regarding digitalization's impact on human replacement is highly relevant. The debate is more or less divided into two vastly different views, an optimistic and pessimistic perspective (Kornelakis et al. 2022). Several studies have investigated the impacts, and potential effects digitalization has on human replacement (Frey and Osborne, 2017; Grimshaw, 2020; Lloyd and Payne, 2019).

Frey and Osborne (2017) investigated how susceptible jobs are to digitalization, or in their words, being replaced by a robot or computer in the US labor market. The study analyzed existing literature about advances in robots and machine learning, interviewed experts in relevant fields and used relevant data systems and programs to get information about the US labor market. The study examined and predicted the probability of computerization and its anticipated impacts for 702 different occupations. The study argued that earlier literature has shown that digitalization has already had a severe impact on routine tasks and focuses more on non-routine and cognitive tasks. Further, Frey and Osborne (2017) divided the occupations into three categories, low, medium, and high-risk occupations based on their probability of being replaced by a digital solution such as a robot or software.

The result of the study suggests that 47% of the entire US employment can be categorized in the high-risk category (Fred and Osborne, 2017). In addition, they argue that most of the technology could be available in one to two decades. For instance, Fred and Osborne (2017) mention examples of how robots are already impacting several service work tasks and refer to the use and advances of service robots. Nonetheless, the study also admits that it is difficult to predict technological advances in the future, and several factors can influence the outcome, such as engineering bottlenecks and laws and legislation. On the other and more optimistic side, other studies argue that digitalization will lead to several new jobs and unforeseen opportunities to counterbalance the job losses from automation (Grimshaw, 2020). In addition, studies have also argued that the job losses will not be as severe as some researchers have anticipated (Arntz, Gregory and Zierahn, 2016).

The study from Grimshaw (2020) conducted a critical review of seven major reports from highly recognized international organizations, such as: The Organisation for Economic Co-operation and Development (OECD), United Nations Industrial Development Organization (UNIDO), International Labour Organization (ILO) and the World Bank. The reports from the organizations aimed to characterize and describe the challenges associated with digitalization and the employment rate. The critical review from Grimshaw (2020) shows that the organizations had, surprisingly, similar viewpoints towards new technology and its impacts on the future labor market. Furthermore, the study argued that new technology will change jobs and tasks rather than a complete replacement by artificial intelligence and robots in several occupations, which contrasts with the highly cited academic study from Frey and Osborne (2017).

Arntz et al. (2016) investigated the risk of automation for jobs in 21 OECD countries. The study built upon the early works of Frey and Osborne (2017). However, this study used a task-based approach, while Frey and Osborne used an occupation-based approach. In other words, they were looking at different tasks rather than the occupation itself. Arntz et al. (2016) argue that the potential automation of jobs is based on which task workers perform in their jobs and to which degree those tasks could be automated.

The result from the study suggests that only 9 % of jobs in OECD countries are potentially automatable (Arntz et al., 2016). In addition, the study compared its results to the US labor

market and found similar results. In fact, the result suggests that only 9% of US jobs have a high risk of being significantly automated. Consequently, Arntz et al. (2016) argue that digitalization and automation are not likely to erase a more significant number of jobs. Nevertheless, Arntz et al. (2016) also admit that low-qualified workers are more prone to automation and automobility than highly qualified workers. Thus, according to Arntz et al. (2016), the future challenges from digitalization and its impact on the labor market and society are likely to manage rising inequality and provide sufficient training and retraining for low qualified workers (Artnz et al., 2016).

## 2.5 What is a chatbot?

As mentioned, chatbots are *"machine agents serving as natural language user interfaces for data and service providers"* (Brandtzaeg and Følstad, 2017, p. 377). In earlier literature, a chatbot has often also been referred to, but not limited to, as a virtual agent, chatterbot, chat robot or digital assistant (Dale, 2016; Mygland et al., 2021; Shawar and Atwell, 2007). For instance, Gnewuch, Morana and Maedche (2017) refer to a chatbot as a conversational agent as it could also converse through voice. For example, well-known computer programs such as Siri from Apple and Alexa from Amazon are voice-driven chatbots in light of the definition.

All the synonyms for a chatbot increase possible confusion regarding the understanding of a chatbot. However, Dale (2016, p. 811) clearly explains this issue: "*Whether you call these things digital assistants, conversational interfaces or just chatbots, the basic concept is the same: achieve some result by conversing with a machine in a dialogic fashion, using natural language".* Further, the same applies to the fundamental case design in the correspondence between the human user and the chatbot, which is illustrated in figure 2 and figure 3 below (Dahiya, 2017).
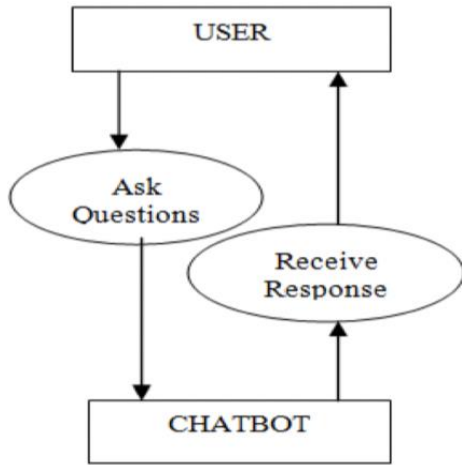
Figure 2: The basic correspondence with a chatbot. From "A tool of conversation: Chatbot". By Dahiya, M. (2017). *International Journal of Computer Sciences and Engineering*, 5(5), p.158
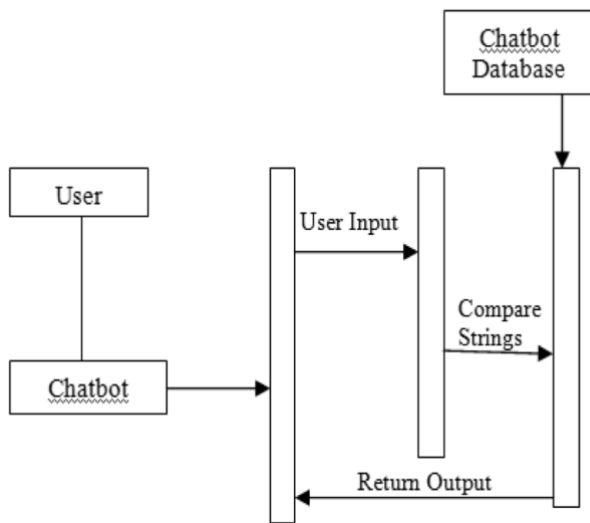


Figure 3: The basic design of a chatbot. From "A tool of conversation: Chatbot". By Dahiya, M. (2017). *International Journal of Computer Sciences and Engineering,* 5(5), p.159

Figure 2 illustrates the fundamental use of a chatbot, while figure 3 illustrates its basic design and how it operates. Consequently, a chatbot can answer the user's question if the chatbot is able to interpret (compare strings) the question and find the answer in its database (Dahiya, 2017).

**2.6 Chatbot development**

The history of chatbots dates back to 1966, and the introduction of the first chat robot named ELIZA was developed by Professor Joseph Weizenbaum (Lokman and Zain, 2010). Even though the chatbot from 1966 was very simple and highly limited, it became an inspiration for later developments in the field, especially in recent times (Lokman and Zain, 2010). The recent increase in interest in chatbots is due to many factors (Nordheim et al., 2019). First, one of the more significant factors is the evolution of artificial intelligence and machine learning (Brandtzaeg and Følstad, 2017). Consequently, making it more straightforward to train and use chatbots as the natural language processing has advanced and improved abilities for pinpointing users' intentions and preferences (Brandtzaeg and Følstad, 2017). A second factor that has increased the popularity of text-based chatbots is the increasing popularity of messaging platforms (Zumstein and Hundertmark, 2017). As a consequence of the high use of text-based messaging platforms such as Facebook Messenger and WhatsApp, the preferred communication channel for many consumers is now chatting (Brantzaeg and Følstad, 2018; Zumstein and Hundertmark, 2017).

Due to the advances in chatbot, it has developed from a basic computer program to highly effective artificial intelligence-powered bots, which will only become more capable and efficient in the future (Accenture, 2018). Consequently, several sectors and industries have increased their interest and increased the implementation rate of chatbots due to their ability to automate and streamline activities (Accenture, 2018). In addition, a chatbot can also help improve companies' productivity, reduce costs and increase customer attention (Accenture, 2018; Barakat and Dabbous, 2019; Zumstein and Hundertmark, 2017.) In a survey from 2016 conducted by Oracle, 800 decision-makers such as chief marketing and strategy officers and senior marketers were asked about their current use and future intentions of chatbots (Business Insider, 2016). The survey result showed that 80% of the respondents already had implemented or were planning to implement chatbots in their business within 2020.

Further, Accenture (2018), a leading global consulting service company that focuses on technology, digitalization, and strategy, conducted a survey about chatbots and located different areas where a chatbot was implemented. The survey included over 350 chief information officers and technology officers from twelve developed countries (e.g. Germany,

Japan, China, Australia and United Stated) and nine different industries (e.g. banking, insurance, health and communication). The result showed that sales and marketing, customer relationship management and customer service were the areas chatbots had the highest prevalence. In addition, the survey also found reasons why some companies were unwilling to implement a chatbot in their business. The result of the study suggested that some executives were afraid of the user adoption hesitancy and inadequate performance in terms of user-friendliness and difficulties in interpreting customers' inquiries.

The academic literature has also investigated the use and potential of chatbots in several different industries and domains. For instance, Bii (2013) investigated the potential of chatbots in education. Chatbots in marketing, tourism, finance and healthcare have also been studied in recent years (Cameron et al., 2017; Ukpabi, Aslam and Karjaluoto, 2019; Van den Broeck, Zarouali and Poels, 2019; Zhang, Følstad and Bjørkli, 2021). Nevertheless, chatbots in a customer service context are arguably the area where chatbots have received the most attention from practitioners and academics (Nguyen, 2017).

## 2.7 Chatbots impact on customer service in the banking industry

Følstad and Skuvje (2019, p. 2) define customer service as "*the provision of information and assistance to the users of a service provide*r". Further, Følstad and Skuvje (2019) argue that customer service is an essential part of how users experience service providers. For instance, customer service can help service providers increase their revenue and amplify users' engagement and loyalty toward the service provider if it has the capability to solve the users' problems and provide sufficient information (Dixon, Freeman, and Toman, 2010; Goldstein, Johnston, Duffy and Rao, 2002; Goodman, 2018). Nevertheless, poor customer service can have the opposite effect, as it presumably will reduce customer loyalty and lead to unhappy users (Dixon et al., 2010).

According to Følstad and Skuvje (2019), service providers have tried to lower the cost of customer service via self-service technologies and automation for a long time. As mentioned, chatbots hold prominent potential in the area of customer service as chatbots can be cost-saving, increase service efficiency and customer experience (Nordheim, et al., 2019; Mygland et al 2021). In fact, highly reputed advisory and consultancy organizations, such as Oracle, CapGemini and Forrester, predict that chatbots will have a crucial role in customer service in

the near future (Følstad and Skuvje, 2019). The largest bank in Norway, DNB, fully automated 51% of its online chat traffic with a chatbot in 2019 (Boost, 2019). Nordea is another large Norwegian bank that has implemented a chatbot called Nova (Boost, n.d.a.). Nova aims to understand customers' needs and give appropriate predefined answers using artificial intelligence.

As stated earlier, chatbots are often placed in the first line of support in a customer service context, which means that customers speak with the chatbot first. Then, if necessary, they are transferred to a human advisor (Nordheim et al., 2019). Chatbots are typically implemented to reduce or remove customers' waiting time to get an answer through chat inquiries or email inquiries from the service provider (Nuruzzaman and Hussain, 2020). Zumstein and Hundertmark study (2017) summarized the pros and cons of using a chatbot for users and providers and is presented in the table below (table 1).

| | Strengths & Opportunities | Weaknesses & Risks |
|---|---|---|
| For providers/ companies | - 24/7 customer service (anytime/anywhere)<br>- New & direct customer contact points<br>- New method & types of data collection<br>- High amount of personal user/usage data<br>- Personalization & automation of communication<br>- Reduction of service & support costs | - Malfunctioning chatbots & unanswered questions<br>- Investments in IT infrastructure & chatbot tools<br>- Extension of IT & analytics architectures<br>- Lack of awareness & acceptance by users<br>- Information security & data protection<br>- Image & reputation risks |
| For users/ customers | - 24/7 customer services & support<br>- One-to-one communication on personal device<br>- High convenience & ease of use<br>- Time- & cost-savings<br>- Reduction on relevant information & services<br>- Relevant offers based on user preferences | - Privacy<br>- Data protection of personal & sensitive data<br>- Lack of experience & understanding<br>- Biased personalized information<br>- Artificial/non-human conversation<br>- Social isolation & ethical concerns |

Table 1: Advantages and risks of chatbots for providers and users. From "CHATBOTS--AN INTERACTIVE TECHNOLOGY FOR PERSONALIZED COMMUNICATION, TRANSACTIONS AND SERVICES". By Zumstein, D., & Hundertmark, S. (2017). *IADIS International Journal on WWW/Internet*, *15*(1). p. 103.

As seen from the table, both parties benefit from 24/7 access to the chatbot (Zumstein and Hundertmark, 2017). In addition, cost efficiency, data collection and new contact points are

highlighted as pros for the provider, while time-saving and ease of use are highlighted as a strength for the user. Further, malfunction, unanswered questions and lack of user adaptation are seen as a weakness and risks for the service providers. Lack of experience in using the chatbot could be a weakness from the users' perspective. It also emphasized the lack of acceptance by users. This is also highlighted by Müller, Mattke, Maier, Weitzel and Graser (2019), which discussed how the customers' lack of trust could prevent them from accepting the chatbot. Consequently, some people prefer to talk to a human. Nevertheless, these studies does not mention how the implementation and use of chatbots affect employees. In addition, industry reports have also found that companies that use and have implemented chatbots are perceived as more efficient and innovative by the consumers (PSFK, 2018 in Zhang et al., 2021). Also, Patil, Mugdha, Kulkarni (2019) argue that compared to a human advisor, a chatbot is significantly better in light of cost, convenience and 24/7 access.

On the other hand, implementing and offering inadequate chatbots in customer service can have a negative effect on the service provider (Zhang et al., 2021). Castillo, Canhoto, and Said (2021) recently investigated how users react when chatbots are unable to solve their issues. The study deducted in-depth interviews with 27 users who had recently interacted with a chatbot in a customer service setting. The study found that failures with chatbots could lead to customer anger, dissatisfaction and confusion. Additionally, the study also found that when the chatbot fails or is not able to understand the customers, the customers tends to blame the service provider and the chatbot even though it was the customers' fault (Castillo et al., 2021).

**2.8 How does the chatbot affect the employees?**
As mentioned, the literature has given little attention to how chatbots affect the employee from an employee's perspective. However, some studies have investigated somewhat similar topics (Barakat and Dabbous, 2019; Stoeckli, Dremel, Uebernickel and Brenner, 2020; Waizenegger et al., 2020). For example, Barakat and Dabbous (2019) investigated how employees in a bank reacted to the implementation of chatbots and how to promote sustained usage. However, the study does not investigate how the chatbot affects the customer service advisor role. The study by Barakat and Dabbous (2019) used a qualitative methodology and conducted ten in-depth interviews with employees in a bank. The bank has over two years of experience with the chatbot and is considered to be a leading bank in several developed countries. The result of the study suggests that five internal factors influence the acceptance

and sustained usage of the chatbot: a favorable corporate culture, perceived efficiency, employee empowerment, continuous improvement of the chatbot, and a multi-stakeholder approach.

The study showed that employees in the bank emphasized the importance of a corporate culture that encouraged and accepted innovation to be essential for an easy implementation process. Furthermore, according to Barakat and Dabbous (2019), employees are more likely to have a positive attitude towards the chatbot if the chatbot is perceived as efficient for the employees and the customer. This is also supported by Følstad, Nordheim and Bjørkli (2018). Further, the study also found that employees that saw the chatbot as a tool for support rather than a threat for human replacement resulted in employee empowerment. Lastly, the employees also found it positive that the chatbot was able to improve as it would help them focus on more challenging and relevant tasks (Barakat and Dabbous, 2019).

As chatbots aim to reduce the amount of customer traffic to a service provider's contact center, this will reduce human employees' workload (Nuruzzaman and Hussain, 2020). Studies by Waizenegger et al. (2020) and Stoeckli et al. (2020) found that implementing chatbots in customer service removed the employees' most routine and repetitive tasks. The study by Waizenegger et al. (2020) investigated how a chatbot in a customer service context affects the employees in the organization. However, the study interviewed managers in the organization and not the customer service agents. The result of the study suggests that the chatbot affects the employees in several ways. For instance, the study shows that the chatbot reduces repetitive tasks and workload. However, it allows the employees to focus on more complex cases. Further, according to the managers, the implementation of chatbots also led to higher employee satisfaction and retention rates (Waizenegger et al., 2020).

On the other hand, the implementation of chatbots could also force employees to upskill their competence, leading to a decrease in new employment and creating a threat of job loss (Waizenegger et al., 2020). Waiznegger et al. (2020) found that the chatbot reduced the number of job openings as companies saw the chatbot as an adequate replacement in roles that a human employee earlier fulfilled. Even though the chatbot did not directly replace the respondent in the study, there were scenarios where employees quit. Instead of bringing in new human personnel, the chatbot covered the role. Further, developing the advisors'

competence, learning and skills can be necessary for the company to survive (Nordhaug, 2002). In order to achieve a competitive customer service advantage, the advisors must develop their knowledge to be more effective, strengthen the feeling of job security and enhance the social environment.

As the literature review shows, earlier research has investigated different aspects of the implementation of chatbots in customer service. However, its impact on employees has received little attention. Studies in light of digital transformation investigated how the introduction and implementation of new technology affect and help employees be more productive (Vial, 2019). However, a chatbot in a customer service context is more or less implemented to help the customers, not the employees. Even though some studies have focused on how the implementation of a chatbot can affect customer service employees' skills and roles, this thesis aims to fill gaps that earlier literature has not investigated yet (Barakat and Dabbous, 2019; Stoeckli et al., 2020; Waizenegger et al., 2020). For instance, Barakat and Dabbous (2019) did not explore how the chatbot impacts the employees' daily work and routines which this thesis aims to do. Further, as mentioned, Waizenegger et al. (2020) studied the impacts of chatbot implementation but interviewed managers instead of the employees. This thesis aims to study the employee perspective by interviewing the customer service advisors directly to investigate if leaders and employees have different points of view.

# Chapter 3. Method

## 3.0 Introduction of Methodology

This section will emphasize the choice of research method used for this paper, along with a detailed report of how the research was carried out.

The research question of how the chatbot affects a customer service advisor in the banking sector must be aligned with the research method. A research method is a tool to gather and treat data sets needed to analyze the banking employees' perspectives. A desire to gain an in-depth understanding is reflected in the choice of the research method. According to Sekaran and Bougie (2016, p. 1), *research* can be defined as the process of finding solutions to a problem after a thorough study and analysis of the situational factors. Within business research, the purpose is an organized, critical, systematic, data-based, objective or inquiry investigation for answers or solutions to a specific problem such as *"how does a chatbot affect customer service advisors in the banking industry?"*. As the research question for this paper requires an in-depth analysis of the customer service advisors, a systematic approach was used to help make informed decisions to deal with the concerning theme of the chatbot (Dalland, 2017).

## 3.1 Research Design

As presented in the introduction and in the literature review, little prior data and research on this research question exist. Consequently, there is not a sufficient framework or theory that can be tested. Thus, this thesis aims to help fill this gap. Hence, an exploratory approach was used for this paper where the theory emerges from the research data. The open approach is also reflected in the research design. The research design emphasizes the choice of who and how in a research process (Silverman, 2020). The data obtained can be undertaken for different purposes and can either be a qualitative or quantitative method (Sekaran and Bougie, 2016, p.13).

A qualitative design was chosen for this thesis since it is concerned with experiences and provides an in-depth understanding of the research question. Choosing this method helps to

understand a deeper meaning and discover people's subjective experiences that cannot be put into numbers (Sekaran and Bougie, 2016). In addition, due to the small number of existing papers addressing the impact chatbots have on human advisors, the need for qualitative research is emphasized for this thesis (Altrock, Mention and Aas, 2022; Waizenegger et al., 2020). Quantitative data is not the right fit for this paper as it is used for more objective and measurable research. When conducting qualitative research, as in this case study, some questions need to be answered regarding what, whom to examine and how by comprehending knowledge gathered from the research (Sekaran and Bougie, 2016). Here, basic research is used. The new knowledge, once generated, can often be used for applied research for solving organizational problems later. The new knowledge generated from the discussion on the qualitative data and prior research will end in theoretical propositions to explain the research question. Consequently, this knowledge aims to be beneficial for managers in the bank.

Case design is utilized in this thesis as its design method. (Sekaran and Bougie, 2016). The thesis aims to describe the specific perception of a chatbot in a unit. Furthermore, gain insights into the perceived reality of the informants from the bank (Kvale and Brinkmann, 2009). This reflects the choice of interviewing the employees to understand their experiences and get the proper descriptions. The unit of analysis is the banking organization which is the focus of the research. This led to choosing interviews as the suited data collection method.

**3.2 Collection of Data**

The type of data used in this paper is primary data collected firsthand (Sekaran and Bougie, 2016). In-depth interviews were used to obtain information. The interviews conducted with the employees are well suited to provide information regarding their experiences and understanding of the chatbot (Thagaard, 2009). According to Sekaran and Bougie (2016, p. 113), interviews can be defined as *"a guided, purposeful conversation between two or more people"*. In order to obtain the informants' understanding thoroughly, a semi-structured interview was utilized (Postholm, 2005). A general structure was set up in advance with questions to cover the employees' workday, while the detailed structure comes during the interview based on the informants' answers (Drever, 1995). In addition, probing tactics were used to ensure more in-depth information on their perception of the different factors. This

approach ensures that the informants can get the freedom to express themselves, give examples and explain their thoughts (Sekaran and Bougie, 2016).

### 3.2.1 Choice of Bank

Another critical factor when conducting interviews is to find the right people to interview. A single organization was chosen for its revelatory potential and richness of data (Dagnino and Cinici, 2016, p. 139). Both researchers of this paper have personal working experience in the finance sector. Hence, an interest in this industry in how the chatbot affects the employees is present. Consequently, a desire to collaborate with a bank was present, as banks are well-known service providers that use chatbots. In addition, writing with a specific bank could provide valuable insight into how the theoretical knowledge found in the literature review was applied in practice. Therefore, a meeting was held with the management of the relevant bank to discuss the possibilities of initiating a collaboration. The research question was also discussed with the management as the research can create valuable knowledge for the bank. Thereby, an agreement was made. The collaborative bank will not be named due to confidentiality reasons. However, it was selected as it is a recognized bank in the Norwegian market. In addition, the bank is located in the same area where the thesis is written. Hence, it allowed for physical meetings and more natural communication. It is conceivable that the findings from this bank can be helpful for other banks in the industry. The purpose of the research is to answer the research question of how bank employees in customer service experience having a chatbot as a colleague. In the collaborative bank, customer advisors are separated into teams who mainly work at answering phone calls or incoming chats. The chatbot has been implemented in customer service for a couple of years in this bank.

Banks can have different implementation strategies for using the chatbot in their customer service (Boost, n.d.b). The selected bank in this case study has a chatbot-first strategy where the chatbot is the first-line customer service support. However, the bank aims for the chatbot to be an additional service to human contact that can affect the efficiency and divide resources matching the customers' preferences. The bank aims for the customer to have a choice between talking to a chatbot or being put through to a human customer service advisor. Consequently, this is also a factor that can affect this research's findings in accordance with the implemented chat strategy for this specific collaborative bank.

### 3.2.2 Choice of Informants

In collaboration with the management in the selected bank, advisors from the target group, the chat team, were asked to participate to gain insight into their perspectives. The chatbot in this case is a digital text-based agent and not voice-based and is not affecting the advisors who answer customer inquiries by phone. Therefore, the advisors who answers customer inquiries only through the phone were not interviewed. In contrast, the customer service advisors who answer inquiries using the chat function, also known as the chat team, are fit to enlighten their feelings towards the chatbot of how it affects them in customer service. Consequently, employees in the collaborative bank were interviewed based on their ability to reflect on the subject (Tjora, 2012). All team members in the selected region were asked as this is a case study, and it is feasible and desirable to interview all target informants from the chat team (Cobern and Adams, 2020). A total of nine employees were interviewed. The informants consist of both genders. The ages range from 23 to 57 years old. The experience the informants have from customer service in the bank varies from a range of 1,5 to 38 years. An overview of whether they were hired before implementing the chatbot and their educational level is also presented. The informants, therefore, cover a wide range, offering different perspectives. The following table presents the informants.

| Informants # | Age | Seniority | Hired before the implementation of the chatbot | Education |
|---|---|---|---|---|
| 1 | 30-39 years old | 5-10 years | Yes | Bachelor's degree |
| 2 | 50-59 years old | 10+ years | Yes | High School |
| 3 | 50-59 years old | 10+ years | Yes | High School |
| 4 | 30 - 39 years old | 10+ years | Yes | High School |
| 5 | 20-29 years old | 1-5 years | No | Bachelor's degree |
| 6 | 30-39 years old | 1-5 years | No | Bachelor's degree |
| 7 | 30 - 39 years old | 10+ years | Yes | High School |
| 8 | 20-29 years old | 1-5 years | No | Bachelor's degree |
| 9 | 20-29 years old | 1-5 years | No | Bachelor's degree |

Table 2: Overview of the informants (created by the authors).

### 3.2.3 The Interviews

The interviews were conducted face-to-face during in-depth interviews. Interviews are exploratory by nature (Sekaran and Bougie, 2016). This method ensured that the interviewed informants could get clarification on the questions that were asked, a natural conversation between the informant and researcher, as well as obtain nonverbal cues. In addition, it builds a trust and rescue relationship between the interviewer and the customer advisors. The tasks are the same among all customer service advisors, and the findings in one region can therefore reflect on the other regions as well. Hence, all informants in one specific region were interviewed, which allowed using direct interviews. All the informants participated voluntarily. In advance to the interviews being conducted, each informant was presented with an information letter about the project (see appendix 1). Furthermore, the informants signed a statement of consent if they agreed to participate. The interview had an estimated duration of an hour, but lasted about 45 minutes in reality.

The content of the structured part of the interview guide was carefully prepared in advance (Sekaran and Bougie, 2016, p. 115). The in-depth interviews followed the recommended structure from Tjora (2012), using the following three stages: warm-up questions, reflection, and closure. The first "warm-up" questions aimed to ease the informant before responding to the main questions covering the purpose. First, the informant was asked a few introductory questions about their age, customer service experience in the bank, and their education. Secondly, the informants were asked to elaborate on their thoughts on their day at work at the chat team. Furthermore, about chatbots both in general and around customer service in the bank. The aim here was to create a safe environment for the informant and build up a transition to the more profound reflection questions. Then, the informant was also asked to elaborate on the main discussion using open-ended questions and letting the informants speak freely.

The main reflection segment emphasized how the chatbot affects the customer service advisor in the banking industry, for example, *"Can you elaborate on your perception of the chatbot?" and" To what degree do you feel that the chatbot affects your workday?".* The research follows an exploratory approach. Therefore, suited follow-up questions were asked based on their answers. Some of the follow-up questions were "t*o what degree do you feel like the bank is informing about the chatbot's role in customer service today", "how would you say that the chatbot has affected your tasks?" or "how do you feel that the chatbot has affected the competence requirements?".* Furthermore, probing tactics were used to gain an in-depth understanding and give examples to explain their perceptions, such as asking the informants, "*can you give us an example of this?*" or "*can you elaborate in further detail?*".

Other follow-up questions emphasized different themes such as the feeling of job security, the chatbot's role now and in the future, the bank's role around the chatbot, change in tasks, efficiency, competence, and feeling of job security. The complete interview guide is added in appendix 2. The interview guide was divided into two sections. First, the questions that were prepared in advance are written in black. Secondly, some questions were developed based on the informants answers as follow up questions. These questions are written in red in the complete interview guide attached. After the interviews, every answer was interpreted and divided into different subgroups when transcribing the answers. When conducting the

interviews, some informants required more follow-up questions and probing techniques than others to obtain information, depending on the degree the informants elaborated on the subject and how informative the answers were. A round-up part followed up the reflection questions to normalize the situation by talking informally about the research project and asking if they had any other things they wanted to add. The questions were carefully developed to avoid biases and ensure validity and reliability.

## 3.3 Data Analysis

This study follows the Gioia methodology as its strategic approach (Dagnino and Cinici, 2016). The Gioia method typically follows one case study and follows interpretive assumptions. Consequently, following an inductive approach to analyze the data. This approach is aligned with this thesis, where the epistemological foundation is to search for informants' understanding of corporate events. This method is well suited to show the in-depth analysis of this single case study, as this research is with the bank. The method was designed to bring qualitative rigor to data research (Gioia, Corley and Hamilton, 2013). This approach is beneficial for exploratory research, as in this thesis. The exploratory approach is needed due to a lack of prior research examining the thesis research question, that resulted in the need to create an own structure. The method is also a good fit as the design uses real-time interviews and can be a successful template to generate new insight. According to Dagnino and Cinici (2016, p. 146), the Gioia method is "*concerned in how people understand the changes they are both instigating and dealing with, and how those meanings evolve*". This aligns with the desire to understand the customer service advisors' perspectives.

The analytical part of the data was identified using the Gioia method to develop a data structure. The Gioia method uses "*first-order codes that are then grouped into second-order themes at a higher level of abstraction*" (Reay, 2014, p. 99). The data structure is illustrated with a figure that contains boxes and arrows based on the first-order codes which are categorized into second-order themes. The first-order coding is the language used by the informants and descriptive phrases they used when talking during the interview (Corley and Gioia, 2004). Transcripts from the interviews were used to the coding-process by looking closely at all of the statements. For example, several informants expressed that the incoming inquiries are more complex now and that the chatbot solves the simplest and mundane tasks

itself, so these tasks do not reach the actual human advisor. This is illustrated in the first box in the first order code. The next step was to look for relationships between these categories. In this example, the quotes were then divided into the category that the chatbot leads to a change in tasks. This was the second-order code. After this coding was done, a higher-order theme emerged from the data. It was assembled by seeing a change in the customer service advisors' role based on the pattern established from the two previous codes to an aggregate dimension. The following figure 4, which was compiled after this data analysis, illustrates this data structure.

**1st order categories**      **2nd order categories**      **Aggregate dimensions**

- More complex cases
- The routine and mundane tasks goes away
→ **Change in tasks**

- The total of chats in a day goes down
- More timeconsuming tasks
- Screening the customer needs first
→ **Affects efficency**

**Change in the customer service advisor role**

- Customer sometimes comes inn angry or frustrated after talking to the chatbot
- Lack of trust towards the chatbot from customers
→ **The chatbot's limited skills**

- Lack of belief that a chatbot can replace a human advisor
- Customer prefer to talk to a human rather than a robot
→ **Feeling of job security**

- Small degree of information form the bank of the chatbot
- Feedback from the advisors nees to be heard
→ **Degree of ownership**

**Affects relationship to the chatbot**

- A helping friend
- Obtains helpsful information from the customer
- Collaboration
→ **Colleague rather than a competitor**

Figure 4: Data structure (compiled by the authors).

**3.4. Ethics and Data Protection**

Ethics in business research refers to "*a code of conduct or expected societal norms of behavior while conducting research*" (Sekaran and Bougie, 2016, p.14). Ethical conduct applies to the researchers who undertake the research, informants and organizations who are a part of the research process. Several issues must be addressed to ensure ethical behavior in each step of the research process. The storage of the data is done according to the University of Agder's guidelines (UiA, n.d.). UiA follows the Norwegian Centre for Research Data (NSD)'s code of practice for processing personal data in research. An understanding of personal data is essential for all research (NSD, n.d). The research requires interviews leading to sensitive data where the informants can be recognized. Hence, an application to NSD was sent to ensure the legal and safe collection and storage of the data early in the process. An approval from NSD was received before conducting the interviews.

All potential participants received an information letter in advance of the interview. This letter emphasized the purpose of the research and explained who was responsible for the research, why they were asked to participate, what it meant to participate, their rights, how the interview would be conducted, and how their data would be processed and stored after the research is completed. The interviews were sound recorded in accordance with NSD guidelines on a device without the possibility for internet connections and stored on an approved external server to ensure confidentiality. The data is only used for this research purpose and deleted after the project ends. The project ends in June 2022. The collaborative bank and all informants would be anonymized to protect their identity. Participation was voluntary, and one could withdraw from participating at any time. Those who chose to participate signed a written consent agreement. The agreement templates are shown in appendix 1 and 2.

**3.4.1 Validity and reliability**

The interviews were conducted in the informants' native language (Norwegian) to create a conversational feeling. The interviews were transcribed and coded in their original language in order to preserve its meaning. Afterward, each response was translated from Norwegian to English following the suggested structure of Clark, Birkhead, Fernandes and Egger (2017)

and Regmi, Naidoo and Pilkinton (2010) regarding how to translate interviews. According to Abalkhail (2018), researchers who both conduct qualitative research and translate their data are in an advantageous position to do a cross-language data analysis when translating from Norwegian to English. To ensure validity, two translating techniques were utilized. One technique was to translate word for word. The second technique was to translate the entire phrase when it could not be directly translated word for word. Thus, adding rigor and ensuring that the meaning is not lost in translation.

The conclusions must be valid and reliable when conducting qualitative research analysis (Sekaran and Bougie, 2016, p. 349). Internal validity refers to how the research results accurately represent the collected data. Each informant was given the result from their interview to make sure the results accurately represented their data, thus strengthening the internal validity. This was also done in order to strengthen the credibility of the result. In addition, no new categories within the data emerged when conducting the last interviews. Arguably, the data can therefore be generalized or transferred to other contexts or settings, known as external validity (Galvin, 2015; Sekaran and Bougie, 2016). Even though the number of interviews that should be conducted has been widely discussed and has no clear answer, Galvin (2015) argues that nine interviews can be sufficient. However, as different banks may have different chatbot strategies, it can be challenging to achieve a sense of saturation that can generalize the conclusion to all banks based on the nine informants. This will be further discussed in limitations. Furthermore, researcher- and theory triangulation ensured reliability and validity in the thesis by mixing methods. Two researchers collected and analyzed the data from the informants, using different perspectives to interpret and explain the data.

## Chapter 4 - Findings

### 4.0 Findings

Key findings from the interview will be presented by following the data structure from figure 4. The findings will be divided into two parts as the figure has two dimensions. The first dimension emphasizes a change in the customer service advisor role. Here, the themes are changes in tasks and how it affects efficiency. Further, the chatbot's skills is a category that affects both dimensions. The second dimension focuses on the customer service advisors' relationship with the chatbot. This dimension highlights the themes of the chatbot as a colleague, feeling of job security and degree of ownership. Examples of answers from the informants will be presented under each segment.

### 4.1 Change in customer service advisors role

By following the data structure generated by the Gioia method, the change in customer service advisors role are divided into the categories of change in task, how it affects efficiency and the chatbot's limited skills.

### 4.1.1 Change in tasks

The informants were asked to elaborate on how the chatbot affects their workday. First, most of the informants explained that the chatbot is the first line of support and that it is the chatbot that greets the customer first. Further, the informants explained how the chatbot solved the easiest and most mundane tasks. The more complex cases and inquiries were transferred from the chatbot to them. Consequently, the majority of the informants felt that they answered fewer easier customer inquiries and were now handling the more complex customer inquiries more frequently, leading to a shift in the difficulty level of the chats they solved.

Some of the informants expressed how their tasks were before the implementation of the chatbot and compared them to how those tasks are today. Findings show that the informants experience a higher complexity standard on the cases they solve throughout the day. An example here is that they no longer get inquiries regarding opening hours at their offices. On one side, this example is seen as a simple and routine inquiry that the advisor no longer gets.

Furthermore, this can imply that the tasks performed are changing as the chatbot learns to solve a greater number of inquiries. On the other side, the informants say that complex inquiries regarding for example stock funds, estate, house loans and pensions appear more frequently. In addition, some of the informants elaborate on how they could notice the constant developments of the chatbot as some of the inquiries they used to get were suddenly drastically reduced.

Informant number 2 and 3 expresses how the chatbot affects a shift in complexity in the tasks and thereby affects the competence standard needed. Informant number 2 expresses that the shift in a task can affect them positively and negatively. The informants experience a feeling of accomplishment when answering the easy tasks, as the conversation is effective and safe. The same informant also elaborates on how the shift in a task can be motivational as the more complex cases are more challenging and interesting. This statement is also supported by informant number 5, who expresses their enjoyment around an increased competence that is due to the shift in task complexity. The following example from informant number 5 expresses this.

Some examples from the informants that highlight a change in tasks:

Informant 2: *The chatbot has led to a higher standard for the tasks in the form of competence, as the inquiries we do get are more difficult and feel heavier to solve. It can be nice to solve the easy cases once in a while myself, because I feel safe when solving these cases, it gives a motivational and effective feeling, even though the more complex cases are more challenging. It takes away some of the variety of complexity that I miss sometimes.*

Informant 3: *I feel like the chatbot affects the tasks and competence requirements. Even though the same inquiries will be asked, the chatbot takes away the most routine tasks, which leads to a higher standard in competence that is required from the employee. I can notice how the chatbot changes the tasks and the way we are working.*

Informant 5: *The chatbot enforces the requirements for competence that are already there, as we no longer solve the easiest tasks. This also means that we need to increase our competence by only solving complex cases all day… I like to increase my competence. It is more rewarding to help them solve inquiries customers might not have been able to do themselves, knowing that you actually helped them.*

Informant number 6 agrees with the other informants on the shift in tasks. The informants also state that the chatbot changes how the advisors conduct their tasks. The informant elaborated on how the customer is affected by the chatbot when it is not working in its intended way, potentially leading to an angry customer. Further, informant number 6 states that chatbot failure can affect the customer service advisor when the customer gets frustrated at the chatbot, adding the task to deal with the angry customer. An example the informants provided elaborated on defending the chatbot or trying to make the customer happy again if the chatbot failed to answer the customer.

For example, informant number 6 expressed the following:

Informant 6: *It also changes the way I work where I sometimes feel that I have the task to defend the chatbot towards the customer, explain how it works and why we are using it. Many customers might also be frustrated due to the chatbot's limitations and lack of skills to answer questions, which affects the role I have when talking to the customer. This changes my task where I try to make the customer happy again because they are mad at the chatbot and take it out on me when they are connected to a human.*

### 4.1.2 Affects efficiency

In addition to reflecting on a change in task, the informants mentioned how their work performance are measured by the management and how they believe the chatbot affects this measure when elaborating on how the chatbot affects their workday. All informants explained that the measurement for efficiency is based on the number of chats they complete during a shift. Further, the informants state that the goal is to achieve 11 chats in one hour, which equal around 82 chats in a day. Then the informants were asked how they thought the chatbot impacted their efficiency. The result showed that the chatbot affects the efficiency goal as it

leads to a higher number of complex and time-consuming cases that again affect the efficiency. The informants explained that since the chatbot handles the easiest questions, they have to handle the more complicated and time-consuming cases. Furthermore, the informants also believed that as the chatbot probably will develop and gets even better in the future, their number of chats will also decrease. Moreover, the informants working in the bank before the implementation compared their efficiency to the time before the implementation of the chatbot and after the implementation. Examples from the informants' answers are listed below.

Some examples from the informants that enlight a shift in perceived efficiency:

Informant 2: *The chatbot takes the simplest inquiries. It, therefore, hurts my number of chats. It was easier to get a higher number of chats before when you had several easy questions. I also did not feel it was taken into account by the management regarding our effectiveness goals. I wish more consideration had been given in light of the questions we receive now compared to those we received before when there were easier questions.*

Informant 3: *I feel that I take a smaller number of chats after the implementation of the chatbot, and I think it will continue to reduce our numbers. The chatbot is getting better, which will probably lead to us receiving even more time-consuming and challenging inquiries.*

Informant 4: *I probably have fewer chats during a shift now than before. Our effectiveness goal feels much more difficult to reach now than before. It was much easier before when we received much easier inquiries. Then there were maybe some chats that had a duration of 30 seconds or one minute. We do not have so many short chats now since the chatbot takes those inquiries. However, I feel that even though I may take on a smaller amount of chats, I still work in a good and efficient way.*

Informant number 6, among others, also emphasized how a frustrated customer could lead to a reduced feeling of efficiency. The informant described an example where the customer was angry after talking to the chatbot if the chatbot failed to answer the customer in the desired

way, making the customer angry. Accordingly, the customer expressed their anger towards the customer service advisor, making the conversation last longer. The informant states:

Informant 6: *The customer can drag out the conversation when only expressing frustration after talking to the chatbot. This can lead to the chats getting longer, and harder for me to solve the inquiry in an efficient way.*

On the other hand, informants 5, 6 and 9 also reflected on how they work together with the chatbot. For example, informants five and six described how the chatbot could help them handle chats more efficiently. In addition, informants 5 and 6 highlighted how the chatbot helps them gather useful information about the customer and their inquiries. The informants referred to this process as screening. However, informant 7 also mentioned that the information transferred from the chatbot could sometimes be very unstructured and confusing and therefore be of no help. Examples from informants 5, 6 and 7 are listed below:

Informant 5: *The chatbot increases my efficiency. It gathers much information about the customer and their inquiry. This information is transferred to me if the chatbot cannot solve the inquiry. Consequently, I can solve the inquiry straight away without asking a single question to the customer.*

Informant 6: *On one side, the chatbot makes my job more complex as it takes away the routine tasks. On the other hand, it does the screening from the customer, if the customer uses the chatbot in the intended way. This means that it obtains the information I need from the customer in advance, so that I can solve the inquiry faster when I take over the chat from the chatbot.*

Informant 7: *Sometimes there is only text, text, text from the chatbot which makes it look quite confusing.*

### 4.1.3 The chatbot's limited skills

Informants elaborated on how the chatbot skills affected their day. The answers varied on how much they thought it affected them, from a neutral to a negative degree. The informants

expressed how the customer could get frustrated with the chatbot and take it out on them when the chatbot was not able to answer their questions. Some informants felt this negatively impacted them, while some said that this did not affect them. For example, informant number 2 reflected on how the chatbot's skills are limited. As a consequence, informant could experience that the customers would enter the chat with the customer service advisor angry after talking to the chatbot. The informant felt that this could turn into a demotivating feeling at work where the chatbot impacted their customer service role and their relationship with the chatbot in a negative way. An example that informant number two answered was:

Informant 2: *My work experience can get reduced when the customers come in angry at me when they are frustrated over the chatbot. Even though I know they are not angry directly at me, they are taking it out on me on the way that they are communicating on the chat. The fact that the customer had a bad experience again affects my day and motivation when they are that angry through the entire conversation.*

Informant number 9 agrees with the following statement:

Informant 9: *The customer can get frustrated or angry over the chatbot if it is not able to understand or answer the customer. This can sometimes affect my motivation when they are calling me bad names.*

Informant number 5 agrees that the limited skills of the chatbot can make the customer angry. The informant then further states that this does not affect him/her as much, as the informant knows that the frustration is often caused by a user fault where the customer fails to use the chatbot in an intended way. The informant agrees on how the chatbot's limited skills affect the customer. However, informant 5 has a different view on how this affects the relationship between the customer service advisors and the chatbot. An example from informant number 5 is:

Informant 5: *The chatbot can make the customer angry sometimes, but I don't let it affect me. Often it is the customers fault, or a user fault, that makes it hard for the customer to use the chatbot.*

**4.2 Relationship between the chatbot and the employee**

The informants were asked to describe their perception of the chatbot. The answers were more or less similar and described as harmonious. Nonetheless, there were some variety. Many informants see the chatbot as a colleague and a digital helping tool. In fact, some informants use the chatbot themself as support for inquiries that stretch out of their area of expertise. Other informants do not see the chatbot as a colleague but as a helping hand. On the other side, the informants also perceive the chatbot as limited and frustrating. Some informants also elaborated on the chatbot's role in the future in customer service, on job security, how it affects their efficiency, and how they use the chatbot throughout the day. The table below highlights some of the keywords from the informants' answers, followed by examples of the informants' answers.

| Perception of the chatbot | Qualities |
|---|---|
| A helping hand | Efficient |
| A Digital tool | Available |
| A tool for customers and employees | Knowledgeable |
| Colleague | Fast |
| Asset | Fair |
| Limited | Frustrating |

Table 3: Most used words when describing their perception of the chatbot (created by the authors).

Informant 8: *For me, it works well as an asset and support. When the customer first contacts us through chat, they come to the chatbot. With the chatbot, the customers write their inquiries and questions. If the customer is transferred to me from the chatbot, I can see the*

*problem/inquiry and the conversation. That way, I can quickly adjust to what needs to be done and, therefore, have the opportunity to answer the problem immediately. So I would say that it is a very efficient way to run customer service.*

Informant 4: *I think the chatbot is starting to get very good and we are constantly working on the chatbot to get better and develop. The chatbot is now so good that we can sometimes use it if we are unsure in some areas. For example, when I get questions about fund savings and stocks that I am unsure of, I like to open up the chatbot myself to get some information from it. Consequently, I learn more about how the chatbot works and get more information about what it can and can not do.*

Informant 2: *In the beginning, my relationship with the chatbot was not that good, but it has developed over time. At first, I thought that the chatbot had more flaws than positive sides, but I now think it is a lot better.*

As the informants answered the prepared questions, suited follow-up questions were asked. This emphasized the subject of the chatbot being a colleague rather than a competitor, and its impact on the feeling of job security.

**4.2.1 Colleague versus competitor**

The informants were then asked to elaborate on their point of view of working alongside with the chatbot. The informants all view the chatbot as a form of a colleague. They answered differently on the degree of helpfulness towards using the chatbot themselves as a tool or the feedback they get from the customer towards the chatbot. However, none of the informants view the chatbot as a competitor to any degree.

Some examples from the informants were as follows:

Informant 3: *I actually refer to it as a colleague. Myself, the bank and our customer gets help from the chatbot, so I believe most customers are left with a good experience after talking to the chatbot. I see it as a good thing that the chatbot solves the easiest inquiries.*

Informant 4: *I would say that the chatbot is a skilled colleague. It responds fast to the inquiries it knows. It has its limitations, and some customers might find it frustrating and lack trust in it. I don't see it as a competitor at all even though it solves the easiest tasks for me.*

Informants 3 and 4 expressed how they see the chatbot as a colleague. Informant number 7 and 9 also adds how they see the chatbot as a team player or friend who obtains helpful information, making the customer service advisors' day easier.

Informant 7: *I see the chatbot as a team player, a helping hand and not a competitor. The chatbot is working along with the advisor to help solve the inquiries, or gather the needed information when the inquiries are being transferred from the chatbot to the advisors. The goal is that the chatbot can get all the information the human advisor will need to help us solve the inquiry as efficiently as possible. The chatbot works as a team player that helps us do our job better.*

Informant 9*: I would describe the chatbot as a helping friend on our side that wants to help us by giving us an easier workday and a more effective working methodology. It can also help to obtain helpful information from the customer and works as a collaboration before I take over the chat.*

### 4.2.2 Feeling of job Security

The informants reflected on the subject of job security when asked about the implementation and use of the chatbot. The informants expressed a strong feeling of job security and has no fear that the chatbot will take over their jobs in the nearest future. There is a consensus perception among the informants that the chatbot's skills are limited and a belief that there will be a need for human advisors as well. Informant number 1 and 3 highlighted how there are a great number of people who contact customer service that requires the need from a human advisor. The informants also emphasized the customers' perception towards the chatbot where there is a lack of trust in what the chatbot says or that customers prefer to talk to human advisors. Two examples expressed from the informants are, for instance:

Informant 1: *I have a strong feeling of job security. We don't get fewer inquiries as the bank is being digitalized. It can actually lead to more people reaching out to us. I have no fear that the chatbot will take over my job as there is a lack of trust from the customers towards the chatbot. Many people prefer to talk to a human, The chatbot's skills are also very limited.*

Informant 3: *I don't think the chatbot will ever be able to replace me in my job, but I can see how it can change the way we are working. Our workplace, like many other places, are in constant change, and the chatbot is just an example. Even though the chatbot will be able to answer more inquiries there will always be a need for humans. There are many customers that you can see don't trust the chatbot.*

Informant number 6 also supported the same statements as informants 1 and 3. Again, there is a clear agreement. Informant 6 also believed that there are some cases and inquiries that the chatbot will not be able to answer even though its skills would be improved, and implies that the chatbot will never be able to replace them. In addition, informant number 6 also stated that their customer service center is still handling severe customer inquiries. An example of a statement from informant 6 is listed below:

Informant 6: *I feel really safe. I don't think that we will be replaced by chatbots anytime soon. Firstly, there is a lot to do and secondly I feel like many customers prefer to talk to a human rather than a robot. There are many complicated cases the robot will not be able answer even though its range would be improved. The chatbot's skills are also very limited.*

### 4.2.3 Degree of ownership

When talking about the chatbot, the informants emphasized a desire to increase the information flow between the management and the customer advisors both ways. In addition, a desire for a feeling of ownership of the chatbot was present in some informants when talking about information they received from the bank about the chatbot.

Informant number 5 expressed a desire to receive more information to increase their knowledge about the chatbot. The informant desired information from the management regarding the chatbot that would lead to an increased feeling of ownership if more

information was provided about the chatbot. The informant also reflected on the opportunity to give feedback to the management that would be beneficial for the company.

Some examples from the informants that addressed the degree of ownership:

Informant 5: *I love to learn new things. I am working at the wrong place if I don't learn new things. The more knowledge I have, the more motivated I will be. I would like to gain more information about the chatbot… There should be a feedback portal or more room for this to be discussed in team-meetings. However, this would only be motivating if we actually see that changes are made or that we feel heard. If not, there is no point in continuing to give feedback… I would also like to receive more proactive information from the management, so that we can adjust our own expectations.*

In addition, if the customer service advisors were provided with more information, some informants such as informant number 9 would increase its feeling of ownership, motivation and the right expectations on issues concerning, for example, the number of chats to be solved during a shift. Furthermore, informants number 7 and 8 reflected on the perception that the management gives out too little information about the chatbot, followed by a desire for an improved information flow. Similar to informant number 5, the two informants mentioned that more information should go both ways from the management to the customer service advisors, and from the customer service advisors to the management.

Informant 7: *I believe the bank informs about the chatbot to a minimal degree and that there should be a greater focus on this. The informational flow should go both ways, more than it is done today. The people who are working on developing the chatbot should give more information to the customer advisors, and the customer advisors should be able to give more feedback. I believe this would improve both the chatbot for the customers, and increase the feeling of ownership the employees would have for the chatbot. This could also be motivating to know that you are a part of developing it.*

Informant 8: *I would like to have more information. I think that all information is good information. The more I know, the more I can understand and how to address our customers.*

*More information would make me feel a stronger ownership and predictability, that I value. I would find it motivating to get the opportunity to give feedback.*

Informant number 9 felt the same as the other informants and further elaborated on how more information would increase the feeling of ownership, which again would lead to better insight and a stronger motivation to learn.

Informant 9: *I believe if more people got the opportunity to help develop the chatbot, it would increase the feeling of ownership. The more information I get, the more motivated I will be. If I received more information on how the chatbot can be improved with our help, what feedback I can give, how to give feedback, and what it can do on its own, I would feel a greater feeling of ownership and better insight into how the chatbot works, and its future role. I would like to be more involved with the development of the chatbot. I would feel a stronger motivation if I was more included and a stronger motivation to learn more.*

# Chapter 5. Discussion and Implications

## 5.0 Discussion

The key findings have been presented from the interviews concerning how the chatbot affects the customer service advisors. This knowledge can be essential for future chatbot implementation, as the employees are a large part of the organization's outcome. The discussion will be presented following the same structure as the findings: change in tasks, affects efficiency, chatbot skills, feeling of job security, degree of ownership and colleague rather than a competitor. However, some of the findings can be linked to more than one category. Furthermore, these findings will be analyzed and discussed in relation to the theoretical and empirical background. Lastly, theoretical propositions are derived from each category.

## 5.1 Change in tasks

The informants emphasized how the chatbot affects the employees' tasks during the interview. The chatbot solves the most mundane tasks and leaves a higher standard of complexity for the customer advisors to solve. The statement that the chatbot increases the complexity for the human advisors is supported by Waizenegger et al. (2020), where managers were interviewed with the same perspective. Waizenegger et al. (2020) stated that employees could focus on the more interesting complex cases that demanded a broader field of knowledge. This shift is underlined in this thesis. On one side, Waizenegger et al. (2020) argued that employee turnover is a great problem in the customer service industry. Furthermore, the shift in task complexity and increased competence skills can lead to greater employee satisfaction. Thus, improving the retention rate of employees. This was found to be partially supported by some of the informants in this thesis, such as informants number 5, 6, 7 and 9. The thesis found that some of the informants were motivated by the change in task. On the other side, informants number 2 and 3, for example, stated that it could be demotivating to only answer complex cases during a day as it feels more exhausting. The shift in tasks can therefore be perceived to affect the employees differently.

According to Jacobsen and Thorsvik (2019), whether a task can get automated is decided by the complexity of the task. All informants elaborated on the fact that they were left with the more complex tasks, as the chatbot answered the most mundane tasks. Dremel et al. (2017) discussed the implementation of digital transformation and argued that the need for human capital and knowledge increases in complex business problems. Consequently, the thesis findings are supported theoretically by prior research. Employees can now focus on the complex cases that are more interesting to solve and that require a broader knowledge field as well as contextualized information and empathy. This shift from highly repetitive to more demanding and interesting cases could lead to higher employee satisfaction and a higher employee retention rate which is crucial as employee turnover is a big problem in the customer service industry (Waizenegger et al., 2020).

Previous literature supports that the skills of existing workers need to be developed in the context of digital transformation (Vial, 2019). Furthermore, the digital transformation can require that the employees must use their analytical skills more as the number of complex business situations arises (Dremel et al, 2017). This research study finds the same to be true for customer service advisors concerning the chatbot. The informants emphasized how the number of complex cases they solved throughout the day increased. Arguably, their analytical skills are more heavily valued when solving these cases as it requires broader knowledge. In addition, the informants expressed how each task could a longer time period to solve, and it can be more challenging to find out what the customer wants help with when the situation is more complex. Thus, requiring a higher competence skill set.

Competence development can include all programs and efforts the organization conducts that aim to develop the employees' competence, skills, and learning when solving actual cases (Nordhaug, 2002). It can be essential for the survival of the organization to strengthen the customer advisors' competency to improve efficiency, job security, and the social environment. The customer service advisors reasoned on how the more complex inquiries affect their efficiency, which will later be discussed in the paper. As the chatbot continues to develop, the advisors' competence must continue to be maintained and further developed. It can also be discussed how it can affect the advisors' motivation, which again affects the bank's business performance on their outcome. Frey and Osborne (2017) highlight the importance of

human skills as digital transformation continues to develop, with a higher demand for capable employees with higher education and the ability to collaborate in order to be aligned with the increased competence level that is found in this thesis.

Increased complexity of cases can also lead to a higher required competence level. The implementation of the chatbot could make the employees upskill (Waizenegger et al., 2020). This is also expressed by different informants, as presented in the findings. One could argue that it is essential for the bank to facilitate the increased competence needed. One could also examine the motivational feeling that the informants expressed from the change in tasks. On one hand, some informants find it motivating to learn new knowledge and continue to develop their skills. Informants expressed this opportunity to gain a broader insight into helping the customer with their needs as a consequence of implementing the chatbot. When the chatbot solves the easiest tasks, the advisors must solve the more complex cases that provide room for obtaining new knowledge. However, the informants also expressed the desired shift in tasks when it comes to helping develop the chatbot that the bank does not meet. This will further be discussed in section 5.5 as they are linked to each other.

Kohli and Johnson (2011) argued how different generations could be affected by digital technologies. Informants in this thesis, in the age range between 20-and 30 expressed that it is motivating to continue to develop their competence. An example is informant number 5, who is in the age range between 20-29. Findings from this informant emphasized the enjoyment of increasing their own competence, and a rewarding feeling when helping customers solve inquiries they might not have been able to do themselves. This informant believes that the more knowledge he or she has, the more motivated he or she will be. This informant is motivated by the more complex cases, hence a stronger opportunity to gain new knowledge . Therefore, it could be argued that the chatbot helps with this motivation as it increases the number of complex cases. According to Kohli and Johnson (2011), this generation has more experience with digital technology. Arguably, the younger generation has therefore a higher acceptance for the changes that have occurred due to the implementation of the chatbot.

On the other hand, informant number 3, is in the age range between 50-59. This informant indicated a desire to be able to solve the easy cases once in a while as it gives a motivational and affective feeling to get some variety. The informant acknowledges that the more complex cases are more challenging, but at the same time, values the variety. Consequently, in contrast, this informant gets more motivated by variety and a sense of accomplishment. However, the variety of complexity is reduced due to the chatbot implementation and could seem to have a demotivational effect on the employee after the chatbot implementation. These assertions can imply a difference between how the chatbot can affect their motivational feeling differently, also considering different generations. This is underlined by Kohli and Johnson's (2011) discoveries. There could be a cultural conflict between the younger generation, who is more digitally experienced, versus the older generation, who is more used to pre-digitalized times. This is something that could be investigated in future research with a larger number of informants than this thesis was limited to. Based on the discussion provided above, the following proposition are suggested:

**P1a:** Implementation of chatbots leads to the customer service advisors receiving more complex inquiries.

**P1b:** Implementation of chatbots leads to a higher competence standard for the customer service advisors.

**5.2 Affects Efficiency**

Nadkarni and Prügl (2021) argued that digital technology and digital transformation lead to more efficient and optimized work processes, consequently improving productivity. However, this thesis found that the human customer service has some ambivalent feelings towards the chatbot's impact on their efficiency. On one side, several informants stated that since the chatbot is handling the more straightforward cases, the more complex and time-consuming inquiries are handled by the human customer service agent. On the other side, the informants also mentioned how the chatbot can improve their efficiency.

A mentionable finding is that the customer service advisors employed before the implementation of the chatbot highlight that it is much more challenging to achieve a high number of chats now compared to the times before the implementation. For instance,

informant number 3 expressed how it was easier to get a higher number of chats during a day before implementing the chatbot, as there used to be several easy questions. The findings also underlined how the informant felt like this shift was not taken into account by the management when setting their effectiveness goals. The feeling of being ignored by the management could also be linked to the study from Nadkarni and Prügl (2021), which argues that employees who cannot keep up with the rapidly moving digital trends and their impact on work processes can feel forsaken.

On the other hand, younger employees employed after the chatbot's implementation argued that the chatbot could increase their efficiency in many cases. Improving efficiency is, as mentioned, more or less the idea with the implementation of new technology (Nadkarni and Prügl, 2021). Since the chatbot talks to the customer first, collects a severe amount of information, and then transfers it to a human customer service agent, the human agent is ready to solve the inquiry immediately instead of collecting the information themselves. Furthermore, as informant number 6 underlined, the chatbot does the screening from the customer first, meaning that the chatbot obtains the needed information in advance that the customer service advisor can solve the inquiry faster. Arguably, this can be supported by Følstad et al. (2018), who also argue that the chatbot can lead to human employees providing better and more effective customer service.

Additionally, the findings of this study also showed that when the chatbot fails, it could also impact the human agents' efficiency. For instance, informant number 9 explained this clearly when emphasizing how the chatbot can make the customers angry or frustrated. For example, suppose the chatbot was not able to respond to the customers' question. In that case, the customer could get angry and take it out on the advisors and complain, which could affect the advisors' efficiency. Further, the customer uses the employees' time to blame the advisor instead of moving forward with their inquiries. Consequently, the customer advisors use a more extended period of time by having to explain either the answers one more time, ease down the customers, and apologize or try to obtain information on what the customer needs help with. These results also correspond with earlier findings from Zhang et al. (2021) and Castillo et al. (2021), which found that inadequate chatbots and chatbot failure can negatively affect the service provider and lead to angry and frustrated customers. Nevertheless, this thesis also found that employees are also affected by chatbot failure in terms of reduced

motivation and job satisfaction due to the time used by a customer to complain about the insufficient chatbot.

In light of this thesis' findings, the results show that the employees see the chatbot as a digital innovation that impacts the employees' efficiency. However, the chatbot has both positive and negative effects. Furthermore, all informants acknowledged that the chatbot is highly effective and handles a severe amount of customer inquiries. According to Barakat and Dabbous (2019), employees need to perceive the chatbot as effective to promote the current and future use of the chatbot. Consequently, if the employees keep feeling that the effectiveness goal is not adjusted accordingly to the chatbot's development and increased efficiency, the employees might feel insufficient, demotivated and develop a negative chatbot-human relationship (Barakat and Dabbous, 2019). The reason why some employees have such a different experience with the chatbot impact on their efficiency can arguably be linked to the findings from Kohli and Johnson (2011). According to Kohli and Johnson (2011), digitalization can lead to vast differences between workers employed before the implementation of digital technology, such as a chatbot, and newly hired young employees with a more digital understanding. The following suggestions on propositions are therefore suggested:

**P2a**: The chatbot affects the customer service advisors' feeling of efficiency negatively as it transfers time-consuming and complex inquiries to the customer service advisors

**P2b:** The chatbot affects the customer service advisors' feeling of efficiency positively when screening the customer first for needed information.

**P2c:** The customer service advisors uses valuable chat-time to defend the chatbot when it is not able to handle some customer inquiries

## 5.3 The chatbot's limited skills

Some of the informants expressed how the customer sometimes comes in angry or frustrated after talking to the chatbot. This is also aligned with previous research by Zumstein and Hundertmark (2017) investigating the customer perspective towards the chatbot. The chatbot lacks the skill of understanding all of the customers' needs that can lead to a frustrated

customer who does not get the desired help right away. In addition, there is a lack of trust from the customer toward the chatbot. Müller et al. (2019) support that individuals' trust towards the chatbot varies and that the lack of trust can prevent the chatbot acceptance. Informant number 1 expressed how the advisors sometimes had to answer the same inquiry that the chatbot had answered due to a lack of trust from the customer towards what the chatbot is saying. Furthermore, the informant acknowledgesd that many customers prefer to talk to a human instead of a chatbot. By comparison, Müller et al. (2019) have found similar findings.

The informants are aware of the limited skills the chatbot has. According to a previous exploratory interview study by Følstad et al. (2018), the primary motivation for users to use the chatbot is productivity on the simple requests. However, the definition of "simple requests" that are expected to be answered fast can be subjective. Consequently, the customer might get angry when the chatbot does not understand the inquiry (Zumstein and Hundertmark, 2017). Hence, the customer is left with a feeling of being inefficient and demotivated. Arguably, this frustration towards the customer service employee might feel demotivating when customers are taking their anger out on them. Thus, delivering poorer results and a lower satisfactory performance level that again is important for the bank's outcome.

One could also look at the age range and the level of education when comparing the different answers. For example, informant number 2 is in the age range of 50-59 and has no higher education after high school. This informant expressed how the chatbot could affect their motivation at work and thereby also willingness to perform when the customers had a bad experience from talking to the chatbot. This could lead to that the customers communicated with an angry tone throughout the entire conversation. This can also be linked to Kohli and Johnson's (2011) article. Arguably, the older generation is not as digitally experienced or educated on the subject. Potentially, this can lead to the informant letting the customers' frustration affect their motivation to a higher degree.

On the other hand, informants number 5 and 9 had a more general approach to how the limited skills of the chatbot affected them. They both have bachelor's degrees and are in the age range of 20-29. Informant number 5 meant that some customers lacked skills on how to use the chatbot properly and that this did not affect his/her workday. These findings are supported by Castillo et al. (2021). Both findings emphasize the awareness of how users have a weakness in lack of experience of using the chatbot. Informant number 5 appears to be aware of this subject. Furthermore, the findings are that the customers tend to blame the customer service advisors even though it is the customers' fault who is not able to understand how to use the chatbot in a correct manner. Informant number 9 also elaborated on the same thoughts. Even though this case study may not appear generalizing enough based on the number of informants who highlighted this to draw a relationship between the two, one could see an interesting pattern here that can be used in future research. Based on the discussion on the chatbot skills, the following theoretical propositions are suggested:

**P3**: The chatbot's limited skills can lead to angry or frustrated customers, which can drive the employees' motivation and job satisfaction down

## 5.4 Feeling of job security

One of the most debated topics around digitalization and digital transformation is its impact on human replacement. According to previous literature, digital transformation can lead to various levels of automation (Vial, 2019). In fact, one of the barriers to accepting the implementation of new technology in an organization is the perceived ability and fear of superseding a human employee (Barakat and Dabbous, 2019). Further, Patil et al. (2019) argued that the chatbot is significantly better than a human customer service agent in terms of cost-efficiency, availability (24/7 access) and convenience. In addition, the informants of this study acknowledged the chatbot is a highly efficient tool and handles inquiries from a customer faster and in larger volumes than ever before. Consequently, one should expect that the employees would feel threatened by the chatbot.

This thesis shows that none of the informants was afraid of being replaced by the chatbot even though prior research predicts that customer service is at high risk for automation (Frey and Osborne, 2017). In fact, some of the informants wished that the chatbot could handle even

more inquiries. The reasons for the lack of fear of being replaced can be linked to several factors. For instance, the informants argue that the chatbot skills are still limited. Furthermore, the human employees must still handle a severe amount of inquiries every day, and the customers prefer chatting with a human. Suppose these results are seen in the light of Frey and Osborne (2017) arguments, which argued that AI would replace a severe amount of service work. In that case, the informants can arguably underestimate the development of AI. Studies have also shown that a significant number of customers would not mind talking to a chatbot if it is efficient (Følstad and Skuvje, 2019). Nevertheless, the results from this study are more in accordance with the predictions from Grimshaw (2020). According to Grimshaw (2020), digital technology, such as the chatbot, would likely change the employees' tasks instead of a total replacement. For instance, informant number 3 also has the same perception. The findings illustrated how the advisor doubted that the chatbot would be able to replace them in their jobs. However, they acknowledged that the chatbot changes the way the advisors work. Nonetheless, informants working in the bank during the implementation of the chatbot mentioned some degree of insecurity at the beginning of the implementation phase. Informant number 1 reasoned that the advisors were nervous when first implementing the chatbot as little information was given to advisors. Consequently, the advisors were left with a feeling of uncertainty about how much the chatbot would develop over time. However, there are no indications that the advisors look at the chatbot as a threat at the moment or in the nearest future.

On the other hand, informant seven asked, "would we have had more employees if the chatbot had not been there?" Informant 7 thinks so but also underlined that the bank would probably have found other solutions to reduce the number of inquiries that reach the customer service center if the chatbot had not been implemented. Waizenegger et al. (2020) also had similar findings and argued that chatbots impact future hires. According to Waizenegger et al. (2020) findings, when companies are looking to replace and hire new employees, a chatbot can be perceived as an adequate replacement and therefore reduce the number of new employees needed. Therefore, even though the employees do not feel that the chatbot will replace them, it arguably impacts the number of employees it could have had. Consequently, the findings are somewhat also in line with the predictions from Frey and Osborne (2017). In light of the presented discussion, the authors of this thesis offer the following proposition:

**P4**: Implementation of a chatbot does not lead to an increased feeling of being replaced among current customer service advisors.

## 5.5 Degree of ownership

This thesis indicates that the informants desired a higher degree of information from the bank regarding the chatbot. Vial (2019) highlighted the strategic role of the management when implementing digital transformation. One of the roles the management or IT should have is an "informative-down" role where they provide information to the employees. Informant number 7 stated how there should be a greater focus on information flow from the management to the customer service advisors regarding the chatbot. A desire to get more information from the ones working on developing the chatbot was valued. Informant number 5 added how knowledge about the chatbot would increase the motivational feeling and feeling of ownership. Vial (2019) also argued that digital transformation requires close coordination and collaboration between the different participants, herein the customer service advisors and the management who develops the chatbot. Hence, the advisors would achieve a feeling of co-creating if collaborating more. It is conceivable that a stronger feeling of ownership and co-creation can also increase the customer advisors' emotional attachment to the chatbot. Consequently, not letting the angry customer if the chatbot fails discussed in section 5.3, decrease their motivation as much when having a stronger feeling of ownership, thus affecting the chatbot-human relationship.

Another role the management or IT should have is an "informative-up" strategy (Vial, 2019). Concerning this thesis, the customer service advisors who work alongside with the chatbot daily should be able to provide information to the top management. Informant number 7 highlighted that the information flow between the customer service advisors and the management regarding the chatbot should occur more frequently. Furthermore, the customer advisors should be able to give more feedback. Arguably, this would increase their motivation by being a part of developing the chatbot, as implied by the informants. This is also supported by informant number 9, who believed it would increase the feeling of ownership towards the chatbot and argued how more information increases their motivation by being more included. The information the management could present can highlight issues such as how the customer advisors could contribute to developing the chatbot further, what feedback should be given

and how, and what the chatbot can actually solve. Consequently, affect the feeling of ownership and perception of effectiveness, as analyzed in section 5.2 if the advisors were more aware of the chatbot's skills.

Hanelt et al. (2021) argue how digital transformation relies on the awareness of the technology. Awareness can be communicated by, for example, a positive attitude towards the technology and the change implemented. In the highlight of this paper, if the management communicates a stronger awareness of the chatbot, it could affect a more positive relationship the employee has with the chatbot. Hanelt et al. (2021) findings correlate with the demands of this research's informants concerning how digitalization affects the individual workers leading to enhanced access to information. Thus, the thesis suggests the following propositions:

**P5:** Two-way information flow between the management and the customer service advisors drives a motivational feeling for co-creation and positively affects the relationship between the chatbot and the employees.

## 5.6 Colleague rather than a competitor

Several informants highlighted their point of view on the chatbot as a team player, a helping hand and not a competitor. Furthermore, they expressed how the chatbot collaborates with the human advisor to help solve the inquiries and gather information when inquiries are being transferred from the chatbot to the advisors. This viewpoint from informant number 7 summarizes more or less the attitude towards the chatbot regarding the relationship with the chatbot. Table 3 shows that the employees use different positive words to describe the chatbot. According to Schrader et al. (2006), employees that see the implementation of new technology as a tool that can help them improve their capability to perform better at work are much more likely to accept the implementation and gain a better relationship with it. Even though the chatbot was implemented to provide customer service to the customers, many employees use the chatbot themselves. In these scenarios, the customer service advisor uses the chatbot as a tool or colleague to ask for help. For instance, informant number 3 expressed how some advisors use the chatbot for themselves if they get challenging inquiries from the

customer, such as to give out information about fund savings and stocks. The results highlight that the employees have a positive human-chatbot relationship and, therefore, will most likely continue to use the chatbot as a tool to solve inquiries and tasks.

On the other hand, as mentioned, the employees that feel intimidated by new technology, in this case, the chatbot, can try to hinder the implementation, future use and development (Barakat and Dabbou, 2019). Even though none of the informants feels threatened by the chatbot in light of being replaced and feels like it is almost like a colleague, informant number 3 indicated how the chatbot could be a competitor in terms of simple inquiries. Consequently, it affects the personal efficiency goal regarding the number of chats to solve during a day. However, the informant further expressed how the chatbot solves these cases is a good thing in the bigger picture. The reasoning from informant number 3 implies that the management has not taken into consideration the chatbot's impact on, for example, employees' tasks and efficiency and therefore affects the employees' view of the chatbot. Consequently, if the management keeps ignoring the impact of the chatbot, the current positive human-chatbot relationship might change.

In order to sustain the current usage and positive attitudes the employees have towards the chatbot, the bank management should increase their attention towards this relationship. Today, the employees' attitude towards the chatbot is mainly positive. Some informants expressed uncertainty in the implementation phase, but it did not last very long. However, the chatbot will likely develop over time and handle more complex inquiries, which can, according to Barakat and Dabbous (2019), shift the attitude towards the chatbot if it starts to feel like a threat in light of human replacement. Therefore, it is crucial that the bank's management is more proactive and considers the chatbot's impacts when, for example, reviewing the human customer service agents' efficiency goals as the chatbot will continue to develop. Based on the discussion above, the following proposition is suggested:

**P6:** The customer service advisors perceive the chatbot as a collaborative colleague and not a competitor.

To illustrate how the customer service advisors are affected by the chatbot, the authors of this thesis proposes the following framework below based on the propositions (figure 5). Each

proposition are linked to one of the boxes, where the interplay is illustrated between the boxes using arrows.
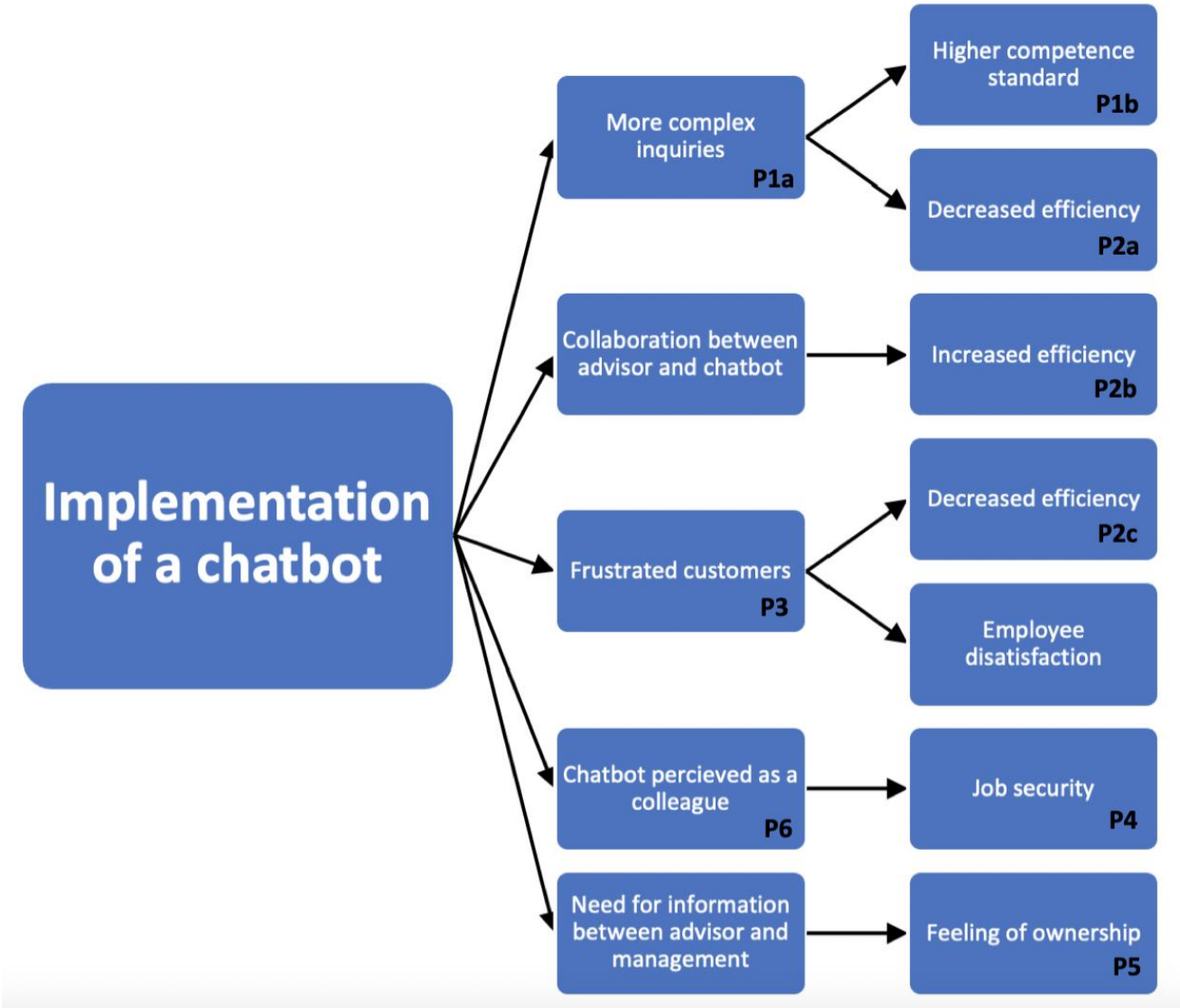


Figure 5: A framework illustrating how the chatbot affects the customer service advisors (created by the authors).

The framework above shows the effects of the implementation of a chatbot. The model illustrates that the implementation of a chatbot leads to more complex inquiries (P1a), which leads to a higher competence standard for the customer service advisors (P1b) and negatively impacts the customer service advisors' efficiency (P2a). Further, the framework shows that the implementation of a chatbot can lead to a collaboration between the chatbot and the customer

service advisor, which increases the customer service advisors' efficiency (P2b). In addition, the framework illustrates that the implementation of a chatbot can lead to frustrated customers (P3), which again affects the customer service advisors' efficiency negatively (P2c) and employee satisfaction. Moreover, the framework also shows that implementing a chatbot results in customer service advisors perceiving the chatbot as a colleague (P6), which also causes an increased feeling of job security (P4). Lastly, the model displays that a chatbot increases the need for more information between the employees and the management, leading to an increased feeling of ownership towards the chatbot (P5). This model can be used as a framework for future research.

## 5.7 Theoretical implications

The thesis has important contributions to theory. The key contribution lays a foundation for theorization of how a chatbot affects the customer service advisors. As highlighted in this thesis, there is a lack of prior literature that explores the chatbot in the customer service industry from an employees' perspective. Investigating this topic in relation to the chatbot and creating a foundation for future research was therefore needed. The majority of existing research emphasized the managerial or customer point of view as discussed earlier. Further, this thesis has also added information towards the highly relevant debate around digital transformation as a driver for automation and human replacement (Arntz et al., 2016; Frey and Osborne, 2017; Grimshaw, 2020).

This thesis has used an exploratory inductive approach to try to gain knowledge on the phenomenon of how the chatbot affects the customer service advisor using interviews. A set of theoretical propositions are also provided to contribute to new knowledge on the phenomenon. Then, a framework was created by the authors of this thesis. These findings offer insightful knowledge for other scholars. Therefore, it can be valuable insight for further researchers to know how a chatbot can affect their customer service advisors in this single case study. Hence, lay a foundation for future researchers on the phenomenon. Beyond the framework created, the thesis contributes to other literature with an essential focus on the employee perspective in digital transformation in other industries to seek further insight.

Although the thesis' theoretical propositions are derived from a case study using a single bank in a large industry, the results could arguably be transferable to similar academic fields with suitable caution. Hence, creating value for several scholars. For example, the collaborative bank utilizes an implementation strategy for the chatbot that could be similar to other banks. That said, implications can be drawn from the thesis as this strategy could be different in other banks or change in the future that academics could investigate.

**5.8 Practical implications**

This thesis provides many practical implications, especially for the collaborative bank but also for companies or service providers that have or are considering implementing a chatbot in a customer service context. First, this thesis informs the collaborative bank on how the implementation of a chatbot affects the bank's employees. As this thesis has shown, a chatbot affects the customer service advisors' role in terms of change in tasks, how the employees' efficiency is affected, and how the limited skills of a chatbot can lead to frustration among the employees. For example, this thesis informs that the employees hired before the implementation of the chatbot felt that the management did not consider the impact the chatbot has on employees' number of chats through a shift. Thus, the bank will need to re-evaluate their efficiency goals as the employees' complexity standards are affected by the implementation and the constant development of chatbots.

Further, this thesis has shown that the collaboration between the chatbot and the customer service advisors could also increase efficiency, which could be exploited to a higher degree. For example, the customer service advisors felt that the chatbot could sometimes provide confusing and unclear screening. Consequently, optimizing the collaboration between the chatbot and the customer service advisors could lead to an even higher efficiency level. The management in the collaborative bank should explore how to improve the collaboration between the chatbot and customer service advisors.

Moreover, since the chatbot is handling the more straightforward inquiries and raises the competence standard, employee training in the future can focus more on the complex topics

and cases that are relevant for the customer service advisors as some of the more simple inquiries will no longer reach the customer service advisors. The management also needs to consider that chatbot failure can lead to customer frustration that the employees handle and potentially impact their job satisfaction. Consequently, the companies need to make good routines to avoid these situations.

Lastly, employees have a great effect on whether a bank reaches its set goals and gains a competitive advantage that is represented by satisfied, loyal and motivated employees. Therefore, managers would want the provided knowledge on the phenomenon in order to know how their employees are affected by the chatbot, which creates awareness on what strategy to implement that will lead to effective and improved quality on the employees' customer service.

# Chapter 6. Conclusion

## 6.0 Conclusion

The thesis aims to answer the problem statement of "*How does a chatbot affect customer service advisors in the banking industry?*". A framework was created based on the findings to answer the question. Firstly, the chatbot affect a change in a task for the customer service advisors. As the chatbot answers the most mundane tasks, the advisors are left with the more complex cases. The employees thereby notice an increase in the competence standard. If the customer uses the chatbot the intended way the chatbot screens the customer to obtain the needed information. The advisor can thereby change the way they work by reading the chatbot and the customers' conversation. Another factor related to a change in task is how the chatbot affects the advisors' perceived efficiency. By removing the easy inquiries as the chatbot solves them on its own, the more complex cases the employee has to solve. Consequently, the advisors need to spend more time on each inquiry leading to a reduced number of chats solved throughout the day. This could lead to a demotivational feeling due to the efficiency goals if the bank management does not inform about this to steer the advisors' perception and expectations. Thirdly, customers can get frustrated with the advisors when the chatbot cannot answer the inquiry due to its limited skills in having to deal with angry customers. All these three factors lead to a change in the customer service advisors' role.

Furthermore, the customer service advisors have a strong feeling of job security as they experience how some customers lack trust towards what the chatbot answers and how some prefer to talk to a human instead. This contradicts the earlier belief that digitalization can lead to a feeling of reduced job security. A fifth category is the degree of ownership. Advisors expressed a higher demand for information from the bank management, such as how it affects the perception of efficiency. The feeling of being able to give feedback on the chatbot's development, and getting information about the chatbot would increase the feeling of ownership. Possibly also reduce the impact the angry customers have on the customer service advisors with an increasing feeling of ownership. Hence, implement a greater awareness of an "information-up" and "information-down" strategy. Lastly, the chatbot is viewed as a helping friend to collaborate with rather than a competitor. The last four categories illustrate the factors that affect the relationship the customer service advisor has with the chatbot based on

how it affects their workday. These results in total show how the customer service advisors in the banking industry are affected by the chatbot. Consequently, a framework was created based on this thesis results (see figure 5).

Lastly, the increased use of chatbots and chatbot development is a part of a much bigger picture in light of the societal phenomenon of digital transformation and its impact on automation and human replacement. Furthermore, as mentioned earlier in this thesis, artificial intelligence and machines develop rapidly and impact several industries and job roles. Consequently, focusing on one aspect using this single case study of how the implementation of chatbots has affected the employees in a bank can provide insight and affect the bigger picture.

## 6.1 Limitations and Future Research

All research papers have their limitations (Alaassar et al, 2021). This section highlights the limitations and provides suggestions for future research. The thesis emphasizes a single case study with a single collaborative bank with nine informants. Each bank utilizes a chatbot strategy when a chatbot is implemented in their customer service. The selected strategy may vary. As this thesis investigates a single study, some of the findings can be limited to the collaborative bank's chosen strategy. For instance, differences in the chatbot strategy can include how challenging it is for the customer to get past the chatbot before they are transferred to an advisor, the chatbot's competence can affect the relationship the employee has with the chatbot or the customer service agents' role. Arguably, the feeling of job security might appear weakened for the customer service advisor if it is harder for the customer to get transferred to the advisor. Consequently, creating a feeling that the chatbot is a competitor trying to take over their tasks rather than being a helping colleague. The limitation of investigating a single case study with a chosen chatbot-implementation strategy provides an opportunity for future research to investigate how another approach in another bank could affect how customer service advisors are affected by the chatbot.

Data collected from the customer service advisors were collected through in-depth interviews. All of the interviews were conducted within two weeks and can therefore be called a cross-

sectional study that examines the data at a specific point in time (Solem, 2015). Thus, it is a limitation to a temporal relationship between an actual cause and effect of a relationship without longitudinal data. Furthermore, it can be challenging to indicate a sequence of events due to the time restrictions of the project (Levin, 2006). The timeframe could also have led to some relevant studies in the literature review being omitted. However, the thesis may generate association and provide important information. It also provides an opportunity for future research to compare the findings at different points in time as the chatbot continues to develop. In addition, the chatbot is under constant development and is likely to be able to increase its skills in the future with training. Accordingly, future research could also examine how the chatbot affects the customer service advisor role if it can answer the more complex cases instead of just the mundane tasks.

Another possible limitation could be the number of informants interviewed if wanting to generalize the answers and achieve saturation (Mason, 2010). It can be challenging to support the generalization in this thesis were the informants interviewed no longer offer new data. Open-ended questions were used to obtain information from the informants. Precautions were made to avoid errors, as discussed earlier in the thesis. Even though the informant has the opportunity to ask clarification questions or get follow-up questions, a possible limitation could be linked to the actual understanding of the questions or that the informant asked their honest and full opinion. A larger sample could therefore be interesting to research. Consequently, it allows for future research to be conducted using the same interviews with a larger number of informants to achieve saturation or a more comprehensive range of perceptions. Thus, obtain valuable knowledge to extend the framework created by the authors in further detail.

# References

Abalkhail, J. M. (2018). Challenges of translating qualitative management data. Gender in Management: *An International Journal.*

Accenture (2018). Chatbots are here to stay- So what are you waiting for? Retrieved 25.02.2022, from https://www.accenture.com/_acnmedia/pdf-77/accenture-research-conversational-ai-platforms.pdf

Adamopoulou, E., & Moussiades, L. (2020, June). An overview of chatbot technology. *In* IFIP International Conference on Artificial Intelligence Applications and Innovations (pp. 373-383). Springer, Cham.

Alaassar, A., Mention, A. L., & Aas, T. H. (2021). Exploring a new incubation model for FinTechs: Regulatory sandboxes. Technovation, 103, 102237.

Altrock, S., Mention, A.L., Aas, T.H. (2022). Exploring Human Replacement: A Literature Review on Robo-Advice. Paper accepted for presentation at ISPIM innovation conference 2022

Arntz, M., Gregory, T., & Zierahn, U. (2016). The risk of automation for jobs in OECD countries: A comparative analysis.

Barakat, K. A., & Dabbous, A. (2019). UNDERSTANDING THE FACTORS THAT AFFECT THE SUSTAINED USE OF CHATBOTS WITHIN ORGANIZATIONS. *IADIS International Journal on WWW/Internet*, *17*(2).

Bii, P. (2013). Chatbot technology: A possible means of unlocking student potential to learn how to learn. *Educational Research*, *4*(2), 218-221.

Boost (2019). How Norway's biggest bank automated 51 of its online chat traffic with AI. Retrieved 02.02.2022, from: https://www.boost.ai/case-studies/how-norways-biggest-bank-automated-51-of-its-online-chat-traffic-with-ai

Boost (2020). How conversational AI is pioneering the digitalization of the banks in the nordics. Retrieved 03.02.2022 from: https://www.boost.ai/case-studies/how-conversational-ai-is-pioneering-the-digitization-of-banks-in-the-nordics

Boost (n.d.a.). Nordic banking leader employs comprehensive conversational AI strategy to scale customer service across four markets. Retrieved 16.02.2022, from: https://www.boost.ai/case-studies/nordea-employs-comprehensive-conversational-ai-strategy-to-scale-customer-service

Boost (n.d.b.). Customer-centric conversational AI for every kind of bank. Retrieved 02.02.2022, from: https://www.boost.ai/solutions/conversational-ai-banking

Brandtzaeg, P. B., & Følstad, A. (2017). Why people use chatbots. *In International conference on internet science* (pp. 377-392). Springer, Cham.

Brennen, J. S., & Kreiss, D. (2016). Digitalization. *The international encyclopedia of communication theory and philosophy*, 1-11.

Business Insider. (2016). 80% of businesses want chatbots by 2020. Retrieved 03.03.2022, from https://www.businessinsider.com/80-of-businesses-want-chatbots-by-2020-2016-12?r=US&IR=T

Cameron, G., Cameron, D., Megaw, G., Bond, R., Mulvenna, M., O'Neill, S., ... & McTear, M. (2017). Towards a chatbot for digital counselling. In Proceedings of the 31st British Computer Society Human Computer Interaction Conference (p. 24). BCS Learning & Development Ltd.

Castillo, D., Canhoto, A. I., & Said, E. (2021). The dark side of AI-powered service interactions: exploring the process of co-destruction from the customer perspective. *The Service Industries Journal*, *41*(13-14), 900-925.

Clark, L., Birkhead, A. S., Fernandez, C., & Egger, M. J. (2017). A transcription and translation protocol for sensitive cross-cultural team research. *Qualitative health research*, 27(12), 1751-1764.

Cobern, W. W., & Adams, B. A. (2020). When interviewing: how many is enough?. *International Journal of Assessment Tools in Education*, 7(1), 73-79.

Corley, K. G., & Gioia, D. A. (2004). Identity ambiguity and change in the wake of a corporate spin-off. *Administrative science quarterly*, 49(2), 173-208.

Dagnino, G. B., & Cinici, M. C. (Eds.). (2016). Research methods for strategic management (p. 363). Oxon and New York, NY: Routledge.

Dahiya, M. (2017). A tool of conversation: Chatbot. *International Journal of Computer Sciences and Engineering,* 5(5), 158-161.

Dale, R. (2016). The return of the chatbots. Natural Language Engineering, 22(5), 811-817.

Dalland, O. (2017). Metode og oppgaveskriving. Oslo: Gyldendal Akademisk.

Dawson, G. S., Karahanna, E., & Buchholtz, A. (2014). A study of psychological contract breach spillover in multiple-agency relationships in consulting professional service firms. *Organization Science,* 25(1), 149-170.

Dixon, M., Freeman, K., & Toman, N. (2010). Stop trying to delight your customers. *Harvard Business Review*, *88*(7/8), 116-122.

Dremel, C., Wulf, J., Herterich, M. M., Waizmann, J. C., & Brenner, W. (2017). How AUDI AG established big data analytics in its digital transformation. *MIS Quarterly Executive*, 16(2).

Drever, E. (1995). Using Semi-Structured Interviews in Small-Scale Research. A Teacher's Guide.

Eren, B. A. (2021). Determinants of customer satisfaction in chatbot use: evidence from a banking application in Turkey. *International Journal of Bank Marketing*.

Følstad, A., & Skjuve, M. (2019). Chatbots for customer service: user experience and motivation. In Proceedings of the 1st international conference on conversational user interfaces (pp. 1-9).

Følstad, A., Nordheim, C. B., & Bjørkli, C. A. (2018). What makes users trust a chatbot for customer service? An exploratory interview study. In International conference on internet science (pp. 194-208). Springer, Cham.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerization?. Technological forecasting and social change, 114, 254-280.

Gabčanová, I. V. E. T. A. (2011). The employees–the most important asset in the organizations. *Human Resources Management & Ergonomics*, 5(1), 30-33.

Galvin, R. (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge?. *Journal of Building Engineering*, 1, 2-12.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. Organizational research methods, 16(1), 15-31.

Gnewuch, U., Morana, S., & Maedche, A. (2017) Towards Designing Cooperative and Social Conversational Agents for Customer Service. In *ICIS*.

Gobble, M. M. (2018). Digitalization, digitization, and innovation. *Research-Technology Management,* 61(4), 56-59.

Goldstein, S. M., Johnston, R., Duffy, J., & Rao, J. (2002). The service concept: the missing link in service design research?. *Journal of Operations management*, *20*(2), 121-134.

Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation,* 102, 102217.

Goodman, J. (2018). Strategic Customer Service: Managing the Customer Experience to Increase Positive Word of Mouth, Build Loyalty, and Maximize Profits. Amacom, New York, NY.

Grimshaw, D. (2020). International organisations and the future of work: How new technologies and inequality shaped the narratives in 2019. *Journal of Industrial Relations,* 62(3), 477-507.

Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159-1197.

Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive*, *15*(2).

Ilsøe, A. (2017). The digitalisation of service work–social partner responses in Denmark, Sweden and Germany. *Transfer: European Review of Labour and Research*, *23*(3), 333-348.

Jacobsen, D. I. & Thorsvik, J., (2014). Hvordan organisasjoner fungerer. 4 red. Bergen: Fagbokforlaget.

Jacobsen, D. I. & Thorsvik, J., (2019). Hvordan organisasjoner fungerer. 5. utgave red. Bergen: Fagbokforlaget.

Kohli, R., & Johnson, S. (2011). Digital Transformation in Latecomer Industries: CIO and CEO Leadership Lessons from Encana Oil & Gas (USA) Inc. *MIS Quarterly Executive*, *10*(4).

Kornelakis, A., Kirov, V., & Thill, P. (2022). The digitalization of service work: A comparative study of restructuring of the banking sector in the United Kingdom and Luxembourg. *European Journal of Industrial Relations*, 09596801211056829.

Kvale, S. & Brinkmann, S. (2009). Det kvalitative forskningsintervju (2.utgave). Oslo: Gyldendal Akademiske.

Levin, K. A. (2006). Study design III: Cross-sectional studies. Evidence-based dentistry, 7(1), 24-25.

Lloyd, C., & Payne, J. (2019). Rethinking country effects: Robotics, AI and work futures in Norway and the UK. New Technology, Work and Employment, 34(3), 208-225.

Lokman, A. S., & Zain, J. M. (2010). Extension and prerequisite: An algorithm to enable relations between responses in chatbot technology. *Journal of Computer Science*, *6*(10), 1212.

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. Forum: Qualitative Social Research, 11(3) [Article No. 8].

Müller, L., Mattke, J., Maier, C., Weitzel, T., & Graser, H. (2019). Chatbot acceptance: A latent profile analysis on individuals' trust in conversational agents. In Proceedings of the 2019 on Computers and People Research Conference (pp. 35-42).

Mygland, M. J., Schibbye, M., Pappas, I. O., & Vassilakopoulou, P. (2021). Affordances in human-chatbot interaction: a review of the literature. In *Conference on e-Business, e-Services and e-Society* (pp. 3-17). Springer, Cham.

Nadkarni, S., & Prügl, R. (2021). Digital transformation: a review, synthesis and opportunities for future research. *Management Review Quarterly*, *71*(2), 233-341.

Neumeier, A., Wolf, T., & Oesterle, S. (2017). The manifold fruits of digitalization-determining the literal value behind.

Nguyen, M.H., (2017). The latest market research, trends & landscape in the growing AI chatbot industry. Retrieved 10.03.2022, from https://www.monigroup.com/article/latest-market-research-trends-landscape-growing-chatbot-industry

Nordheim, C. B., Følstad, A., & Bjørkli, C. (2019). An Initial Model of Trust in Chatbots for Customer Service – Findings from a Questionnaire Study. Interacting with Computers. DOI: 10.1093/iwc/iwz022.

NSD (n.d.). About NSD - Norwegian Centre for Research Data. Retrieved 18.01.2022, from https://www.nsd.no/en/about-nsd-norwegian-centre-for-research-data/

Nuruzzaman, M., & Hussain, O. K. (2020). IntelliBot: A Dialogue-based chatbot for the insurance industry. *Knowledge-Based Systems*, *196*, 105810.

Parasuraman, R., & Riley, V. (1997). Humans and automation: Use, misuse, disuse, abuse. *Human factors*, *39*(2), 230-253.

Parida, V., Sjödin, D., & Reim, W. (2019). Reviewing literature on digitalization, business model innovation, and sustainable industry: Past achievements and future promises. Sustainability, 11(2), 391.

Patil, K., Mugdha, S and Kulkarni (2019), "Artificial Intelligence in Financial Services: Customer Chatbot Advisor Adoption." *International Journal of Innovative Technology and Exploring Engineering* (IJITEE) ISSN: 2278-3075, Volume-9 Issue-1, November 2019.

Postholm, M.B. (2005). Kvalitativ metode. En innføring med fokus på fenomenologi, etnografi og kasusstudier. Oslo: Universitetsforlaget.

Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2018). Digitalization and its influence on business model innovation. *Journal of Manufacturing Technology Management.*

Reay, T. (2014). Publishing qualitative research. Family Business Review, 27(2), 95-102.

Regmi, K., Naidoo, J., & Pilkington, P. (2010). Understanding the processes of translation and transliteration in qualitative research. *International Journal of Qualitative Methods*, 9(1), 16-26.

Schraeder, M., Swamidass, P. M., & Morrison, R. (2006). Employee involvement, attitudes and reactions to technology changes. *Journal of Leadership & Organizational Studies*, *12*(3), 85-100.

Sekaran, U. & Bougie, R. (2016). Research Methods for Business (7th ed.). United Kingdom: Wiley

Servion. (2018). What Makes Emerging Technologies The Future Of Customer Experience?. Retrieved 11.02.2022, from https://servion.com/blog/what-emerging-technologies-future-customer-experience/

Shawar, B. A., & Atwell, E. (2007). Chatbots: are they really useful?. In *Ldv forum* (Vol. 22, No. 1, pp. 29-49).

Silverman, D. (Ed.). (2020). Qualitative research. Sage.

Solem, R. C. (2015). Limitation of a cross-sectional study. *American Journal of Orthodontics and Dentofacial Orthopedics,* 148(2), 205.

Solis, B. (2017). The Digital Change Agent's Manifesto. *Altimeter*, 1-29.

Stief, S. E., Eidhoff, A. T., & Voeth, M. (2016). Transform to succeed: An empirical analysis of digital transformation in firms. *International Journal of Economics and Management Engineering*, *10*(6), 1833-1842.

Stoeckli, E., Dremel, C., Uebernickel, F., & Brenner, W. (2020). How affordances of chatbots cross the chasm between social and traditional enterprise systems. *Electronic Markets*, *30*(2), 369-403.

Thagaard, T. (2009). Systematikk og innlevelse: en innføring i kvalitativ metode. (3.utgave) Bergen: Fagbokforlaget.

Tjora, A. (2012). Kvalitative forskningsmetoder i praksis. 2. utgave red. Oslo: Gyldendal Akademisk.

UiA (n.d.). Code of practice for processing personal data in research and students' dissertations. Retrieved from https://www.uia.no/en/research/about-the-research/code-of-practice-for-processing-personal-data-in-research-and-students-dissertations

Ukpabi, D. C., Aslam, B., & Karjaluoto, H. (2019). Chatbot adoption in tourism services: A conceptual exploration. In *Robots, artificial intelligence, and service automation in travel, tourism and hospitality*. Emerald Publishing Limited.

Van den Broeck, E., Zarouali, B., & Poels, K. (2019). Chatbot advertising effectiveness: When does the message get through?. *Computers in Human Behavior*, *98*, 150-157.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The journal of strategic information systems,* 28(2), 118-144.

Waizenegger, L., Seeber, I., Dawson, G., & Desouza, K. (2020). Conversational agents-exploring generative mechanisms and second-hand effects of actualized technology affordances. In Proceedings of the 53rd Hawaii international conference on system sciences.

Wilson, H. J., Daugherty, P., & Bianzino, N. (2017). The jobs that artificial intelligence will create. *MIT Sloan Management Review*, 58(4), 14.

Zhang, J. J., Følstad, A., & Bjørkli, C. A. (2021). Organizational Factors Affecting Successful Implementation of Chatbots for Customer Service. *Journal of Internet Commerce*, 1-35.

Zumstein, D., & Hundertmark, S. (2017). CHATBOTS--AN INTERACTIVE TECHNOLOGY FOR PERSONALIZED COMMUNICATION, TRANSACTIONS AND SERVICES. *IADIS International Journal on WWW/Internet*, 15(1).

# Appendices

## Appendix 1. Information letter to the informant

Vil du delta i forskningsprosjektet:

*Robot som kollega i arbeidshverdagen- En casestudie av kundeservice i banksektoren*

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er hvordan ansatte på kundeservice i bank opplever å ha en robot, i dette tilfelle en chatbot, som en kollega. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

### Formål

Formålet med prosjektet er å belyse temaet digitalisering innenfor kundeservice i bankvesenet. Arbeidshverdagen i bank er sterkt påvirket av digitalisering og digitaliserte løsninger som påvirker arbeidsoppgaver og rutiner. Prosjektets mål er å se nærmere på hvordan bankansatte i kundeservice i blir påvirket av digitaliserte løsninger. Problemstillingen som skal besvares er "hvordan ansatte på kundeservice i bank opplever å ha chatbot som kollega". Herunder vil tematikkene motivasjon, jobbsikkerhet og følelse av effektivitet undersøkes. Omfanget vil bli å intervjue 10 ansatte på kundeservice. Opplysningene i intervjuene vil bli benyttet til en masteroppgave innenfor International Business.

### Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Agder er ansvarlig for prosjektet.

Oppgaven skrives i samarbeid med en norsk bank.

### Hvorfor får du spørsmål om å delta?

Det undersøkes hvordan ansatte på kundeservice i bank opplever å ha chatbot som kollega. Oppgaven er i samarbeid med en norsk bank. Herunder vil ansatte i denne banken som besvarer henvendelser på chat, eller har gjort det tidligere derfor bli spurt om å bli intervjuet. Det vil være ti personer som får forespørselen.

**Hva innebærer det for deg å delta?**

Hvis du velger å delta i oppgaven så innebærer det at du svarer på et intervju. Det vil ta deg ca 45 minutter. Intervjuet inneholder spørsmål om hvordan chatboten på kundeservice påvirker din motivasjon, følelse av jobbsikkerhet og følelse av effektivitet. Dine opplysninger fra intervjuet vil bli tatt lydopptak av og notert ned underveis.

**Det er frivillig å delta**

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg. Det vil ikke påvirke ditt forhold til arbeidsplassen.

**Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger**

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Det er kun vi (Stian André Johansen og Benedicte Økland Amundsen) og veileder (Tor Helge Aas) som vil behandle og ha tilgang til dine personopplysninger og svar.

**Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?**

Prosjektet vil etter planen avsluttes 1 juni 2022. Etter prosjektslutt vil datamaterialet med dine personopplysninger slettes.

**Hva gir oss rett til å behandle personopplysninger om deg?**

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Tor Helge Aas har vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

**Dine rettigheter**

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende

- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

· Veileder Tor Helge Aas ved Universitetet i Agder på epost: tor.h.aas@uia.no

· Vårt personvernombud: Johanne Warberg Lavold ved Universitetet i Agder på epost: personvernombud@uia.no

Hvis du har spørsmål knyttet til Personverntjenester sin vurdering av prosjektet, kan du ta kontakt med:

· Personverntjenester på epost (personverntjenester@sikt.no) eller på telefon: 53 21 15 00.

Med vennlig hilsen

*Tor Helge Aas*                          *Benedicte Økland Amundsen*
                                         *og Stian André Johansen*

-----------------------------------------------------------------------------------------------------

**Samtykkeerklæring**

Jeg har mottatt og forstått informasjon om prosjektet *"Hvordan ansatte på kundeservice i bank opplever å ha chatbot som kollega"*, og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i intervju
- at opplysninger om meg publiseres anonymisert

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

----------------------------------------------------------------------------------------------------------

(Signert av prosjektdeltaker, dato)

**Appendix 2. Interviewguide**

Intervjuguide for bankansatt i kundeservice
- Vi vil først takke at du stiller opp til intervjuet for vår masteroppgave
- Formålet med intervjuet er i forbindelse med et forskningsprosjekt knyttet til vår masteroppgave.
- Dine opplysninger vil bli anonymisert i oppgaven. Det vil bli tatt opp lydopptak av intervjuet.. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Ytterligere informasjoner er også gitt i informasjonskrivet.
- Prosjektets mål er å se nærmere på hvordan bankansatte i kundeservice i blir påvirket av digitaliserte løsninger. Problemstillingen som skal besvares er "hvordan ansatte på kundeservice i bank opplever å ha chatbot som kollega". Herunder vil tematikkene motivasjon, jobbsikkerhet og følelse av effektivitet undersøkes.
- Det estimeres at intervjuet vil vare ca. 45 minutter

**Spørsmål om inneholder personopplysninger**

**Tema 1: Chatbot**

Innledning:

Spørsmål 1: Kan du si hvor gammel du er?

Spørsmål 2: Hvor lenge har jobbet i kundeservice i banken?

Spørsmål 3: Hvilken utdanning har du?

Spørsmål 4: Kan du fortelle om hvordan din arbeidshverdag er?

Spørsmål 5: Hva tenker du når du hører ordet digitalisering?

Spørsmål 6: Hva tenker du når du hører ordet digitalisering innenfor kundeservice bankvesenet?

Spørsmål 7: Hva tenker du når du hører ordet chatbot?

Oppfølgingsspørsmål: Kan du forklare dette nærmere?

Oppfølgingsspørsmål som ble til under intervjuet basert på kandidaten sitt svar:
- Hvordan opplever du chatboten som en kollega på kundeservice?
- Til hvilken grad opplever du chatboten som en konkurrent i kundeservice?
- Hvilke tanker har du til chatboten sin rolle i fremtiden?

Spørsmål 8: Hvilket forhold har du til chatboten i banken?

- Hvordan vil du si at chatboten påvirker din følelse av jobbtrygghet?
- Hvordan opplever du at chatboten påvirker din effektivitet?
- Hvordan bruker du chatboten i arbeidshverdagen?
- Til hvilken grad føler du at din arbeidshverdag er truet etter innføring av chatbot?

Spørsmål 9: Hvordan opplever du at chatboten påvirker din arbeidshverdag?

Oppfølgingsspørsmål: Kan du gi et eksempel på dette?

Oppfølgingsspørsmål som ble til under intervjuet basert på kandidaten sitt svar:

- Hvordan vil du si at chatbot har påvirket dine arbeidsoppgaver?
- Hvordan føler du at chatboten har påvirket effektiviteten din?
- Hvilke faktorer vil du si at det er noen faktorer som påvirker motivasjonen din?
- Hvordan er det å jobbe med chatboten?

Spørsmål 10: Hva ville du gjort annerledes for at chatboten skal påvirke din arbeidshverdag til noe bedre, hvis du kunne bestemt selv?

Oppfølgingsspørsmål: Kan du gi et eksempel på dette?

Oppfølgingsspørsmål som ble til under intervjuet basert på kandidaten sitt svar:

- Til hvilken grad synes du at banken informerer om chatboten sin rolle i kundeservice i fremtiden?
- Hvordan vil du si at din motivasjon er på en arbeidshverdag på kundeservice i banken på chat?
- Hvilke oppgaver på chat vil du si at kan motiverer deg?
- Ville du gjort noe annerledes for å påvirke din motivasjon på chat, hvis du kunne bestemt selv?
- I forbindelse med rollen til chatboten i dag, ville du gjort noe annerledes for å påvirke din effektivitet i arbeidshverdagen, hvis du kunne bestemt selv?
- I forbindelse med rollen til chatboten i dag, ville du gjort noe annerledes for å påvirke din jobbtrygghet i arbeidshverdagen, hvis du kunne bestemt selv?
- Hvordan føler du at chatboten påvirker kompetansekravet som i din arbeidshverdag?
- Hvordan vil du si at chatboten påvirker din motivasjon på jobb?
- Hvordan vil du si at dette påvirker din følelse av effektivitet?

**Appendix 3. Discussion Paper Number One: The Concept of Responsible**

**By Benedicte Økland Amundsen**

This discussion paper is written as a part of the Master's Programme in International Business. The paper will discuss the concept of "responsible" considering the topic of having a chatbot as a colleague in the banking industry and its ethical challenges. It will highlight both the potential and actual ethical challenges. First, the two terms of responsibility and ethics in business research will be defined. Furthermore, the research question that will be discussed is "how does a chatbot affect a customer service advisor in the banking industry?". Then, the concept of responsibility will be discussed in the unit of analysis with regards to the informants' rights and the researchers responsibility, the data collection process, the thesis' findings, and lastly, the conclusions of the Master's thesis.

According to Lucas (1995), the term responsibility can be defined as "a key concept in our moral, social and political thinking, but is not itself properly understood. Furthermore, Sekaran and Bougie (2016, p. 13) define ethics in business research as "a code of conduct or expected societal norms of behavior while conducting research". Therefore, the researchers must act ethically and responsibly in each step of the research process to ensure responsible behavior, follow their obligations and the moral right thing to do. Furthermore, the ethical principles can be utilized as guidelines during the research process ensuring answering the research question as well as maintaining responsible behavior (Orb, Eisenhauer, and Wynaden, 2001). This will firstly be discussed towards the Master's thesis' topic.

The research topic investigates having the chatbot as a colleague in the banking industry. The topic emphasizes both digital transformation, more specifically, the chatbot. The implementation of chatbots has grown in the banking sector, where it holds great potential for cost savings for the organization and efficiency for the customer (Nordheim et al., 2019). However, the employee perspective has not been given much attention to how the chatbot affects them (Altrock, Mention and Aas, 2022; Desouza, 2020; Waizenegger, Seeber, Dawson and Desouza, 2020). The chatbot is a large part of the employees' workday. The customer is in contact with the chatbot first before they are potentially transferred to an actual customer service advisor. Arguably, the organization should have an ethical obligation to take care of its employees. Or in other words, a responsibility to pay attention to the customer service employees by being aware of how the chatbot affects them on a daily basis. It is conceivable

that managers should have a moral or social obligation to be mindful of and that the authors of the thesis can provide helpful information for the managers.

As the results of this thesis highlight, the customer service advisors are affected by the chatbot in several ways. One of the affected areas is how the chatbot affects the feeling of efficiency. The informants state how they are measured on the number of solved chats during a shift. After the chatbot was implemented, the complexity standard increased, leading to the inquiries solved by the customer service advisors to take a more extended period of time, thereby reducing their efficiency. Thereby, the managers should be responsible for being aware of this and knowing how it affects their own employees. Gabčanová (2011) and Jacobsen and Thorsvik (2014) emphasize how the most valuable resource in a corporation is the human employee. If the management does not take responsibility for adjusting the efficiency goals or showing an understanding toward the employees, the advisors might feel demotivated or forgotten. Thus, reducing their performance and weakening the business performance outcomes. Arguably, it would therefore be beneficial for both the organization and the customer service employees if the management took responsibility to investigate the topic of how a chatbot affects their customer service employees.

The research question looks into how the chatbot affects the customer service agent in the banking industry. There are different responsibilities the researchers must be aware of when conducting the interviews (Sekaran and Bougie, 2016). The researchers first gave out an information letter to the potential interview candidates to act responsibly. In this informational paper, they received information regarding what the interview would investigate, a time estimate, the purpose, and what the data would be used for. According to Sekaran and Bougie (2016, p. 159), an essential responsibility for the researchers is to treat the information obtained from the interview candidates as confidential and guard the informants' privacy. An application was sent to the Norwegian Centre for Research data, shortened NSD, to ensure responsible data collection and analysis. In this application, a wide range of information was filled in to get the data collection process approved by NSD, including: the type of data that would be processed, information about the process, who is responsible for the project, underlining that interview was voluntary, how their data would be stored and when it would be deleted, treatment, storage and safety of the data. By following NSD and the University in Agder's guidelines, the data was stored in a responsible, legal, and safe way after approval

was received from NSD ensuring a responsible data collection process (NSD, n.d; UiA, n.d). Thus, ensuring confidentiality by using devices without an internet connection. Confidentiality is an essential topic when conducting research ethically right, meaning that data obtained from the informants will be treated and stored in a confidential manner where no other people than the researchers had access to the information (Lichtman, 2009). This required action to take care of the data the researchers were responsible for. Furthermore, to act responsibly during the interviews, each candidate received an information letter in advance of the interview, as mentioned, regarding the interview process, purpose, data store, and other needed information. The candidate could freely choose whether they wanted to participate. A written consent was obtained from the candidate who wanted to participate. Even though the informants gave a written consent the informants could still withdraw their consent and not continue with the study. This is also aligned with the handbook of social research ethics (Lincoln, 2009).

Another ethical consideration when conducting the data analysis is ensuring the researchers have ethical behavior (Sekaran and Bougie, 2016). The researchers might have a responsibility to ensure that the informants' answers are accurately represented in the findings- and result section of the paper, both regarding the academic findings and the informants' opinions, which should be presented accurately. In order to avoid biases or misunderstandings, the prepared questions in the interview guide were carefully developed. The researchers' responsibility was to make sure that the candidate understood each question before answering and provide room to talk in a natural and honest environment. In addition, to ensure responsible data collection, the interviews were conducted physically at the informants' workplace in a private room as a social responsibility to make a safe, known environment surround the informants.

Arguably, an ethical responsibility the researchers also have is to ensure internal validity (Sekaran & Bougie, 2016). Internal validity refers to "the extent to which the research results both accurately represent the collected data" (Sekaran & Bougie, 2016, p. 349). As mentioned, the informants' perspectives should be accurately represented. Firstly, the interviews were conducted in Norwegian, as it is the informants' first language, hence a more natural conversation form. Therefore, the researchers are responsible for transcribing the interviews from Norwegian to English correctly. As a responsibility precaution, the

researchers followed the suggested guidelines and techniques of Clark, Birkhead, Fernandes and Egger (2017) and Regmi, Naidoo and Pilkinton (2010). Thus, using a combination of translating each word and the entire phrase to prevent the intended meaning is lost in translation. Another measure taken as a social responsibility by the researchers was to contact the informants subsequently of the interviews to make sure the findings accurately represented their perspectives.

The researchers have a responsibility in the operating environment when analyzing the perspectives of employees who are currently working at the organization they are being interviewed in. The research topic investigates their perception of the chatbot, which is a technology the bank has implemented. It can be conceivable that the customer service employees have a fear of stating their honest opinion as they do not get to decide whether the chatbot should be implemented, and they have to continue with the chatbot. Thus, a fear of being honest if disliking the chatbot and the managers finding out. The environment becomes a responsibility for the researchers to maintain confidentiality and anonymity as discussed earlier. Another potential ethical issue is regarding the lack of time to follow up the interview informants. To protect both the employee and the collaborative bank, both parties will be given codenames. Hence, ensuring anonymity.

Another ethical issue that required responsible actions are the concept of anonymity to protect the informants participating in the research. According to Grinyer (2002), anonymity for respondents is assumed to be an integral feature of ethical research. Grinyer argues how anonymity should be maintained when possible during qualitative research, as in this thesis. Arguably, it would not be responsible to let the informants be recognized in a published article if the coding is done poorly. Therefore, it is essential when conducting ethical research to prevent. Following these guidelines, the respondents may be able to recognize themselves, as the statements accurately represent their perspective, but the reader is not able to identify the informants (Barnes, 1979:39). In addition, it would affect the data protection positively in a secure manner. One could argue that anonymity is both required as it was agreed upon in advance, but also likely to be a strong desire from the interview informants when discussing a topic related to their current workplace that can be a private matter when talking honestly about their true perspectives. In addition, a moral action is to not harm the informants' on any way, making the anonymity aspect especially important for the researchers.

To ensure responsible findings, measures were taken. The findings present data from the interviews with the customer service advisors. First, the interviews were recorded using a recording device without an internet connection with the consent of the informants (NSD, n.d.). Then, the interviews were transcribed in their original language. After conducting all interviews, the interviews were coded by gathering similar answers into different categories, called first order categories (Corley and Gioia, 2004). Hence, ensuring all answers were analyzed and not being biased towards what answers would fit into the pre thoughts the researchers might have had in advance. Therefore, objectivity can be an important action to ensure responsible behavior and the correct results. Objectivity must be considered during the research process, such as when conducting the data analysis to provide biases.

Furthermore, after the interviews were collected into categories, the data were assembled into second-order themes (Corley and Gioia, 2004). By looking at all statements from the first categories, no statements were forgotten or skewed by seeing the emerging pattern. The findings could follow the structure created, making sure all statements were presented in an ethical and structured way. It was important for the researchers to be responsible when being in charge of presenting the findings honestly and acting morally.

Lastly, the conclusion must be presented in a responsible way. In any research, not twisting or adjusting the findings to match the original thought is essential to behave ethically (Sekaran & Bougie, 2016). The conclusions were checked by both researchers using the Gioia method to obtain the data structure, carefully developed and checked by the thesis' supervisor before a model was created by the authors (Dagnino and Cinici, 2016; Gioia, Corley and Hamilton, 2013). This, ensuring rigorous data and responsible behavior.

To summarize, the researchers have prioritized behaving in a responsible and ethical manner through the entire process of the Master's thesis. The correct actions were taken after careful consideration following different academic guidelines, the supervisor's instructions and having a genuine interest to act responsible and ethical. Consequently, this is also reflected in all of the thesis' steps. Therefore, the entire research process was carefully examined step by step. In addition, as the thesis has two authors, each part could be examined by both authors.

**References**:

Barnes J. (1979) *Who Should Know What?* Penguin, Harmondsworth.

Clark, L., Birkhead, A. S., Fernandez, C., & Egger, M. J. (2017). A transcription and translation protocol for sensitive cross-cultural team research. Qualitative health research, 27(12), 1751-1764.

Corley, K. G., & Gioia, D. A. (2004). Identity ambiguity and change in the wake of a corporate spin-off. Administrative science quarterly, 49(2), 173-208.

Dagnino, G. B., & Cinici, M. C. (Eds.). (2016). Research methods for strategic management (p. 363). Oxon and New York, NY: Routledge.

Gabčanová, I. V. E. T. A. (2011). The employees–the most important asset in the organizations. Human Resources Management & Ergonomics, 5(1), 30-33.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. Organizational research methods, 16(1), 15-31.

Grinyer, A. (2002). The anonymity of research participants: assumptions, ethics and practicalities. *Social research update*, *36*(1), 4.

Jacobsen, D. I. & Thorsvik, J., 2019. Hvordan organisasjoner fungerer. 5. utgave red. Bergen: Fagbokforlaget.

Lichtman, M. (2009). Ethical issues in qualitative research. *Retrieved May*, *3*, 2013.

Lincoln, Y. S. (2009). Ethical practices in qualitative research. The handbook of social research ethics, 150-169.

Lucas, J. R. (1995). Responsibility.

Nordheim, C. B., Følstad, A., & Bjørkli, C. (2019). An Initial Model of Trust in Chatbots for Customer Service – Findings from a Questionnaire Study. Interacting with Computers. DOI: 10.1093/iwc/iwz022.

NSD (n.d.). About NSD - Norwegian Centre for Research Data. Retrieved 18.04.2022, from https://www.nsd.no/en/about-nsd-norwegian-centre-for-research-data/

Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of nursing scholarship*, *33*(1), 93-96.

Regmi, K., Naidoo, J., & Pilkington, P. (2010). Understanding the processes of translation and transliteration in qualitative research. International Journal of Qualitative Methods, 9(1), 16-26.

Sekaran, U. & Bougie, R. (2016). Research Methods for Business (7th ed.). United Kingdom: Wiley

UiA (n.d.). Code of practice for processing personal data in research and students' dissertations. Retrieved 19.04.2022, from https://www.uia.no/en/research/about-the-research/code-of-practice-for-processing-personal-data-in-research-and-students-dissertations

**Appendix 4. Discussion Paper Number Two: : The Concept of Responsible**

**By Stian Andre Johansen**

This discussion paper is written in light of our master's thesis in International Business BE-509. The master thesis topic is digitalization and digital transformation. More specifically, the master thesis aimed to answer the following research question: *how does a chatbot affect the customer service advisors in a bank*. Due to advances in artificial intelligence and chatbot developments, chatbots have received a huge interest in the latest years, especially in a customer service context (Nordheim, Følstad and Bjørkli, 2019; Zumstein & Hundertmark, 2017). However, how chatbots affect human customer service advisors has received little to no interest (Waizenegger, Seeber, Dawson and Desouza (2020). To answer the research question, we, the authors of the master thesis, contacted a Norwegian bank and made an agreement with the bank in order to get access to interview their employees.

In this discussion paper, I will reflect on and discuss our master thesis in light of responsibility and ethical challenges connected to the thesis topic, research question, findings, and unit of analysis. First, I will define the terms responsibility and ethics and highlight the importance of ethics in research. Further, this paper will identify actual and potential ethical challenges related to the master thesis. This includes, but is not limited to, the topic, research question, and findings of the master thesis. Moreover, the paper will discuss how these challenges were managed or can be managed. Lastly, the paper will summarize the provided discussion.

**What are responsibility and ethics?**

The term responsibility is quite extensive and can have different meanings depending on the context (Giddens, 1999). According to Giddens (1999), one meaning of responsibility "*is where we speak of someone being responsible if he or she acts in an ethical or accountable manner*". Furthermore, Schermerhorn (2002, p.146) suggests the following definition for ethics: *"Ethics can be defined as the code of moral principles that sets standards as to what is good or bad, or right or wrong in one's conduct and thereby guides the behavior of a person or group".* In light of the definitions, it is easy to see that the terms responsibility and ethics are closely related. Sekaran and Bougie (2016) state that ethical behavior needs to be present at each step of the research process, such as collecting data, analyzing the data, and reporting

it. Additionally, ethical manners apply to the researchers and other parts involved in the research process, such as the organization and the respondents.

**The master thesis topic- digitalization**

 The topic of digitalization is highly relevant, and the use of new digital technology is constantly increasing both in society and in the business world. Furthermore, as mentioned in the master thesis, digitalization is a driver for automation. Digitalization's impact on automation raises a lot of ethical challenges in general. For example, is it ethically right to replace a human with a machine to increase profit? Taking away jobs from human employees could lead to severe consequences for the individual that loses his or her job. If you see this question in light of the well-known quote from Milton Friedman (1970), "*the social responsibility of business is to increase its profits"* then the answer might be yes.

On the other hand, I will argue that today's society sets higher demands for companies and their responsibility. However, where does the line go? Companies compete in highly competitive environments, and many companies struggle to survive. The chase for profit is essential for many companies in order to survive. Consequently, investigating how digital technology, in this case, the chatbot, affects the customer service advisors could contribute to the larger picture and provide more insight into the ethical challenges around digitalization.

**Ethical challenges in light of the research question**

 As mentioned, the master thesis aimed to answer how a chatbot affects customer service advisors in the banking industry. To answer the research question, we conducted a qualitative study and interviewed the employees in the collaborative bank. Sanjari, Bahramenzad, Fomani, Shoghi, and Cheraghi (2014) argue that qualitative research that investigates sensitive topics could lead to an emotional risk to the employees and the researchers. Before the research process began, we had discussed some potential ethical challenges in light of our research question. We thought the participants could find it uncomfortable to talk about their work and how the chatbot impacted their role and task. For instance, it is not uncommon to read articles in a newspaper or on social media about how computers and machines can solve cases that were thought impossible to automate and now can replace humans in their jobs. Consequently, if some of the employees felt threatened by the chatbot, we could understand that it could be a sensitive topic to talk about. One ethical challenge that can arise in this case

is if we could see that someone was uncomfortable answering some questions, should we still continue to ask a similar question if it would improve the master thesis?

To the best of our knowledge, none of the participants felt that it was a sensitive or an uncomfortable topic. Nevertheless, it is impossible to be absolutely sure. Arguably, if some of the informants felt it was a sensitive topic, they could also provide inaccurate information. Therefore, in order to handle the potential ethical challenge mentioned above, it was vital for us to emphasize that the participation was voluntary and that the informants had the option to withdraw their consent and participation at any time during the duration of the project. We also had a great dialog with the informants and emphasized that it was acceptable to skip questions if they did not want to answer specific questions.

**Ethical challenges in light of the data collection**

The data collection process raises several ethical challenges and is relevant to collecting the data, how to store the data, and how to share it. For example, it could be compelling to collect and store the data in a way that is easy and more practical for the researchers. However, as researchers, our responsibility is to follow the strict rules regarding research projects. Therefore, we followed the suggested "*Code of practice for processing personal data in research and students' dissertations*" from Uia (n.d).

Thus, before the interviews and the data collection, we acquired the appropriate approvals from the Norwegian Centre for Research Data (NSD) which considered our proposed way of collecting, storing, and sharing data. Our way of collecting, storing, and sharing data included but was not limited to the use of approved voice recorders from UIA. Further, we only stored the data in platforms/programs that were approved and suggested by UIA. Further, the bank management and the employees who were part of this project were given an information letter that explained the research project in detail and what they could expect in terms of data collection, data storing, and data sharing. For example, the letter stated that all stored data would be deleted after the project was finished.

According to Sanjari et al. (2014), anonymity is one of the most typical ethical challenges researchers face when conducting research. In our master thesis, we collected data from employees in the bank and identified some ethical challenges in light of our data collection.

For instance, we were quick to notice that some information from the employees needed to be left out of the master thesis, even though it would strengthen the master thesis in order to keep the informants anonymous. Furthermore, even though it would be beneficial for us to use as much information from the employees as possible, it was essential for us that no information could be traced back to a single employee. For example, if the informants say something negative about the company or the manager, this could potentially impact the relationship between the employee and the manager.

As researchers, we have an ethical responsibility to present the informants' answers and statements anonymously. Consequently, anonymity is critical as information provided by the employees can affect them later. In addition, the employees would most likely hold back certain information if they knew their answers could be traced back to them. Thus, we told every employee that participated in the research process how we handled the data, how their identity was kept safe, and that we would exclude information that could be traceable back to the employees. Respecting the need for anonymity and confidentiality also meant that we as researchers could not discuss any of the data with other parts that were not included in the study, such as family and friends.

Further, Sanjari et al. (2014) argue that a typical ethical challenge in qualitative research is the researchers' potential influence on the informants. For example, asking leading questions to the informants. In our case, we used a long time to create our questions for the employees in the bank, and we conducted test interviews to reduce the chances of influencing the informant through the questions. Lastly, we treated all the informants equally and were open to questions from the employees.

**Ethical challenges in light of our findings**
After collecting the data, it was time to interpret and present the findings. We identified several actual and potential ethical challenges in this part of the project. For example, it could be tempting to present inaccurate findings to make the master thesis even more exciting or spectacular. In fact, I would argue that it could even happen subconsciously if one does not have some focus on an accurate presentation of the findings. In our case, more attractive and suitable findings could potentially impact our academic results in terms of a higher grade. Hence, we followed the ethical guidelines and focus areas from Sekaran and Bougie (2016).

According to Sekaran and Bougie (2016), the researchers must be aware of what the results actually indicate and leave behind their self-interest, and focus on the greater good. Consequently, to the best of our knowledge, we have presented the findings in our master thesis truthfully and accurately.

Furthermore, our findings also could be of interest to the collaborative bank. For instance, we found that the chatbot can decrease and increase the customer service advisors' efficiency. Even though it is more pleasant only to include and focus on positive findings, it is our ethical responsibility to present the findings as it is and not leave something out just because it can be perceived negatively. In fact, I would argue that they would most likely want to receive negative and positive findings to improve further.

**Ethical challenges in light of the unit of analysis**

For our master thesis, we collaborated with a Norwegian bank as banks are known for having large customer service centers. The unit of analysis wished to be anonymous, and therefore confidentiality was essential during the project but also critical after the project. Further, as mentioned, Sekaran and Bougie (2016) stated that the ethical code of conduct applies to the researchers, participants, and organizations involved in the research process. Consequently, the organization should not try to affect the results in any way. A potential ethical challenge is if the organization tries to impact the results. For instance, say an organization tells the employees to say something specific or lie about certain things. In addition, an organization could also try to influence the research by acting threateningly or in bad faith. In our case, the collaborative company behaved exemplary. There was an open and honest dialog with the bank throughout the research process. As a result, the bank prioritized the project and set aside time and resources in order to complete this project. We did not see or experience any attempts to influence the results, researchers, or the employees from the bank.

**Conclusion**

In this discussion paper, I have defined and highlighted the connection between the terms responsibility and ethics in light of business research. Further, I have presented, discussed, and reflected upon some actual ethical challenges we faced during our master thesis project and spotlighted some potential ethical challenges. In addition, I have explained how we managed the actual and potential ethical challenges during our master thesis.

**References**

Friedman, M. 1970. The social responsibility of business is to increase its profits.
New York Times Magazine, Sept. 13.

Giddens, A. (1999). Risk and responsibility. *Mod. L. Rev.*, *62*, 1.

Nordheim, C. B., Følstad, A., & Bjørkli, C. (2019). An Initial Model of Trust in Chatbots for
Customer Service – Findings from a Questionnaire Study. Interacting with Computers.
DOI: 10.1093/iwc/iwz022.

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical
challenges of researchers in qualitative studies: The necessity to develop a specific
guideline. *Journal of medical ethics and history of medicine*, *7*.

Schermerhorn, J. R.: 2002, Management, 7th edition (Wiley, New York).

Sekaran, U. & Bougie, R. (2016). Research Methods for Business (7th ed.). United Kingdom:
Wiley

UiA (n.d)  Code of practice for processing personal data in research and students'dissertations
- Universitetet i Agder. Retrieved 25.04.22, fromhttps://www.uia.no/en/research/about-
the-research/code-of-practice-for-processing personal-data-in-research-and-students-
dissertations

Waizenegger, L., Seeber, I., Dawson, G., & Desouza, K. (2020, January). Conversational
agents-exploring generative mechanisms and second-hand effects of actualized
technology affordances. *In Proceedings of the 53rd Hawaii international conference on
system sciences.*

Zumstein, D., & Hundertmark, S. (2017). CHATBOTS--AN INTERACTIVE
TECHNOLOGY FOR PERSONALIZED COMMUNICATION, TRANSACTION
AND SERVICES. *IADIS International Journal on WWW/Internet, 15(1).*