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ENSURING CONSUMER SATISFACTION WITH CHATBOTS IN THE BALTIC STATES

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Abstract. Within the framework of this work, the authors want to study the theoretical foundations of consumer satisfaction, to understand the peculiarities of consumer satisfaction using chatbots. The artificial intelligence and its use is an integral part of modern business development, enabling companies to operate successfully in a competitive environment. This study identifies factors that influence consumer satisfaction with the use of chatbots to enable businesses to improve their use and become more competitive. The study uses both secondary data analysis and expert interviews, as well as a survey of chatbot users. The study describes the situation in the field of the use of chatbots in the Baltic States. The study finds that personalized chatbots provide a higher level of consumer satisfaction. In order to achieve the goal of the research, three tasks were set: 1) to analyze the theoretical basis of consumer satisfaction and the introduction of chatbots; 2) describe the use of chatbots and their contribution to consumer satisfaction; 3) Explore user satisfaction with chatbots. A monographic or descriptive method was used to analyse the theoretical aspects of chatbots and their use, secondary data analysis and expert interviews were used to describe the situation, but user survey was conducted to study consumer attitudes using chatbots.

Keywords: chatbot, user experience, consumer satisfaction.

JEL Classification: M14.

Introduction

Consumer-oriented business is a factor of ensuring company competitiveness. The process of attracting new customers always involves putting in ever more money, time and energy. In order for a company to retain the existing customers and gain the new ones, one of the main tasks is to know the factors that make them happy. Based on research, attracting a new consumer is 5–10 times more expensive than selling to an existing one, and the existing consumer spends 67% more money than new consumers (Anderson et al., 2007). Consequently, the company's task is to ensure and promote the consumer satisfaction and to develop a system that would make the consumer want to keep in touch with the company. By gaining an understanding of the factors that make up consumer satisfaction and using them skillfully, a company gains more customer confidence and significantly increases its competitiveness. In recent years, the artificial intelligence, including chat robots, has entered the consumer service very rapidly. The chatbot

is an artificial intelligence program that helps businesses communicate with consumers at any time by answering consumer questions, recommending the latest products, and more. The program simulates the work of a service specialist, communicating with the consumer in a plain language. The study examines the situation in the field of chatbot use in the Baltic States. The study found that the chatbots could increase consumer satisfaction. In order to achieve the goal of the research, three tasks were set: 1) to analyze the theoretical basis of consumer satisfaction and the introduction of chat robots; 2) describe the use of chat robots and their contribution to consumer satisfaction; 3) Explore user satisfaction with chatbots. A monographic or descriptive method was used to analyze the theoretical aspects of chatbots and their use, secondary data analysis and an expert interview were used to describe the situation, but a user survey was conducted to study consumer attitudes using chatbots. The methodological sources of the research are the latest publications (Azadbakht & Schultz, 2020); Fan et al., 2022; Blessinger & Comeaux, 2020; Hewitt & Beaver, 2020 and others).

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The research period was from June 1, 2021 to January 1, 2022. The study found that personalized chatbots were tools that companies can use to ensure consumer satisfaction and, as a result, increase the competitiveness.

1. Ensuring consumer satisfaction

The consumer satisfaction is formed by comparing the actual experience of using a given offer (as it is) with the consumer's expected offer, including all the required characteristics (as it should be). As a result, satisfaction can have three levels of compliance: the actual level of supply exceeds the expected level, satisfaction above the level of compliance (positive non-compliance), the actual level of supply meets the expected level, satisfaction at the level of compliance (compliance) and the actual level of supply does not reach the expected level of supply, then satisfaction below the level of compliance (negative non-compliance), or dissatisfaction (Linina, 2016). This situation can be represented in the model (see Figure 1).

Positive/neutral/negative consumer attitudes are always formed by comparing the actual and the expected level of supply. Today, the companies are increasingly focused on the user experience. Improving the user experience increases the consumer satisfaction. The user experience method has come from the design industry. Its main goal is to focus on user needs and build a product or service based on those needs (Young et al., 2020).

Attitude, speed and quality are important factors in serving consumers. The consumer wants fast and clear action. In the field of consumer service, the speed and accuracy depend on the company's internal system and it is a complicated process (see Figure 2). Unfortunately, there can be a variety of difficulties in this process that can affect the overall consumer satisfaction. Before answering the question, the customer service representative has to find out all the details of the registered user, if necessary, the specialist asks various questions to better understand the question, and the user tends to write and spend more time if the person rather than machine answers the call (Hewitt & Beaver, 2020).

The use of artificial intelligence in customer service is a solution to shorten and improve this process (see Figure 3).

As the artificial intelligence product, the chatbot has the advantage of allowing customers to communicate with the company at any time convenient to them. The
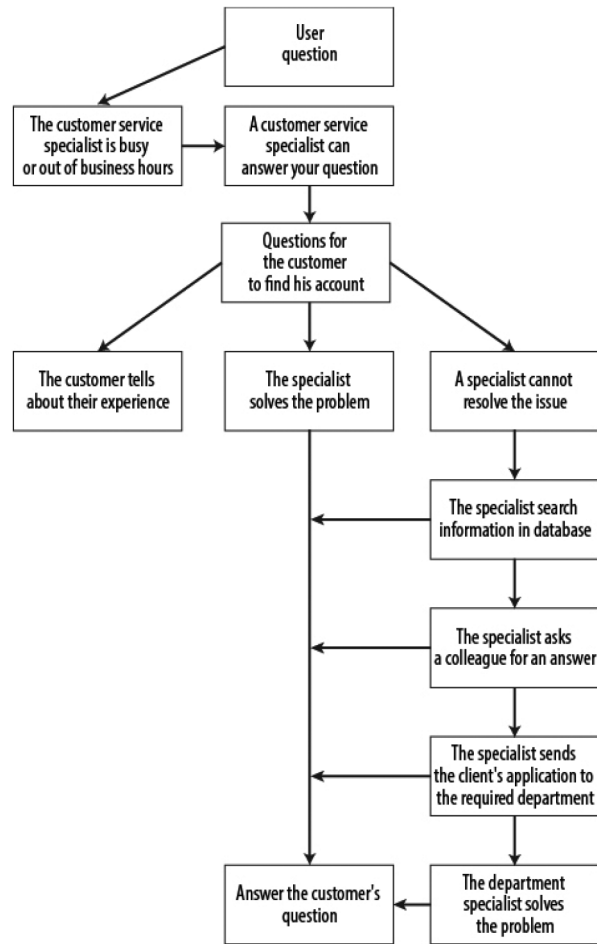

Figure 2. Customer service specialist response cycle
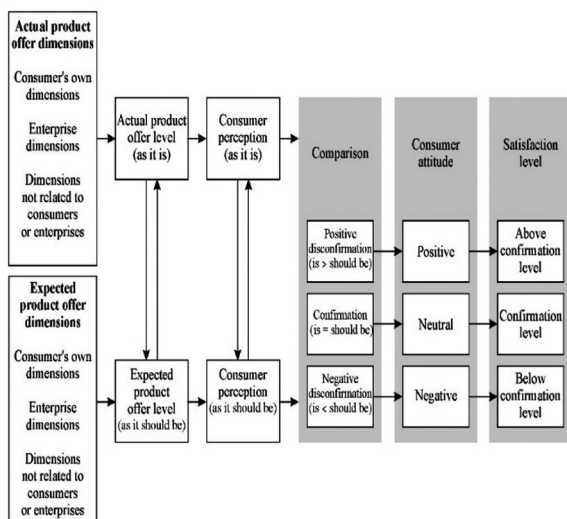(created by the authors)

Figure 1. Enhanced consumer satisfaction conformity/
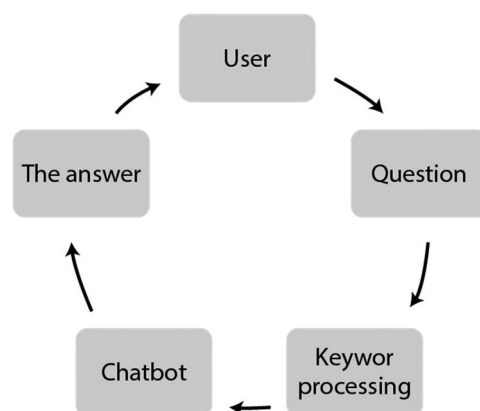disconformity (C/D) model (Linina, 2016)

Figure 3. Chatbot response cycle (created by the authors)

chatbots provide a quick response at any time of the day, automatically, but customer service can only provide an answer during certain business hours, and answers can be taken for a longer period of time based on the experience or workload of the customer service specialist (see Figure 1). The chatbot answers questions faster and usually better than a customer service specialist. The chatbot feature replaces the use of human resources by answering easy questions or directing the user to the right solution, thus allowing the company to focus on more complex questions. The time and effort saved by the chatbot can be used to solve complex customer problems, close deals, plan strategies, and provide vision and leadership (Mishra et al., 2020).

The artificial intelligence (AI) based chat robots are increasingly used in the communication because they combine the efficiency and flexibility of front-end services (Fan et al., 2022). Researcher Popescu has defined the benefits that the company derives from using the chatbots. He stresses the cost reduction as the most important one, as the chat can save up to 30% on customer service costs and improve the customer interaction. The chatbot can be the key to increasing user satisfaction, improving brand perspective, improving performance, reaching new customers, gaining a deeper customer understanding, and supporting a team collaboration. To achieve these figures, 26% of organizations use the AI chatbots and the virtual assistants for this purpose, 49% use the Microsoft Cortana artificial intelligence, 47% use the Apple Siri, 23% use the Google Assistant and 13% use the Amazon Alexa, but only 2% uses the custom Chatbots (Popescu, 2020).

The chatbots can operate in a variety of fields, such as customer service, e-commerce, insurance, healthcare, retail, and more. They provide consumers with humane answers to questions and is programmed to learn from their experiences in order to adapt to consumer needs. The chatbot is a data store that makes a company feel secure about its data. The information requested by the chatbot can only be accessed by company staff when processing the data. By analyzing the data, the company can view frequently asked questions and customize the app to improve the user-friendly environment (Sandberg et al., 2017). The chatbots have three main functions: job postings and current affairs, a store assistant (helps you find products or information you need) and customer complaints (allowing customers to express their feelings and thoughts about the company anonymously). Today, almost all social networks, company websites and even government organizations use the chatbots to reduce the flow of consumer questions, as well as to improve communication with the consumer and provide him with an immediate response (Abdul-Kader & Woods, 2015, pp. 72–80). The chatbot can enhance, for all consumers, the online experience, regardless the age. The consumers will get used to communicating with businesses through messaging apps, virtual assistants and smart home devices. The ability to analyze information and make decisions

independently will be an integral part of our lives. The chatbot's technology is expected to evolve dramatically to make people's lives easier and more comfortable. It is expected to have a global market size of $ 1.34 billion by 2024 (Popescu, 2020). There are two types of chatbots, one that asks the customer questions, giving him questions that he can answer, such as the location of the business, opening hours, and so on. The second type of the chatbot is the one in which the customer asks questions and the chatbot provides answers based on keywords and phrases (Sandberg et al., 2017). The chatbot receives data from an automatically registered user, so it is able to gather information faster and answer a question (Dahiya, 2017).

The companies create the personalized chatbots to enhance the user experience. The use a similar language as the customer; if the chatbot uses voice recognition, it adapts to the person's pronunciation and language, adds emoticons to the answers, and changes the appearance of the avatar. By matching gender or using similar words in conversation, the chatbot increased sales compared to the traditional interface (Hildebrand & Bergner, 2019).

The studies have shown that the personalized chatbot can even double sales. The users perceive and talk to machines as humans, and if artificial intelligence can adapt to the user's type and language, it makes the user feel welcome. As well as the personalized chatbot increases the brand awareness, it promotes a positive attitude towards the brand and the product (Hildebrand & Bergner, 2019).

Some researchers point out that the matrix to be used to measure the success of a chat robot has not been developed and is neither systematized nor compared. One way to solve this problem is to adapt the matrix to different perspectives on the evaluation of the chat robot: the user experience perspective, the information retrieval perspective, the linguistic perspective, the technology perspective, and the business perspective. To create an evaluation system, the following categories of chat robots need to be analyzed: usability, performance, impact, satisfaction, accuracy, availability, efficiency, quality, quantity, relationship, type, grammatical accuracy, humanity, and business value (Peras et al., 2018).

An experiment in car rental shows that sales have increased based on the type of communication on the website. By installing face-to-face lists on the company's website (Live Chat), it increased sales by 29%. The neutral Chatbot increased sales by 49%; the personalized chatbot increased sales by as much as 55%. It can be seen that the use of the personalized chatbot increased sales by more than half compared to not using any tools and it kept questions in the repository as well as generated new answers and new personalities over time using the benefits of artificial intelligence (Hildebrand & Bergner, 2019). A financial study also found that people were increasingly trusting the chatbot's recommendations and that users trusted computer statistics and metrics. The study found that the chatbot provided incorrect answers

to entrepreneurs, but despite incorrect advice and additional warnings to investors, the participants in the experiment trusted the chatbot's advice three times more than the traditional website interface (Hildebrand & Bergner, 2019).

2. Research

More and more businesses and municipalities are using Chatbots to improve the speed and quality of the customer service. In Latvia and other Baltic countries, it is already used by several municipal institutions and companies. The chatbots, as the trend in the Baltics has entered in recent years, have been using this feature in the world for longer. Currently, a generation of millennials choose to use the chatbot function, this group of people communicates with chatbot on a daily basis 40% of the time; users are 73% satisfied with the service, and the chatbot reduces the load on call centers by 70% (Pekša, 2020). According to the Google Trends statistics, the keyword "chatbot" has been searched worldwide since 2004. Significant interest in the chatbots has grown rapidly since 2017.

A study was conducted to further explore consumer attitudes towards the chatbots. Consumer satisfaction is seen as a phenomenon that looks at consumer and process perceptions in the context of a particular study, so the study is considered analytical and the research paradigm is positivism (Kumar & Thondikulam, 2005). The study was a mixed methods approach. First, it was quantitative because it aimed to characterizethe consumers "attitudes towards the chatbots as a phenomenon based on an assessment of consumers" current supply (Kristapsone, Kamerāde, 2011, pp. 49–81). In order to identify the essence and explanation of consumer evaluation, the research employed a qualitative approach – an expert interview (Kristapsone & Kamerāde, 2011, pp. 89–116).

The questionnaire was distributed with the non-probability snowball method (Kristapsone & Kamerāde, 2011, p. 71), using the personal contacts of the study authors, it was sent via e-mail to the respondents, who further shared this link. The questionnaires were filled out, 1448 answers were recognized as valid for the research. In 2020, the population of all three Baltic States was taken as a general population. At the 95% confidence level and the 5% margin of error, the minimum sample size in all three countries together was calculated to be 1155 respondents (Arhipova & Bāliņa, 2006, pp. 98–104). The research questionnaire consisted of closed, open-ended questions, and in order to evaluate the user experience, questions with a Likert scale of 5 points were created,
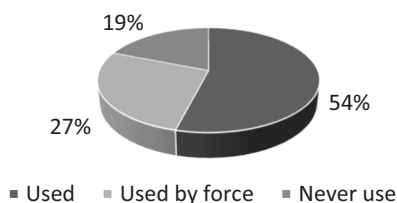
Figure 4. Use of chatbots by Baltics (created by the authors)

where 1 is very bad and 5 is very good. The responses were processed with SPSS software.

54% of respondents indicated that they sometimes use the features offered by the chatbot, 27% use only forcibly if there is no other choice, while 19% say they have never used the feature (see Figure 4). Of course, the fact that the chatbots have recently been introduced in the Baltics compared to the world experience and many users are not yet used to them and do not trust their ability to help is also important.

Users who do not use the chatbot indicate that they prefer to communicate by phone or that the previous experience has not been positive. The chatbots in the Baltic States are available in different versions and qualities. Some work as search engines, but the latest generation of chatbots has a built-in self-learning feature that allows them to remember different questions and answers to increase their database. They refine their answers based on data analysis from previous users so that they can answer the user's question as quickly and accurately as possible.
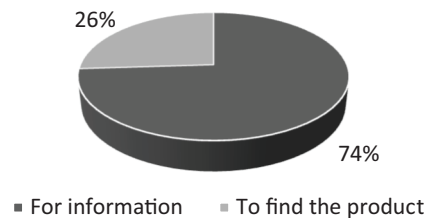
Figure 5. Reasons to use chatbots in the Baltics (created by the authors)

74% of users who have used Chatbots say they use this feature to get help from a customer service center. 26% said they used the tool to find the products they needed (see Figure 5).

67% of users say they are positively affected by the presence of chatbots on websites.
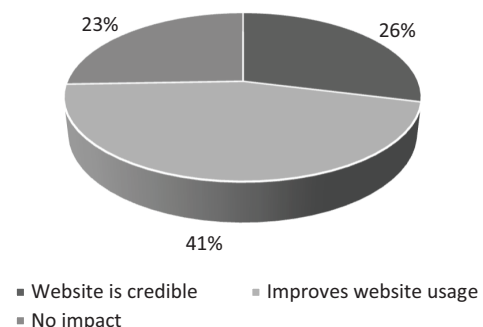
Figure 6. Experience using chatbots using company websites (created by the authors)

Respondents were asked about their experience using websites that use chatbots. 26% of respondents said that the website seems more understandable and reliable, that the chatbot is available, 41% said that sometimes the presence of the chatbots improves their sense of the website. Only 23% of respondents say that it does not change their feelings (see Figure 6).

The results of the survey showed that the experience of users who use this feature on a computer or tablet was much more positive, but their use on a smartphone was a problem.

As can be seen from Table 1, the respondents rated the acquisition of information outside the specified working hours the highest, which also indicates the importance of this factor from the respondents' point of view ($\bar{X} = 4.71$; Me = 5.00; Mo = 5.00). The speed of service and information acquisition was assessed slightly lower ($\bar{X} = 4.52$; Me = 4.00; Mo = 4.00), which in the opinion of the respondents is also noted from the point of view of importance. This is followed by the comprehensibility and accuracy of the information (4.15; 4.00; 4.00) and the quality of the information obtained (3.94; 4.00; 4.00). The personalized attitude was rated lower (3.55; 3.00; 4.00), which indicates the need to pay attention to this issue, because it is the personalized attitude that can be the basis for ensuring customer satisfaction. Of the six criteria, the chatbot's ease of use received the lowest score (3.05; 3.00; 3.00). It should also be noted that the amounts of variation are relatively small for all criteria (0.04–0.08), which practically indicates a consensus on this issue. In conclusion, the ease of use of chatbots was relatively low (see Table 1).

Differences of opinion can be observed between respondents. Apparently, it is selection criterion that was significantly influenced by the demographic, social and personal characteristics of the consumers. Another reason was the possible lack of comparison with the sample. Therefore, from the point of view of the authors of the study, this indicator should by no means be ignored, as improvements in this area will only benefit from the point of view of attracting and satisfying consumers.

The survey also included open-ended questions about the problems encountered by respondents in using chatbots. The biggest problem is that not all systems understand complex structured sentences. Thus, it is more difficult to formulate the questions of interest to the user, but the authors want to remind that the chatbot is designed to save time and have easy communication, so it works by typing simple keywords and can find information of interest quickly and easily.

3. Interview

Expert methods are increasingly used in the evaluation and forecasting of socio-economic processes. The expert survey is mainly used in diagnosing and forecasting industry problems and in analyzing and solving research problems (Kristapsone, 2014, pp. 281–284). An expert is a qualified specialist in a given field who expresses his or her opinion, for example, in the evaluation of an activity. In addition, the expert can assess various (significant and insignificant) factors, goals, better ways to achieve them, performance, etc. Therefore, the authors of the paper chose the expert survey method for the study in order to study in more depth the use of chatbots in ensuring consumer satisfaction. During the interview, Hung Khang Pham, an international business consultant and marketing specialist from Germany, was interviewed. The authors chose to interview an expert, in order to see the validity of using chatbots not only from the users perspective. The in-depth interview was carried out on Zoom. The results of the interview allowed us to conclude that the specialist chooses to recommend companies to use the chatbot program, as it is a 24-hour customer service. The program reduces the company's costs, as there is no need to hire an employee who can service the website around the clock. The interviewee admitted that the chatbot could solve 85% of customers' problems, a separate employee is needed to answer more complex questions. The interviewee is of the opinion that most consumers will only buy a product if the company gives them a response within the first five minutes. In the B2B segment, answers to questions can take up to two weeks, so an immediate answer is needed to ensure quality service and initiate the first contact with the user.

Conclusions

1. Consumer satisfaction is formed by comparing the actual experience of using a given offer with the consumer's expected offer. As a result, satisfaction can have three levels of compliance: the actual supply level exceeds the expected level, satisfaction occurs above the compliance

Table 1. Chatbot user experience rating (created by the authors)

Chatbot user usage factors	The arithmetic average	Arithmetic mean standard error	Median	Moda	Standard deviation	Dispersion	Amount of variation
Service, information acquisition speed	4.52	0.04	4	4	0.82	0.67	0.04
Comprehensibility and accuracy of information	4.15	0.05	4	4	1.07	1.14	0.06
Personalized attitude	3.55	0.05	3	4	0.99	0.97	0.06
Ease of use of chatbot	3.05	0.05	3	3	1.04	1.09	0.08
Quality of the information obtained	3.94	0.05	4	4	1.09	1.19	0.06
Possibilities to obtain information outside working hours	4.71	0.05	5	5	0.96	0.92	0.05

level, the actual supply level meets the expected level, satisfaction occurs at the compliance level and the actual supply level does not reach the expected supply level, then satisfaction occurs below the compliance level, or dissatisfaction. The result of satisfaction/dissatisfaction is a complex reaction of the consumer – cognitive, emotional and different in intensity, which is formed in relation to the stages of the process.

2. The Artificial Intelligence chatbot is a customer service tool that can increase consumer satisfaction with a company's service by being able to answer a variety of questions faster and more accurately than customer service staff.

3. The results of the survey demonstrate that the chatbots are being used by 63% respondents, 23% of respondents use them only forcibly, but 19% avoid using the chatbots whatsoever. The reasons for using the chatbots are the following: obtaining information (74%), finding the products (24%). Availability of the chatbots in company homepage help to understand information better for 26% of the respondents, 41% of respondents admit that they create a feeling of trust, 23% of respondents do not feel any influence.

4. Summing uo the survey data regarding evaluation of the chatbot user experiences, we can see that in 5-point Likert scale, the mean values vary between 3.05 and 4.71, thus they are quite high. Therefore, it is possible to conclude that the chat program leaves a positive impression on the company and product for the user and can become a search tool that helps the user to find the goods/services they need, can increase brand awareness and increase turnover.

5. The personalized chatbots are more perceived by consumers as being in a similar form and shape that is easier to understand. Therefore, when choosing the chatbot programs, companies need to consider the goals they achieve and adapt the type of the chatbot to them.

6. Users have difficulty using the chatbots on smartphones, in order to improve the user experience, it is necessary to improve the features of the chatbots using smartphones.

7. The chatbot is a tool that can increase consumer satisfaction and as a result of its activities, companies can focus on other issues related to the development of the company, while the chatbot will perform simplified activities, which will result in increased competitiveness.

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