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**THE USE OF CHATBOTS IN CUSTOMER SERVICE: A  
QUALITATIVE ANALYSIS ON CUSTOMERS'  
PERCEPTION**

AYŞE BARIŞ

THESIS ADVISOR: ASSIST. PROF. DILEK MELIKE ULUCAY

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## ABSTRACT

### THE USE OF CHATBOTS IN CUSTOMER SERVICE: A QUALITATIVE ANALYSIS ON CUSTOMERS' PERCEPTION

Bariş, Ayşe

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Advisor: Asst. Prof. (PhD) Dilek Melike Uluçay

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The continuous communication advantage brought by digitalization has a great impact on customer behavior and perceptions. To meet customer demands, companies have established further contact channels. Today companies are competing over who has the best product and compete over which company has the best service to differentiate. For this reason, companies have started to include chatbot technology in their customer services. Customers' questions about a product or service can be answered at any time by using chatbots. Some companies have taken this subject to the next level and designed chatbots that serve instead of people in psychological counseling, lawyer and dietitian in the USA and Europe. It raised some questions about if a chatbot could be useful when it is used in customer service or it could damage the company's image for their customers. This thesis will focus mainly on the consumer-chatbot area, which aims at customer satisfaction. This thesis aims to determine and evaluate the perceptions of customers about chatbots, benefits to brands and customers, and how it should be designed in customer service. This research presents an exploratory interview study to answer the questions of customer perceptions about the chatbot, the contributions of chatbots in the customer-brand relationship, the disadvantages, and advantages of the chatbot, the good qualities of the chatbot effective chatbot for the customer. Questions are asked through facetime and skype interviews with participants by implementing an exploratory interview study. There are ten interviews in total with a group of people, and 16 questions are asked. The answers to the questions were discussed under eight categories using the descriptive analysis method.

**Keywords:** Chatbot, Customer service, Artificial Intelligence, Brand Communication



## ÖZ

### MÜŞTERİ HİZMETLERİNDE SOHBET BOTLARININ KULLANIMI: MÜŞTERİ ALGISI İLE İLGİLİ BİR NİTEL ANALİZ

Barış, Ayşe

Yüksek lisans Tezi, İletişim Programı

Danışman: Asst. Prof. (PhD) Dilek Melike Uluçay

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Dijitalleşmenin getirdiği markalarla kurulan sürekli iletişim avantajı, müşteri davranışları ve algıları üzerinde büyük bir etkiye sahiptir. Günümüzde markalar müşteri taleplerini karşılamak için daha farklı iletişim kanalları kullanmaya başlamıştır. Bunun sebebi ise şirketlerin artık sadece kimin en iyi ürüne sahip olduğu konusunda değil, aynı zamanda hangi şirketin en iyi hizmete sahip olduğu konusunda da farklılaşmak için rekabet etmesidir. Bu nedenle firmalar müşteri hizmetlerine chatbot teknolojisini dahil etmeye başlamışlardır. Müşterilerin bir ürün veya hizmetle ilgili soruları, sohbet robotları kullanılarak her an yanıtlanabilir. Bazı şirketler Avrupa ve Amerika'da bu konuyu bir üst seviyeye taşıyarak psikolojik danışmanlık, avukat, diyetisyen gibi işlerde çalışan kişilerin yerine hizmet veren chatbotlar tasarlamıştır. Chatbotların kullanımının artması, onların müşteri hizmetlerinde kullanıldığında gerçekten yararlı olup olmayacağı gibi bazı soruları ortaya çıkardı. Bu tez, temel olarak müşteri memnuniyetini hedefleyen tüketici-chatbot alanına odaklanmıştır. Tezin amacı ise, müşterilerin chatbotlar hakkındaki algısını öğrenmektir. Bu sayede markalara ve müşterilere sağladığı faydalar ve dezavantajlar, müşteri hizmetlerinde nasıl tasarlanması gerektiği gibi sorulara da cevap aranmaktadır. Sırasıyla chatbot hakkında müşteri algıları, Chatbotların müşteri-marka ilişkisine katkıları, Chatbotların dezavantajları ve avantajları ve müşteri için etkili sohbet robotunun iyi nitelikleri sorularına yanıt aranmaktadır. Yöntem olarak yarı yapılandırılmış görüşme tekniği çalışması uygulanarak katılımcılarla Facetime ve Skype görüşmeleri yapılmıştır. Toplamda 10 katılımcı araştırmada yer almış ve 16 soru cevaplandırılmıştır. Soruların cevapları betimsel analiz yöntemi kullanılarak 8 kategori altında tartışılmıştır.

**Anahtar Kelimeler:** Chatbot, Müşteri Hizmetleri, Yapay Zekâ, Marka İletişimi



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Ayşe Barış  
İzmir, 2021







## **TEXT OF OATH**

I declare and honestly confirm that my study, “THE USE OF CHATBOTS IN CUSTOMER SERVICE: A QUALITATIVE ANALYSIS ON CUSTOMERS' PERCEPTION” titled presented as a Master's Thesis, has been written without applying to any assistance inconsistent with scientific ethics and traditions. I declare, to the best of my knowledge and belief, that all content and ideas drawn directly or indirectly from external sources are indicated in the text and listed in the list of references.

Ayşe Barış

June, 2021



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## **CHAPTER 1**

### **INTRODUCTION**

Keeping in touch with customers is the first step for a business to achieve its goals. The thoughts and perspectives of companies' target audiences are changing day by day. For this reason, companies should always track the new demands of customers. Observations on topics such as new technologies and market demands can deliver early predictions of opportunities. Having consistent contact with clients provides high customer engagement and loyal customers (Venkatesan, 2017). According to a study, 53% of consumers tend to buy from a company to message in real-time (Be Part of it with Messenger, 2018).

Chatbots represent a potential means for automating customer service because customer service is increasingly provided through online chat. Chatbots are not a novel technology. However, recent advances in artificial intelligence (AI) and machine learning and a general adoption of messaging platform have recently motivated companies to explore chatbots as a complement to customer service.

In order to be closer to customers and increase the brand image, companies take advantage of technology and determine new strategic steps because in today's rapidly changing lifestyles, creating a successful customer experience is about reaching them from where they are (Pansari&Kumar, 2017). Today, there are important ways to reach potential customers than any other place such as messaging and live chat. Chatbots have been included in our lives because of this digital movement. According to Khan and Das, Chatbots are an intelligent conversational tool that generates meaningful answers to users' questions, allowing us to have the feeling of talking to a person (2018). The chatbot analyzes everything written by the user in detail and creates a database to give them possible answers (Crutzen, Peters and Fisser, 2011). Chatbots have enormous potential for any business to increase their potential customer base

and this ultimately leads to more engagement and sales (Spychalska, 2019).

The need for such chatbots arose due to the increasing number of personal machines and the desire of people to communicate with them (Wilks, 1999). Recently, the use of chatbots has increased considerably both on phones and on websites. According to a research, the chatbot market is estimated to reach \$ 1.25 billion by 2025 (How Much Money Has Poured into, 2018). Moreover, the average user will be talking to the bot at least once every day, and 85% of interactions between a customer and a brand will be through a chatbot in the future (Top Strategic Predictions, 2018). In addition, more than 50 percent of businesses will develop different strategies using chatbots, which will contribute to a market value of \$ 1.23 billion by 2025 (Spychalska, 2019). Another study shows that chatbots will deliver the banking and insurance sectors up to \$8 billion in cost savings per year by 2022 (Etlinger, 2017). In addition, by the year 2023, %80 percent of businesses will have implemented a form of chatbot technology into their processes (80% of Business Want Chatbots, 2016).

Since the chatbot is a newly developing technology, the studies on this subject are still new. The study's contribution to literature is that chatbot researches prepared in the field of customer relations are limited. When the literature is examined, it is seen that the studies on the chatbot are mostly done in the field of engineering, while the research on the communication sector is very limited. Since the chatbot is especially preferred in the customer service area, learning what customers think about it and what to pay attention to is an important strategic step for brands. A well-developed chatbot can provide potential customers and a poorly developed chatbot can create a negative relationship. The study aims to reveal the customer perceptions of chatbots. To reach that goal, a qualitative study was conducted. To collect data, semi-structured in-depth interviews were done on a sample who experienced chatbot Zeki, which Vatan Computer uses for customer service. The reason for having participants use a chatbot before starting the interview is to show them exactly what a chatbot is and give them an idea. This research presents an exploratory interview study to answer the questions of customer perceptions about the chatbot, the contributions of chatbots in the customer-brand relationship, the disadvantages, and advantages of the chatbot, the good qualities of the chatbot effective chatbot for the customer.

The remainder of the paper is structured as follows. First, historical events with

technology, artificial intelligence and machine learning terms, the concept of chatbot, usage areas, types, development features, examples and chatbot research are explained. Then the methods and findings are shared and the discussion and suggestion sections are added. Next, interviews were made with ten people over Facetime and Skype using the exploratory research design method. Participants were selected from people between the ages of 22-35, who have high levels of education and are interested in technology. They were asked 16 questions and the interviews lasted an average of 45 minutes. The questions were asked under eight categories. Each category serves research questions. The categories and the corresponding questions are explained in detail in the method section. The results were evaluated by descriptive analysis.

### **1.1 Human-Computer Interaction**

Human-Computer Interaction (HCI) is a field of science that studies the design and use of computer technology (Brey & Søraker, 2009). It is a subfield within computer science that studies communication between users and computers and the design, evaluation and implementation of user interfaces for computer systems. It is a multidisciplinary field, which includes computer science, behavioral sciences, and design. A main objective of HCI is to make computer systems more user-friendly and more usable (Lazar & Hochheiser, 2017). For this reason, it focuses on interfaces between people and computers and how to design, evaluate, and implement interactive computer systems that meet users' needs. Humans collaborate with computers in many different ways which means that having a good interface facilitates that interaction is important for day-to-day activities. On the other hand, poorly designed human-machine interfaces can cause many unexpected problems such as dissatisfaction between users and brands (Brey & Søraker, 2009). The history of the computer and human relationship began with the fulfillment of human needs by machines (Myers, 1998). Human-computer interaction is the study that aims to develop the most useful applications of design and technology by focusing on the interface between the user and the computer. Researchers of this subject observe people's interaction with computers, design different technologies and examine people's interactions with these technologies. The term human-computer interaction was first used by Stuart K. Card in his book *The Psychology of Human-Computer Interaction*, published in 1983 (Lazar & Hochheiser, 2017).

Human computer interaction operates on cognitive devices, systems, and

infrastructures; It aims to improve human-computer interaction by increasing the usability of computer interfaces. Furthermore, it examines exactly how usability is perceived and how it relates to other social and cultural values.

At the beginning of the era, ease of use was not taken into account due to the lack of technological possibilities, but the functionality of a product was completely focused, but as technological developments progressed, these limitations have disappeared. People are now less compatible with the machine, and machines have an obligation to respond to people's needs. Therefore, the concept of usability started to be of great importance thanks to machines. A study shows that it is very important for people to express their interests, wishes and thoughts directly or by writing to improve human-computer interaction more (Zadrozny & Elkan, 2001). This shows that people should do the same with machines as they do when communicating with other people (Oudeyer, 2003). Therefore, it is important to create HCI that supports the intended users' needs, knowledge, and skills. By the 1970s, the graphical user interface was introduced and steps were taken to develop the computer in a user-friendly and people-understanding manner (Dourish & Bell, 2011). This interface contains hardware parts such as the screen, keyboard, microphone that allow people to interact with the computer. With this interaction, computers are positioned at the usability center and hence user experience (Stone, Jarrett and Woodroffe, 2005). In terms of the chatbot, the design process of a chatbot is very important to satisfy users. Since Chatbots interact with users in every area today, it is necessary to know and analyze each component very well (Muldowney, 2017).

It is important to create a chatbot that suits the business goals. To design it, a business first should learn the important components and features of the chatbots and how they evolved from the past to the present. For this reason, in the following paragraphs, artificial intelligence, machine learning and natural language processing, which are the important components of the chatbot, will be explained in detail to provide information about the chatbot design process.

## 1.2 Artificial Intelligence

Artificial intelligence is the science that makes machines clever (Muldowney, 2017). AI is a framework for a wide variety of developments. Under this umbrella, artificial intelligence includes the two most important components, machine learning and deep learning. With these two components, the machines perform important tasks such as voice recognition, image recognition, virtual assistants, and search suggestions.

Artificial intelligence enables machines to perform their tasks in the best way by using the necessary data. In our world, there are a wide variety of different kinds of AI, so the term could be considered as an umbrella of technologies as explained by Guruduth Banavar, overseer of IBM's research on AI (Kaput, 2016). These AI technologies serve different purposes in different fields, but the fundamental role of all of them is to use and carry human intelligence in the same way on the computer. In general, there are two main categories and four different opinions to define Artificial Intelligence. The first category includes systems that are thinking and acting humanely. The other category includes acting rationally and acting humanly. Russell and Norvig presented eight different definitions according to the main categories (2010).

**Table 1:** Definitions of Artificial Intelligence

Thinking Humanly: "The exciting new effort to make computers think...machines with minds, in the full and literal sense." (Haugeland, 1978)
Thinking Rationally: "The study of the computations that make it possible to perceive, reason, and act." (Winston, 1992)
Acting Humanly: "The art of creating machines that perform human functions." (Kurzweil, 1990)
Acting Rationally: "AI is concerned with intelligent behavior in artifacts." (Nilsson, 1998)

Source: Russell and Norvig (2010)

It can be seen that AI covers different disciplines such as Machine Learning, Computer Vision or Natural Language Processing. According to the definitions given above, artificial intelligence is a systematic whole consisting of sub-applications and systems.

It is important to learn the fields covered by artificial intelligence in terms of chatbots because Chatbot uses a process known as Natural Language Processing, Machine Learning combined with artificial intelligence and the annotation of human data. Chatbots use artificial intelligence and natural language processing technology to understand sentence structure, process that information, process that information, and

answer questions. First, they understand what your question is then when they understand your purpose, they give an answer that they think is the correct answer based on available data. Over time and by observing correct and incorrect answers, the machine understands what the 'right' answer is through a process we call machine learning. In the other parts, machine learning and natural language processing will be explained in detail.

### **1.3 Machine Learning**

Machine learning is an AI sub-extension that contains many data and develops itself with computer programs with this data. It is the fastest-growing type of AI and is the basis for many of the marketers in machine learning, many data are processed to form a meaningful whole, and over time, these data come together correctly and determine the right output for random input, then frequently improves upon itself over time as additional knowledge points are processed. Machine Learning, according to Copeland can be viewed as a new approach to be successful at Artificial Intelligence (2016). According to Raschka, this sub-discipline learns on its own by extracting meaning from the data and responds to the needs (2016). Suthaharan explains three important factors affecting machine learning: big data, computing power, Statistical Methods (2015). We are now living in a time when large amounts of data are available and digitally recorded. While the data produced by computers in the past was not of great importance, it is now seen as a very important resource (Alpaydın, 2016). As a result, high-performance computers were needed for the increasing amount of data. There was also a need to develop new statistical methods to analyze the amount of data generated by changes in Computing Power and Big data. All this ensured that developments continued cyclically. There are three different types of machine learning: supervised learning, unsupervised learning, and semi-supervised learning. In the context of supervised learning, the system has already been provided with sample data. A map is created with input and output data and a meaningful whole emerges with the algorithm (Alpaydın, 2016). On the other hand, unsupervised learning allows you to independently build a model based only on the inputs given. Here, the machine learning algorithm explores the data to identify patterns. There is no answer key or human operator to give directions. Instead, the machine examines the current data to see correlations and relationships. In an unsupervised learning process, the machine learning algorithm is left to explicate big data and sensibly manage them. The

algorithm organizes this data in some way to relate its structure. This can mean ordering them to look more systematic. As we evaluate more data, the ability to make decisions about these data moderately increases and becomes more clarified (Suthaharan, 2015). Both methods can be combined in semi-supervised learning.

Semi-supervised machine learning is similar to supervised learning, but instead uses both tagged and untagged data. Tagged data is necessary information with meaningful tags so that untagged data lacks this information, and the algorithm can understand the data. Using this combination, machine learning algorithms can learn to tag untagged data (Abney, 2007). With a machine learning, chatbot, the chatbot processes user-shared data to respond to any request and instantly responds to questions asked by the customer. When a question is enabled, machine learning helps the AI first monitor the conversation with the user and respond based on that conversation. Consumers today want to ask a lot of questions and want to have a deep conversation with the other side. A chatbot develops itself more over time with machine learning and can make the customer happy by generating answers independently. How it speaks as important as learning. Therefore, in the next section, it is explained about the natural language processing and its relationship with the chatbot.

#### **1.4 Natural Language Processing**

In its broadest scope, natural language processing is the analysis of texts and sound waves in natural languages such as Turkish and English in a software program and transferring to the computer environment. NLP uses machine learning algorithms and enables voice apps like Siri and Alexa to interpret human voices into data. With the advent of NLP, various practical applications such as chatbots, the ability to transcribe speech, correct grammar, and determine the sensitivity of a text string have emerged (Brandtzaeg & Følstad, 2017).

The analysis is difficult as human speech is constantly changing, both written and spoken, but thanks to the NLP it is not impossible. Both text analysis and text production can be performed with Natural Language Processing (Kumar, 2011). According to Liddy Natural Language Processing defines human-like "a set of computational techniques that are theoretically motivated to analyze and represent naturally occurring texts at one or more levels of linguistic analysis to achieve language processing" (2001). Research has shown that the best language model is



based on learning from an important amount of sample data (Alpaydın, 2016). Today, the development of Natural Language Processing systems in both scientific research and practical technology has increased. We can say that Apple's Siri or Skype Translator is the best example to prove that the NLP system is quite successful (Hirschberg & Manning, 2015). Machine translation is one of the most well-known and frequently used NLP applications. For example, when we click the Search or search button, we always search for something in Google or Bing, and we feed them with data by entering information in the system in your language. When you click on a search result, the system will sort the results it finds for you and ask you "Did you mean that?" To find out the accuracy and do a better search, it asks for your approval by submitting questions or corrections in style. It also uses of this information for similar developments or sentences to be entered in the future (Hoy, 2018). Chatbots work the same way: they merge with Slack, Microsoft Messenger and other chat programs that read the language you use, then open when you type words that activate it. Voice assistants like Siri and Alexa also wake up when they hear phrases like "Hey, Siri", by transforming the language. Natural language programs work in the background in such applications and expect the perception of the expression from you (Hoy, 2018). Hirschberg and Manning explained the different purposes of Natural Language Processing (2015). First, it could focus on supporting human-human communication in the form of Machine translation. Second, NLP can develop communication between humans and machines. In this way, the designed chatbot satisfies the customer and meets their expectations from the brand.

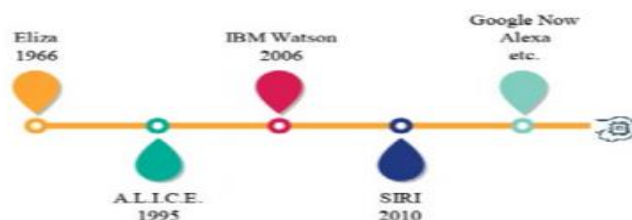
It is very important to know how a chatbot is designed and its sub-components. In this section, the design process of chatbots is explained. Another important point is to know when the chatbot first appeared and its historical development. Information such as how the chatbot has developed from the past to the present, its usage areas and types will be explained in the next chapter.

## CHAPTER 2

### CHATBOTS

#### 2.1 History of Chatbots

A chatbot is an artificial intelligence tool that engages users by messaging applications, websites, mobile apps or over the phone (Pratt, 2017). According to a research, people who prefer to use chatbots feel confident and comfortable with them. (Hill, Ford and Farreras 2015). Chatbots are tools that communicate with people in a natural language on a different type of subject (Huang, Zhou and Yan, 2007). As can be understood from this definition, an important part of the Chatbot is communicating with users in a natural language. Therefore, the most important element when designing a chatbot is to arrange the natural language function in a correct way. Liddy says that Natural Language Processing aims to perform human-like communication to increase the effectiveness of chatbots with people and make their intelligence in conversation (2011). In this process, content is received by artificial intelligence, and formulating takes place by obtaining information about the related content. According to the planning, the related words are selected, and the sentence's tone begins to be decided by creating the sentences. There will be more reliable results if coding of sentences and words are accurate. Although the contribution of the Natural Language Processing ability to Chatbots cannot be denied, 90% of Chatbots that are on the market by various companies do not have Natural Language Processing in the creation process (Pratt, 2017).



**Figure 1:** The evolution of chatbots over time, Source: Thinktech, 2019

In early times, dialogue systems started to connect the system and humans more "human-like." A Chatbot as a dialogue system is nothing new here. Already in the 1960s, the first attempts were made to computer-simulate a speaking person. More and more chatbots have come and gone in the technology world (Brandtzaeg & Følstad, 2017). A prominent figure then and now was the computer scientist Alan Turing who came up with an idea of determining whether a computer would have a mind that was equivalent to a human's mind. In the course of this test, one person is a human, the other a machine. Turing, widely considered one of the fathers of computer science, is in the origin of what scientists and experts still refer to as the "Turing test" when they talk about smart bots (Levesque, 2017). In this era, the first chatbot is considered "ELIZA" developed in 1966 by Joseph Weizenbaum, a MIT professor. Figure 1 shows how Eliza is programmed. ELIZA was designed as a psychologist and aimed to create human dialogues in a more realistic way. However, since natural language processing and machine learning technologies were not improved and existed, Eliza could answer only by word matching at that time as shown in the picture below. In the 1990s, the Turing Test based on the work of Alan Turing, was developed and gained a structure that was reproduced every year. A person interacts with both the person and the computer. The goal is to find out who is a person or a machine (Braun, 2013).

Other chatbot examples like JabberWacky or ALICE received significant awards in various contests even though they did not pass the Turing Test (Janarthanam, 2017). Experts have considered these developments not to be any real progress in AI or concerning building useful conversational assistants (Sameera & Woods, 2015). The intelligent service Siri, released in 2011, was designed as the user's assistant. The assistant developed by Apple, aimed to perform tasks such as making calls, reading messages, and setting alarms and reminders. This development is of great importance in the recent past of conversational interfaces. Another milestone of the AI set in the same year 8 with IBM's Watson, which can answer open questions in real-time through natural language processing (Janarthanam, 2017; Shevat, 2017). These developments serve as an overview and should point out the essential lines in the evolution of dialogue systems or Chatbots.

```
Welcome to
          EEEEE LL   IIII ZZZZZZ  AAAAA
          EE   LL   II    ZZ  AA  AA
          EEEEE LL   II    ZZ  AAAAAA
          EE   LL   II    ZZ  AA  AA
          EEEEE LLLLL IIII ZZZZZZ  AA  AA

Eliza is a mock Rogerian psychotherapist.
The original program was described by Joseph Weizenbaum in 1966.
This implementation by Norbert Landsteiner 2005.

ELIZA: Please tell me what's been bothering you.
YOU:   I don't know exactly what to write about you.
ELIZA: Don't you really know exactly what to write about I ?
YOU:   No, I don't.
ELIZA: Why 'no' ?
YOU:   Because it seems a difficult task.
ELIZA: What other reasons might there be ?
YOU:   None, seems like the only one.
ELIZA: I'm not sure I understand you fully.
```

**Figure 2:** Screenshot of a Conversation with ELIZA, Source: Medium, 2017

Technological improvements in artificial intelligence and machine learning have recently gained attention to chatbots. The increasing use of the internet, social media and messaging apps has led to the adoption of chatbots because nowadays people want a supporter who speaks to them and finds a quick solution to their problems. Through mobile messaging platforms, chatbots can reach most people at the same time. In addition, the fact that people want to get things done fastly and easily has caused chatbots to appear in our lives. Today, with the technology leaders like Google, Apple, Facebook, Amazon, Microsoft, Alibaba, which is called GAFAMA, it can be seen that chatbots and voice assistants are used at a very advanced level. Their artificial intelligence-focused strategy opened doors for chatbots and couraged other companies to adopt this new tool. Today, companies started to use chatbot in many different areas. These usage areas will be explained in the following section.

## 2.2 Areas of Use

Chatbots have been recognized as a promising technology for businesses due to their unique ability to manage complex processes and support multiple customers (Etlinger, 2017). This technology can interact with people and easily replace human employees by supporting customers in their online activities (Bakhasi, 2018). Considering their interactions with people, it is important to evaluate the social role chatbots have during conversations (Al-Natour, Benbasat and Cenfetelli, 2011). Reeves and Nass suggested that as early as 1996, humans treated computers and robots as a real people with gender, values, and personality (Reeves & Nass, 1996). Personality has defined some sort of personal behaviors and characteristics that make it possible to distinguish people from eachother (Tausczik & Pennebaker, 2010). In addition, personality traits

are considered to be very important in effective conversations, so the personality of chatbots affects their communication with people (Tausczik and Pennebaker, 2010). Research has shown that people tend to add personality traits to chatbots as if they were arguing with a real person with a certain personality (Lortie & Guitton, 2011). Today, chatbots are becoming popular in companies' strategic movements. Chatbots, offer companies the opportunity to provide a better experience to their customers and increase the income while operating their cost. They proved themselves as a tool that quite useful in marketing and consumer service. They can also provide support for sales representatives by undertaking the sales task (Etlinger, 2017). Telegram, WhatsApp and Facebook Messenger are all examples of messaging apps that people use daily to chat with friends, interact with brands, make calls, consume content, buy products, and even book a restaurant. Adding chatbots into those platforms will create a new experience for the customers when they engage with their favorite brands (Etlinger, 2017). A study presented during the "International Internet Science Conference" held in November 2017 listed the reasons why people choose to communicate with chatbots. The main reasons why people communicate with a chatbot are productivity, entertainment, social and relationship factors and curiosity. Chatbots serve many purposes, such as customer service, social and emotional support, information, entertainment, and they tie the user to other people or machines. In particular, chatbots are seen as an alternative way for customer service. For customers, interactions with these bots feel more natural and efficient than interacting with real humans as they can obtain answers quickly, receive suggestions for purchases, place orders, and keep updated on shipping 24/7. Chatbots are preferred for other assistance, such as a phone call or online search, due to their convenience and immediacy. Chatbots have many possible use cases. This use case varies by area. For example, they can be used in the media industry to present news or explain sports results. In the field of tourism, chatbots help with hotel and flight reservations. In addition, the banking industry uses Chatbots to monitor accounts and transactions, pay bills or make transfers (Gladys, 2018; Mindbowser, 2017). Generally speaking, chatbots are used especially in the customer service area where support and service are required. Customers want quick answers to simple questions or standardized, simple processes. That's why Chatbots are developed primarily to answer consumer questions about products, businesses, and campaigns (Chakrabarti & Luger, 2015). Almost every company provides customer service to their consumers by phone or e-mail. However, companies cannot manage this complex process very well. A lot of information needs

to be known to customers and it is necessary to convey this in a way that they can understand. In addition, it is necessary to be very fast and to serve every customer on time. To prevent these situations and find solutions, scenarios in which chatbots actively communicate with customers according to defined rules and events emerge. With a Chatbot, many routine queries such as account balance and transactions executed can be answered quickly. Chatbot's integrated learning algorithms continuously improve the scope and quality of the knowledge base, which means that the customer's problem will be solved quickly. (Chakrabarti & Luger, 2015). To summarize, Chatbots are used predominantly for primary goals such as increasing productivity, reducing human chat agents, or strengthening the ability to deal with many individual customer queries. According to these developments, Mou and Xu perceive chatbots as a promising alternative to traditional customer service (2017). Various statistics show that these developments will continue; According to a survey, 95% of consumers believe customer service will be the main beneficiary of Chatbots (Current State of Chatbots, 2017).

Platforms on which chatbot software can be installed;

- Amazon Echo
- Android
- Cisco Spark
- Discord
- Email
- iMessage
- iOS
- Kik
- Line
- Facebook Messenger
- Skype
- Slack
- SMS
- Telegram
- Twitter
- Viber
- Web

## **2.3 Different Types/Categories**

Chatbots are used today for different purposes as B2B, B2C, team and personal (Radziwill & Benton, 2017). However, all bots have one thing in common despite the diversity: they are text-based or voice-based systems that use Natural Language Processing to communicate based on pre-defined rules or AI. Thus, there does not seem to be a general distinction or definition of Chatbot types in the literature. However, it can be stated that there are different types of chatbots according to their usage. (Janarthanam, 2017).

### **2.3.1 Types of chatbots in accordance with the technology used**

- Rule-based-/ Sequential bots
- Intelligent (AI-based) bots

The first type offers to the other person within existing pre-formulated rules and answers. There are pre-prepared and determined questions and answers. Rule-based bots have an informative character. The aim is to be pragmatic and deal with situations that require a short answer. Since artificial intelligence is not used here, deep dialogue with them is not possible or very limited. Programming is very low here (Grigorev, Shanmugamani, Boschetti, Massaron, and Thakur, 2018). Users' roles are restricted in rule-based edits. Unlike NLP or keyword methods, it is not through what users write. Flow is provided through the choices they make. Let's imagine we are ordering coffee via chatbot. While expressing our problem with a sentence such as "I want coffee" in other structures, the question of "what do you want to drink" will meet the user in the rule-based method. The user will select the coffee among the listed types of coffee and make his order. Since the user does not reply in the text, situations such as spelling mistakes or explaining his problem with different words will not affect the chatbot's performance (Shevat, 2017).

With its no need for artificial intelligence, easy design and smooth flow, rule-based structures appear like an easier way but the customer cannot "chat" with rule-based chatbots. Although they live in chat-based user interfaces, their lack of a structure to understand and respond to messages makes them no longer a chatbot. Unlike rule-based bots, the second type uses Artificial Intelligence techniques such as Machine Learning and NLP to communicate deeper (Janarthanam, 2017). These bots can learn the language slowly, just like a child, and can make sense of complex sentences over

time. Even without having to be programmed exactly as such, they spontaneously find answers to open-ended questions and respond appropriately, feeling the concerns of customers (Janarthanam, 2017). Suppose a chatbot used to order food received a message saying, "I want three burgers and two french fries". Natural language processing decides that hamburgers and potatoes are the types of food. It concludes that the numbers before them also represent the portion. Understands that the word "I want" at the end of the sentence is a request. All these analyzes made by the chatbot are processed by the software and converted into orders. Whether the user says burger instead of hamburger or fries instead of french fries does not pose a problem for natural language processing. The analysis process is not based on words but meaning. Artificial intelligence, which knows that the hamburger will be used as a burger or that makes inferences based on similarity, can provide the necessary outputs for creating the order. In this way, despite spelling errors, inverted sentences and different expressions, the chatbot can understand the user's problem.

According to Kassibgi, Chatbot is classified according to the technique they use to classify a particular input and produce meaningful output (2017). In his analysis, he explains and distinguishes three categories as "Pattern Recognition", "Algorithms" and "Neural Networks". Chatbots assigned to the pattern recognition category process the input and compared them with predefined patterns. If the outside input matches a pattern, the predefined response is selected and forwarded. Because these Chatbots only process inputs that exactly match a model, the programmer must therefore process all possible input models one by one at the implementation stage (Shawar & Atwell, 2007). Chatbot in the category of "Algorithms" is more flexible than the other model and it is unnecessary to determine many patterns in advance. It is developed using the probability method. These Chatbots can handle input that the developer is not explicitly programming without patterns with the background (Shevat, 2017). The ability to learn new input classes and outputs is theoretically come along by systems belonging to the third category "Neural Networks". These Chatbots calculate the answer to a question using links made from repetitive iterations obtained with data. The iterations are optimized to allow the neural network to generate responses with higher accuracy (Kassibgi, 2017). From the author's point of view, this classification makes a difference between the three techniques but also makes a difference between the three techniques and shows their evolution in input-output data.



### **2.3.2 Types of chatbots in accordance with the Field of Expertise: Vertical and Horizontal**

A chatbot can specialize in a single service, such as recommending a restaurant or hailing a taxi. For example, another chatbot can suggest a restaurant, make reservations for the restaurant they recommend and call a taxi to reach the restaurant they have booked. Vertical chatbot for those who have a single task and specialize in that task; We call those who can perform more than one task simultaneously as a horizontal chatbot (Garcia, 2018).

Vertical chatbots have the advantage of concentrating on a single service. Each part of the creation process, such as strategy, content, flow, platform selection, is designed according to a single focus. The designer's hand is comfortable in the "make-up" layer of the work. Language, jargon, visual material can be used depending on the type of service (Garcia, 2018).

Horizontal chatbots are more capable when compared to vertical chatbots. It can perform many tasks at the same time. It makes its users' lives easier by not having to deal with more than one application. It also offers cross-selling opportunities for different brands playing in the same playground. The priority of horizontal chatbots is that the services they provide work together and without any problems. User experience is also affected by this prioritization. The designer's task, who cannot be as comfortable as in vertical chatbots, is to maintain the necessary harmony (Garcia, 2018).

### **2.3.3 Types of chatbots in accordance with the Chat Type: Subject and Service**

Although the main function of chatbots is to "chat", not all of them do the same task. A chatbot reminds you that the concert you bought the ticket for a long time ago is approaching. It will not answer your questions outside the subject. Chatbots responsible for performing one or more tasks such as event reminders, calling a taxi, shopping are called service-oriented chatbots. In terms of user experience, service-oriented chatbots try to keep the chat at a certain limit. This is for fast and accurate service. Questions that can be answered in a single format are preferred instead of open-ended questions. This attitude is supported by the answer options presented with the buttons. Texts also get their share of this effort; short, understandable sentences are used (Bakhasi, 2018).

The situation is different for topic-focused chatbots that answer frequently asked questions or communicate a brand. The chat is not within the rules set by the chatbot; It proceeds in line with the questions and demands of the user. The only limit is the subject of the conversation. What question the user asks and how; In other words, it doesn't matter how it transmits the data. Chatbot receives the incoming message, analyzes it and gives the appropriate answer. Not understanding the question or not knowing the answer is not a problem for the chatbot. He continues the conversation with the help and understanding that his designer bestowed on him. Topic-oriented chatbots love to chat. They are also trained for the five pleasant casual conversations we call Small Talk (Bakhasi, 2018).

#### **2.3.4 Types of chatbots in accordance with Type of Communication: By Writing and Speaking**

As with people, we can communicate with chatbots in two ways: by texting and talking. Although it does not directly affect on the purpose of the chat, there may be design differences depending on the type of communication. Chatbots that communicate through text, in other words, are generally included in messaging applications and they take advantage of it. While enriching messages with visual elements such as emoji and GIFs, they also use the graphical user interface instructions, such as buttons. Messaging applications such as Messenger, Skype, Slack provide the necessary conditions for the participation of text and visual elements in the conversation (Jusoh, 2018).

Although chatting by talking is the most natural way to communicate, voice bots are just entering our lives. The most famous of the voice bots are of course, Alexa. Although the voice of Alexa, which is the subject of the advertisements, rushes to our every job, it makes it very difficult to continue the whole process by speaking. Although this is not a problem for simple information such as the clock or the weather, listening to the Wikipedia article with a mechanical sound may annoy users. The solution is two-way chatbots, as in the Siri example. Two-way chatbots controlled by speaking and providing visual outputs offer the most optimal experience (Jusoh, 2018). Above all of this, it is important to know why chatbot is used by business and customers. In the next section, the motives of using a chatbot is explained.

## **2.4 Motives for Using a Chatbot**

Customer expectations are increasing day by day. With the emergence of new technologies, the need for fast and reliable payment processing, fast processing of orders, an easy shopping experience, a personalized solution to the customer and more variable customer service has emerged. And chatbots have stepped in to meet the needs at this point (Bae & Asbjørn, 2018). The main advantage of chatbots is that they are always available and ready. Chatbots are always online and answer questions when needed. It gives correct, individual and fast answers and meets the expectations. In addition, it reduces waiting at the time of need, because the chatbot offers the ability to simultaneously process unlimited questions without any problems (Bae & Asbjørn, 2018). Chatbots have the option to support customers in finding the perfect product in shopping. In addition, with the advancing technology, customers can make suggestions according to their preferred orders in the past. This also increases the comfort of the customer and enables one-click ordering at the next time. Thanks to chatbots, the process is automated and customer satisfaction is significantly higher as it reduces resources spent on employees in the company and maximizes customer satisfaction and loyalty. (Bae & Asbjørn, 2018). Chatbots increase motivation of use with these features. According to Fakhrudin, the estimated annual savings from Artificial Intelligence bots will exceed 8 billion points by 2022 (2017). In addition, chatbots also sell and market the brand's products they are affiliated with on the internet. The four main advantages of chatbots include convenience, saved costs, the opportunity to maximize customer engagement and outreach, and minimizing customer service hours. For example, the travel industry can provide 24-hour customer service if it develops a good chatbot. According to a research if chatbots are successfully developed and used properly, they collect a wide range of information from customers and thanks to this information, brands can develop their products better accordingly. (Jusoh, 2018). Additionally, a business can send feedback forms or surveys after the interview and gather more information on improving the guest's experience.

### **2.4.1. Operational Efficiency and Cost Reduction**

Today, companies are going to automate the simple and highly repetitive tasks previously undertaken by people. This both reduces costs and enables employees to focus on higher quality and satisfying jobs. Thus, it increases employee satisfaction and loyalty. However, people doing things that are as simple as an algorithm can do is

both an obstacle to employee development and a situation that can make the customer experience problematic. For this reason, it is very important to use chatbots for some jobs in areas such as customer service and call centers (Guzman, 2018).

Features of chatbots provide this efficiency:

- Chatbots are a scalable tool - companies can serve thousands of customers with a single chatbot, the cost does not increase as the customer base grows.
- Chatbots are a great place to take preventive action. For example, a chatbot can prevent fraudulent situations that require companies and customers to bear high costs by establishing a timely dialogue with the customer.
- Chatbots are multilingual - it is possible to serve in more than one language with chatbot technology.

Chatbots offer companies serious savings opportunities in this way. According to a study, chatbots will save \$ 0.7 and 4 minutes for each call, which will mean a total savings of \$ 8 billion in 2022 (How Chatbots will Transform, 2018).

#### 2.4.2. Improving the Customer Experience

Chatbots offer customers a direct, simple and natural interaction opportunity. Today, providing a good customer experience is the most important competitive advantage for companies. In many sectors, competition is driven by customer experience. It is a fact that existing digital channels are insufficient to meet consumers' expectations because using these channels is not a simple, fast and natural experience enough. In addition, these channels can often be weak in terms of technology and design (Guzman, 2018).



**Figure 3:** State of Chatbot Report by Drift (2018)

### **2.4.3. Increasing Company Profits**

It is very important for a chatbot to identify the right customer moment, understand the need and communicate properly. Therefore, chatbots are a good data gathering tool, while using the available data as a sales channel. As a result of every chat with a customer, a chatbot can add a lot of data about that customer to the company's system, and direct sales or sales. The contribution of artificial intelligence-based innovations to the global economy will reach \$ 15.7 trillion, of which \$ 6.6 trillion will be the savings effect, and \$ 9.1 trillion will be the effect of increasing the sales we mentioned till 2022 (Global Artificial Intelligence Study, 2019). The main features of a chatbot experience that differ from other channels can be summarized as follows:

- **Simple and direct:** Chatbots can quickly answer questions and perform transactions without keeping customers on the phone for minutes, without navigating between menus, and installing a separate mobile application for each job. (Haan, 2019).
- **Fast and uninterrupted:** According to a study, 73% of customers say that the most important requirement for a good experience in customer service is to value the customer's time, so speed and prompt response are essential for the customer. Chatbots are advantageous in this sense. They also have the feature of providing 24/7 uninterrupted service (Chatbots and Virtual Assistants, 2020).
- **Natural and human:** For many traditional sectors, the digital world consisting of web and mobile applications is perceived by the customer as far from the artificial and humanitarian dialogue. Especially, in the financial services sector, which has an important history before digital, human relations, getting information or advice by making a dialogue with someone, taking action is very valuable. In this sense, chatbots have a great potential to be the interface of the future (Haan, 2019).
- **Personalized:** In addition to fast and continuous service, thanks to the company's data analysis capabilities, chatbots can provide a personalized service by getting to know the customer. This means accurately identifying the moment the customer needs and offering exactly what he needs (Haan, 2019)

## **CHAPTER 3**

### **CUSTOMER SERVICE**

#### **3.1 Chatbots in Customer Service**

Today, banking chatbots, shopping chatbots, reservation chatbots, health chatbots, IT / HR support chatbots and call center chatbots are the most common usage areas (Haan,2018). SnatchBot, Microsoft, Facebook, Google, IBM, Apple, Samsung and many other technology giants are in a war on Chatbot technology. While CNN's Chatbot helps to serve news in specific industries, Marriott International's Chatbot conducts research and helps bookings within 4,700 hotels for Marriott Rewards members. Amtrak, one of the major travel companies in the USA, provides virtual consultancy to its customers with the Chatbot named Julie due to its high passenger density. In the statement made by Amtrak, it was seen that after Julie was used, there was a 25 percent increase in reservations and a savings of \$ 1 million in customer service expenses. It is also reported that there has been a 50 percent increase in annual customer communication and a 30 percent growth in online ticket sales. The travel Chatbot used by Skyscanner allows passengers to find the flight they are looking for very quickly with the most affordable budget. This Chatbot also offers alternative travels if passengers are unsure of their destination.

Today, when dozens of Chatbots are launched every day, there are many examples like Julie. In addition to their good work, Chatbots such as Insomnrobots that attract attention with their functions and usage purposes is increasing. Among the examples to be given to these chatbots; The therapy bot Woebot developed by Stanford psychologists includes DoNotPay, which advices US and Canadian immigrants, Replika.ai where you can create your virtual copy; Tickx Chatbot, the perfect assistant to find concerts and events and get tickets, TransferWise Chatbot, which facilitates money transfers. Messenger Bring the boat's online ordering application in Turkey is a good example. If your phone is far away, your order can be placed without leaving the table. To complete your shopping, you must connect your Getir account to the

Chatbot with an SMS password. Capable chatbot from each other leading banks and financial institutions in Turkey has implemented. Some of these institutions stand out as Akbank, Garanti Bank (UGI, Paragaranti, Garanti Bot), Yapı Kredi (BankerBot) BKM Express (Why Chatbot Applications are Important, 2019). Chatbot usage is also widespread in the insurance industry. My agency, HDI Sigorta, Axa Sigorta and Sigortacı are examples of these. Although chatbots can be used most effectively, there are not many examples in the field of education. The UniverList Chatbot, which acts as a preference consultant in this field, is known. Media stands out as another Chatbot preference area. In our age when online publishing is on the rise, while print-oriented media organs are shutting down, publishers who continue to keep up with new media with their Chatbots emerge. Haberturk, Marketing Turkey are some publications that might be an example. Chatbots such as MuudBot, Biçim Sinema, Sinemia, Noluyo.tv stand out in the entertainment industry in many areas from music to cinema. Career net in human resources: career friendly and many Chatbots like Armut.com are known (Why Chatbot Applications are Important, 2019).

In addition to these examples, another important area is banking. Especially nowadays, artificial intelligence has started to be used quite a lot in the banking sector. 42% of banks in Turkey started to use the chatbot. It offers a chatbot experience of its customers a variety of platforms already 13% of all banks in Turkey have an ongoing project on developing a chatbot 9% that, while 20% of the issue was included in the 2-year strategic plan. Half of the banks that have a virtual banking or are about to complete their work, prioritize answering "frequently asked questions" only at the first stage. Cbot's artificial intelligence system, which is trained to answer all banking questions, greatly speeds up the implementation of such projects. 40% of bank customers use chatbots. Consumers can access chatbots from the bank's website in 67% of the banks with chatbots and via the mobile banking application in 50%. It is possible to say that 40% of the website visitors of banks use the chatbot. Users like to reach the answer they want with a single sentence without getting lost in the website's intense information content and menus (Bank Customers have Embraced the Chatbot, 2019). All the examples given above show the main areas where the chatbot is used. More can be added to these examples in the future if chatbot technology is noticed by the brands. Connecting with the consumer in customer relations is critical for a business. The company can gain or lose customers. Companies that have a high

engagement with their customers have a more loyal audience. In the next section, the detailed definition of engagement and its effects will be explained.

### **3.2 The Term of Engagement**

The use of the concept of engagement in the marketing field is not very old. The concept started to be used in the marketing field in the 2000s, and studies related to the concept have started to show themselves since then. However, the origin of the concept of engagement goes back to the 17th century. In the literature, different interpretations of the concept of engagement such as connection, relationship, emotional interest and participation have also emerged. However, these concepts can only be used to describe specific forms of engagement (Brodie, Hollebeek, Jurić and Ilić, 2011). Although there is no comprehensive definition of the concept of engagement, today it is seen as the main driving force behind postmodern behavior and decision-making (Gambetti & Graffigna, 2011). The word engagement comes from the French Gage origin. The noun, Gage, is a word used to mean to pledge or commit something. No matter how old the use of the concept of engagement is, there is still no consensus on the concept. The concept has different uses in different disciplines. For example, the 2000s are the periods when the concept of engagement was widely used in psychology, sociology, political science and corporate behavior. However, it is possible to see that different aspects of the concept are emphasized in every field. Working on the concept of civic engagement in sociology and social engagement in psychology can be given as an example (Brodie et al., 2011). In the field of marketing, the concept was first used by Appelbaum. Appelbaum used the concept of consumer engagement in 2001 and stated that consumer engagement is formed by rational and emotional commitment (2001). Appelbaum consumer engagement can occur with rational and emotional commitment; He stated that there are various factors in each type of commitment. He stated that there is trust in a brand in emotional loyalty, belief in integrity, pride of the brand and the passion factors necessary for this. Accordingly, there are cognitive and emotional dimensions in engagement and there is a behavior realization. Consumer engagement defined as the intensity of individual participation and engagement in the presentations or organizational activities initiated by the customer or organization, and engagement to them is a mutual process. The intensity of consumer engagement is an indicator of engagement (Vivek, Beatty and Morgan, 2012). In 2006, a definition for engagement



was developed by the Advertising Research Foundation [ARF]. ARF defined engagement as arousing anticipation of a brand idea developed by environmental contexts (Wang, 2006). After this definition was made, the concept was not fully understood again and brought along many discussions. For example, some researchers stated that engagement should be redefined as being willing to spend time with a brand and stated that this time could be used as an engagement metric. Others have emphasized that it is important to focus on partnerships with the brand rather than focusing on time spent with a brand in the definition of engagement. According to this point of view, it would not be wrong to say that a brand that engages is a brand that establishes and maintains strong brand associations in people's minds (Pincott, 2009). Engagement helps convey a brand or brand message to the consumer's mental field of study. Otherwise, the effect of marketing on brand perceptions or consumer behavior will be quite limited (Brown, 2007).

It is necessary to learn about customer behavior and perceptions as well as to have a high engagement with them. Customer behavior varies according to the conditions and technological developments. In the next section, customer behavior in the era of high technology and artificial intelligence will be discussed.

### **3.3 Consumer Behavior in the Age of Artificial Intelligence**

With the introduction of online shopping into our lives more and more, replacing physical retail store sales and digitalization in physical stores, artificial intelligence has become an essential point for businesses. Artificial intelligence, helps to predict trends in the supply chain, realize the actions that need to be taken instantly, helps the brands to improve the customer experience and provide special services to customers (Grewal, Roggeveen and Nordfält, 2017).

Artificial intelligence integration of companies is a natural result of the supply-demand balance brought by age. As technology increases its dominance in human life, modern people's concept is changing with each passing day. Customer demands are also evolving into a form where everything is 'faster'. The speed demand of the customer is met by 24-hour available chatbots or mail prioritization software. Another social trend with technology is the increase in the desire for individualization. Modern customers want to feel as individual and be seen by brands all the time. When customers feel this way, it is inevitable that they will be more willing to buy any product. With artificial intelligence tools that use Big Data; Brands can receive millions of information such

as customer's internet activities, interests, personality traits, shopping habits in seconds. This situation helps brands to improve the products and services for their customers (Ameen, Tarhini, Reppel and Anand, 2021)

Today, X and Y generations hardly ever go to a physical bank. Banking transactions can be done anywhere, anytime, and online. In the past, these operations could be done on the computer; Now it can be done easily via smart phones. This provides great convenience to consumers. But if a problem that requires a phone call to the bank, people do not like talking to a digital operator and being guided over the keys. Everything can be perfect digitally, but customers expect the best resolution and fast response (Belleghem, 2015). In addition, people will be able to buy goods and services using the internet from all over the world and use the additional benefits provided by artificial intelligence (Makridakis, 2017). Recent advances in artificial intelligence and data analytics, automation of some of the routine tasks of consumers (for example, in smart homes and self-driving vehicles) and allows the emergence of big data-driven, micro-targeted marketing practices (e.g., personalized content recommendation algorithms).

With the conveniences brought by artificial intelligence, today's customers also expect to reach the brand 24/7. When call centers are called, customers who wait for a long time to connect to a person easily end their relationship with that brand and position the brand negatively. Today, it is difficult for human employees to provide a 24/7 and very fast service to consumers by brands. For this reason, the development of chatbots, which are provided with humanoid services by artificial intelligence, is increasing. Brands want to get to know their customers closely, they want to create the best products and services, and they want to stay in constant contact with the customer. The most important point here is that brands can create an effective chatbot that suits them best (Grewal et al., 2017).

### **3.4 Advantages of Using Chatbots in Customer Service**

Establishing quality and permanent communication between brands and their consumers has become very important in today's world. Companies aim to establish long-term communication with their customers through continuous interaction, but many companies do not have enough staff to meet customers' needs (Saunders, 2017) This is where the benefits of chatbot integration are realized, as companies can offer an unlimited communication service to their customers using digital platforms.

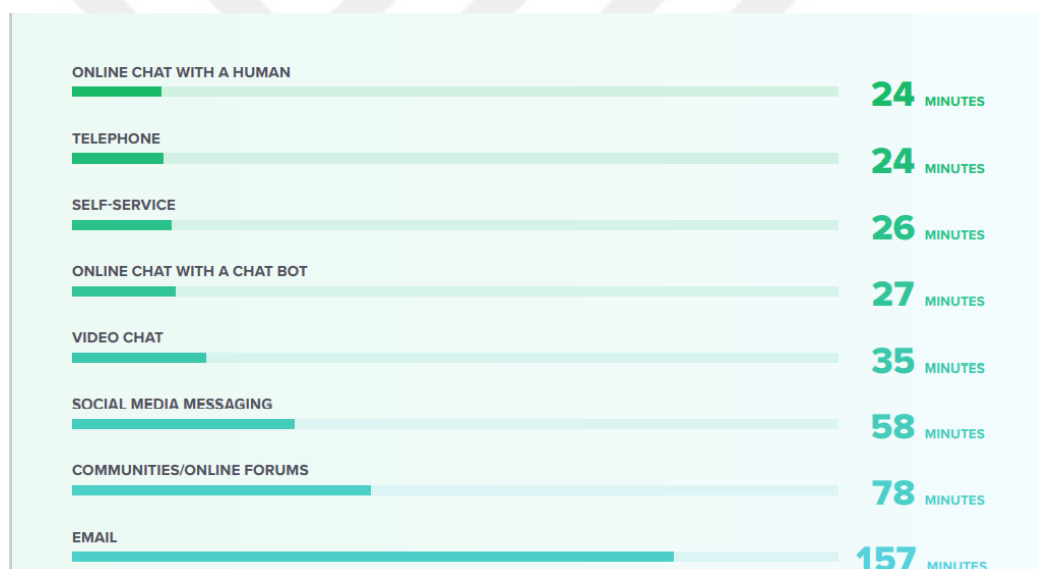
Chatbot has abilities such as imitating human-like interaction, needs and preferences of its consumers better. In terms of user experience, a service that is not the only natural but also strategic, non-cynical and mutually beneficial. According to Saunders, chatbots provide a lot to businesses (2017).

These include the following positive properties:

- 24/7 customer service
- Providing active customer interaction
- Customer engagement increased
- Data collection and insights
- Creating potential sales
- Cost-effectiveness

These attributes mentioned above are perhaps the most important summary of chatbot functionality. The chatbot provides an unprecedented amount of customer insight and in-depth knowledge of the unique, personalized preferences and behaviors that AI has the power to use. Companies must continually develop interaction strategies that build lasting relationships with customers and fully understand the audience they interact with. This includes the necessity of creating digital platforms completely inclusive to all users. Artemova explores how companies can seek the benefits of engaging Generation Z, given a younger, more technologically and digitally savvy audience that has emerged due to the transition between generations, and sees chatbots as an important potential source for increasing engagement (2018). Today, chatbots, which are digital marketing tools, appear to play a very important role in providing customer service experience, real-time communication, two-way interaction, and personalized communication (Artemova, 2018). The research results show that chatbots will be successful in meeting the digital demands of the new consumer age and, thanks to their 24/7 customer service, they will collect a lot of information and increase their sales. While it is vital to engage with the new age of digital users, chatbots are inclusive and technologically advanced will make it even easier. Saunders proved this in his evaluations of the technology website Digital Doughnit chatbots, in addition to the findings of Artemova (2017). It is estimated that 83% of online shoppers need some form of assistance during purchasing. (Saunders, 2017). The benefits of chatbots are also seen for older generations of consumers who are more likely to need shopping assistance, such as navigation or payment entry assistance. This observation shows

that chatbots are not only interaction tools that meet younger generation's expectations but are also a great helper for older generations (Saunders, 2017). According to the report quoted by Charlton, 57% of customers want to get help via chatbot and their customer service experience will be even more positive with them. 82% stated that chatbots solve problems faster (2013). The figure 3 shows that how it takes lots of time to interact with customer service in different ways. Analysis showing the average number of minutes, including waiting time, takes for a customer of Business respondents' organizations to resolve an issue. Consumers generally reports that their issues take an average of 11 hours to resolve, which is almost three times higher than the wait time that they cited as being acceptable to resolve (4 hours, on average). These types of interaction can easily bother customers and it decreases engagement with the brands. These statistics confirm that chatbots are considered strong choices for interactive customer service providers.



**Figure 4:** Waiting Time for the Services, Source: Bold360.

Another observation made by Saunders is that customers who engage with the chatbot spend 20% to 40% more (2017). Companies increase the benefit of close interaction with customers and their sales targets through continuous interaction. Chatbots are also economically beneficial for companies and are brand advocates. Lego designed a chatbot that promotes UX by assisting online customers through its extensive product catalog. The data collected according to personalization, preferences and interests made by the customers were combined by the chatbot. The chatbot provided Lego with a 71% reduction in cost per purchase and a 1.9% increase in value per order than the website ad click process (Saunders, 2017). Improved customer experience by allowing

users to quickly receive insurance quotes. The findings observed the impressive potential for chatbots when applied to banking, insurance, and e-commerce sites. However, the research shows that customers are ready to fully adopt chatbots created for insurance and banking (Chatbot Revolution, 2017). Another pioneer highlighting the potential for companies in successful chatbot integration comes from Dutch airline KLM. They reported a 40% increase in customer interactions thanks to the chatbot they prepared on the Facebook messenger, and it was successful in representing the image of the brand. Companies are currently using the chatbot platform available around the clock to address simple customer issues online, but the technology becomes more effective. As contextual chat becomes viable, companies will see the full impact of chatbots. This will make significant savings in reducing the number of human sales representatives. Many observers who criticize chatbots draw attention to the issues regarding the cost of implementing the technology. However, according to statements from many sources, substantial long-term savings will be gained from the technology. It will allow a reduction in the number of humanitarian service intermediaries used with full artificial intelligence support. Chatbots will turn into a technology that engages customers, encourages purchases and encourages online spending (80% of Business Want Chatbots, 2016).

Independent market research coordinators shows that chatbots deliver companies important savings and benefit their economic conditions (How Chatbots will Transform, 2018). It is stated that sectors including banking, insurance, retail, and healthcare will gain savings from chatbots' replacement of service agents up to \$11 billion by 2023. Chatbots' ability to carry personalized marketing, sell products based on data gained through communication, engage customers, and reduce additional spend, is all considered parts that provide to the success of the technology and areas where businesses gain most. The research even offers the most viable solution as a Facebook Messenger bot, named Octane AI, further demonstrating how messenger application- based chatbots offer genuinely large scope currently, and in line with future predictions (How Chatbots will Transform, 2018). Sectors such as banking, insurance, retail and health services will save 11 billion dollars in customer services by 2023 if they use chatbot. The ability of chatbots to offer personalized marketing, sell based on data obtained through interaction, interact with customers and encourage additional spending, and preventing online shopping cart abandonment are all

considered to be the areas where businesses make the most profit. The savings are also predicted to come from reduced transaction times and improved customer experience.

### **3.5. Challenges of Using Chatbots in Customer Service**

Like any other type of technology, chatbots have a few downsides and potential risks (Fakhruddin, 2017). Heterogeneity issues have a huge impact on any service. Customers are individuals with their identities and needs and services need to be highly unique and tailored to a specific individual. The demand is difficult to predict, so the employee may have planned less time than it should be to answer all questions accurately and on time. Pinhanez also evaluates the importance of performance consistency and the ability to handle different services at an equally well-perceived level (Pinhanez, 2011). Because developers' program chatbots, they consist of pre-programmed information and only recognize an input if it fits an expected path and if something unexpected happens it disrupts their flow. Therefore, the output will be either repetitive or irritating for the customer, by not giving the correct answer and not leaving the users satisfied (Fakhruddin, 2017). One advantage of chatbots is the convenience when shopping online and finding products for a customer via chat (McCall, 2017). However, this can also lead to potential confusion by changing the customer's purchasing decisions. Narrowing down each filter feature, such as size, color, type and material, can become a time-consuming task, reduce comfort for the customer and take advantage of this aspect (Fakhruddin, 2017). Also speaking on other disadvantages of this technology, thousands of data is needed for the system to learn a situation. The system cannot learn anything from a single piece of data. Therefore, it takes about six months to a year for the system to be like a person working in a call center and it should always be fed with data. Another disadvantage is that we have not already entered what kind of output the system will give, so the output may not always be what is expected. In such a case, manual intervention may be required. Early outputs should be tested more rigorously than other technologies. Taking every aspect of it into the live environment without being tested may not be correct under current conditions (Jain, 2016). As the worldwide use of chatbots has only increased in the last few years, the threat of social engineering attacks is very high. Chatbot privacy and security are two important areas that organizations should pay attention to. Chatbot solutions must ensure that they comply with the General Data Protection Regulation and industry-specific or region-specific policies and regulations. End-to-end encryption, purpose-

level authorization, user authentication, channel authorization, intent-level privacy are some ways to increase the security and privacy of chatbot usage information must be handled securely (Fakhruddin, 2017).

The implementation and maintenance of chatbot projects require a different expertise than traditional web & mobile application development. Lack of this understanding can cause confusion and setbacks in projects. Users rely on the experience provided by giants such as Amazon, Google, Netflix, and Lyft, and expect all their needs to be fulfilled instantly. According to the Usabilla.com survey, 46 percent of internet users in the US prefer to get online support from a live person rather than meeting with the time-saving chatbots. Similar results are demonstrated by UJET's survey, which makes an interesting result for everyone involved in the chatbot industry. Fifty-eight percent of respondents believe chatbots are not as effective as expected. Surprisingly, in retail, most users like to be self-sufficient in their decision-making. These users do not need to communicate with Chatbot or customer service managers. In this case, the main challenge is to design a chatbot that will enable customers to use and understand their language. Customers express themselves differently in every business, and each target audience group communicates in different ways. Language is affected by the advertising campaigns in the market and the political situation in the country. The way people talk can vary depending on the cities they live in, their moods, and the weather. Therefore, it takes a lot of effort to develop a chatbot to understand everything correctly that users write in the conversation. In addition to the time, effort, money, and effort spent to use a chatbot, brands must also be aware of chatbot-related security problems. Chatbot developers state that the security element should never be forgotten, especially when it comes to sensitive data such as personal information and commercial data. There are two important security risks to be considered in the use of chatbots. The first of these is considered as threats such as malware or DDoS attacks. These types of attacks cause the system to be locked and left out of access. The second security hazard is known as the vulnerability state. All systems can have weak points. A system that cannot be hacked is not yet known. However, combining the complex algorithms of chatbots with the right security measures can significantly solve the problems. After learning its advantages and disadvantages, it is necessary to develop certain features based on these results while creating the chatbot. In the following paragraphs, the key points will be explained in creation process.

### **3.6 The Key Points in Creating a Chatbot for Customer Service**

The most important point in this matter is to focus on a personalized customer experience. When talking to a digital assistant, users should feel like they are talking to a family member or friend, because this way only they will feel safe and happy when purchasing any service or product from a particular company. Another advantage of ChatBots is that they can talk to many people simultaneously and achieve greater customer satisfaction across multiple channels, while providing unique and personalized experiences to users. When creating chatbots in dialog-based business, the purpose of conversation interactions must first be defined. What will this chatbot work for? Will it be an informational Chatbot, or will it be a sales chatbot? Understanding the target audience is another key to building a successful chatbot. Where do customers spend their most time? What kind of language do users use more comfortably? The chatbot should be designed as a solution to the defined problem, which means that there should be a sensible purpose for this tool. It is impossible to create a chatbot for everything, so the company should decide whether they will use it for taking feedback, customer service or as an educational resource (Chatbots and Virtual Assistants, 2020).

After analyzing this data, companies must analyze traditional customer interactions captured over time and change their content accordingly. Uninterrupted conversation between companies digital and human interactions will provide clearer communication and fill the content gaps that may occur during digital transformation. Companies should focus on collecting the correct data while chatbot is interacting. The content that people see in replies of chatbots should be practical, informative, understandable, relevant and personal. Also, businesses should be careful with the data they collect. They should only take it only when the user permits it. The next issue is that companies should care wishes and demands of their users. If a company does not pay enough attention to its users, the chatbot can easily become not useful and not efficient (Chatbots and Virtual Assistants, 2020).

Another point is, chatbot should have a design that it can continue to improve with the data it receives from its users. A constantly learning chatbot can learn from every customer interaction and demographic information, what users are interested in, what their preferences are and what activities they are more inclined to do; It provides a smoother interaction between your company and your users. Another important issue



is company personality. Based on data collected over time, a persona needs to be created for the company's digital and live interactions, as users can expect the quality of communication and are satisfied with the result. Finally, conversations should be kept confidential. In any case, the user's consent must be obtained if the conversations are to be used on another platform to collect data. Customers should be presented with a chatbot to feel comfortable and safe while security controls are checked in the background. A carefully planned dialogue will lead to confidence and comfort in users' eyes and will provide a greater source of income to the business while providing a higher satisfaction rate (Chatbots and Virtual Assistants, 2020). Finally, the development of chatbots should be continuous, so that the information and technology behind them are up to date. By following all these recommendations, the company will have the most useful chatbot according to their needs.

After all this information about the chatbot, successful chatbot examples will be presented in the next chapter. With these examples presented from both the world and Turkey, what exactly the chatbot is and what it does will be explained.

## CHAPTER 4

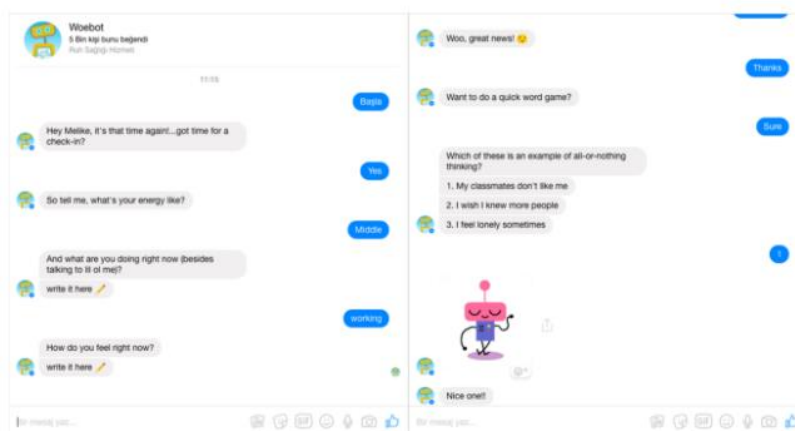
### CHATBOT EXAMPLES & STUDIES

#### 4.1 Examples

Therapy Boat Developed by Stanford Psychologists: Doctor Woebot

This chatbot stands out as a therapist who is available whenever a customer wants and trying to help them in the best way he can. Woebot, the therapist you can reach 24/7 with FB Messenger, is just like that. Developed by Stanford's psychologists and AI experts, Woebot proceeds with simple directions without applying too much to NLP in the first place.

He gets to know people with the mini-quiz-style questions he asks and determines the questions he will ask in the next session accordingly. At the end of the day, he also states that he is a robot and that this help cannot replace a real psychologist's help. Still, if people have depression or anxiety, he is willing to help resolve it. Providing free service for the first 12 sessions, the bot offers weekly, monthly and annual payment options for those interested in the following sessions.



**Figure 5:** Doctor Woebot Source: FB Messenger

## Travel Companion in Japan: Bebot

It is developed by the Japanese car rental service Times and the first chatbot developed by a car rental service, Bebot works the same as any recommendation bot. Users need the coin to activate the bot. They can get the coin by making a reservation from the hotels that the company has an agreement with. Afterward, users activate the bot by typing this coin. The bot, which can only be accessed from Messenger, will take place in different popular channels such as WeChat, Kik and Twitter.



**Figure 6:** Bebot Source: Bebot.io

## Trish by Soylent

Soylent is a ready-made food brand. Its slogan is: "Eating is not easy." Soylent, which came to the market with a great idea, diversified its products over time, and problems such as how much I ordered from which product will have started to emerge, and as a solution, Trish has produced a female identity chatbot. The target audience of the chatbot, which helps in matters such as which Soylent product to order and how often you should consume, is especially men between the ages of 18 and 34. The brand is constantly appearing in a new dimension, "What should I eat?" Chatbot finds a solution these kinds of questions easily.



**Figure 7:** Trish Source: Forbes (2017)

## Captain

Yahoo's new family assistant "Captain" has only one task: To follow up on family planning. No need to download any apps or own a smartphone. With a single SMS to be sent to Captain, daily reminders can be planned and a need can be added to the family shopping list. In this way, chatbots come to the fore for personal use in family communication.



**Figure 8:** Captain, Source: Yahoo.com

### Insomnobot

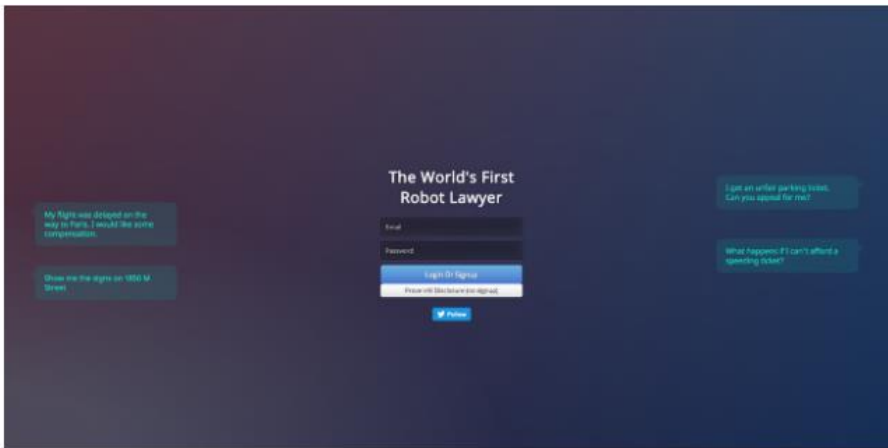
The chatbot, created for people suffering from insomnia, takes its name from the insomnia disease "insomnia". It makes a difference by serving at night. But the main difference of this chatbot is that it serves via SMS, not a website or phone application. According to the 844-823-5621 number, this chatbot inactive in Turkey can be used by users via SMS, quite realistic, and having deep conversations power.



**Figure 9:** Insomnobot, Source: Medium,2017

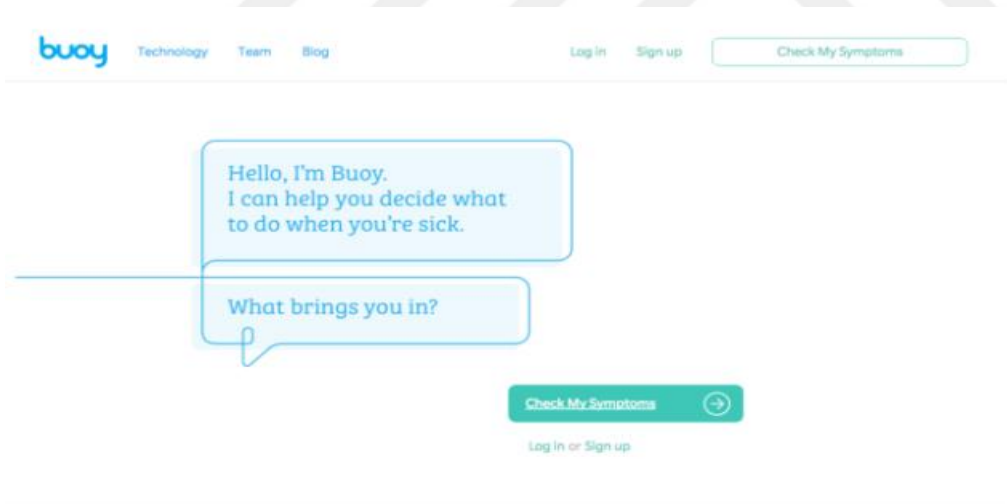
### World's first robot lawyer: DoNotPay!

Developed to challenge parking fines and reached more than 160,000 users in London and New York, the chatbot is now a free assistant for immigration applications to the USA and Canada. The bot, which helps the applicant determine which forms to fill according to the answers given to the questions asked, can be used on Facebook Messenger.



**Figure 10:** DoNotPay! Source: Donotpay.co.uk

Health: Chatbot that puts an end to the disease search syndrome on the internet: Buoy  
 Nowadays, people always search google to learn the diseases according to symptoms that they have. In order to put an end to these searches, a chatbot called Buoy Health was developed. Users report disturbing symptoms on this bot. On the other hand, the robot conveys the user to go to the doctor or to rest at home according to the symptoms.

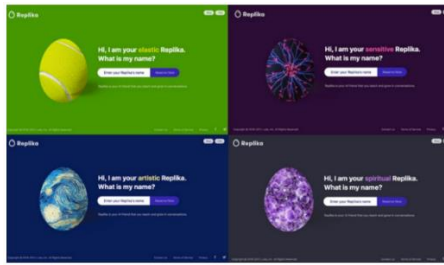


**Figure 11:** Buoy, Source: buoyhealth.com

Replicabot: Create your virtual twin with the replica

Replica is an artificial intelligence application where people can create their own virtual replica by chatting. Chatbot learns the character of the user by talking to him and imitates them in the virtual world. Since he completely learns behaviors from what is written and expressions, he reflects the state of speaking with him in a state of mind. The application can only be used by invitation; However, even if you do not have an

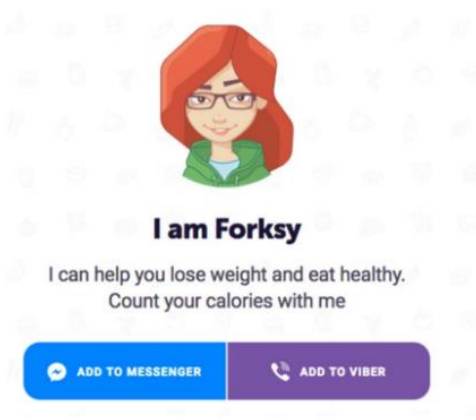
invitation, you can register with the application, reserve your username, and request invitations from registered members via social media.



**Figure 12:** Replicabot, Source: Replica.com

### Forksy

A chatbot specially designed for people who diet and want to lose weight by paying attention to what they eat. Users can express the desired food by simply typing "half a kilo of meat" or saying "I ate 4 portions of veal chops". Chatbot offers a realistic speech by understanding the daily life words coming from users by having a very good NLP system.

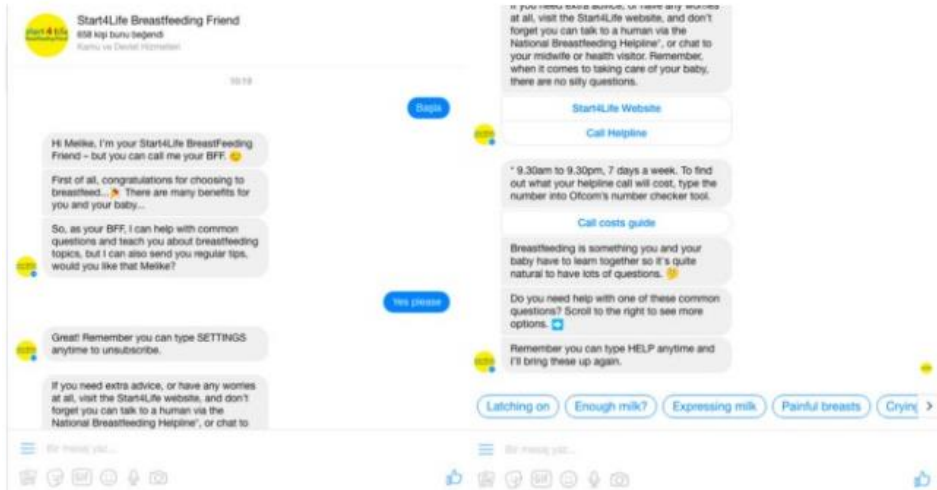


**Figure 13:** Forksy, Source: getforksy.com

### Suggestions for Breastfeeding Mothers: Start4Life Breastfeeding Friend (BFF)

This chatbot helps mothers in a process in which a baby needs to be fed exclusively with breast milk for the first six months and breastfeeding with supplementary food for a certain period after six months for healthy development. Although it may seem as easy as giving a bottle from the outside, breastfeeding is a job that requires patience and effort. For this reason, mothers may give up breastfeeding after 6 months and sometimes even before six months for many reasons. Start4Life, the mother-infant

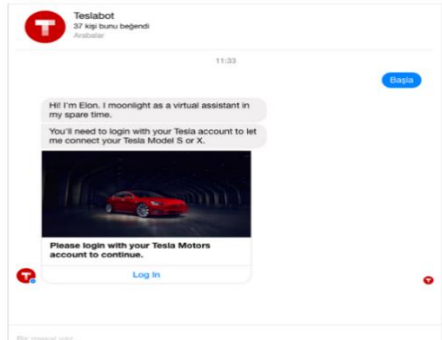
counseling service of the British National Health Service, is aware of this challenge. That's why she has developed a virtual friend that they can consult on everything to help mothers while breastfeeding. In this way, when mothers convey their breastfeeding problems to the BFF 24/7, they can see the support they need and get suggestions from the chatbot.



**Figure 14:** Start4Life Breastfeeding Friend, Source: Facebook Messenger

**New Messenger Bot from Tesla: Elon**

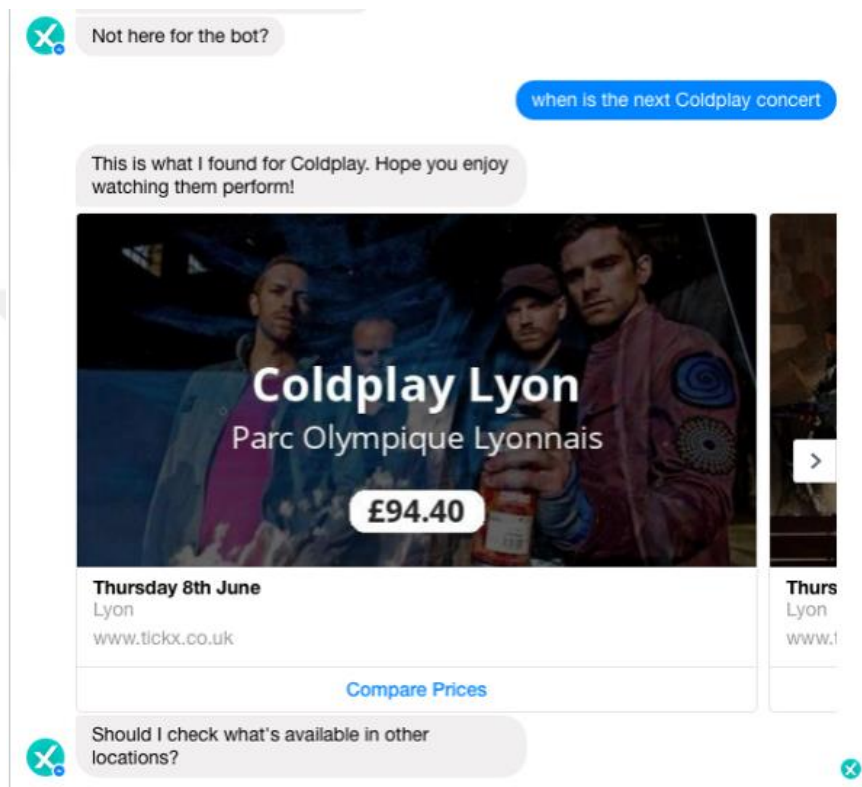
Tesla Motors, which conquered our hearts with the electric vehicles it designed and manufactured, opened the Messenger boat Elon, which can remotely control the X and S model Teslas. When you connect your Tesla account to your Facebook Messenger account, you can lock your vehicle's doors or ask about any situation about your vehicle. In addition, it provides personalized service by performing everything that needs to be done by a human with the commands given.



**Figure 15:** easier way to search event: tickx chatbot, Source: Tesla.com

TickX: Easier way to find a flight ticket

TickX is, in its simplest terms, the flight price comparison service Skyscanner is designed for event tickets. You can scan UK event or concert tickets on TickX, compare prices and buy tickets at the best price. It is enough to write to the bot with a single sentence to determine which activity is desired or when, where and what kind of activity. It gives instant responses to these questions and meets all the needs.

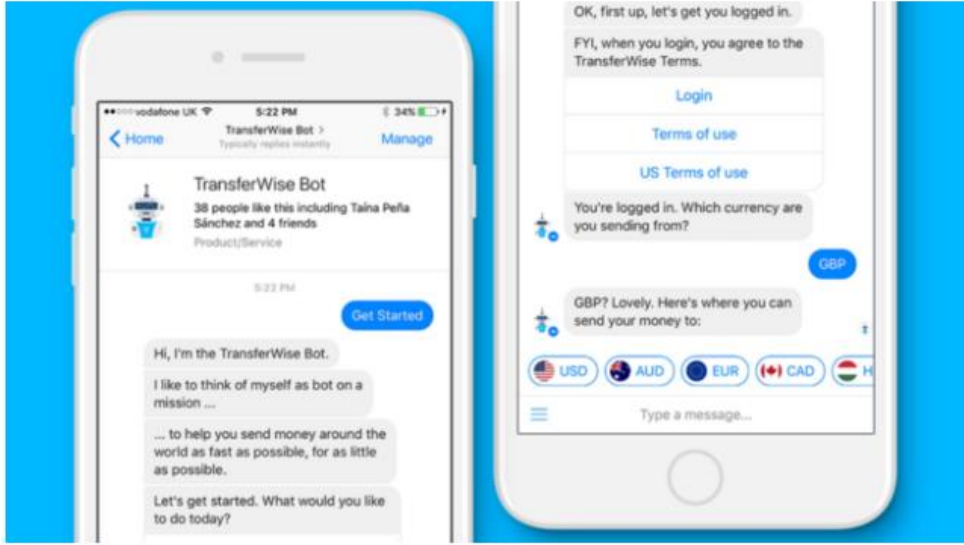


**Figure 16:** TickX, Source: Medium,2017

Making your international money transfer by chat: TransferWiseBOT

TransferWise, an international money transfer company serving in more than 50 countries, has developed a Facebook Messenger bot to make international money transfer transactions faster and more practical. Users who carry out all the steps of the transfer process via Facebook Messenger via chat with the guidance of TransferWise Bot are directed to the company's website to confirm the final payment. The chatbot, which currently only serves customers in the United States, Australia, England, Europe and Canada, is planned to expand to more countries where TransferWise continues to exist.



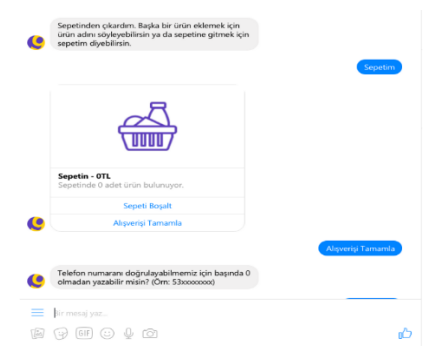


**Figure 17:** TransferWiseBOT, Source: transferwisebot.com

## GetirBOT

The Messenger bot of the online ordering application Getir, which has attracted our attention lately, is a good example. It may not be very correct to call Getir a chatbot. You cannot chat with this chatbot, but it acts as a personal virtual assistant. Whatever you say, it detects it as a product and starts searching and places the order at the desired time. To complete your shopping, you need to connect your Getir account to the bot with an SMS password. Then you can do your shopping as you wish by writing.

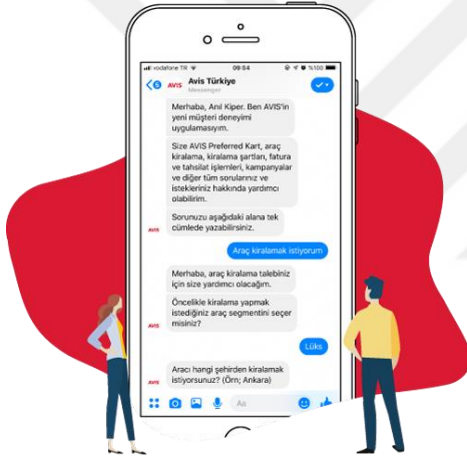
With the getirbot, customers' delivery arrives at their homes without a problem, and even when they have a problem, they can find an assistant to solve it 7/24. For example, it is important to create bot and virtual assistants in grocery shopping since there could be many problems during the delivery process.



**Figure 18:** Getirbot, Source: getir.com

## AVIS

With the developing technology and to open new communication channels to customers, Avis developed a corporate chatbot supported by artificial intelligence, which is the first in the automotive industry, in 2019. Chatbot, designed to solve all kinds of requests, questions and requests of customers faster, provides service over Whatsapp. The company stated that thanks to the Chatbot, 85% of the correspondence with the customers was done through artificial intelligence without being transferred to customer representatives. In this way, customer representatives' efficiency is increased, and a difference is made in service experiences by responding to customers faster. In addition, self-service integrations for bots designed as digital assistants, developments that will instantly respond to customer demands and bot sales functions were also put into use in 2020. With the chatbot, sales, service and 2nd hand sales appointments and online reservations are made for retail business units.



**Figure 19:** Avis, Source:avis.com

## Garanti BBVA

With WhatsApp chatbot, Garanti BBVA supports its customers in more than 100 issues such as lost / stolen card notification, credit card application tracking, ATM / Branch location learning, foreign exchange rates and loan calculation. In this way, customers who contact Garanti BBVA via WhatsApp can answer their questions faster than call center on many issues. The chatbot, which aims to increase its ability to understand and chat with its customers, will continue to assist its customers in more matters in the future.



**Figure 20:** Adabot, Source: garanti.com

### EBA Assistant

It is created during the coronavirus period by the Minister of National Education to ensure that families do not have difficulties in the distance education process, instantly respond to user questions, and ensure the most effective use of the system. Chatbot provides password retrieval // renewal services, querying the course schedule, learning the status of exams, meeting with teachers, and repeating the course. EBA Assistant took its place at the "www.eba.gov.tr" address, in the lower right corner. By clicking the orange smiling face icon, students, teachers and parents easily use their assistants. Artificial intelligence system used when users ask questions such as "how do I get my password", "how do I log into the system", "What lessons are there tomorrow in 3rd grade", "How do I access the course schedule", "Can I ask my teacher?" It understands what is written in the form of, gives the relevant answers to these questions and guides the users in the most accurate way.



**Figure 21:** Eba Assistant, Source: www.eba.gov.tr

## 4.2 Studies about the Chatbots

According to the study conducted by Seyitoğlu to learn about chatbot perceptions and attitudes, it was observed that users generally think positively about chatbots (2019). Considering that the chatbot concept has been in our lives for a few years, the Y and Z generation participants were able to define the chatbot with concepts such as

"artificial intelligence", "assistant robot" and "virtual assistant". It can be said that both generations are conscious and experienced against this concept. This concept evokes titles such as "short cut", "ready answers", "assistant assistant", "assistant robot" and "personal assistant". All participants consist of people who use and experienced chatbot applications in daily life by changing their frequency. Regarding the fields they use, they stated as "Banking", "Food", "Education", "GSM", "Technology", "Cosmetics", "E-newspaper" and "Ready-to-Wear" sector.

Chatbot applications were mostly used for inquiring invoice information, checking account information, ordering, purchasing and curiosity. Their thoughts on the use of chatbot applications are, in terms of their strengths, "convenience", "speed", "accessibility", "support" and "practical"; Weaknesses are sub-themes such as "security gaps", "perceiving", "not understanding", "mold answers", "lack of information", "limited choice", "artificiality". They stated that it can be used in all sectors. When we consider participants' opinions regarding the future of digital public relations and chatbot applications, it was stated that chatbot applications will develop in a short time, artificial intelligence technologies will affect all areas and new business lines will be formed. Opinions for the future of artificial intelligence and chatbot applications emphasized the importance of following the digital transformation in the competition where everything is progressing very fast and such applications are developing day by day.

Another study conducted by Kurilchik also shows the pros and cons of chatbots with a focus group (2017). Interviewers said that having a chatbot is an opportunity for businesses to engage and contact their customers on a more individual basis. They added that the use of chatbots increases efficiency and is saving for the customers because instead of talking to another human, users can get answers from the bot quickly and easily. Another result of the focus group shows that chatbot can reduce the workload that employees deal with. It directs very simple and time-consuming processes directly to the customers, leaving room for problems that need to be focused on by the customer representative. Chatbots also can be used for other tasks, such as saving documents, in companies. Data that users would share with the chatbot is another topic mentioned in the interview with the focus group. They all agreed that most users would give most of their data, if it is not financial data or passwords. They also added that they are more likely to provide personal data to chatbots instead of a

human. Because they fear that there is a person who can easily reach the information behind if they share them with human. Participants agreed that well-developed chatbots are better because they provide a quick response and are better at starting one-to-one communication. However, some users would prefer to speak to a human rather than a bot because they get annoyed when they receive basic answers for example responses where the chatbot says that it does not know the answer or did not understand the question. In general, it is seen that chatbots take attention with their advantages rather than disadvantages. Følstad and Bjørkli also tried to understand the motives of using chatbots and how companies make them better and the authors prepared a survey for the participants who have experiences chatbots before (2018). It shows that chatbot is the opportunity for fast and accessible help and information. Attendees also say that it is great that they get an immediate response, and not have to wait for a human to answer also it is simple. They say that there is often a waiting time if you are to talk to the employees or the managers but the chatbot always has time.

Another thing that they state that they are more comfortable they interact with chatbots. They added when they call customer service, they are in a way cautious not to ask too simple questions. But with a bot they are encouraged to ask basic questions and they are a bit more open. Also, some of the participants noted that since the chatbot is not a real person they do not feel any pressure for time, so they do not put any limit. Besides the opportunities of a chatbot, participants also talked about the challenging part of the bots. The chatbot does not always understand what the customer intends to ask. They must formulate questions in three or four different ways and the chatbot still does not understand. This issue is in part linked to the limitations of the chatbots. Eventually, a chatbot is a chatbot according to participants and the things that they can are limited.

Schär also shows the interesting result for the usage of the chatbot (2018). The author asked the interviewees that what companies should improve to make them use chatbot services more. Results showed that, individualized advice from a chatbot is highly suggested. This personalized advice includes the bot's ability to answer specific questions in a personal way. (No standard/robotic replies to questions). A fast process is also talked about among attendees.

Moreover, transparency becomes so important when interacting with a chatbot. Furthermore, people expect a modern and responsive design when it comes to chatbot

technology. Lastly, data privacy is an important topic, as people prefer not to have their data gathered without their permission. Generally, the participants have a positive opinion towards taking advice from a chatbot and they see great potential for this technology in the future. However, they are hesitant to share their personal information with a bot, especially regarding payment details. While chatbots have just arrived in our lives, they are still new to many consumers and recent activities around the world have increased concerns about data privacy. The findings of this study show that people do not want their data to be gathered or shared with other people or companies.

In another study prepared by Rieke, participants also suggested some opinions about the chatbot to make them more reliable and trusted (2018). Provide helpful and informative customer service chatbots which provide helpful and informative responses are seen as more reliable. Chatbot's ability to help and its ability to match a question with a relevant response are the most important factors that affect trust in chatbots. About half the participants also think that chatbots character that has personal features increase trust. A human-like style of communication feels better and make people more relaxed. Some participants suggested that the chatbot's self-presentation is important, such as what words it uses during the interaction. Some of the participants also said that how chatbot is developed also affects trust. People care if chatbots use correct language or the visual design is consistent with its purpose. A chatbot should be well made and should not automatically answer with poor grammar to customers.

The participants also reported that the brand that behind the chatbot is also important when it comes to trust. A chatbot for customer service is typically developed to support customers of a specific brand, and users' perceptions of this brand were perceived to be a key factor of trust. Another factor that affects trust is security. It was noted that the user needs to be certain that the security level of the chatbot is enough at some level. The chatbot needs to be safe to use. When customers start using the chatbot they need to be convinced that the security level is designed correctly. The respondents also stated that it would be important for their trust levels how their personal data from the interaction with the chatbot is used and stored.

### **4.3 Chatbot Applications Created During the Covid-19 Pandemic Period**

The Covid-19 Pandemic, which is experienced worldwide and whose effects are extremely heavy, has brought with it permanent changes in terms of marketing strategy in many sectors. In particular, the evaluation of after-sales customer relations management and communication standards from different perspectives has improved. Furthermore, in working systems and business models, the tendency towards contactless technologies and remote working systems has increased. From this point of view, all institutions and organizations have aimed to benefit from technology effectively in Turkey.

In particular, chatbots, which are one of the artificial intelligence technologies that reduce the cost factor considerably thanks to their ability to reach a large number of people simultaneously, enable consumers to communicate whenever they want and however they want. It is stated that the use of chatbots has been mostly in the banking sector in recent years, and since the past months, it has become the focus of attention almost five times, and two times more in terms of e-commerce businesses. In addition to this, it is also involved in developing and using chatbots in the health, education and public sectors. Furthermore, it is stated that the use of chatbots has been adopted and used much more in this crisis period, especially with the Covid-19 pandemic, with the increase in the number of loan applications and loan installment postponement questions coming to chatbots used in the digital banking sector since March. In this way, developments such as prevention of problems such as transportation problems in call centers, inability to respond to answers, not being able to reach everyone at the same time, and providing cost advantage in the crisis period have been observed (İçözü, 2020).

EBA Assistant, brought to life by CBOT, known as Turkey's leading artificial intelligence company, has become the most question-answering chatbot in Turkey with artificial intelligence during the Covid-19 pandemic period. However, Koronabot, which was also developed by CBOT and put into service on March 17, 2020, was developed with NLP and artificial intelligence learning. As a result of the information received from the Ministry of Health and related institutions, it has become an extremely reliable source by providing information about the disease. Having the ability to answer hundreds of different questions simultaneously under 20 main headings, Koronabot provides up-to-date information from official sources. It

can calculate the risk of disease according to the algorithms of the Ministry of Health, thus making great contributions to the fight against the Covid-19 pandemic. As a result of the users using a language as if they are talking or messaging, the chatbot develops a result that is convenient to what is said. Based on this, since the day it was put into service.

In total, with Koronabot, which has been used by 15 thousand people, It was determined that 60,000 dialogues were carried out. The percentage distribution of the questions and main topics in these dialogues is as follows:

- Do I have a corona virus?
- How is Corona transmitted? How can I be protected?
- Number of cases
- What is Corona? Is there any medicine or treatment?
- Social chats

In addition to the health, education and banking sectors, Getir application, which is one of the prominent brands in providing people with their needs during the covid-19 pandemic period, also created a chatbot that provides a very healthy solution by offering options in line with the demands and suggestions of consumers. Moreover it is a chatbot that shows an example of communication. This chat robot, which quickly detects and responds to every spoken or written order, has recently been used by other similar brands (Yeren, 2019).

The wave of digitization will gain momentum after the pandemic. This period will bring radical and lasting changes in both the operational and service models of companies. In the new period, the same quality can be maintained with the new digital tools and efficiency will increase in our lives the great wave of digitization that has already begun in this new world due to Pandemic. Even today, it can be seen that companies that have established their digital infrastructures have adapted very quickly to the new situation and continued their services without interruption. It is seen that especially banks in Turkey put forward a rapid adaptation process in this regard. This is the result of their having an advanced digital infrastructure. We are in this period when it is very difficult to make predictions. There are forecasts and different scenarios, which point to various levels of revenue declines for companies. This shows that costs will have to be reduced and companies will have to continue on their way as much



more efficient structures. Digitization is no longer an option but a necessity for companies of all sizes. In this great digitalization wave, dialogical artificial intelligence has a serious place. Because this area offers companies tools at the center of remote working models and digital service models that both employees and customers can use, get instant answers to their questions, make transactions instantly. According to researches, virtual assistants and chatbots increase the speed of entry into our lives in this sense and that the near future will be shaped within this framework. Although examples of chatbots are not seen in Turkey yet, it is stated that a chatbot will be created that will meet the needs of customers in every field in the future (Bank customers have Embraced the Chatbot, 2020).



## **CHAPTER 5**

### **UNDERSTANDING THE METHODOLOGY**

#### **5.1 Objectives and Aim of the Research**

A Chatbot, which has developed with new technology and is now being used in customer service, is the main basis of this research. The general purpose of the study is to learn the perceptions of users about chatbot technology. In order to reach that goal, the research will highlight;

- The perceptions of consumers about chatbots,
- The contributions of chatbots in a customer-brand relationship,
- The disadvantages and advantages of chatbots,
- The qualities of an effective chatbot for customer.

Another aim of this study is to contribute to the literature because there are not enough studies on this subject in Turkey. The research about chatbots is generally related to engineering and its design process and does not include the communication aspect of the chatbot. This study will focus on chatbots and customer relationship and learn what consumers think and the ideal chatbot design desired from brands.

#### **5.2 Research Questions**

This study is to explore and identify perceptions of users about chatbots for customer service. The primary and secondary research questions for the study are as follows;

1. What are customer perceptions about chatbots?
- 1.2 What are the contributions of chatbots in the customer-brand relationship
- 1.3 What are the disadvantages and advantages of a chatbot?
- 1.4 What are the good qualities of an effective chatbot for the customer?

#### **5.3 Method**

For the analysis, an exploratory research design is chosen to gather rich in-depth insight. Exploratory research design is a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions. Exploratory research focuses on deploying an agenda through an interview guide (Adams, 2015). The reason for choosing this method is that users do not experience

chatbot much in their daily lives, even if they know what it does or the word meaning. This is exactly the reason for using an exploratory research design. Therefore, I have the opportunity to conduct deep analyses with this preferred method to provide participants with additional information about the chatbot and have them use a sample chatbot before starting the questions. The results will be analyzed by using the descriptive analysis method.

#### 5.4 Participants

There are ten interviewees for this research and participants consist of both students and employees. It has a profile in the age range of 22-33. The working group holds a four years of a university degrees. Participants were chosen from people who have a high education level and are interested in innovations. All of them live in Turkey. Only one is both Dutch and Turkish. The interviews lasted an average of 45 minutes and since we were in the covid period, they were made over Skype and Facetime. With the consent of the individuals, voice recordings were obtained and transcribed. The information of the users can be found below.

**Table 2:** Demographic Characteristics of the Participants

Participant	Gender	Age	Occupation
P1	Male	31	Working
P2	Male	23	Working
P3	Female	25	Working
P4	Female	22	Bachelor's Degree Student
P5	Male	29	Working
P6	Female	25	Master's degree Student
P7	Female	26	Working
P8	Female	30	Working
P9	Female	22	Bachelor's Degree Student
P10	Male	25	Working

#### 5.5 Data Collection

All interviews were conducted based on a predefine interview guide. The guide included questions on the following topics:

- Chatbot experience
- Feelings about the chatbots
- Trust in chatbots
- Brand-customer engagement with chatbots

- Perceived benefits of chatbots
- Perceived challenges of chatbots
- Features that chatbots should have.

**Table 3: Categories and Interview Questions**

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**Chatbot experience**

Do you have an interest and curiosity about chatbots?

Have you ever used a chatbot before?

**Feelings about the chatbots**

How does it feel to talk to software instead of people?

**Trust in chatbots**

Would you trust the solutions you get from the chatbot? -

Do you prefer a person or a chatbot when sharing your data?

**Customer-brand relationship with a chatbot**

Does the chatbot increase your interest in brand?

Would you like to see the chatbot in the services of the brands?

Does chatbot contribute to brands?

Would chatbot create a positive effect on brand and consumer relationships?

**Perceived benefits of chatbots**

What do you think the general benefits of chatbot for a user?

In which service area can Chatbot work more?

**Perceived challenges with chatbots**

What could be the challenging aspects of chatbots?

**Features that chatbots should have**

What would be the features you would pay attention to in a chatbot?

Would you prefer the chatbot to have name and character?

**Today and future use of chatbots**

Do you think today consumers are ready for this technology?

Do you see any potential for chatbot in the future?

---

Each category above seeks answers to the research questions prepared. The primary research question, what are customer perceptions about the chatbot was examined by questions in the Chatbot experience, Feelings about the chatbots and Trust in chatbots categories, respectively. The question of What are the contributions of chatbots in the customer-brand relationship is associated with the Brand-customer relationship with chatbots category. The third research question, what are the disadvantages and advantages of the chatbot, was examined under the Perceived benefits of chatbots, Perceived challenges or problems with chatbots category. The last question, what are the good qualities of an effective chatbot for the customer, was explained with the

category ideas about the features that chatbots should have. The last category, the today and future use chatbot, is not prepared for questions. The purpose of this question, which is created as an option, is to present ideas about the present and future of the chatbot and be the basis for the studies.

The table below explains the above category and question relationship.

**Table 4:** Research questions and categories

What are customer perceptions about chatbots?

- Chatbot experience
- Feelings about the chatbots
- Trust in chatbots

What are the contributions of chatbots in customer-brand relationship?

- Customer-brand relationship with chatbots

What are the disadvantages and advantages of a chatbot?

- Perceived benefits of chatbots
- Perceived challenges or problems with chatbots

What are the good qualities of an effective chatbot for the customer?

- Features that chatbots should have.

The purpose of categorizing the questions is because there are many questions, and it would be easy to explain them under categories. The answers were explained under the categorization system's titles. Interview questions and categories were adapted from the research by Følstad and Bjorkli (2018). They provided insights to brands by measuring trust in chatbots by interviewing 13 people. They also preferred exploratory research design and conducted a semi-structured interview study. According to their findings, chatbots need to be trusted by users to understand the potential in chatbots for customer service. Users' trust in chatbots for customer service was found to be affected by the quality of its interpretation of requests and advise, its human-likeness,

its self-presentation, and its professional appearance.

During the interview, the participants were first encouraged to experience a chatbot and then tell their ideas about this topic. The interview guide also included a brief introduction about the chatbot since customers did not know what it was used for, summarized the study purpose and a debrief for the participant to ask questions and make additional reflections. All interviews were conducted in Turkey and questions were asked in Turkish. The interviews were recorded, upon the participants' explicit consent, and transcribed. Analyses were done on the transcripts, following Ezzy's guidelines for thematic analysis (Ezzy, 2002). Coding themes were identified, consolidated and applied for coding the data. The data associated with each particular code were then made the subject of a final qualitative interpretation. The chatbot, which is used as the sample, is a web-based chatbot named Zeki and created by Vatan Computer, which sells technological products in Turkey and is highly preferred. First of all, Zeki, a chatbot selected as an example, was used for 20 minutes before starting the questions in the research, and then the questions were asked. This is because the users do not know exactly what the chatbot technology is, so they can present them as examples and not have difficulty answering the questions. The study both learns the perceptions about the chatbot service and suggests implications for practice and future research.

## **5.6 Zeki and its Use in Interview**

The computer selection process can take a lot of time. Users who do not have any technical knowledge about technology can easily find a suitable computer without having to ask for help from anyone with the help of Zeki which is created by Vatan Computer. All they have to do is answer the questions asked while chatting with Zeki. Zeki is an artificial intelligence application developed to learn the needs of consumers and help them choose the most suitable computer for them. Zeki learns the usage habits and needs in conversation and then offers the most suitable computer options to the user. Zeki is a project with a very comprehensive algorithm behind it, and the project took about a year to develop. In artificial intelligence, Turkish natural language processing (NLP), interpretation and decision tree algorithms work together. Sales performances of computer suggestions made by Zeki are calculated instantly and taught back to the system (ML). Thus, Zeki constantly improves its sales performance. Another important feature of Zeki is that all interface animations are also made with

codes. Zeki continues to learn new things and improve himself every hour. As a result, Zeki, received two gold awards together. Vatan Bilgisayar achieved great success in Effie Turkey, which is recognized as one of the most prestigious awards in the marketing and communication industry by advertisers and agencies worldwide. In Effie Turkey, Zeki was awarded two gold Effie awards in the categories of "Those Who Walk with Data and "Online / Offline Retail and Marketplace". It also won the silver award in the experimental and innovative award category, and the bronze award for the best campaign effectiveness.

The first reason for choosing this chatbot is that it complies with the research results about how chatbots should be. For example, research by Schär first found that if a chatbot is sincere, the more trust in it (2018). When we examine its style, he seems friendly and talkative and speaks like a friend to appeal to the Turkish customers. In addition, according to the results of the research, the name and character features of a chatbot indicate that it will stand out in terms of the service it provides. Zeki has both a name and a character that matches his name. When our interviews were first experienced with Zeki, they paid attention was its name and character. Likewise, according to the results of Rieke's research, chatbots that has a friendly and sincere manner make people happy and relaxed (2018). While helping the other person, Zeki uses terms that people use in their daily life when having a normal conversation with a friend creating basic and familiar experience among the human and bot. It makes the other person feel like talking to a person. When other chatbots used in Turkey are examined, (Getir, Garantibank chatbot, Avis) these chatbots do not have a conversation and only leaves link to help the customers. They only perform a task rather than mutual communication so the reason why clever was chosen for this thesis is to allow users the opportunity to talk with a bot.

## CHAPTER 6

### RESULTS

#### 6.1. Findings

As a result of the interviews with the participants, the data were analyzed and explained under categories. Eight categories were used and information was provided by including the opinions of the participants. Tables are added under each category and the results are summarized.

##### 6.1.1 Customer Experience

First of all, the participants were asked whether they have used the chatbot before to learn their experiences with it. The participants who used it before also explained why they used it and their thoughts on the chatbots performance. According to the results of the research, five participants stated that they had used chatbot at least once and the other five people have never used it. The users stated that they used chatbots on e-commerce for online shopping, but they generally complain that the chatbots they use are not well developed and do not understand words in general. For example, in the following:

*“Technology in Turkey is not very advanced yet, so the chatbot performance is not high because they do not have a professional infrastructure. Therefore, it would not be right to expect today’s chatbots to understand us very well with these technological conditions”* (P6, Female, 25)

*“I couldnt solve my problem when I first used it, but after a while, I used it again and I was able to solve my problem easily. This is actually about how much the chatbot has improved over time”* (P3, Female, 25)

It was stated that the reasons of those who do not use it are generally biased because chatbots in Turkey are not good in terms of quality, and some do not prefer it because they do not know exactly what it is.

*“I didn’t use it because brands have not yet used chatbots in their strategies. I think*



*the reason for this is both the technological infrastructure and the fact that consumers do not make such a request from the brands.” (P5, Male, 29)*

*“I was hesitant to use it because I dont know exactly what chatbot does” (P1, Male, 31)*

Participants were asked about their interest and curiosity towards the chatbot idea. 2 people indicated that they had no interest or curiosity for the chatbots.

*“I never felt like I needed them so I’m not interested” (P2, Male, 33)*

*“Obviously not because I would rather talk to a real person” (P6, Female, 25)*

Five people stated that they always have an interest in chatbot and this idea makes them curious as in the following:

*“Yes, especially since there are so many e-commerce opportunities nowadays, we need chatbots in these areas. We like a service where we can get answers to our questions in more detail and 7:24, so it would be nice to have a chatbot on the other side.” (P10, Male, 25)*

*“It is not something that I use and experiences actively, but I am in the advertising industry so I have an interest since, it has an important place in our industry.” (P3, Female, 25)*

The other three users stated that interest in them increased after they first used the chatbot.

*“I didn’t have any interest or curiosity, but after you let me use the chatbot, I liked it a lot. I think it must already be very common because dealing with people is very difficult.” (P1 Male, 31)*

*“It didnt exist until you asked, so at least my curiosity did not occur, but after this research, my curiosity arose” (P7, Female, 26)*

According to the number of participants in this question, it is seen that although there are negative thoughts, the majority have a curiosity and that their curiosity develops after experiencing it once, if not before. The problem here is that when they hear the word “chatbot”, the first thing they think about is not well developed. Because of it, they hesitate to use it or experience it.

**Table 5: Chatbot Experience**

Participants	Chatbot experience
5 P	“I have used it before”
5 P	“I have not used it before”
<hr/>	
	<b>Interest and Curiosity</b>
8 P	“I am interested”
2 P	“I am not interested”

### 6.1.2 Feelings about the Chatbot

Participants were first asked how it would feel to talk to software instead of a person. The participants main headings: relaxed, anxious, restrained, neutral, bad.

Five of the participants stated that they felt more comfortable with the software. Some participants noted that since the chatbot is not human they do not feel any time pressure. Hence, they can take the time they feel necessary to prepare questions and read answers.

*“In fact, talking to a chatbot makes you feel comfortable because you cannot get very clear answers when talking to one of the customer services, you feel a constant time pressure on you because they want to hang up the phone immediately but you can talk to the chatbot as much as you want and ask all the questions you have in mind.” (P9, Female, 22)*

Specifically, it was reported that when asking questions to a chatbot, you don't feel being judged even when asking questions that one may consider stupid or silly.

*“It is a shame to seem ignorant when asking some questions so you can't ask every question to a human that you wonder so with a chatbot, you can be a bit more open” (P4, Female, 22)*

*“It would make me more comfortable because I wouldn't mind what chatbot thinks of me so I don't have to pay attention to the words I use or my tone of voice” (P8, Female, 30)*

2 participants stated that they were neutral, and they did not see much difference because the software was also created by a human as stated in the following:

*“They imitate humans because they are programmed so I don't see much difference” (P7, Female, 26)*

*"I don't feel different because we are in constant contact with software like this, like Siri Alexa... so it didn't give me a very different or technological feeling because I couldn't find it strange since it is in our daily lives in the different ways."* (P5, Male, 29)

One of the participants stated that he might be worried if the chatbot might not understand him.

*"It makes me feel worried, so I'm afraid if the process will be completed. For example, when I was talking with Zeki, I wrote different sentences and he did not understand me, which worried me if it would be a waste of time"* (P3, Female, 25)

One of the participants stated that she would feel restricted.

*"There is no interactive communication, so people feel a little uncomfortable because it is a one-way communication, I mean I feel restricted, but if I can ask questions, my opinion will change."* (P6, Female, 25)

One of the participants stated that he would feel bad as in the following:

*"It definitely feels bad. For example, if it doesn't understand me and I have to repeat things, I will feel extremely bad. I experience the same thing when talking to people anyway. I don't tolerate things that don't understand me. "* (P2, Male, 33)

In the rest of the interview, the participants stated that the main reason they felt restricted and bad was not the idea of it being a "chatbot" but because its features were not "developed". They added that they will not have such fears if they see an advanced and capable chatbot.

**Table 6:** Feelings about the Chatbots

How it would feel to talk to software instead of a person.	
Relaxed	5 P
Anxious	1 P
Restrained	1 P
Neutral	2 P
Bad	1 P

### 6.1.3 Trust in Chatbots

In this section, participants were asked whether they would trust the solutions they received from the chatbot. Unsurprisingly, its ability to provide helpful and informative responses was seen as a key factor affecting trust in customer service chatbots. This was reported by 7 participants, and they all stated that since it is software and is programmed, a chatbot is less likely to give the wrong answer than human as in the following:

*“I trust the solution it gave me more than human beings because people do not have much technical knowledge, they cannot direct customers very well.”* (P9, Female, 22)

*“I trust because it does not provide me a wrong solution, there is a software in the background, there is a process in the background, it transmits the existing information to me, it is not possible for it to be the other way around.”* (P3, Female, 25)

Participants (3) who stated that they would not fully trust it said that it was not because it was a chatbot, but because it developed. A chatbot should first get to know and ask deep questions to learn what exactly you would prefer. They stated that they would pay attention to the proposed solutions by a chatbot, but since they always do research before purchasing, the chatbot will guide them.

*“I wouldn't fully trust it, but of course I would take a look at the solutions that are offered, I would research how correct and how good it was for me, frankly, I wouldn't ignore it.”* (P2, Male, 33)

*“If I talk about Zeki chatbot example, his solutions were not very good because he did not ask me very detailed questions in a personalized way, but if the chat bot really does deep analysis and asks me logical questions, if it knows me very well and offers a solution and then I would trust.”* (P6, Female, 25)

Another issue related to trust is whether users prefer chatbots or humans to share personal data. In this question, which was prepared by considering data breaches and data sharing concerns of users today, five users stated that they felt the chatbot more reliable in this regard as in the following:

*“If you ask which one I would be more comfortable with, I would be more comfortable with chat bot because people are emotional and maybe they got angry with me at that moment and may abuse my information. The idea is scary and we see examples of it in the customer service area”* (P5, Male, 29)

Also a chatbot for customer service is developed to support customers for the particular brand, and users perceptions of this brand were argued to be a key determinant of trust. The brand was seen as potentially affecting trust through branding of the chatbot as noted by 2 of the participants:

*“This is actually a very difficult question for me. The brand that creates the chatbot is very important. At this point, of course, I want the other to be a bot while giving personal data, but I pay attention to the brand that creates it, so if it is a brand that I know and experience, I would like to give my personal data to every chatbot.”*  
(P3,Female, 25)

Tree users stated that they could give personal information to both.

*"Frankly, it doesn't matter because if you talk to a person and chatbot, both of them will save your information to a system."* (P2, Male, 33)

**Table 7: Trust in Chatbots**

<b>Trust the Solutions from the Chatbot</b>	
‘I would trust Chatbot’:	7 P
‘I wouldn’t trust’:	3 P
<b>Sharing Personal data</b>	
Chatbot:	5 P
Human and Chatbot:	3 P
Depends on the brand:	2 P

**6.1.4 Customer-Brand Relationship with Chatbots**

In this topic, the main goal is whether using chatbots will contribute to the relationship between the brand and the consumer. A total of four questions were asked. In the first question, does the chatbot increase your interest in brand, all the participants agreed and stated that they would increase their interest because that brand will move forward in research and development and consider it as an innovative brand open to technological developments.

*“Yes it increases interest. Not only for the brand I use, but it can also even increase my interest in a brand that I have never used before, it can make it more attractive [...]”* (P1, Male, 31)

*"I think of the brand as following the innovations. It becomes like a brand that focuses on the new rather than the old, it seems to be open to development [...]" (P10, Male 25)*

In the second question, would you like to see the chatbot in the services of the brands, all of the participants agreed and stated that they want to see this service in the brands they use in their daily life. The participants said that they do a lot of shopping especially during the corona period from e-commerce sites and have lots of problems but contacting customer service for simple problems is very difficult and takes a long time.

*"Sometimes we have a problem and we call customer service and we say that they should report these problems to the appropriate places about the brand, but they do not. For example, if there is a chat bot, if we tell it about this situation, the data will be examined, the purpose of its creation is to examine the feedback received there, so I would like to see it. "(P5, Male, 29)*

Participants also stated that they sometimes had difficulty using the sites and that having a chatbot to help them instantly would make their lives easier.

"Turkish applications are not very advanced for example e-government. You don't know much about what to do on these apps.. it could be better if there is chatbot that guides us" (P6, Female, 25)

The third question is does chatbot contribute to brands? In this question, it was asked the participants about the chatbot's contribution to brands, and it was stated that the contribution would be related to economic conditions. The first reason for this is to gain potential customers. If the chatbot is used as a good marketing tool, it can generate many sales and expand its customer base. The other reason is that it will be profitable in terms of the number of employees. It turns out that since the chatbot does more than one thing at the same time, it will not be necessary to employ too many people as stated in the following:

*"Companies can obtain a network of potential customers, sales of products or services may increase. In addition, instead of employing 400 people in the call center, the number of employees can be reduced by using a chat bot. As a result, they do not have physiological needs, so companies would make a lot of profit." (P1, Male, 31)*

*"For example, companies spend a lot of money on marketing and it usually doesn't*

*work at all. Brands can develop strategies that work better, so they can do better marketing for less cost.” (P8, Female, 30)*

One of the participants stated that these sales would increase not only in the country where they are located, but if they are designed in different languages, sales will increase all over the world and the international awareness of the brand will increase.

*“Of course, the company's sales will increase, but we should not consider this sales situation only in terms of Turkey. We can think of this in the international arena and maybe the chat bot can sell a product to a person abroad, if you design a chat bot in different languages, a foreign person will use your brand's chat bot” (P3, Female, 25)*

Another contribution to the brand is that products and services can be better developed with the feedback received. For the feedback provided to the chatbot, brands can offer a good product or service according to what their customers want.

*“More useful data is collected and with this data, brands can develop better service or products. If a company makes a mistake in one area, it can immediately notice it and the next product it releases will not repeat the same mistakes” (P5, Male, 29)*

The 4th question chatbot would create a positive effect on brand and consumer relationships. In this question, all of the participants stated that it would definitely have a positive effect, but it was related to how successful the chatbot was. They stated that if a useless chatbot is created, the relationship between them and the brand will be negatively affected.

*“If the brand's chatbot is really good, my relationship with it will be really positively affected. I prefer to shop from that place, I prefer to see service because this is a communication and communication is very important for a brand [...]” (P10, Male 25)*

*“Even if you make the best product in the world, but you can't represent it well, it would be a disaster for the brand. That's why if I use a good chatbot, the relationship between the brand and me will be positively affected, but if there is a useless chatbot, it means that the brand doesn't care and didn't show any effort, then of course there will be a negative relationship between me and my brand” (P8, Female, 30)*

People state that the negative and positive feelings are all about how much a chatbot has developed. According to them, creating a chatbot is one of the steps that shows

how advanced a brand is, so brands should do good research when creating chatbots.

**Table 8:** Brand-Customer Engagement with Chatbots

Questions	Answers
Does the chatbot increase your interest in the brand?	Yes (10P)
Would you like to see the chatbot in the services of the brands?	Yes(10P)
Would chatbot create a positive effect on brand-consumer relationship?	Yes (10P)
Does chatbot contribute to brands?	
	Gain Potential Customers Increase Sales Reduction of Cost International Brand Image

### 6.1.5 Perceived Benefits of Chatbots

Respondents were asked about the benefits of a chatbot for users in general. When the results were analyzed under headings, a total of 4 main benefits were determined. The most commonly cited benefits are listed in the order below.

- It is fast (9P)

*"Speed.. if a really high-quality chatbot is designed, it will benefit more than a human service, especially in terms of speed and practicality."* (P10, Male, 25)

- It has the ability to think analytically (5P)

*"Chatbot contains more information and data and it creates solutions by combining the data very quickly. A human brain cannot do this very quickly."* (P1, Male, 31)

- Easy to reach (9P)

*"The fast way to get information because it is easier to reach a chatbot than to reach a person, you can also reach chatbot 7-24, but you cannot reach human employees after a certain time."* (P4, Female, 22)

- More knowledgeable and less likely to make mistakes (8P)

*"I think it can provide more detailed and clear information to the user because sometimes when you connect to customer service they make you wait in line and goes and asks other people. They don't provide correct information even though they research."* (P7, Female, 26)

Another question was about which field chatbot would work best. When the participants were asked which areas chatbot would work best in, basically four topics



emerged. While 7 participants conveyed both e-commerce and banking sector, 2 participants stated that tourism and 1 participant could be in government related apps.

-E-commerce

*“I think the e-commerce industry, chat bot wont only about solves a problem, it will also be a place where you can get advice in the future on the e-commerce”* (P9, Female, 22)

-Banking

*“I think it could be banking. I worked in the banking sector and there is too much wrong data given to customers by customer service, but with a chatbot, it is nearly impossible to give the wrong data to the customer since it contains related information inside it.”* (P7, Female, 26)

*“It works very well in financial fields because people don't understand finance very well. They are afraid to ask simple questions to a person but if there is a chatbot available, they won't hesitate to ask simple questions about finance.”* (P10, Male, 25)

-Government-related apps

*“It can be very useful in government apps, since they are clear in terms of using and there is not much guidance about how we can use them”* (P6, Female, 25)

-Tourism

*“It can work in the field of tourism. It can make reservations, arrange flight times, would list available hotels...these are simple things so a chatbot could do this better”* (P5, Male, 29)

**Table 9:** Perceived benefits of chatbots

Benefits of chatbots	Fields that Chatbot Would Work Best
It is fast	E-commerce
It has the ability to think analytically	Banking.
Easy to reach	Government related apps
More knowledgeable & Minimum Mistake	Tourism

### 6.1.6 Perceived Challenges with Chatbots

When we asked the participants about the challenging aspects of the chatbot, the main challenge with chatbots for customer service mentioned by the participants (9) was interpretational problems. That is, the chatbot does not always understand what the customer intends to ask. For example, as in the following participant report.

*“It is not always the chatbot understand what I say. I have to ask the questions in different ways to make it understand me. Then it is not very useful and I rather want to talk to a human.”* (P10, Male, 25)

Users think that to prevent this situation, the chatbot should be constantly improved and nurtured as a result of the feedback. They conveyed that this situation can be prevented if the brand educates and develops like a human being.

Four of the participants mentioned that there is one-sided communication and that people cannot ask it detailed questions. Chatbots are implemented, and do not have the ability for answering complex questions if brands cannot create good quality of a chatbot as in the following:

*“You can’t have a deep conversation with chatbot, and communication can be one-sided as mostly it asks you questions more than you ask.”* (P1, Male, 31)

One participant stated that creating a chatbot costs some money so the brand that creates it should have good economic conditions and not create something cheap.

*“Brand should consider its cost and should pay money to create useful chatbots. For this reason not every brand can have a chatbot in terms of quality”* (P5, Male, 29)

One of the participants stated that there might be difficulties as a target audience because not everyone understands technology and should a certain education level to use it.

*“For example, if you are not good with technology, you will have difficulty even using it. The people who use chat bot should be at a certain level, so the challenging part is that it does not appeal to everyone [...]”* (P1, Female, 22)

**Table 10:** Perceived challenges with chatbots

- |   |
|---|
| <ul style="list-style-type: none"><li>• interpretational problems</li><li>• one-sided communication</li><li>• Cost money in the creation process</li><li>• The target audience is limited</li></ul> |
|---|

### 6.1.7 Necessary Features of Effective Chatbot

We asked the participants about the features they will pay attention to in the chatbot. For this, two questions related to the subject were prepared. The first question, What would be the features you would pay attention to in a chatbot? The participants stated that they would pay attention to its development, graphic design features, the words they used, whether it was application or web-based.

- Development (9P)

*“First of all, I would check how advanced it is. If it has a simple use, I will not prefer it” (P8, Female, 30)*

- Graphic design features (6P)

*“It shouldn't have a simple look; it should be a professional design, it should have an elite quality look” (P10, Male, 25)*

*"Design is very important; it will not be a flat screen, it should be interesting and exciting, it should be a nice design with graphic features" (P1, Female, 22)*

*“The colors and style it use is very important; it should make me feel close to the chatbot, it should have a sincere and entertaining style” (P3, Female, 25)*

- The words (8P)

*"I should be familiar with the words used by the chatbot, that is, it should not be difficult to talk to me, it should not use too many technical words, it should be simple "* (P5, Male,29)

- Application or web-based (4P)

*"I pay great attention if it is an application or based on the web. I do not spend much time on the computer and I don't like to use websites so it should be created as an app. "* (P10, Male, 25)

The second question is would you prefer the chatbot to have a name and character? And we asked the participants whether a chatbot has human-like features. While all of the participants (10) preferred the chatbot to have a name, they stated that character style depends on the area that the chatbot use. 7 participants prefer a friendly and funny character as in the followings:

*“It should definitely have a name and a character. If it is sincere, for example, it will take more attention. After all, since these things try to replace people, so if it has a name and character, we will adopt it faster.” (P5, Male, 29)*

2 participants stated that this situation should change according to the area and situation as in the following:

*“It should have the name, but the character issue definitely depends on the sector in which it is used.” (P10, Male, 25)*

*"It should have a name, but it does not need to be always fun when using it, it can be serious in some questions, it can be fun in some questions, so there is no need to focus on just one thing as a full character." (P6, Female, 25)*

One person stated that chatbots should always be serious.

*“I think it should definitely be serious so Siri and Alexa’s seriousness should also be there. For example, they don't have any jokes or conversations like a human. They sound like straight robots and people still love it and use it a lot "(P1, Male, 31)*

**Table 11:** Features that Chatbots Should Have

What would be the features you would pay attention to in a chatbot	
Development	
Graphic design features	
The words	
Application or web-based	
Would you prefer the chatbot to have a name and character?	
It should have a name	10 P
It should have a sincere character	7 P
It should have a serious character	1 P
It depends on the area and situation	1 P

### 6.1.8 Today and Future use of Chatbots

This section is additional questions and is intended only to learn the general opinions and thoughts of the participants. Due to the new development of the chatbot and its use will increase in the future according to research, the ideas on this subject have been wondered. In the first question, it is asked if consumers are ready for this technology. All of the participants (10P) stated that this situation would change especially according to age and they all stated that y and z generations are ready as in the followings:

*“This situation definitely changes according to age and education. It cannot appeal to all segments, not everyone is ready for this, especially the elderly in Turkey, so at this point, the y and z generations stand out actually ” (P10, Male, 25)*

*“We are now in the Covid era, so we have already entered the digital environment. and we will not come out of this environment again, so even at this time, brands are trying to do a lot in terms of technology and I saw a very rapid adaptation in people, people adapted to the digital environment immediately” (P5, Male, 29)*

When the participants were asked if they see any potential for the chatbot in the future, they (10P) stated that their usage of it would definitely increase and attract more attention in the future.

*“If we had talked about this situation before the pandemic, I would say it step by step, but since the pandemic entered our lives, this change will happen fastly” (P1, Male, 31)*

*“Absolutely, everything that is not digital is considered as old-fashioned. The reason why it is not developed in Turkey is that there is no target audience to understand it, a large part of the society is uneducated but it definitely has a lot of potential as the Z-generation will be active in the future” (P6, Female,25)*

As stated above, the participants said that the chatbot would definitely be used a lot in the future, especially by the z generation, and this has actually proven it in this pandemic period we live in. With the pandemic period, consumers have adapted to the digital environment very quickly. All these reasons show that the potential of the chatbot is quite high, and participants stated that brands are even late to use it.

## **CHAPTER 7**

### **CONCLUSION AND FUTURE RESEARCH**

#### **7.1 Conclusion**

In today's rapidly changing world, brands that use the most different and innovative communication strategies greatly impact on customers. Therefore, brands need to offer the best communication methods as well as the best product to its user. With the advancement of artificial intelligence, new and more digital strategies have emerged. Chatbot is one of these products. Chatbot is an artificial intelligence tool that engages users by messaging applications, websites, mobile apps or over the phone.

This research presents an exploratory interview study to answer the questions of customer perceptions about the chatbot, the contributions of chatbots in the customer-brand relationship, the disadvantages and advantages of a chatbot, the good qualities of an effective chatbot for the customer. In total, ten people were interviewed over Skype and Facetime for an average of 40 minutes, and 16 questions were asked under eight categories.

When the general perceptions of the users towards the chatbot are examined according to the results obtained, it is seen that most of them approach the chatbot idea positively. People who approached negatively stated that their opinions would have been very different if they had used a chatbot that met their needs before, but they did not see a quality and advanced chatbot in Turkey. Most of the participants are interested and curious about chatbots and their curiosity increased after I made them use it, even if not at first. This shows that to familiarize customers with the idea of a chatbot, it is necessary to give them a good experience.

Half of the participants stated they felt comfortable when talking with a chatbot, while the other half felt anxious, restrained, bad, and neutral. Users who felt comfortable stated they do not feel any time pressure as they talk with customer service in real life. Also, there would not be a situation that judges and embarrasses them because of what they say or do. The users, who felt restricted, anxious and bad said that chatbot is unable to answer every question so they would not get the answers they want. Chatbot

also cannot understand every word so they would have to repeat or formulate the sentences which is time-consuming. This finding shows that it is all related to how chatbot is improved. In another research called What Makes Users Trust a Chatbot for Customer Service by Følstad and Bjørkli, it also revealed the same result (2018). It is stated that users will be more comfortable with the chatbot because they will not be embarrassed when asking simple questions and they will use as much time as they want to ask questions. The other result of this research is that users will feel uncomfortable when they have to repeat something.

Another question is related to trust. The majority of the participants stated that they would definitely trust the solutions of chatbot because the information in the chatbot is already included and they will bring it together very quickly and provide appropriate solutions. Hence, it is unlikely that it will give false results when you compare human. On the other hand, users who would not trust the solutions said that chatbot would just be a guide. In the data sharing process, most participants said that they prefer the chatbot because they do not trust people and they argued a lot when talking to customer service, so they worry about their data being abused by people. In Kurilchik's research the same result is also found and participants also added that they are more likely to provide personal data to chatbots instead of human (2017). Others stated that this depends on the brand that created the chatbot. If they trust that brand, then they will prefer the chatbot. This is also the same result with Følstad and Bjørkli research (2018).

The benefits of the chatbot to the brand and consumer relationship is another research question. All participants stated that their interest in the brand using chatbots would definitely increase because brands using such new communication strategies will create an innovative image. For this reason, all of the participants said that they definitely want to see the chatbot in the communication strategies of the brands they use since it would create longer and healthier relationships with customers. They also said that it is necessary to be careful when creating a chatbot because if an unsuccessful chatbot is created, this relationship may turn from positive to negative. In the study of Chatbot Personality and Customer Satisfaction by Haan, he concluded that brands that make innovative and different choices in their communication strategies and that use chatbots have a positive effect on their consumers (2018). In addition, when users were asked about chatbots benefits to brands, they said that brands would gain a potential customer network, sales would increase considerably, marketing costs would decrease

and the brand image would increase in the international arena.

Another question is the advantages and disadvantages of chatbots. Its advantages are much faster than a human. It has the ability to think analytically, it is easier and faster to reach, it does not have physical needs as a human, and it can work 24/7. Also, they are more knowledgeable and less likely to make mistakes. On the other hand, it is more difficult for a person to learn something and bring it together in his mind and offer a solution, because the chatbot is a machine. It will do it quickly and accurately. As a disadvantage, chatbots do not understand different words, there will be a one-sided communication, it does not appeal to everyone, and it required a high budget to create an effective chatbot. In the study of Weißensteiner on Chatbots as an approach for a faster inquiry handling process in the service industry, it is also concluded that chatbots are both faster and less likely to make mistakes while serving, but they do not understand every word written and are expensive while being developed on a budget (2018). When we asked which areas would be more useful, they said that it would be in banking, e-commerce, government applications and tourism.

Finally, the last question is about the features that an effective chatbot should have. The participants said that it should be very advanced, its graphic features should be remarkable, elite and nice, the words it used should be simple and daily life language, and it should definitely be developed as an application. The Chatbots results as a Digital Marketing Communication Tool research by Kurilchik also found the same result and the participants stated that the design of chatbot should be nice and creative and words should be simple to understand (2017). In addition, all of them said that chatbots definitely have a name that suits the chatbot and the brand's purpose. While most of them said that they want a sincere and fun character, others stated that the character structure changes according to the field and the questions asked. Ciovati stated in his study on Personalized Dyadic Chatbot Conversations that in order for chatbots to be effective, they should have human-like features and their character should be designed sincerely (2020). According to this research, one of the main solutions to increase chatbot effectiveness is the ability to attach to the agent specific personality traits to make them more similar to humans.

The last question was asked in terms of suggestions. Participants were asked whether people are ready for such a technology today. All of the users stated that especially the y and z generations are ready, but older people will have difficulties. They stated that



there is a great potential for the future of the chatbot, especially in the pandemic period we live in. They see that people easily accept the digital environment.

With this study, it is aimed to highlight the general perceptions of customers. Future research can be prepared with detailed questions including more people.

## **7.2 Limitations and Future Research**

The study aims to provide an initial basis for understanding customer perceptions of chatbots. This aim has been pursued through an exploratory interview study, a consequence of which are some important limitations. In this section, I will in particular address three such limitations. First, the study is relatively small scale, involving 10 participants. This number can be increased in future studies and studies can be carried out on a wider population. The second limitation is that the number of people who know the concept of chatbots in our country is low, so it is difficult to choose a method such as a survey for large audiences for this study. The third limitation is that unlike Europe and America, there is no high quality and well-developed chatbot in our country, which negatively affects the users' viewpoint towards the chatbot. As mentioned in the literature, chatbots are used professionally in many different fields in other countries, but unfortunately, these studies have only just begun to be used by big brands in Turkey. Therefore, future research is needed to validate and expand on the findings of this study, through the involvement of a larger number of users. Hopefully, the findings from this study may serve as a basis for establishing such a framework.

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