

# Chatbot usage in e-retailing and the effect on customer satisfaction

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## **ABSTRACT,**

*Chatbots are one of the main source of interaction with customers in e-retailing and customer experience is key to business success. For this reason, this paper examines how selected retail companies use Chatbots and whether customers are satisfied with the chatbot service. Despite previous research on user satisfaction and chatbot usage being available it has yet to be discussed how customers find chatbots, whether they prefer talking with a human customer service employee or a chatbot, whether the chatbot makes them feel valued or if they find it fun to chat with. What's more this paper is also explores how different companies in the retail sector use chatbots while it extends an understanding between chatbot usage and customer satisfaction. The selected companies are Sephora, H&M, IKEA, eBay and Lidl. An online survey was used to collect data from 54 mainly European students to measure customer satisfaction of chatbot usage. Participants were shown several used cases of chatbots which they had to evaluate. According to the findings both perceived extrinsic value and intrinsic value of online customer experience have a positive effect on customer satisfaction with the chatbots in e-retailing. Furthermore, chatbot usability increases customer satisfaction.*

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## Keywords

Chatbots, Customer Satisfaction, Use of chatbots, E-Retailing, AI

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## 1. INTRODUCTION

Nowadays, the world is transforming dramatically. Businesses have to adapt to the results of the fourth industrial revolution. Online consumers are growing and rapidly changing, business environment is pushing e-retailing to differentiate itself by providing better customer experience. The rapid evolution of AI has created opportunities for companies to interact with customers using chatbots (Chen et al., 2021). Chatbots can be described as software that receives textual input from the user and based on it's AI, responds with a textual output. An example of a chatbot can be found in customer service of retail companies, where customers ask questions about their order and the chatbot generates an answer. This technology allows human employees to perform more meaningful and high-quality work. The new age technology not only provides more intuitive, convenient and engaging customer experiences through chatbots (Kumar & Ramachandran, 2021b). Chatbots enable hyper-personalization because of their ability to connect the physical and virtual infrastructure (Leszkiewicz et al., 2021). Chatbots allow for personalized and real-time communication in RFI processes and sales transactions (Leszkiewicz et al., 2021). Chatbots in the e-retailing service field often serve a search or decision support function, providing convenient, personal, unique, interactive and engaging customer service interaction (Quintino, 2019). This results in better customer relationships and a more efficient use of time, while it decreases customers' uncertainty and anxiety (Quintino, 2019). In the near future of e-retailing, businesses will rely on new tools such as chatbots, to directly communicate with customers and develop personal relationships with them. But how do customers perceive these chatbots? Do they appreciate the immediate responses to simple questions? Or do they prefer to speak with a real human being? The main theme of this research is about the effect that chatbots have on customer satisfaction. People spend more time online so businesses are adapting and prioritize being online to keep in touch with their customers, online communication is an essential factor in improving the customer experience. Customer satisfaction is created by meeting customer expectations. By optimizing the customer experience, customer expectations and satisfaction can be exceeded (Siswi and Wahyono, 2020).

Customer loyalty can be achieved by increasing customer satisfaction (Brandtzaeg and Følstad, 2017). In the current era competition between companies fighting for the individual customer is bigger than ever. There are companies that offer any product one can think of, so customers do not have to search for a lot of different companies to fill their needs. Because of these developments and growing competition, companies constantly have to attract and retain customers (Maroengsit et al., 2019). So, there is an urgent need for companies to have loyal customers and customer loyalty is influenced by customer satisfaction. In this thesis, the researcher will explore how companies use chatbots and how the use of chatbots relate to customer satisfaction.

## 1.2 RESEARCH GAP

Similar previous research has been conducted by Chen et al., 2021 however most respondents in the study are from Asia and the United States meanwhile this research is mainly focused in continental Europe. What's more 2 years has passed since the research by Chen et al., 2021 was conducted, customer behavior shifts and chatbots are used more now, people know more about it and chatbots have definitely became better now. For example, Business insider said that "the chatbots markets will be the fastest-growing market from 2019 to 2026 with growth of 31,6% of customer service engagement." (Cheng & Jiang, 2021) Especially during the global pandemic customers had to rely mostly on online tools like chatbots, to seek for relevant information about their orders or simply to make decision about purchasing products and selecting brands for purchases. Because they had no human contact with shop assistants, the human contact was completely lost, and also a lot of people in customer service lost their jobs. (Cheng & Jiang, 2021) Little research has been done on user satisfaction, especially not in continental Europe. For this reason the researcher decided to focus on this topic.

## 1.3 RESEARCH OBJECTIVE

This research paper aims to investigate how retail companies use chatbots and how effective they are in satisfying customers needs, five international companies will be selected and observed. A survey is conducted to investigate whether customers are satisfied with the usage of chatbots by providing the participants with snapshots of

different chatbots. Correlations of customer satisfaction are based on demographic data like participants' age, geographical location, number of hours spend a month on shopping etc. The research question that the researcher formed is the following:

### **How do companies use Chatbots in the retail industry to improve customer experience ?**

To answer this, the following sub-questions were derived from the research question.

1. How do eBay, H&M, IKEA, Sephora and Lidl use chatbots?
2. What effect do chatbots have on customer satisfaction?

## **2. LITRETURE REVIEW**

The main concepts of this research are customer satisfaction and chatbots. The researcher will review and discuss the literature of these concepts in this section and what previous research has determined.

### **2.1 CUSTOMER SATISFACTION**

Over the last few decades, consumer satisfaction has been extensively studied in marketing but as of now, marketing scholars have not agreed on a common definition of customer satisfaction (Al-Msallam, 2015) Based on a conducted literature review by a previous researcher customer satisfaction is considered one of the main goals in marketing. (Al-Msallam, 2015). The level of customer satisfaction reflects how well a company meets or exceeds its customers' expectations. (Fornell, 1992) Due to the significant impact customer satisfaction has on economic performance, firms need to improve customer satisfaction levels. (Fornell et al., 2006) In addition, maintaining high levels of customer satisfaction serves as a precaution against increasing price competition and enhances customer loyalty (Anderson, Fornell and Lehmann, 1994; Anderson and Sullivan, 1993) The conducted literature review by Al-Msallam, 2015 shows that high levels of customer satisfaction in companies generate profitability, higher levels of return on investment, increase in market share

market value added, shareholder value, and stock market performance as well as productivity. (Al-Msallam, 2015) What's more a study about AI chatbots and user experience results showed that customer satisfaction is significantly influenced by smart media appeal. Fulfilling information needs was an important gratification of chatbot services. A chatbot is a useful tool for delivering news about a company, recommending products or services, and providing information that helps with purchasing decisions. The informational functions of such systems are also significant factors influencing user satisfaction and indirectly influencing customer loyalty, in line with previous literature (Cheng & Jiang, 2020) This study explores chatbot applications for business communication and provides guidance on how to improve customer experience and encourage the use of chatbots in the future. As a result, privacy risk has been identified as a major concern that reduces customer satisfaction, so corporations and media developers should closely regulate how users' data is used for commercial purposes. To improve the level of satisfaction with chatbot services, brand managers must understand customers' motivations to cultivate their continued use and long-term loyalty.(Cheng & Jiang, 2020)

in addition another study revealed that the presence of chatbots positively influenced retailers' experiential innovativeness which directly affected consumers 'self determined satisfaction, ultimately influencing their attitudes and behavior (Jiang et al., 2022) the social presence of chatbots enhances retailers experiential innovativeness and encourages consumers' self-determined satisfaction. In the online environment, the level of social presence of chatbots is a crucial factor for consumers to assess the innovation capabilities of retailers. This research found that social presence impacts consumers' behavioral intentions in two ways Consumers' behavioral intentions are influenced by experiential innovation and self-determined satisfaction

There is no direct link between social presence and empowerment; however, retail experience innovation can enhance consumers' sense of empowerment Even though Chinese consumers are willing to advance toward chatbots, the intervention of chatbots might cause them to lose control over their purchasing decisions. (Jiang et al., 2022) Experienced innovativeness can compensate for consumers' negative emotions when interacting with chatbots. Additionally, significant differences were found between the cute and formal communication styles (the cute communication style increased the social presence level what's more the consumers who interact with chatbots want to enjoy the chat process (Jiang et al., 2022) more results of the study shows that It is not always the case that cute communication styles will produce more positive responses than formal communication styles. (Jiang et al., 2022)

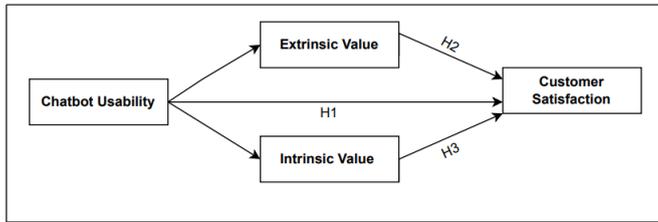
### **2.2 CHATBOT**

Previous research has been focused on gaining deeper understanding of chatbots and customer loyalty by also examining the customer experience. (Jenneboer et al., 2022) Providing a good customer experience is the key to greater customer satisfaction. There is an increasing interest in chatbots. And numerous studies have shown that chatbots can be valuable in providing customers with an enjoyable experience. A number of scientific articles have found that when customers have a positive experience with an organization, they are likely to be satisfied with that experience. Therefore, customer satisfaction and customer experience are linked. Satisfied customers gain confidence in the organization's future services, resulting in customer trust. The satisfaction and trust in a company lead to customer commitments. These factors combined make it able to build customer loyalty. (Jenneboer et al., 2022) The conclusion is that according to the study, chatbots can positively affect customer loyalty. (Jenneboer et al., 2022) Another study focuses on understanding the factors influencing user satisfaction with AI-enabled Customer relationship management (CRM) in E-Commerce, the Expectation Confirmation Theory (ECT) was used in this study in conjunction with human-computer interaction (HCI), AI, and E-Commerce streams of literature. (Sohail et al., 2021).

## **3. CONCEPTUAL FRAMEWORK**

In this section, the concepts of this thesis and their relations are briefly discussed. The conceptual framework has been adapted to the Chen et al., 2021 research . A graphical overview can be found in figure 1. The main concepts of this research are:

- How satisfied customers are by the chatbots
- How easy chatbots are to use
- The intrinsic value of customer experience
- The extrinsic value of customer experience
- The overall effectiveness of chatbots in the way they are used



**Figure 1. Conceptual framework** Conceptual research model. Originally adapted by the research made by Chen et al., 2021.

### 3.1 CHATBOT USABILITY

With the usability of chatbots, we mean how straightforward it is to use the chatbot. If customers don't understand how a chatbot can be used, they will not use certain functionalities and the chatbot will not live up to its potential. This can have a limiting effect on the effectiveness of the chatbot. (Chen et al., 2021)

*H1: Usability of chatbots increases customer satisfaction*

### 3.2 CUSTOMER SATISFACTION

The definition of e-satisfaction is the following "e-satisfaction is defined as the contentment of the customer with respect to his or her prior purchasing experience with a given electronic commerce firm." (Anderson and Srinivasan, 2003). Customer satisfaction is important because a dissatisfied customer is more likely to search for information alternatives and go to a competitor. In this thesis, the relationship between chatbots and customer satisfaction is being researched through a survey. When a customer has a good experience with online shopping, it creates positive attitudes, improves self-efficacy, and influences future intentions, while if they have a bad experience, it could have the exact opposite effect. What's more Customers are more likely to trust and rely on the seller if they have a positive experience with online shopping (O. Pappas et al., 2014) In the paper by Chen et al., 2021 customer satisfaction is defined as a "reaction and feeling related to customer experience in e-commerce" Users expect systems to be fast, efficient, and reliable, and their perception of time spent is also important. According to the research conducted by Chen et al., 2021 the definition of extrinsic values is the following: "Extrinsic values of online customer experience include the convenience, time savings and efficiency that have been acknowledged as functional outcomes of using a technology" Price discounts, time savings, and other extrinsic benefits motivate users (Meuter et al., 2005). The following hypothesis is formed considering the importance of essential values in chatbot customer support services in achieving higher customer satisfaction.

*H2: Perceived extrinsic value of online customer experience have a positive effect on customer satisfaction with the chatbot in e-retailing.*

Measuring customer satisfaction based on the satisfaction of intrinsic needs (autonomy, competence, and relatedness). It was suggested that customer experiences of social support, social presence, and flow affected community engagement and word-of-mouth recommendations (Xi and Hamari 2019) Based on the research made by Chen et al., 2021 A customer's intrinsic value in an online environment is accomplishment, independence, confidence, novelty, and enjoyment, all of which are associated with an increased likelihood of accepting technology. A chatbot is also a fun way for customers to interact. To increase customer adoption of digital tools, fun is crucial to the customer experience. When customers receive specific, clear, and easy-to-read information along with comprehensive discussion, they are

more likely to feel valued and comfortable. Customer may think that chatbots are talking to them personally when chatbots are aware of the context (Chen et al., 2021)

*H3: Perceived intrinsic value of online customer experience have a positive effect on customer satisfaction with the chatbot in e-retailing.*

## 4. RESEARCH DESIGN METHODOLOGY

To answer the main research question, all sub-questions will be answered individually. Combining the answers will result in an answer to the main research question. The researcher randomly choose five companies in the retail sector. The companies involved in this study are: eBay, H&M, IKEA, Sephora and Lidl. To investigate how retail companies use chatbots and how effective they are in satisfying customers needs different research methods will be used. They are presented in the table below.

Question	Method
<i>How do companies in this study use chatbots?</i>	Secondary research: Literature review
<i>What effect do chatbots have on customer satisfaction?</i>	Primary research: Survey (SPSS analysis)

**Figure 2: Summary of research questions and methods**

in order to find out how the five selected retail companies use chatbots, literature review was conducted through scientific literature and various news outlets. Google search engine was used to find more about how the selected companies use chatbots. News media information searching was conducted of the selected company name and chatbots. After various results were found the researcher read through them thoroughly and selected the most useful articles about the selected companies. Scopus and Google Scholar were also used in the article search, ultimately the necessary articles were found. The results and findings will be presented briefly in the next section below.

In order to answer the second research question and find what effect chatbots have on customer satisfaction the researcher conducted an anonymous online survey using Qualtrics. Each respondent was provided with screenshots of a chatbot which they had to scan, evaluate and then answer the survey questions accordingly. The Target audience of the survey was young people because they spend most of their time online shopping. The survey was distributed on various social media channels, it was also sent to friends and acquaintances. Participation in the online survey was not mandatory, screenshots of the whole survey can be found in this documents in Appendix B.

### 4.1 OPERATIONALIZATION

To test the group of the attributes the researcher created questions related to 4 variables which are customer satisfaction, usability, extrinsic value and intrinsic value. A 5 point scale was used with 1 being the lowest score (strongly disagree) and 5 the highest and best score (strongly agree) this means that the statements have 5 possible answers. This will reflect on the satisfaction, usability, extrinsic value and intrinsic of the given screenshot. The participants in the survey were provided with screenshots of chatbots that some of the selected companies of this study use and asked different questions. In this research recoding the variables is not needed because the survey questions measure the same thing, however the variables are computed to create new variables, the new variables was transformed from 1 to 5. An SPSS output can be seen in the Appendix. The first variable measured is "Usability" this is measured on a scale from

one till five. One being strongly disagree and five strongly agree. In the survey a screenshot of a chatbot is provided and the respondents were asked to reply to several statements. The survey questions are “searching with assistance from the chatbot saves me time”, “the chatbots makes websites easy to use and effortless” , the chatbot provides customers wit specific, preferred information, “ “The chatbot is aware of the context during the conversation” The second variable being measured is Extrinsic value. This value is measured on a scale from one till five. One being strongly disagree and five being strongly agree. In the survey a snapshot of a chatbot is presented and the respondents were asked different statements. The survey questions elated to this variable are “ I feel more comfortable talking with a chatbot than a chat with a human customer service employee”, “ I feel like chatbots care about our well-being”, “I find chatbots helpful”, “the chatbot makes me feel that it is talking to me personally as a customer”, “ the chatbot can offer additional information and service that’s best of my interest. The third variable being measured is intrinsic value. This value is measured on a scale from one till five. One being strongly disagree and five being strongly agree. In the survey, an example usage of extrinsic value is presented and the respondents were asked to reply to several statements. The survey questions related to this variable are “ the chatbot seems fun to chat with”, “ using the chatbot is a smart way to get things done”, “this chatbot works well”. Lastly, the fourth variable being measured is customer satisfaction. The variable is measured on a scale from one till five. One being strongly disagree and five being strongly agree. In the survey, a snapshot of a chatbot is presented and the respondents are asked to reply to several statements. The survey questions related to this variable are “the chatbot provides competent guidance during the service”, “the chatbot has the required functionalities to serve me”, “ the chatbot will provide me with the help I need”, I would recommend that others use the chatbot” . The survey questions and the concepts can be seen in Table 1 “Operationalization table”.

**Table 1: operationalization table**

Concept	Survey Questions	Sources
Usability	U1 - Searching with assistance from the chatbot saves me time U2 - The chatbots makes websites easy to use and effortless U3 - The chatbot provides customers with specific, preferred information U4 - The chatbot is aware of the context during the conversation	(Chen et al., 2021), (Sephora Bot, z.d.)
Extrinsic value	E1 - I feel more comfortable talking with a chatbot than a chat with a human customer service employee E2 - I feel like chatbots care about our well-being E3 - I find chatbots helpful E4 - The chatbot makes me feel that it is talking to me personally as a customer E5 - The chatbot can offer additional information and service that’s best of my interest	(Chen et al., 2021), (Say “Hello” to eBay ShopBot Beta, 2016), (Choung et al., 2022)
Intrinsic value	I1 - The chatbot seems fun to chat with I2 - Using this chatbot is a smart way to get things done I3 - This chatbot works well	(Chen et al., 2021), (Say “Hello” to eBay ShopBot Beta, 2016), (Choung et al., 2022)
Customer satisfaction	S1- The chatbot provides competent guidance during the service S2 - The chatbot has the required functionalities to serve me S3 - The chatbot will provide me with the help I need S4 - I would recommend that others use the chatbot	(Chi et al., 2022), (Chen et al., 2021), (What is a Customer Service Chatbot (and Why Do You Need One)?, 2022)

## 5. DATA COLLECTION AND ANALYSIS

In the following section all the results that have been found from the literature review and the conducted survey are going to be presented. The results from the conducted online survey were analyzed using the statistical software SPSS and will be explained bellow.

### 5.1 COMPANY USAGE OF CHATBOTS

The company H&M uses chatbots in different ways, for example, to provide outfit and style recommendations to its customers (Hung Lo, 2022). By doing this in artificial intelligence experience (Retaildive, 2022) The chatbots is provided on the website of the company but also through Kik (Hung Lo, 2022) . The global personal care and beauty products company Sephora with over 2,300 stores in 33 countries has also developed a chatbot called Sephora virtual artist that allows people to try out lipstick colors using selfies. The Sephora chatbot provides beauty tips, product recommendations and reviews. (Lee, 2020) It also gives information to users that want to learn about makeup by providing them with videos and tutorials. (Lee, 2020) The Sephora chatbot is offering personalized recommendations by asking questions about the customers’ taste. ( Quo, 2019). What’s more about Sephora is that for example when a customer is searching for a specific product it could be a mascara the customer may receive a message from BeautyTube and receive tips and videos on this exact same product that the customer asked about. (Retaildive, 2022). The furniture retailer IKEA launched a chatbot on their website to help reduce its work load which had a positive effect.(Perfectbot, 2021) The chatbots answers questions regarding 400 topics like ordering, delivery, payment, complains, returns, promotions or stores. (Perfectbot, 2021). eBay is putting an effort in enhancing customer’s experience by making it easier for them to shop (ebayinc, 2016). Lidl launched an online chatbot via social media channel WhatsApp. Irish customers can send a message to Lidl with the intended date and time they want to visit the grocery store and the Lidl responses by making a LinkedIn post whether the store is quite during that time. (Stevens, 2020)

### 5.2 CHATBOT USAGE AND CUSTOMER SATISFACTION

A five-point Likert-type scale was used, with scores ranging from strongly agree to strongly disagree. Descriptive statistics was applied to exemplify the sample. In total 54 people participated in the survey, 74.1% of the participants were higher-education students in the Netherlands from Dutch nationality. 81.5% of the participants are between the age of 18 -24. 9.3% of the participants are aged between 25-30 and only 3.7% are 51 and above. There are 3 people that have not responded to this question at all. Majority of the respondents are from continental Europe which was a goal of the researcher with respondents from France 5.6%, Bulgaria 18.5%, but also from Germany, Finland, Norway, Poland. Some respondents are from outside of Europe - Mexico, America, China. To the survey question “how many hours a month do you spend on online shopping” 42.6% responded that they spend less than 2 hours a month on shopping. 37.0% shop 2-6 hours a month. 14.8% shop more than 6 hours a month. All of the SPSS outputs can be seen in Appendix 10.3 and Appendix 10.2.

### 5.3 ANALYSIS RESULTS

The statistical software SPSS was used to analyze the data using Cronbach’s Alpha, multiple regression model to validate the hypothesis and answer the second research question.

**Table 2: Reliability analysis: Cronbach's Alpha**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,793	,795	4

A high alpha level indicates that the items in the test are highly correlated to perceive. (Cronbach's Alpha: Definition, Interpretation, SPSS, 2022). The Cronbach's Alpha is very high 0.793 which is considered okay and reliable.

**Table 3: Model fit measures**

**Model Summary<sup>b</sup>**

	R	R Square	Adjusted R Square	Std. Error of the Estimate
Customer satisfaction	,773 <sup>a</sup>	,597	,570	,6210

\* Predictors: (Constant), Intrinsic, Usability, Extrinsic  
 \*\*Dependent Variable: Customer Satisfaction

Based on the sample regression of usability of chatbots, extrinsic value and intrinsic value on customer satisfaction it can be stated that 59% of the variation in customer satisfaction can be "explained" by extrinsic value, intrinsic value and usability of chatbots.

**Table 4: ANOVA**

**ANOVA<sup>a</sup>**

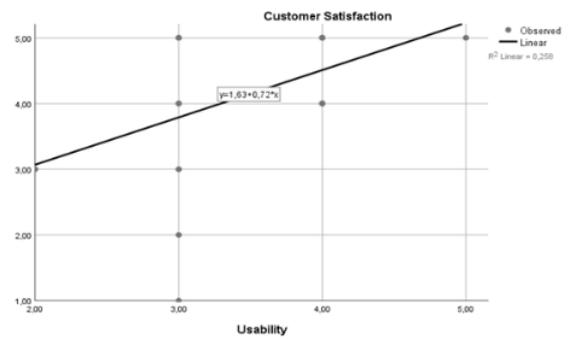
	Sum of Squares	df	Mean Square	F	Sig.
Regression	25,706	3	8,569	22,217	,000 <sup>b</sup>
Residual	17,355	45	,386		
Total	43,061	48			

Note. a. Dependent Variable: Customer Satisfaction

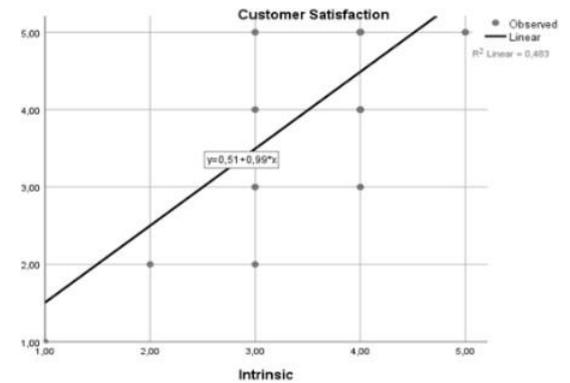
b. Predictors: (Constant), Intrinsic, Usability, Extrinsic

F-ratios in ANOVA tables indicate whether the overall regression model fits the data well. Based on the table, The independent variables intrinsic value, extrinsic value and usability statistically significantly predict the dependent variable customer satisfaction. (How to Perform a Multiple Regression Analysis in SPSS Statistics | Laerd Statistics, z.d.)  $F=22,217$ ,  $df=3,45$ ,  $P<.01$  Based on the results from the ANOVA table it can be concluded that the regression model is a good fit for the data.

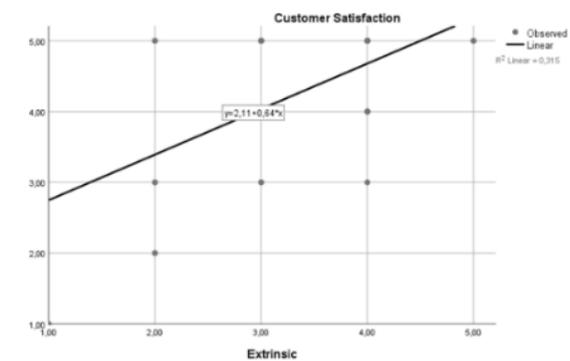
**Figure 3: Customer satisfaction and chatbot usability scatterplot**



**Figure 4: intrinsic value and customer satisfaction scatterplot**



**Figure 5: Extrinsic value and customer satisfaction scatterplot**



**Table 4: Regression results**

	Unstandardized Coefficients		
	B	Std. Error	Sig.
Usability	,381	,145	,012
Extrinsic	,261	,129	,049
Intrinsic	,684	,165	,000

\*p1 < 0.012 \*\*p2 < 0.049 \*\*\*p3 < 0.001

B1, B2, B3 > 0

The Regression equation is as follows:

$$\hat{y} = -.578 + .381 * U + .261 * E + .684 * I + \epsilon \quad S = 0.6210$$

$\hat{y}$  = Customer satisfaction

U = Usability

E = Extrinsic

I = Intrinsic

Table 4 shows the regression results for the relationship between chatbot usability, extrinsic value of customer experience, intrinsic value of customer experience and customer satisfaction in e-retailing. The coefficient for Intrinsic value is 0.684 which is high and the higher the coefficient the bigger the influence intrinsic value has on customer satisfaction. Based on these results it can be concluded that Intrinsic values of online customer experience have a positive effect on customer satisfaction with chatbots in e-retailing. The higher the accomplishment, enjoyment, novelty in the online environment the higher customer satisfaction will be. Based on these results the hypothesis (H3) Perceived intrinsic value of online customer experience has a positive effect on customer satisfaction with the chatbot in e-retailing will be accepted. Further, The coefficient for Extrinsic value is 0.261 the findings of this study are consistent and the results do support H2. Hence, the hypothesis that perceived extrinsic value of online customer experience has a positive effect on customer satisfaction with the chatbot in e-retailing will be accepted. The coefficient for chatbot Usability is also high 0.381. That means that the easier chatbots are to use for customer the higher the customer satisfaction. Therefore, the hypothesis (H1) that states Usability of chatbots increases customer satisfaction will be accepted.

## 6. CONCLUSIONS AND RECOMMENDATIONS

This research aims to investigate how selected retail companies use chatbots and how does it help to improve user experience. Five randomly chosen retail companies were researched about chatbot usage. Three hypothesis were formed and tested. Based on the SPSS analysis all the three Hypothesis were accepted. Based on the hypothesis became clear that Extrinsic value, Intrinsic value and Usability of chatbots positively influence customer satisfaction. first hypothesis that is accepted is about chatbot usability increasing customer satisfaction. That means that consumers that use the website need to know how to use the chatbot and be familiar with all the functionalities the chatbot provides them with. Since it is proved in this research that chatbot usability has a positive effect on the customer satisfaction companies should focus on making chatbots easy and straightforward to use. The second hypothesis that got accepted is about perceived extrinsic value having positive effect on

customer satisfaction. Based on the results of the research that means that companies need to make sure that chatbots enhance customers' online experience by saving time, providing price discounts to motivate its users since it will also have a positive effect on online satisfaction. The third hypothesis that got accepted is about perceived intrinsic value having positive effect on customer satisfaction. Firms need to make sure the chatbots on their websites are providing clear and easy to read information, make their customers feel comfortable in.

## 7. PRACTICAL RELEVANCE

This research is mostly beneficial for practitioners, but academics can always use this research as a reference in future studies. It might happen that the results of this research are in contradiction or in support of this research. There is also a possibility that when this research is being conducted, the author is stumbling upon certain questions outside of the scope of this research. It may be because of relevance or because the timespan of this research is limited. These thoughts will be outlined in a section of the final research paper. The novelty of this research is chatbot usage grows rapidly, and parts gets unexplored. The landscape changes rapidly so previous research gets outdated quickly. For this reason, the researcher believes that this research is something new and interesting to explore. Practitioners of this research topic can vary from computer scientists that develop the software to the marketeers that choose to integrate certain artificial intelligence in their companies. By answering the research questions, marketeers can use the outcome of this research as advice on what kind of chatbot functions for what should be used. As this research aims to study the satisfaction of chatbot usage it would be beneficial for them to integrate the most effective functions, instead of wasting time, money and effort on the ones that are proven less effective.

This study does not focus much on the technical aspects of the AI, so software developers will not be helped as much as marketeers. Yet, providing information about effectiveness of their software in combination with how companies use can give software developers a better understanding of how their work is used and if their software gives their clients what they hoped for.

## 8. LIMITATION

Due to the limited time the respondents size is very low only 56 people participated in the survey. What's more the groups in this study are not independent. Independent groups would be to have 4 versions of a survey and every individual would only evaluate one version. However, in this paper the researcher created only one version of the survey and distributed it around. Another limitation is that the researcher can not observe real behavior in the survey so it can not really be measured whether people really use chatbots. What the researcher is doing in this paper is based on intentions and also on self reported information people say what they think they would do but it is unknown whether the participants would actually behave this way or not. What is more the framework in this research assumes mediation yet the researcher in this paper does not test the mediation but just the direct effect.

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# 10. APPENDIX

## 10.1 SURVEY

Survey:

17/07/2022, 15:59

Qualtrics Survey Software

### Default Question Block

Dear participants,

I am writing my bachelor thesis on how retail companies use chatbots to satisfy customers needs and whether customers are satisfied with the use of chatbots.

In this survey you will be provided with screenshots of different chatbots which you will have to evaluate and share your opinion on how you feel about them. This survey will be conducted among students. Participation is not mandatory. This survey will only be used for study purposes. If you have any questions related to this survey do not hesitate to contact me on my email address.

The survey will take approximately 5 to 10 minutes to complete.

Student: Lora Syarova

Study: International Business Administration Faculty: Behavioral, Management and Social Sciences (BMS)

Email address: l.syarova@student.utwente.nl

Please consent to taking part in this study.

- Yes I Consent  
 No I do not Consent

### Block 1

[https://utwenteba.eu.qualtrics.com/Q/EdiSection/Block/Ajax/GetSurveyPrintPreview?ContextSurveyID=SV\\_0DR44RH8T4F5X0n&ContextLibra...](https://utwenteba.eu.qualtrics.com/Q/EdiSection/Block/Ajax/GetSurveyPrintPreview?ContextSurveyID=SV_0DR44RH8T4F5X0n&ContextLibra...) 1/11

17/07/2022, 15:59

Qualtrics Survey Software

What is your Gender?

- Male  
 Female  
 Non-binary  
 Prefer not to say

What is your age?

- 18-24  
 25-30  
 31-40  
 51 and above

What is your country of origin?

Are you a student in the Netherlands?

- No  
 Yes

How many hours a month do you spend on online shopping?

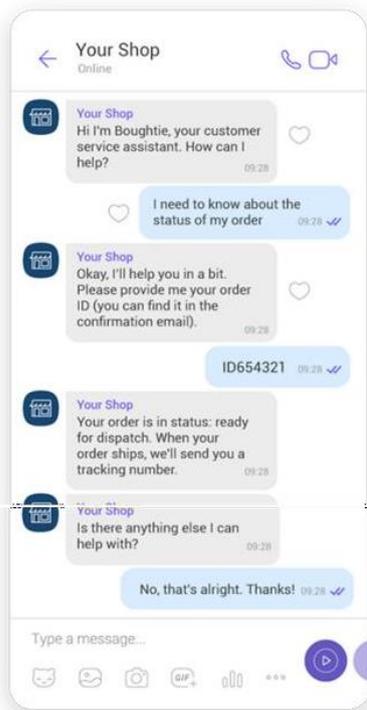
- Less than 2 hours  
 2-6 hours  
 More than 6 hours

### Block 2

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## Customer satisfaction

“Customer satisfaction is defined as a reaction and feeling related to customer experience in e-commerce. A good experience with online shopping influences future intentions, causing them to perceive the seller as reliable”. Using a 5-score scale to score items ranging from strongly disagree to strongly agree, we want to measure your level of satisfaction based on Chatbot screenshots. Consider the Screenshot when answering the question



The chatbot provides competent guidance during the service

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot has the required functionalities to serve me

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot will provide me with the help I need

- Strongly disagree

- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

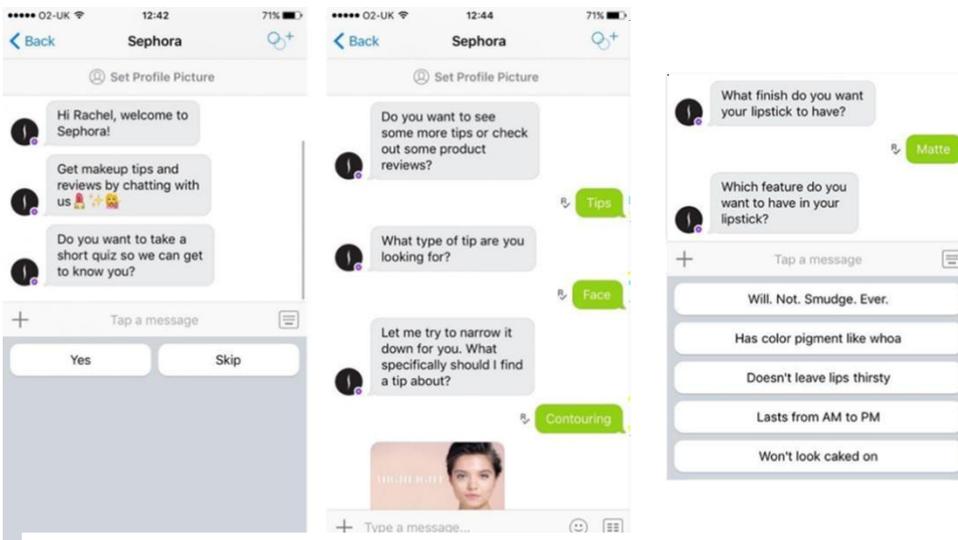
I would recommend that others use the chatbot

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Usability

Usability is defined as “a quality or attribute that represents how easy a human-computer interface is to use to achieve a specified goal effectively, efficiently and satisfactorily”.

Using a 5-score scale to score items ranging from strongly disagree to strongly agree, we want to measure your level of usability based on Chatbot screenshots. Consider the screenshot when answering the question



Searching with assistance from the chatbot saves me time

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbots makes websites easy to use and effortless

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot provides customers with specific, preferred information

https://utwentebc.eu.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurveyPrintPreview?ContextSurveyID=SV\_0DR44RHBTdF5XOm&ContextLibraryI... 6/11

17/07/2022, 15:59

Qualtrics Survey Software

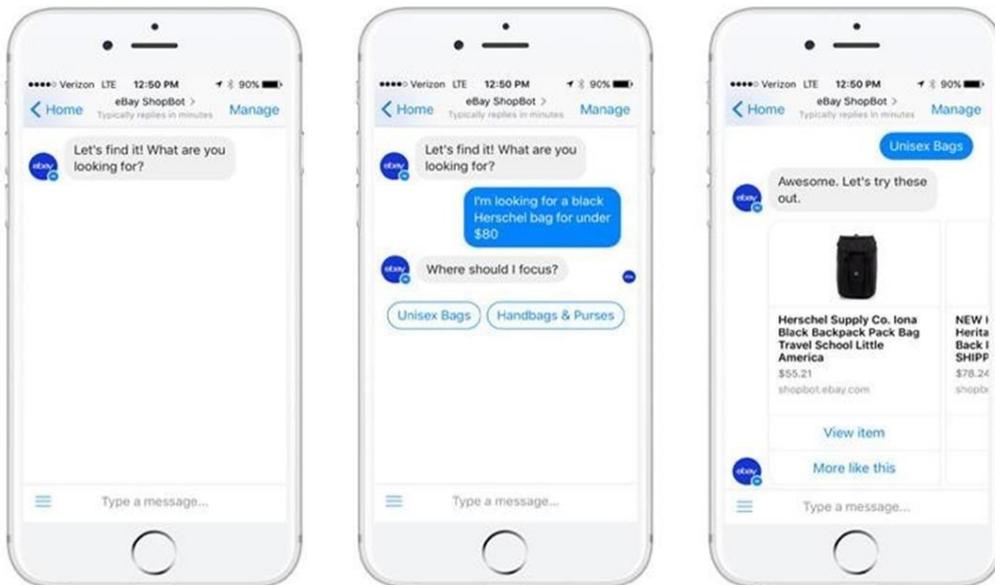
- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot is aware of the context during the conversation

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Extrinsic values

When answering the questions please consider this screenshot



I feel more comfortable talking with a chatbot than a chat with a human customer service employee

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I feel like chatbots care about our well-being

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I find chatbots helpful

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot makes me feel that it is talking to me personally as a customer

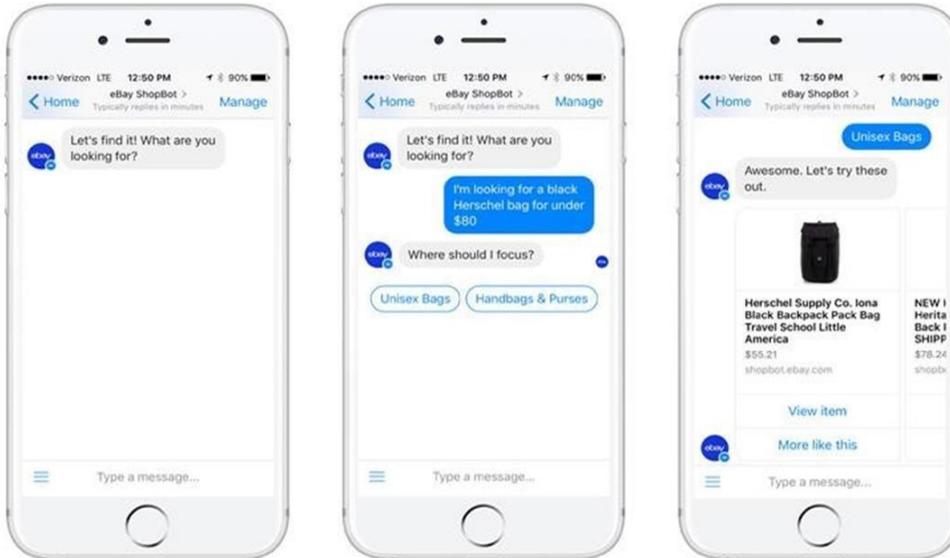
- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

The chatbot can offer additional information and service that's best of my interest

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

## Intrinsic values

When answering the questions please consider this screenshot



The chatbot seems fun to chat with

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Using this chatbot is a smart way to get things done

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

This chatbot works well

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17/07/2022, 15:59

Qualtrics Survey Software

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

## 10.2 Demographic data about survey respondents

Fig 1.1: Gender of respondents, Age group of respondents, country of origin of respondents:

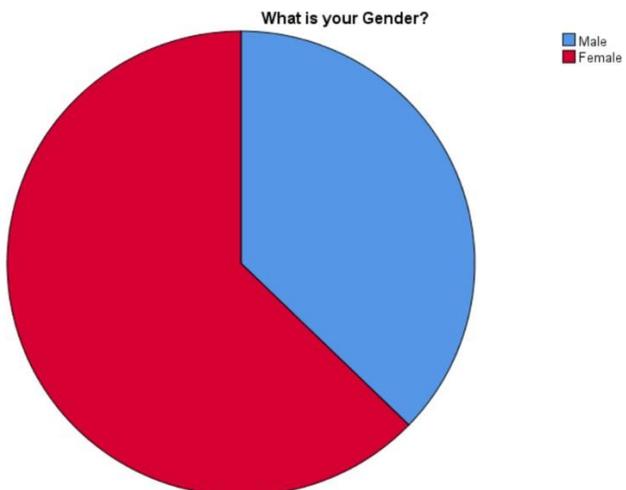
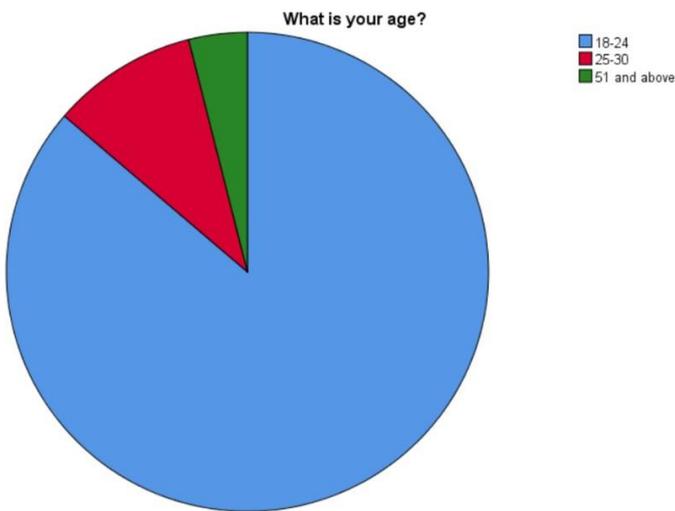
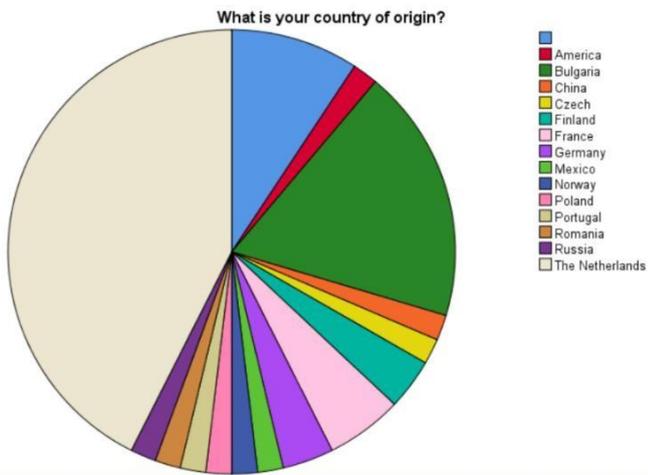


figure 1.2: Mean and Standard deviations: hours spent on online shopping and age\*satisfaction

Dependent variable	Group	Mean	SD	Group	Mean	SD
Satisfaction (S1+S2+S3+S4)	Less than 2 hours	4,14	,560	18-24	4.07	0.593
	2-6 hours	3,95	0.826	25-30	3.75	1.258
	More than 6 hours	4.00	0	> 51	4	0.000
Usability (U1+U2+U3+U4)	Less than 2 hours	4.14	0.774	18-24	4.35	0.720
	2-6 hours	4.25	0.851	25-30	3.25	0.957
	More than 6 hours	4.71	0.488	> 51	4.5	0.707
Extrinsic (E1+E2+E3+E4+E5)	Less than 2 hours	4.45	0.51	18-24	4.35	0.613
	2-6 hours	4.2	0.834	25-30	4	1.155
	More than 6 hours	4.29	0.488	> 51	4.5	0.707
Intrinsic (I1+I2+I3)	Less than 2 hours	3.77	0.429	18-24	3.77	0.649
	2-6 hours	3.65	0.933	25-30	3.5	1.000
	More than 6 hours	4	0	> 51	4	0.000

### 10.3 SPSS OUTPUTS

**Q3 What is your Gender?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	19	35.2	37.3	37.3
	2 Female	32	59.3	62.7	100.0
	Total	51	94.4	100.0	
Missing	System	3	5.6		
Total		54	100.0		

**Q4 What is your age?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 18-24	44	81.5	86.3	86.3
	2 25-30	5	9.3	9.8	96.1
	4 51 and above	2	3.7	3.9	100.0
	Total	51	94.4	100.0	
Missing	System	3	5.6		
Total		54	100.0		

**Q42 What is your country of origin?**

		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	America	5	9.3	9.3	9.3	
	Bulgaria	1	1.9	1.9	11.1	
	China	10	18.5	18.5	29.6	
	Czech	1	1.9	1.9	31.5	
	Finland	1	1.9	1.9	33.3	
	France	2	3.7	3.7	37.0	
	Germany	3	5.6	5.6	42.6	
	Mexico	2	3.7	3.7	46.3	
	Norway	1	1.9	1.9	48.1	
	Poland	1	1.9	1.9	50.0	
	Portugal	1	1.9	1.9	51.9	
	Romania	1	1.9	1.9	53.7	
	Russia	1	1.9	1.9	55.6	
	The Netherlands	1	1.9	1.9	57.4	
	Total	23	42.6	42.6	100.0	
	Missing	System	3	5.6		
	Total		54	100.0		

**Q6 Are you a student in the Netherlands?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 No	10	18.5	20.0	20.0
	2 Yes	40	74.1	80.0	100.0
	Total	50	92.6	100.0	
Missing	System	4	7.4		
Total		54	100.0		

**Q7 How many hours a month do you spend on online shopping?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Less than 2 hours	23	42.6	45.1	45.1
	2 2-6 hours	20	37.0	39.2	84.3
	3 More than 6 hours	8	14.8	15.7	100.0
	Total	51	94.4	100.0	
Missing	System	3	5.6		
Total		54	100.0		

**Q11 The chatbot provides competent guidance during the service**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	2	3.7	4.0	4.0
	2 Disagree	3	5.6	6.0	10.0
	3 Neither agree nor disagree	4	7.4	8.0	18.0
	4 Agree	24	44.4	49.0	66.0
	5 Strongly agree	17	31.5	34.0	100.0
Total	50	92.6	100.0		
Missing	System	4	7.4		
Total		54	100.0		

**Q13 The chatbot has the required functionalities to serve me**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	2	3.7	4.1	4.1
	2 Disagree	1	1.9	2.0	6.1
	3 Neither agree nor disagree	7	13.0	14.3	20.4
	4 Agree	23	42.6	46.9	67.3
	5 Strongly agree	16	29.6	32.7	100.0
Total	49	90.7	100.0		
Missing	System	5	9.3		
Total		54	100.0		

**Q14 The chatbot will provide me with the help I need**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	2	3.7	4.1	4.1
	2 Disagree	3	5.6	6.1	10.2
	3 Neither agree nor disagree	5	9.3	10.2	20.4
	4 Agree	25	46.3	51.0	71.4
	5 Strongly agree	14	25.9	28.6	100.0
Total	49	90.7	100.0		
Missing	System	5	9.3		
Total		54	100.0		

**Q15 I would recommend that others use the chatbot**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	4	7.4	8.2	8.2
	2 Disagree	2	3.7	4.1	12.2
	3 Neither agree nor disagree	10	18.5	20.4	32.7
	4 Agree	26	48.1	53.1	85.7
	5 Strongly agree	7	13.0	14.3	100.0
Total	49	90.7	100.0		
Missing	System	5	9.3		
Total		54	100.0		

**Q27 The chatbot provides customers with specific, preferred information**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Disagree	5	9.3	10.2	10.2
	3 Neither agree nor disagree	17	31.5	34.7	44.9
	4 Agree	22	40.7	44.9	89.8
	5 Strongly agree	5	9.3	10.2	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q28 The chatbot is aware of the context during the conversation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	3	5.6	6.1	6.1
	2 Disagree	17	31.5	34.7	40.8
	3 Neither agree nor disagree	13	24.1	26.5	67.3
	4 Agree	15	27.8	30.6	98.0
	5 Strongly agree	1	1.9	2.0	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Usability Usab**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Disagree	2	3.7	4.1	4.1
	3 Neither agree nor disagree	4	7.4	8.2	12.2
	4 Agree	22	40.7	44.9	57.1
	5 Strongly agree	21	38.9	42.9	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q32 I feel more comfortable talking with a chatbot than a chat with a human customer service employee**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	9	16.7	18.4	18.4
	2 Disagree	14	25.9	28.6	46.9
	3 Neither agree nor disagree	9	16.7	18.4	65.3
	4 Agree	12	22.2	24.5	89.8
	5 Strongly agree	5	9.3	10.2	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q33 I feel like chatbots care about our well-being**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	15	27.8	30.6	30.6
	2 Disagree	13	24.1	26.5	57.1
	3 Neither agree nor disagree	15	27.8	30.6	87.8
	4 Agree	6	11.1	12.2	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Extrinsic extr**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Disagree	1	1.9	2.0	2.0
	3 Neither agree nor disagree	2	3.7	4.1	6.1
	4 Agree	26	48.1	53.1	59.2
	5 Strongly agree	20	37.0	40.8	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q34 I find chatbots helpful**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	3	5.6	6.1	6.1
	2 Disagree	4	7.4	8.2	14.3
	3 Neither agree nor disagree	8	14.8	16.3	30.6
	4 Agree	31	57.4	63.3	93.9
	5 Strongly agree	3	5.6	6.1	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q35 The chatbot makes me feel that it is talking to me personally as a customer**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	3	5.6	6.1	6.1
	2 Disagree	19	35.2	38.8	44.9
	3 Neither agree nor disagree	14	25.9	28.6	73.5
	4 Agree	13	24.1	26.5	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**intrinsic int**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	1	1.9	2.0	2.0
	2 Disagree	1	1.9	2.0	4.1
	3 Neither agree nor disagree	9	16.7	18.4	22.4
	4 Agree	36	66.7	73.5	95.9
	5 Strongly agree	2	3.7	4.1	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q36 The chatbot can offer additional information and service that's best of my interest**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	1	1.9	2.0	2.0
	2 Disagree	9	16.7	18.4	20.4
	3 Neither agree nor disagree	13	24.1	26.5	46.9
	4 Agree	23	42.6	46.9	93.9
	5 Strongly agree	3	5.6	6.1	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q39 The chatbot seems fun to chat with**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	3	5.6	6.1	6.1
	2 Disagree	5	9.3	10.2	16.3
	3 Neither agree nor disagree	21	38.9	42.9	59.2
	4 Agree	19	35.2	38.8	98.0
	5 Strongly agree	1	1.9	2.0	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		

**Q40 Using this chatbot is a smart way to get things done**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	2	3.7	4.1	4.1
	2 Disagree	2	3.7	4.1	8.2
	3 Neither agree nor disagree	14	25.9	28.6	36.7
	4 Agree	27	50.0	55.1	91.8
	5 Strongly agree	4	7.4	8.2	100.0
	Total	49	90.7	100.0	
Missing	System	5	9.3		
Total		54	100.0		