CHATBOTS: CHARACTERISTICS INCREASING CUSTOMER SATISFACTION

Bachelor's Thesis
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Abstract

The number of chatbots used as customer service agents has increased significantly over the last decade. Even though chatbots lack the ability to simulate human speech and do not perform as well as human agents do, their implementation as customer service agents has several benefits. Therefore, it is important to understand which characteristics customers find appealing and engage them into satisfying interaction. This study examines the characteristics and features which are found to positively affect the customer satisfaction. Moreover, this research investigates if there is a conflict between these characteristics and if it is possible to incorporate them all into a single chatbot to construct *the perfect chatbot*.

The research method used in this study was a literature review, which mainly focused on publications on the subject published in the last few years. The research questions were twofold: which characteristics of chatbots have a positive impact on customer satisfaction and how they conflict with each other. The research questions were addressed as broadly as possible, taking into account the significant and recent literature.

The study found multiple characteristics positively affecting customer satisfaction. From the results a table was created where all the characteristics not in conflict can be found. The study also discovered conflicting characteristics that should be considered when a company is designing a chatbot for their target audience. The most significant result was that characteristics found to be appealing to customers were anthropomorphic which indicates that customers want the chatbot to be as human as possible and communicative cues should be carefully considered.

Keywords chatbot, consumer, customer, satisfaction, characteristics

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List of Terms

In alphabetical order:

A/B testing

A/B testing involves comparing two versions of a webpage or app to determine which one performs better (Kohavi *et al.*, 2009)

anthropomorphism

the tendency of assigning human traits to non-human objects or animals to make sense of their actions

Artificial Intelligence (AI)

computer or computer program which can do tasks that are considered intelligent

business to business (B2B)

the marketing and/or sales of products and services from business to business

business to consumers (B2C)

the marketing and/or sales of products and services from business to consumers

conversational agent (CA)

an agent which can understand and provide natural language

conversational linguistic style

personal and informal writing style that makes the text seem like a conversation

journalistic linguistic style

impersonal and formal writing style with compact and direct sentences

social-oriented

focused on the social side of the interaction

task-oriented

focused on the task at hand and leaving the social side as secondary

The Big Five

model about five base personality traits that are not interdependent; extraversion, emotional stability, agreeableness, conscientiousness and openness to experience (Barrick and Mount, 1991)

1. Introduction

It has been nearly sixty years since ELIZA, the most famous early chatbot, was published. ELIZA was a parody chatbot of a psychotherapist asking the user the most cliché therapist questions such as "What are your feelings now" etc. (Weizenbaum, 1966) Ever since companies have done a lot of research to create a chatbot capable of having human-like conversations to allow chatbots to be used for various tasks. In 2020s many companies use chatbots to create better customer service experience for their customers of which many are AI powered. (Chen, Le and Florence, 2021) Over the years chatbots have developed more and more human-like, but they are not there yet, they are still unable to simulate human speech (Caldarini and Jaf, 2022). Simultaneously the use of chatbots have increased in B2B and B2C interactions, especially over the last decade (Larivière *et al.*, 2017).

Nowadays when visiting a website of a large enterprise, a chatbot bumps up from the righthand corner of the screen asking whether you need assistance with anything. With the assistance of the chatbot you can get help any time of the day with a non-human fast reply time. According to Adam, Wessel & Benlian, (2020) consumers prefer interactions with actual humans compared to chatbots which indicates that chatbots' fast reply time around the clock still does not compensate for the fact that they are not able to provide service. However, the number of interactions with chatbots will continue to increase, as they evolve, their cost-efficiency from the companies' perspective is unbeatable, they always obey instructions and do not have any sick leaves. Chatbots are useful but they cannot provide the same sympathy or empathy a human being can.

With the increasing use of chatbots in customer service, it is important to understand what features and characteristics are appealing to consumers, whether consciously or subconsciously. The key challenge for the companies is to create chatbot that customers are satisfied to interact with. Companies should strive to create the most engaging chatbot possible, considering their customer base and communication interests. Positive feelings after interacting with a company, whether it is with a chatbot or with a real-life customer service representative, will increase the attractiveness of the company to its customer base and affects positively to company related outcomes (Araujo, 2018). The importance of creating a chatbot which affects customer satisfaction cannot be overemphasized.

In this thesis, the term *perfect chatbot* means chatbot which has the effect to create perfect customer satisfaction. It is a utopian term, because satisfying every customer is impossible in the real world, but it is something to strive for.

The features of chatbots have been investigated broadly along with how customers react to them. The research articles include papers which have studied characteristics such as warm versus competent communication style (Roy and Naidoo, 2021), linguistic style (Bleier, Harmeling and Palmatier, 2019) and many more which will be discussed later in this thesis. However, the characteristics and features *the perfect chatbot* has in terms of customer satisfaction, have not been studied nor it has been discussed are the characteristics in conflict with each other.

The objective of this thesis is to fill this gap, discuss what characteristics affect customer satisfaction positively and what characteristics *the perfect chatbot* has. The thesis will also be discussing whether the characteristics conflict with each other. In conclusion the objective is to discover the *perfect chatbot* in terms of customer satisfaction.

1.1 Research objectives and research questions

This thesis will focus on two main research questions:

- Q1: Which character traits in a chatbot increase customer satisfaction?
- Q2: Which characteristics conflict with each other?

The primary focus of this thesis is on research question 1 and the other question will be answered based on this question. The following question carries significant importance, as it facilitates companies in selecting characteristics aligned with their customer base. The research questions will be answered in this thesis by conducting a literature review of articles related to the topic and analyzing their results and conclusions.

1.2 Scope of the research

The scope of this research is firstly to introduce previous studies on the subject; characteristics of chatbot appealing to consumers. Then this thesis will discuss whether the characteristics conflict with each other and in what way and whether the characteristics preferred by consumers are unambiguous and appealing to all customers. Additionally, the creation of *the perfect chatbot* is being discussed in the discussion chapter.

The chatbots discussed in this thesis are AI powered, intelligent, capable of understanding natural human language and reacting to all messages without the help of a human. The chatbots which are predesigned to communicate with certain phrases and trained to answer only certain types of questions will not be covered in this thesis.

The most important factor in customer satisfaction when talking about chatbots is their usefulness and the skill to help the customer. These features are clearly the most important factor affecting customer attitudes towards chatbots, so it seems unnecessary to investigate them. It is more important to focus on other factors affecting customer satisfaction from a holistic perspective. This study covers these previously mentioned other characteristics and features, such as conversional style, communication style, linguistic style, etc.

1.3 Methodology

The research has been conducted as a literature review. The significant advances in conversational agent (e.g., chatbot) field have led to the point where many of the papers conducted over the years have become outdated. However, the parts of the articles related to this study that have been referred to in this study are relevant as their main point discusses customers' attitudes towards conversional agents.

The articles, books and other sources used for this study were mainly released over the last ten years with emphasis on the last few years. A few much older articles were used for older background information.

The platforms used to research articles in this study are Scopus and Google Scholar. Mainly articles were searched by Scopus. Scopus searches were conducted using "chatbot" as a keyword with different combinations of topic related words, such as "customer", "consumer", "satisfaction", "communication", "identity" and "characteristics". From the results most cited and most relevant results were used.

Articles were chosen by first reading the abstract to find whether the article is relevant to the study. If the article is found to be relevant it was skimmed through, and the discussion and the conclusion was read. Lastly the parts relevant to the study were read (possibly the whole article) and used to conduct this thesis.

There was one base study, "Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions" (Araujo, 2018, p. 185) which was cited by most of the articles relevant to the field. This article has built a base for the studies conducted after the release. The article was broadly used as a base for this thesis as well. The study discussed which human cues affected the social presence and anthropomorphism. The study has been the first major study to examine the anthropomorphism and human cues in chatbots affecting customer satisfaction, therefore it can be thought to be a base study for the field.

1.4 Structure of the research

The thesis is divided into a total of four chapters. The rest of the thesis is structured as follows. Chapter 2 discusses theoretical background by explaining what is a chatbot, its applications and defines the main metric, customer satisfaction, for the study. Chapter 3 reviews previous literature about satisfactory characteristics of chatbots and their conflicts. The last, fourth chapter will contain a discussion and a conclusion answering the research questions found in Chapter 1.1. The fourth chapter will also contain discussion about the perfect chatbot and a confrontation between a human and a chatbot as customer service agent.

2. Theoretical background

In this chapter a few key concepts for the study are being explained. In the first part the term chatbot is being explained through history and technical point of view. In the second part chatbot applications are discussed. The final third part explains the key measurement for the study, customer satisfaction.

2.1 What is a chatbot?

Chatbot is a software which is designed to have human-like conversations and was introduced to the public for the first time ever in 1966 by Joseph Weizenbaum. Weizenbaum's chatbot (at the time chatterbot) was named ELIZA and it mimicked a psychotherapist (Weizenbaum, 1966). Ever since chatbots such as PARRY (1972) and A.L.I.C.E (2009) have continued the legacy of ELIZA to this day, where Apple's Siri, OpenAI's ChatGPT and all chatbots created by multiple companies around the world have revolutionized the way we communicate, seek information and access services. Modern chatbot can be defined as an AI program designed to simulate human conversations using NLP and machine learning. (Shum, He and Li, 2018)

The primary goal of a chatbot is to provide a meaningful conversation to its user, and to provide efficient and accurate assistance. Chatbots have become increasingly popular due to the chance to enhance user experience, automate tasks, and provide around the clock service. Chatbots come in various forms, ranging from predesigned rule-based bots to AI based bots capable of understanding natural language, context and even emotions. (Brandtzaeg and Følstad, 2017)

2.2 Chatbot applications

The main application on which many of the other applications are based is customer support and service. Many businesses in 2020's use chatbots to provide instant customer support. These chatbots are capable of answering frequently asked questions and help the customer through processes and thus are able to reduce the workload on human customer service agents. (Go and Sundar, 2019)

The healthcare industry is using chatbots to provide medical information, schedule appointments and offer initial diagnostic based on symptoms (Nadarzynski *et al.*, 2019). During the COVID-19 outbreak governments had to introduce new service platforms to meet the growing demand for healthcare services. Chatbots were utilized to evaluate the

potential risk of coronavirus infection and leveraging these chatbots for customer service operations eased the workload of healthcare professionals letting them to focus on more specialized duties.

Banks and financial institutions use chatbots for customer service and tasks like fund transfers, bill payments and investment advice (Hildebrand and Bergner, 2021). Travel industries such as airlines and hotels use chatbots to make flight bookings, hotel reservations and recommend restaurants and tourist attractions (Pillai and Sivathanu, 2020).

Educational institutions have adopted chatbots to provide information about courses and remind people about deadlines. Language learning apps incorporate chatbots to help the users to practice words, conversional skills and receive feedback. (Kerly, Hall and Bull, 2007; Fryer *et al.*, 2017)

These are just a few examples and the possibilities for chatbot applications. The number of application possibilities will increase as chatbot technology develops.

2.3 Customer satisfaction

Customer satisfaction measures how well a company performed at providing a product or service and how it met or exceeded the customers' expectations. It is an important measurement for companies' indicating products or services quality and customer's will to remain loyal and repurchase. High level of customer satisfaction typically leads to repurchases and positive word-of-mouth recommendations.

Customer satisfaction is the measurement of this study because it has high effect on companies' financial results and is the biggest non-financial performance measurement (Birch-Jensen *et al.*, 2020). Customer satisfaction can be measured through trust, loyalty, repurchase intention (Chinomona and Dubihlela, 2014) and compliance with one's requests (Adam, Wessel and Benlian, 2021). These are the measurements of this study regarding customer satisfaction.

3. Characteristics increasing customer satisfaction

This section discusses the different characteristics of chatbots that appeal to consumers. These character traits are reviewed by examining previous literature on the subject and by dividing the character traits into four larger parts. There are also several other factors and characteristics which do not fall under anthropomorphism, communication style or personality and they are covered in the fourth part.

3.1 Anthropomorphism

Anthropomorphism is a key concept when discussing human-chatbot interaction. Anthropomorphism refers to the tendency of assigning human traits to non-human objects or animals to make sense of their actions. People tend to unconsciously explain, in this context, chatbot's gestures and actions as human-like, even though they act machine-like. Products and services sold should have anthropomorphic features as they increase sales incomes and satisfaction. (Duffy, 2003) With the help of anthropomorphism, companies can implement chatbot more efficiently to be a valuable addition to their customer service team.

It is known that consumers prefer a chatbot that behaves as human-like as possible. Human-like characteristics such as usage of human-like language or name increases anthropomorphism which is a big factor in giving an image that the consumer is interacting with a human-like being, consciously or unconsciously. The name of the chatbot should be a real human name like "Hester", which is the name of the chatbot of Helsinki city's "Sotebot" used for social-, health- and rescue services. (Araujo, 2018; Go and Sundar, 2019) Araujo (2018) also concludes that human-like characteristics improve consumer satisfaction. With anthropomorphism by indicating identity, small-talk and empathy, chatbot becomes more human-like and users are more likely to comply with the chatbot's requests. Complying with one's requests indicates that the person had a satisfactory interaction. (Adam, Wessel and Benlian, 2021)

Additionally, to the anthropomorphic features mentioned above, the human-like avatar for a chatbot can increase customer satisfaction through authenticity. The effect of the authenticity can be amplified when the avatar has female-like characteristics, is dressed professionally, and appears to be from different ethnic background than the customer. These features are linked to more authentic feeling for the user which is found to affect the customer satisfaction positively. (Esmark Jones *et al.*, 2022)

All these features are wrapped around the same idea that a chatbot should have character which has human-like features. Humanness is influenced by the very traits mentioned earlier; name, human-like language, identity, human-like avatar, and ability to express empathy and practice small-talk.

3.2 Communication style

The communication style is one of the biggest factors affecting customer satisfaction and thus the style chatbot communicates with, needs to be considered when engaging chatbot to use (van Dolen, Dabholkar and de Ruyter, 2007).

Hildebrand and Bergner (2021) studied that, as simple social cues as turn-taking and showing to the speaker (user) that the listener (chatbot) has listened to the speaker is important in communicating. Chatbot should react to all user's messages to demonstrate that the chatbot has listened to the user. Chatbots are found to be more human-like and pleasant when chatbots follow these social cues.

Social-oriented communication style increases the warmth perception of the chatbots and therefore increases customer satisfaction especially when the customer has an attachment anxiety. More interestingly customers with attachment avoidance are indifferent about the communication style (social- vs. task-oriented). A socially oriented chatbot has its own disadvantages, it has to engage in a longer chain of communication with the user, as it has to take into account different social behaviors, and cannot just focus on the task at hand, while the task-oriented chatbot gets the job done in significantly shorter period of time and with fewer messages and words. (Xu, Zhang and Deng, 2022)

Linguistic style is one factor to affect communication style. The conversational linguistic style (vs. journalistic style) affects the social experience positively. Positive social experience is a driver to better customer satisfaction. The effect of linguistic style with chatbots has not been studied yet, but it has been suggested that conversational style has a positive factor to customer satisfaction including chatbots. Conversational linguistic style can be adapted by using adjectives, asking questions and using pronouns. (Bleier, Harmeling and Palmatier, 2019)

Chatbots are not yet at the point where they perfectly simulate human speech. Studies have shown that people modify the way they communicate to match the chatbot's style when interacting with a chatbot, in the way they do with little children. (Hill, Randolph Ford and Farreras, 2015; Caldarini and Jaf, 2022)

Some characteristics customers prefer conflict with each other. Present-oriented people have a more positive attitude towards the chatbot and the brand when the chatbot applies warm conversional style (vs. competent) and future-oriented people prefer competent conversional style. The style also affects the perception about the humanness. (Roy and Naidoo, 2021)

Related to the previous part, communication style can be anthropomorphic, and it moderates customer satisfaction positively. Anthropomorphic communication style can be achieved by informal communication style by using customary greetings, emotional concern and well-wishing. (Xu *et al.*, 2023) The informal communication style must be targeted at the right customers. Too informal communication style may be perceived as inappropriate by consumers who are unfamiliar with the brand or company. (Van Hooijdonk and Liebrecht, 2021)

3.3 Personality

Personality for a chatbot significantly affects the user experience positively (Araujo, 2018). In this part the personality traits which are preferred by most people are being discussed. However, personality should match the personality of the user which is the most important factor when considering the chatbot's personality (Kubota, 2019; Smestad and Volden, 2019). In terms of building trust and relationship between chatbot and human (as well as between human and human), personality is essential, and trust is one of the key factors in affecting the customer satisfaction (Kuhail *et al.*, 2022).

The personalities of a chatbot have been studied mainly by utilizing The Big Five -model, according to which the main personality traits are extraversion (1), emotional stability (2), agreeableness (3), conscientiousness (4) and openness to experience (5). According to the famous model, these traits are not interdependent and therefore they can thought to be the base personality traits to all human. (Barrick and Mount, 1991) Even though different people prefer different personalities, there are personality traits (from The Big Five -model) that have been studied to satisfy the majority of consumers. According to previous studies, consumers prefer extroverted chatbot which is conscious and highly agreeable. (Mehra, 2021; Ruane, Farrell, and Ventresque, 2020) In contrast, according to Kuhail *et al.*, (2022), only the extrovert and the agreeable personality traits affect the customer satisfaction significantly more than consciousness.

As mentioned before, matching personalities between customer and chatbot create trust and satisfaction. It has been found to be the most effective factor in creating satisfactory and engaging interactions between to communicative agents. (Kubota, 2019) In their

study, Shumanov and Johnson (2021) concluded that chatbots can assume personality (extrovert vs. introvert) through language and convert their own personality to match the consumers personality which is found to be linked to financial outcomes of the company.

Personality traits consumers prefer are not unambiguous. Consumers suffering from mental health problems prefer for the chatbot's personality to be more conscious (Moilanen *et al.*, 2022), and some people prefer for the chatbot to be extroverted which is the thing for people unfamiliar with the brand or the company (Van Hooijdonk and Liebrecht, 2021). *The perfect chatbot's* personality cannot be created because people want different features from their servants.

According to Shumanov & Johnson (2021), chatbots can assume personality (extrovert vs. introvert) through language and convert their own personality to match the consumers personality which is found to be linked to financial outcomes of the company.

3.4   Other factors and characteristics

Adam, Wessel and Benlian (2021) concluded that disclosing to the user that they are interacting with AI based CA is important, because consumers despise being lied to. On the other hand, Luo, Tong, Fang and Qu (2019) stated that disclosing the chatbot identity to the customer reduced the sales made by the conversional agent by nearly 80%. It makes more logical sense that if a user does not know that they are talking to a chatbot, any preconceptions they may have about talking to a chatbot are not in the way of the dialogue, but simultaneously customers have the right to know if they are interacting with a chatbot. When company is considering how to frame their chatbot, it should choose the one in line with its own values and answer to the question; "Is it more important to make more sales or act more ethically and disclose to the customer all the facts?"

The frame which is given to the user also affects the anthropomorphism. When the user is told that the chatbot they are interacting with is "a virtual agent powered by AI and uses machine learning and AI technology to engage in conversations automatically" (Araujo, 2018, p. 185), the mindful anthropomorphism increases compared to neutral frame (user is told that it is interacting with virtual agent without any further explanations). (Araujo, 2018)

Chatbots which use emojis or smileys have been found to have more credibility from the perspective of the user. Agents which are found to be credible are also found to be caring, trustworthy and competent. As previously mentioned, trust is one of the factors affecting

customer satisfaction positively. Users also found emoji using chatbots more socially attractive. (Beattie, Edwards and Edwards, 2020) Thus it is safe to conclude that the use of emojis affects the customer satisfaction positively.

3.5 Table of characteristics and other factors in chatbots increasing customer satisfaction

In Table 1 (page 14) the characteristics and features mentioned in this chapter affecting customer satisfaction positively are listed in three columns. The first column discloses the writer(s) which have studied the character trait. The second column tells the character trait. The third column is for additional details. In the additional details it is told in more detail how the character trait can be achieved or there can be more information about the character trait if it is not self-explanatory. The table below is made for this thesis and is not comprehensive. The table includes only characteristics which have been found to be appealing to the user regardless of the user. The characteristics in conflict with each other are not included in the table to make it more user-friendly when developing chatbots.

The characteristics and other factors are divided into four categories: anthropomorphic cues (1), communicative cues (2), personality (3) and other factors and characteristics (4). The number in the second column after the character trait informs into which category the characteristic is grouped to.

Table 1: Table of characteristics and other factors in chatbots increasing customer satisfaction

Writers	Character trait	Additional details
Adam, Wessel and Benlian, 2021	Identity (1)	Can be achieved by using first-person singular pronouns
Adam, Wessel and Benlian, 2021	Small talk (1)	Builds trust between customer and the chatbot
Adam, Wessel and Benlian, 2021	Empathy (1)	Can be achieved by emotionally reacting to the counterpart's emotions
Araujo, 2018	Intelligent framing (4)	Telling user that the counterpart is intelligent and capable
Araujo, 2018; Go and Sundar, 2019	Human-like name (1)	I.e., the name of Helsinki City's social and health services chatbot is named Hester
Araujo, 2018; Go and Sundar, 2019	Human-like language (1)	Human-like language is productive, creative, systematic, vocalic and social
Beattie, Edwards and Edwards, 2020	The use of emojis/smileys (4)	Especially emojis which signal positive feelings
Bleier, Harmeling and Palmatier, 2019	Conversional linguistic style (2)	Can be adapted by asking questions and using adjectives and pronouns
Go and Sundar, 2019; Esmark Jones *et al.*, 2022	Human figure / Avatar (1)	Professionally dressed woman from different ethnic background
Hildebrand and Bergner, 2021	Social cues (2)	Turn-taking and showing that the listener has listened the speaker
Ruane *et al.*, 2020; Mehra, 2021; Kuhail *et al.*, 2022	Agreeable personality (3)	Personality trait which puts others' needs first
Ruane *et al.*, 2020; Mehra, 2021; Van Hooijdonk and Liebrecht, 2021; Kuhail *et al.*, 2022	Extroverted personality (3)	Especially for consumers unfamiliar with the company (Van Hooijdonk and Liebrecht, 2021)
Ruane *et al.*, 2020; Mehra, 2021; Moilanen *et al.*, 2022	Conscious personality (3)	Especially for consumers suffering from mental health problems (Moilanen *et al.*, 2022)
Xu, Zhang and Deng, 2022	Social-oriented communication style (2)	Especially for attachment anxious persons

4. Discussion and conclusions

This study examined by conducting a literature review which characteristics affect positively on customer satisfaction and are those characteristics possible to apply to the same chatbot and thus is the perfect chatbot possible to create. In this chapter the findings are discussed, and conclusions are made while answering the research questions.

4.1 Characteristics increasing customer satisfaction

This study found multiple different characteristics and features which affect customer satisfaction positively. All the characteristics and features affecting customer satisfaction positively are human-like. From the conclusion of all studies, it can be found that human-like characteristics and features resulted in greater anthropomorphism which is linked to positive impact towards customer satisfaction (Araujo, 2018). The main finding of this study is the confirmation of past literature concluding that anthropomorphic features increase customer satisfaction as all the characteristics found in this study are human-like. This study also confirms Araujo's conclusions that through anthropomorphism customer satisfaction can be increased, meaning customers want the chatbot to be as human as possible. A human-like chatbot increases customer satisfaction through trust and meeting customer's expectations.

The characteristics found in this study are divided into four categories: anthropomorphistic cues, communicative cues, personality and other factors and characteristics. The division between these four areas is blurred. Some of the character traits discussed in the study fall into two or more categories. However, for the sake of clarity, these were grouped into the most appropriate category according to the author's own view. The characteristics are listed in Table 1 (page 14). The characteristics found in the table have been found to increase customer satisfaction regardless of the user base. The characteristics are not listed in this section to avoid repetition and their easy readability from Table 1.

The findings indicate that categories 1 and 2, which are anthropomorphic cues and communicative cues, are the most significant affecting customer satisfaction as the number of characteristics in them is the highest. However, many anthropomorphic cues could be grouped into communicative cues and therefore it can be concluded that communicative cues are the most important factors affecting customer satisfaction, which is in line with the fact that chatbots are conversional agents. This does not mean that other categories should be forgotten when making a chatbot, but it is good to

keep in mind which areas are most important and when met with constraints it is clear to which category to concentrate.

The character traits mentioned in this study are linked to chatbots and cannot be directly applied to agents. Some of them may be beneficial to apply to human agents but this should be further examined as this study does not cover this perspective.

The technological advancement during the last two years in the field may have affected recent literature to become outdated. Especially literature that argues chatbots not to have the ability to simulate human speech can already be outdated even though the study was published only five years ago. This does not invalidate the research findings, as people's preferences for chatbot character traits do not evolve at the same pace as technology, which is why the research is and will remain relevant for a long time to come.

4.2   Characteristics in conflict with each other

Some characteristics conflict with each other because different users prefer different characteristics from a chatbot. Most of the characteristics found in this thesis fall under communicative cues -category which is rational since chatbot is a conversional agent and its main task is to communicate.

Present-oriented people prefer the chatbot to be warm in conversations and future-oriented people prefer for the chatbot to be competent. Consumers familiar with the company and the brand prefer the chatbot to be informal by using customary greetings, emotional concern, and well-wishing. On the other hand, consumers unfamiliar with the company and the brand find the informal communication style inappropriate and prefer the chatbot to be formal.

Also, personality traits consumers prefer are not coherent. Other consumers prefer chatbots to be introverted and others prefer it to be extroverted. The most important factor in terms of personality is for the chatbot to match the user's personality. This has been found to affect the attitude towards the chatbot and therefore the satisfaction. (Shumanov and Johnson, 2021)

4.3   The perfect chatbot

The term *perfect chatbot*, meaning chatbot which is appealing to all customers and creates perfect customer satisfaction, was introduced in this thesis to define which characteristics, and features *the perfect chatbot* would have. The characteristics of *the*

perfect chatbot are listed in Table 1. As mentioned before the table is not comprehensive and some other characteristics conflict with each other, therefore these all cannot be implemented to the same chatbot. These characteristics are not in conflict with each other because consumers are illogical but because different users prefer different characteristics.

The perfect chatbot would be possible to create if the chatbot knew enough about the user and could change its behavior depending on user's preferences. This chatbot would be able to change its personality to match the user's personality. It would also know the user's ethnic background, whether the user is familiar with the company and is the user future or present oriented. In this scenario, the chatbot would be *perfect* and it would create perfect customer satisfaction. This scenario is not realistic since it is not possible for the chatbot to know all this information about every user using the chatbot. Therefore, it is safe to assume that that *the perfect chatbot* is not possible to create.

4.4 Chatbots vs. humans

Even though this thesis discusses several benefits the use of chatbots as customer service agents has, chatbots are not replacing human agents quite yet. Human agents have an advantage over chatbots due to several factors concerning the service quality.

Chatbots, while efficient for specific tasks, cannot fully replace human agents as customer service agents. Human agents possess emotional intelligence allowing them to react more naturally to counterpart's emotions, while chatbots might not fully understand the situation. Human ability to think outside the box is still only a human skill. While both humans and chatbots can face challenges, technical glitches in chatbots can lead to misunderstandings. Chatbots offer automation benefits, but the multifaceted abilities of human agents make them irreplaceable as customer servants in this technical environment. (Luo *et al.*, 2019)

4.5 Implications to practice

This thesis gives great value to companies that are thinking about implementing a chatbot to their customer service team and for companies which create chatbots. The implementation of a chatbot should be the next step when improving their organization. Over the next decade, advancements in chatbot technology will revolutionize the field of customer service. (Adamopoulou and Moussiades, 2020) As a consequence, companies that do not integrate chatbots into their customer support risk lagging behind in the competitive landscape. The characteristics and features mentioned in this thesis

should be considered when utilizing the chatbot as they have been found to affect customer satisfaction positively resulting in better brand image and financial outcomes.

By automating customer service, the company's financial outcomes are not only affected by the improved customer satisfaction but also companies are making savings by freeing people to perform more challenging and rewarding tasks that chatbots are not able to execute.

The characteristics listed in Table 1 should be implemented by every chatbot developer in their chatbots, as they have been studied to have a positive impact on customer satisfaction, which is one of the most important metrics for any business today.

As previously mentioned, certain characteristics and features conflict with each other. When determining which of these attributes a company wants to implement, careful consideration should be given to its client base and core values. Characteristics which conflict with each other can be tested with A/B testing. With A/B testing a company can discover the characteristics that appear to be more pleasant for their customers.

4.6 Limitations and future research

Even though chatbots have been around for nearly sixty years, the utilization of AI based chatbots is relatively recent development (Chen, Le and Florence, 2021). Most of the studies related to the topic of this thesis were published during the last five years. Many characteristics remain undiscovered. The thesis was conducted as a literature review thus every fact stated in this thesis is based on previous research. The literature review was not comprehensive and all studies regarding characteristics of chatbots were not considered in this study. An attempt was made to include all major articles in the study by examining the scientific quality of the articles published in the journals. The selection of articles also took into account the cited by number. However, it is possible that some relevant papers have not been found, which is why they have not been used in this study.

Future researchers should consider conducting research about the characteristics which makes the chatbot less appealing because avoiding these is just as important as complying with the appealing characteristics.

Conducting research about differences of preferences for chatbot characteristics in different cultures might give new perspective on creating a chatbot. It could analyze differences within broader cultural categories. For instance, a comparative study between chatbot preferences in various continents or countries can provide more insights.

Additionally discovering differences for preferences in different generations dived into Baby Boomers, Gen X, Millennials and Gen Z. This could give more coverage on how to create a more personalized chatbot based on generation. Additionally, one should take generations after these into consideration as they are the ones growing up in a world even more immersed in technology, making their perspective invaluable.

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