SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2026
ORGANIZATION AND MANAGEMENT SERIES NO. 253

CHATBOT OR HUMAN? CUSTOMER SERVICE PREFERENCES IN THE COURIER INDUSTRY

Szymon PRZYBOREK[1], Roman DOMAŃSKI[2*]

[1] Faculty of Engineering Management; Poznan University of Technology; szymon.przyborek@student.put.poznan.pl
[2] Faculty of Engineering Management; Poznan University of Technology; roman.domanski@put.poznan.pl, ORCID: 0000-0001-5861-4978
*Correspondence author

Purpose: Continuous development in logistics and e-commerce compels companies to implement AI–based solutions in customer service to optimize cost, although consumer acceptance remains a challenge. This paper identifies and assesses customer preferences regarding customer service in the courier industry, regarding the choice between interacting with a chatbot and interacting with a human.
Design/methodology/approach: A quantitative research approach was applied. Data was collected using an online questionnaire, with responses rated on a five-point Likert scale. The survey was distributed in February and March 2026 among individuals using courier services in Poland, yielding 200 correctly completed questionnaires.
Findings: The research show a strong correlation between the chosen contact form and the complexity of the delivery issue. For simple issues, respondents are moderately willing to use chatbots. However, in crisis situations, they reject automated options, expecting human support. Complete automation is currently unacceptable in the Polish courier market.
Research limitations/implications: The main limitation of the study is its exclusive focus on the Polish courier industry and the overrepresented of young people in the research sample. Nevertheless, the identified barriers can serve as a benchmark for the broader e-commerce market, highlighting the need for further research as AI-powered customer service system continue to evolve.
Practical implications: The study provides valuable guidance for businesses, indicating that a hybrid customer service model is the most effective development direction. Courier companies should implement combine the speed of chatbots for routine tasks with the guarantee of immediate delegation to a human representative for difficult-to-solve issues.
Social implications: The study reveals that society still considers the humans factor irreplaceable, primarily due to the need for empathy and a "human touch" that AI bots currently lack. Consequently, consumer strongly reject complete automation in customer service and expect guaranteed access to human agent when dealing with complex or problematic issues.
Originality/value: The paper fills a gap in the existing literature by addressing automated forms of customer service in the previously under-researched Polish courier industry. It provides original insights into consumer preferences and AI-based form implementation barriers, offering value to logistics managers, researchers, and customer experience designers.
Keywords: chatbot, customer service, courier services, e-commerce, survey.
Category of the paper: Research paper.

1. Introduction

The dynamic growth of the e-commerce industry has placed pressure on courier companies providing last-mile services, which represents the final stage of courier delivery to the customer. With the increase in shipment volume, the availability and quality of customer service, alongside price and delivery time, have become important factors in building competitive advantage. To address the growing number of inquiries regarding, for example, parcel status or complaints, companies are increasingly implementing solutions supported by artificial intelligence, such as chatbots and virtual assistants.

Implemented technologies enable the optimization of operating costs and provide 24/7 support, but their effectiveness from the consumer perspective is questionable. Customer service requests in the courier industry often concern problematic situations that require not only fast data processing but also empathy and flexibility in resolving non-standard issues. In this context, research is emerging on the reception of automated forms of customer service. While the benefits for businesses are widely discussed in the literature, the actual preferences and consumer trust in artificial intelligence in everyday practice in this specific sector requires further investigation.

The main goal of this article is to identify and assess customer service preferences in the courier industry, specifically considering the choice between interaction with a chatbot and contact with a human representative. A complementary goal is to identify key trends and challenges in implementing new technologies based on artificial intelligence. This requires answering the following research questions:

RQ1: How does the complexity of a shipment issue determine the choice of the preferred form of customer service contact in the courier industry?

RQ2: What are the current shortcomings and obstacles that prevent consumers from using AI-powered bots to resolve their issues?

RQ3: What development directions for AI bots are identified as key to improving the quality of customer service in last-mile logistics?

The structure of this article includes the following parts: a literature review, a description of the research, a presentation of the research results and their discussion, and a summary containing synthetic conclusions.

2. Literature review

A literature review was conducted in March 2026 using the Scopus database of scientific articles, which contains numerous peer-reviewed publications. The primary search was based on the terms "chatbots" and "courier". This resulted in three related articles, only one of which was directly relevant to the topic. To expand the theoretical background, a broader search was conducted using the terms "chatbots", "e-commerce," "human agents", and "customer service", yielding an additional 32 results, 15 of which directly relate to customer service and chatbots.

In the context of the topic of this article, the growing ubiquity of AI-based chatbots in the e-commerce sector as a replacement for human consultants is observed (Mahajan, Chauhan, 2026). This is linked to the increased interest in improving the efficiency of services provided by AI bots (Xu, Yan, Cao, 2022).

Chatbots are defined in various ways in the literature – as systems designed to communicate with users using natural language, supported by AI (Adam, Wessel, Benlian, 2021), or as intelligent systems using artificial intelligence algorithms and natural language processing (Singh, Manju, Jatain, 2024). Authors also describe chatbots as an outstanding and versatile application of artificial intelligence, a possible link enabling effective communication between humans and machines (Sasikala, Kavitha, 2026), or as customer service agents that help consumers make decisions (Xu, Yan, Cao, 2022).

Among the research methods, many authors used surveys (Baabdullah et al., 2022; Chen, Wang, Wood, 2025; Chen, Salahuddin, Khamarudin, 2026; Mahajan, Chauhan, 2026). Other tools used in the research included a 2x2 factorial experiment in which participants conversed with a human agent or chatbot, during which the conversational style was alternately fact-based or highly emotional (Kim, 2025), and an experiment involving simulated conversations between half of the research group and a "raw" bot, while the other group communicated with a chatbot with human characteristics (Klein, Martinez, 2023). The research focused on factors shaping virtual customer experiences during conversations with AI bots (Baabdullah et al., 2022), differences in customer behaviour when served by a chatbot and a live human (Mahajan, Chauhan, 2026), the main components of customer satisfaction (Antonio et al., 2022), and factors influencing the willingness to use chatbot services instead of a human consultant (Chen, Wang, Wood, 2025).

Among the results, the authors point to the need to implement chatbots that solve simple problems based on a database by answering standard questions, while simultaneously operating in a hybrid model or a strict mechanism that delegates the resolution of difficult problems to humans (Wang et al., 2023; Deepak, Dumka, Mazumdar, 2025; Zhang et al., 2025). Furthermore, it has been noted that giving human characteristics significantly increases customer satisfaction, which simultaneously increases the chance of success in handling cases (Adam, Wessel, Benlian, 2021; Klein, Martinez, 2023).

A significant gap identified in the literature is the lack of studies conducted in the Polish context, particularly those examining consumer preferences regarding customer service in the courier industry.

The authors of this paper use a survey as a methodological approach to identify and assess customer service preferences in the courier industry, with particular emphasis on the choice between interaction with a chatbot and human contact. Understanding these attitudes is crucial in identifying current trends and challenges in customer service. This issue has been previously addressed in other publications, but the research has not yet been directed at customers of the courier industry in Poland.

3. Methods

To assess consumer preferences regarding customer service in the courier industry and verify their attitudes toward AI-based solutions, a survey was conducted (like other scientists - Baabdullah et al., 2022; Chen, Wang, Wood, 2025; Chen, Salahuddin, Khamarudin, 2026; Mahajan, Chauhan, 2026). A proprietary survey was created using Google Forms. The form was divided into six thematic sections, including: an introduction to the research, the respondent's demographic profile, preferences regarding the form of contact depending on the complexity of the problem, an assessment of previous experiences with chatbots, expectations regarding the future of customer service automation in the courier industry, and the identification of trends and challenges in the implementation of AI bots.

The questions included in the questionnaire were intended to examine customers' willingness to use AI-powered virtual assistants and identify factors influencing trust in this form of customer service. The questionnaire consisted of single- and multiple-choice closed-ended questions. A five-point Likert scale was used to examine respondents' opinions. This study structure was intended to facilitate the collection of transparent and standardized data that would enable further quantitative analysis.

The survey was aimed at people who use courier services in Poland. However, no reports were found specifying the number of people utilizing this industry. The "E-commerce in Poland 2025" report stated that the number of people shopping online in Poland in 2025 was approximately 24 million (Gemius, 2025), which is directly related to the need to use courier services. Therefore, it was assumed that the number of people using courier services at least once a year is 24 million.

During the study, 200 correctly completed surveys were obtained. Assuming a significance level of $\alpha = 5\%$ and a permissible error of $e = 7\%$, the minimum sample size for the finite population studied is 196. The number of responses obtained meets this requirement, which allows the results to be considered reliable.

The survey was distributed via social media in February and March 2026. The survey were completely voluntary and anonymous. The collected data was analysed, the results of which are presented in the next chapter of this article.

4. Results and discussion

The primary goal of the study was to identify and assess customer preferences regarding customer service in the courier industry, with a particular focus on choosing between chatbot and human interaction. The collected data allowed us to verify consumer expectations and identify their concerns regarding the future of customer service. The study collected 200 correctly completed questionnaires.

The sample consisted of 66% women, 33% men, and 1% respondents who selected “other gender”. The dominant age group in the study aged 19-25, accounting for 60% of the sample group. The second largest group aged 26-40, representing 15%. Analysis of the respondent profile shows that the majority of respondents were young and actively using modern technologies.

Respondents were first asked about their most recent contact with customer service. The smallest group was those who had contacted customer service more than six months ago – 13%. The largest group was those whose most recent contact occurred within the previous week – 35%. This suggests that respondents' opinions are based on recent market experiences.

In the next question, respondents were asked about their preferences regarding the choice of customer service channel depending on the complexity of the issue. In the case of simple and routine matters, such as checking the status of a shipment, preferences are relatively evenly distributed (Figure 1) – the largest group (44.5%) still prefers contact with a consultant, but overall, over half of respondents choose a chatbot (26.5%) or indicate indifference to the choice (29%).

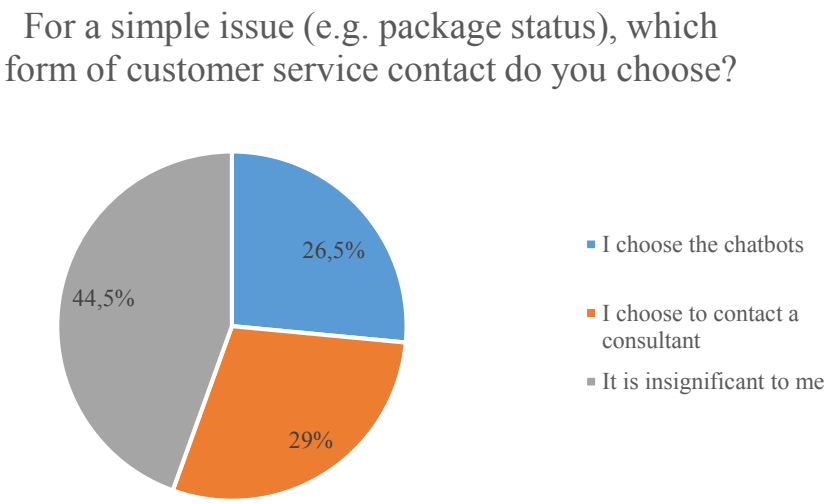

Figure 1. Customer service contact preferences for simple issues.

Source: own study – results of a proprietary questionnaire.

However, a substantial shift can be observed in the case of more complex issues, such as filing a complaint (Figure 2). In such situations, as many as 86% of respondents choose a human consultant, while only 5% of respondents express a desire to use a chatbot, and 9% remain indifferent.

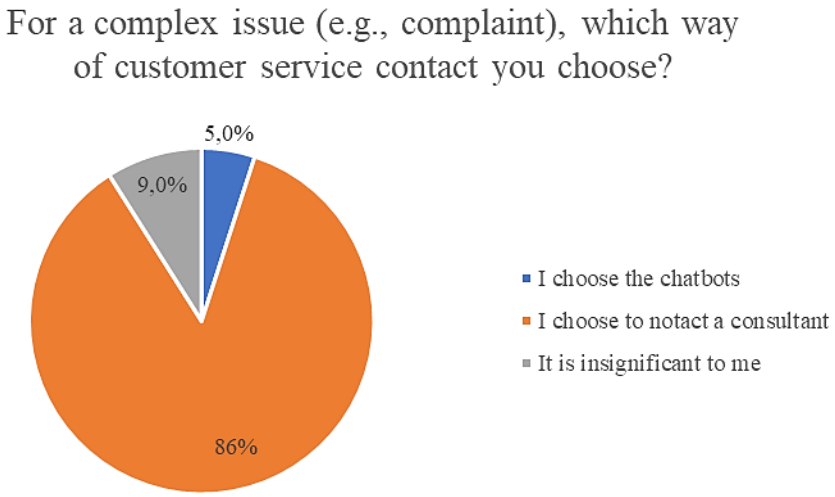

Figure 2. Customer service contact preferences for complex issues.

Source: own study – results of a proprietary questionnaire.

When asked about the importance of minimizing waiting time, 64% of respondents provided affirmative answers, indicating they would choose the option involving the shortest waiting time in every situation (Figure 3). Only 2% of respondents always choose a chatbot. Human contact is always chosen by 34% of respondents, regardless of waiting time.

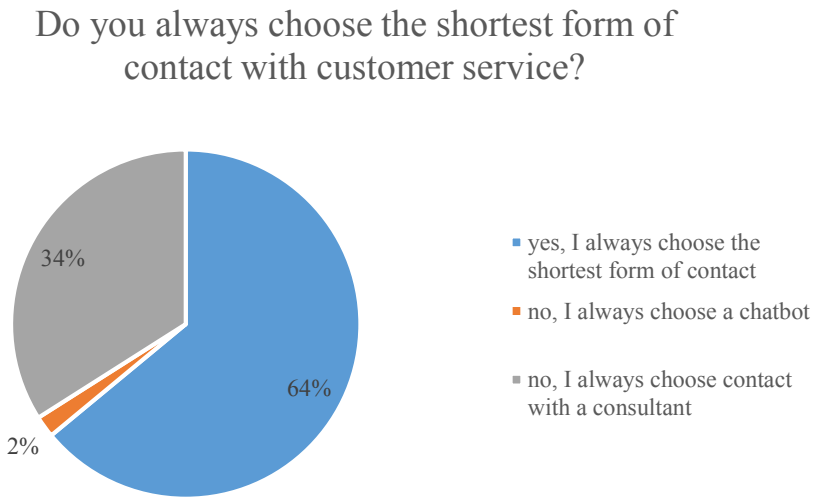

Figure 3. Customer service contact preferences depending on waiting time.

Source: own study – results of a proprietary questionnaire.

The results show that customers demand that more complex issues be resolved by a human. For simpler queries, they prioritize speed of resolution, not paying much attention to the form of contact. The above results answer the first research question (RQ1). The results we obtained are confirmed by the publications of other scientists (Wang et al., 2023; Deepak, Dumka, Mazumdar, 2025; Zhang et al., 2025).

The next section of the survey focused on experiences with chatbots (Figure 4). As many as 65% of respondents believe that chatbots lack a "human touch". Only 26% of respondents consider chatbots competent and helpful. This indicates a generally sceptical attitude toward chatbots.

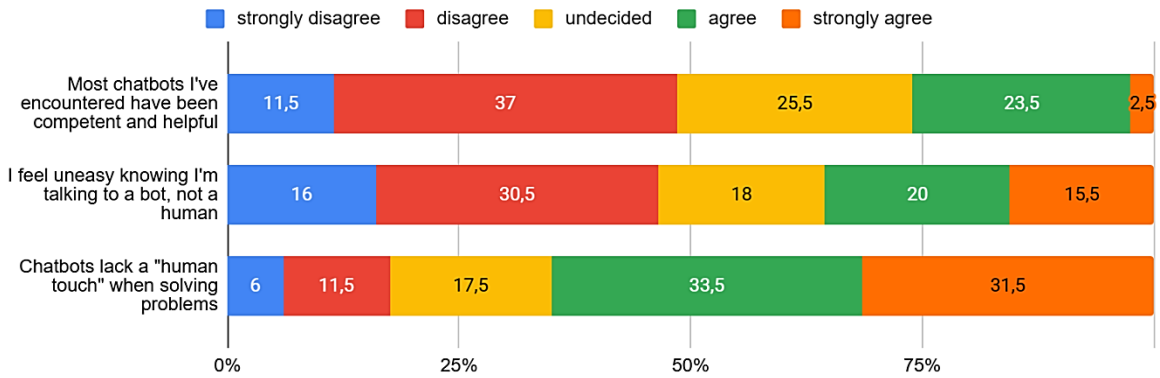

Figure 4. Evaluation of consumer experiences with chatbots.

Source: own study – results of a proprietary questionnaire.

While 35.5% of respondents say they have no problem with automated contact, and 18% have no opinion on the matter, 46.5% of respondents indicate that the awareness of a conversation with a bot makes them uncomfortable (Figure 4). These results show that, in addition to technical accessibility, human connection and empathy are key factors, which

chatbots still lack. Assessing consumer experiences reveals what currently hinders them in using AI bots, which provides an answer to the second research question (RQ2). The results we obtained are similar to the information in the publications of other scientists (Baabdullah et al., 2022; Chen, Wang, Wood, 2025; Mahajan, Chauhan, 2026).

Analysis of respondents' expectations regarding the future development of chatbots reveals significant customer resistance to the complete automation of customer service (Figure 5). The vast majority of respondents completely reject the vision of a bot dominating customer service (76% of respondents), of which 49% strongly disagree with the possibility of being served exclusively by an advanced AI chatbot without human involvement within the next five years. This result is directly related to their disagreement with the statement that AI bots will be able to completely replace humans in the future – as many as 60% of respondents disagree with this thesis.

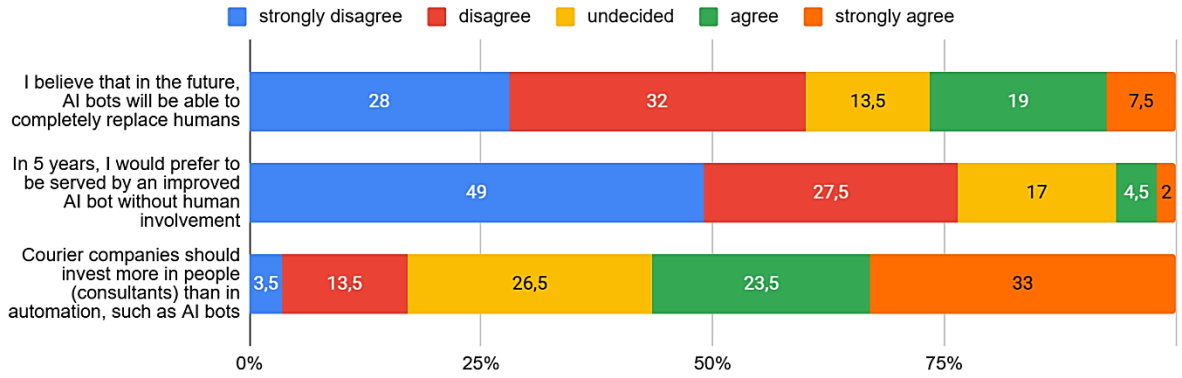

Figure 5. Future expectations regarding chatbots as assessed by consumers.

Source: own study – results of a proprietary questionnaire.

In light of all the above, the results are understandable, as they show that 56.5% of respondents agree with the statement that courier companies should prioritize investing in people (consultants) rather than fully automating the customer service process based on AI bots (Figure 5). The collected results clearly demonstrate that despite the rapid development and increasing digitization of the e-commerce sector, Polish consumers consider humans to be an irreplaceable component of service quality, indicating that their role cannot be eliminated in the future.

The identification of implementation barriers shows (Figure 6) that the main obstacles are not technical issues, such as complicated operation (16.5%) or technical difficulties (31%). Respondents clearly point to AI bots' lack of understanding of complex problems (80.5%), as well as the low quality and precision of responses (61%) as the most significant barriers.

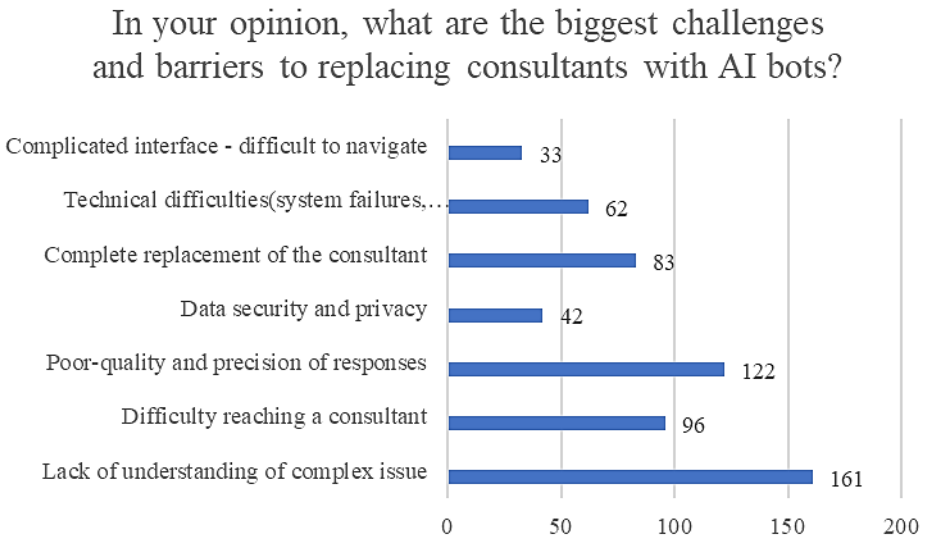

Figure 6. Barriers and challenges related to replacing consultants with AI bots.

Source: own study – results of a proprietary questionnaire.

The key directions for the development of automated customer service in the form of AI bots are strongly linked to consumer experience (Figure 7). Respondents indicated the ability to immediately redirect to a consultant in difficult cases as the most important development direction (79%). Faster and more precise responses ranked second (57.5%), while improved language models ranked third (43%). These results answer the third research question (RQ3). The results we obtained are confirmed by the publications of other scientists (Adam, Wessel, Benlian, 2021; Antonio et al., 2022; Xu, Yan, Cao, 2022; Klein, Martinez, 2023).

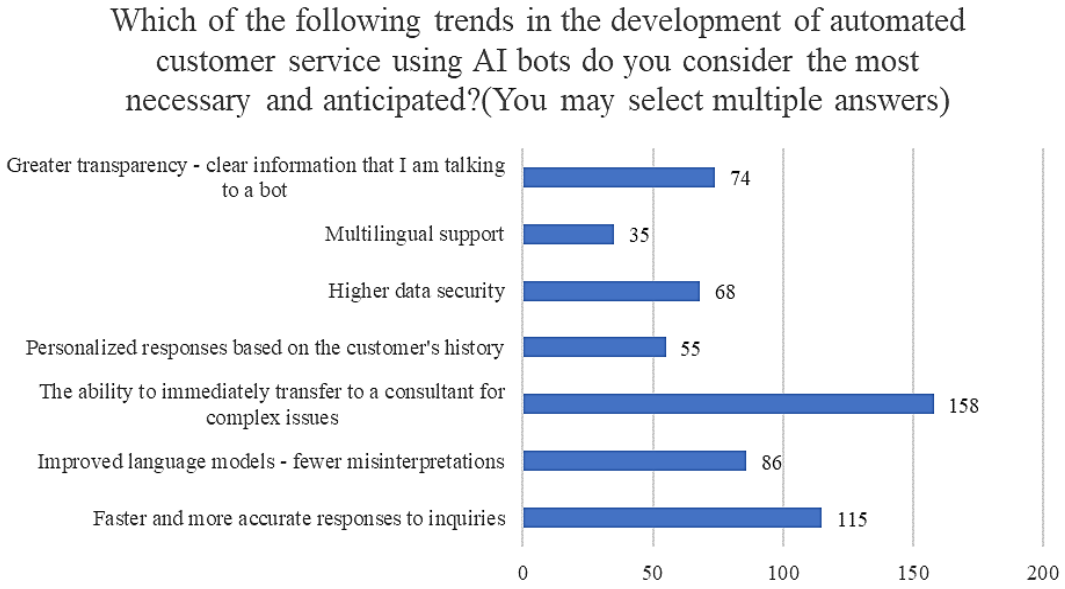

Figure 7. Key directions of development of automated customer service in the form of AI bots.

Source: own study – results of a proprietary questionnaire.

The results of the survey's section on trends and challenges indicate that Polish consumers don't reject AI bot technology, but they do point to its current shortcomings. The acceptance of automation in the courier industry could gain traction under a model that guarantees constant and seamless access to a consultant in challenging situations.

5. Summary

The main goal of this article was to identify and assess customer service preferences in the courier industry, particularly the choice between interaction with a chatbot and human contact. The survey allowed us to identify preferences regarding the choice of a specific channel for customer service communication, assess the functioning of chatbots, define expectations regarding them in the future, and identify key barriers and directions for the development of automated customer service. The results are consistent with conclusions emerging from the literature.

Based on the results, it's noticeable that the reception of chatbots depends on the complexity of the reported issue. For simple queries, customers show moderate willingness to interact with a chatbot, but for more complex issues, they strongly reject the possibility of using this solution (RQ1).

The results clearly indicate the impossibility of implementing complete automation in customer service processes. A fundamental obstacle is the inability of AI bots to understand complex problems and the low quality of the responses they generate. Additionally, consumers point to a lack of a "human touch" on the part of AI bots, which causes discomfort during service (RQ2).

Courier companies should be aware of consumers' resistance to fully digitizing the customer service process. For AI chatbot-based systems to succeed, a working hybrid strategy is essential. AI bots should support the solution of simple, routine problems. In the event of a difficult problem, the service system should ensure that the matter is delegated to a consultant (RQ3).

The conducted survey focused on customer service in the courier industry. However, the identified preferences and barriers can serve as a benchmark for other e-commerce market sectors. It is crucial to continue research in this area as automated customer service systems employing among others AI bots continue to evolve and improve.

Acknowledgements

This research was funded by the by the Polish Ministry of Science and Higher Education – project No. 0812/SBAD/4237 and project No. 0812/SBAD/4240.

References

1. Adam, M., Wessel, M., Benlian, A. (2021). AI-based chatbots in customer service and their effects on user compliance, *Electronic Markets*, *31(2),* pp. 427-445, DOI: 10.1007/s12525 020-00414-7.
2. Antonio, R., Tyandra, N., Nusantara, L.T., Anderies, A., Gunawan, A.A.S. (17-18.09.2022). *Study Literature Review: Discovering the Effect of Chatbot Implementation in E-commerce Customer Service System Towards Customer Satisfaction*. International Seminar on Application for Technology of Information and Communication (iSemantic), Semarang, Indonesia: IEEE, pp. 296-301, DOI: 10.1109/iSemantic55962.2022.9920434
3. Baabdullah, A., Alalwan, A., Algharabat, R., Metri, B., Rana, N. (2022). Virtual agents and flow experience: An empirical examination of AI-powered chatbots. *Technological Forecasting and Social Change*, *181*, 121772, pp. 1-15, DOI: 10.1016/j.techfore.2022.121772.
4. Chen, S., Wang, P., Wood, J. (2025). Exploring the varying effects of chatbot service quality dimensions on customer intentions to switch service agents. *Scientific Reports*, *15(1),* 22559, pp. 1-16, DOI: 10.1038/s41598-025-06490-z
5. Chen, Y., Salahuddin, N., Khamarudin, M. (2026). From Failure to Satisfaction: How AI Chatbot Language Affects Service Recovery in Chinese E-Commerce. *International Research Journal of Multidisciplinary Scope*, *7(1),* pp. 1199-1213, DOI: 10.47857/irjms.2026.v07i01.07511
6. Deepak, Dumka, A., Mazumdar, B. (2025). Establishing Communication in Agent Based E Commerce Platforms. In: Naithani, K., Tiwari, S., Kumari, S. (Eds.), *AI for Product Development* (pp. 1-17), 1st edition. Boca Raton: CRC Press, DOI: 10.1201/9781003536901-5
7. Gemius (2026). E-commerce w Polsce 2025 (E-commerce in Poland 2025). Warszawa: Gemius S.A. Retrieved from: https://gemius.com/documents/81/RAPORT_E-COMMERCE_2025.pdf, 15.03.2026.
8. Kim, H. (2025). Chatbots vs. Human Agents: Emotional Aspects and Trust in Customer Service Interactions. *International Journal of Electronic Commerce Studies*, *16(3),* pp. 1-22, DOI: 10.7903/ijecs.2480.

9. Klein, K., Martinez, L. (2023). The impact of anthropomorphism on customer satisfaction in chatbot commerce: an experimental study in the food sector. *Electronic Commerce Research*, *23(4),* pp. 2789-2825, DOI: 10.1007/s10660-022-09562-8
10. Mahajan, S., Chauhan, V. (2026). AI and human interaction in e-commerce platforms: analysing the consequential effects through empirical investigation. *International Journal of Electronic Marketing and Retailing*, *17(1),* pp. 80-103, DOI: 10.1504/IJEMR.2026.150311
11. Sasikala, S., Kavitha, V. (2026). Exploring of AI-Powered Application in Chatbots for Future Development. In: Raj, P., Sundaravadivazhagan, B., Kavitha, V., Rao, B.N.K., Vijaykumar, H. (Eds.), *Real-Time Artificial Intelligence (AI): Key Motivations, Technologies, Platforms and Use Cases* (pp. 1-34)*,* 1st edition. New York: Apple Academic Press, DOI: 10.1201/9781998511358-10
12. Singh, D., Manju, D., Jatain, A. (2024). Artificial Intelligence and Natural Language Processing Inspired Chatbot Technologies. *Recent Advance in Computer Science and Communications*, *17(1),* pp. 11-20, DOI:10.2174/2666255816666230712141148
13. Wang, C., Li, Y., Fu, W., Jin, J. (2023). Whether to trust chatbots: Applying the event-related approach to understand consumers' emotional experiences in interactions with chatbots in e-commerce. *Journal of Retailing and Consumer Services*, *73*, 103325, pp. 1-11, DOI: 10.1016/j.jretconser.2023.103325
14. Xu, Q., Yan, J., Cao, C. (2022). Emotional Communication Between Chatbots and Users: An Empirical Study on Online Customer Service System. In: Degen, H., Ntoa, S. (Eds.), *Artificial Intelligence in HCI* (pp. 513-530), Lecture Notes in Computer Science, 13336, Cham: Springer, DOI: 10.1007/978-3-031-05643-7_33
15. Zhang, Y., Ding, Z., Sun, J., Zhao, X., Hu, X., Yang, Z. (2025), Optimizing AI strategies in e-commerce customer service: An agent-based simulation. *Electronic Markets*, *35(1),* pp. 1-22, DOI: 10.1007/s12525-025-00821-8