

Chatbot Technology Acceptance in the Insurance Sector: A Trust and Privacy Based Approach

Bachelorarbeit

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1 Introduction

This chapter explains the motivation and problem definition of this research area. Based on the underlying research questions, the research goals are defined and the structure of this bachelor thesis is presented. Furthermore, this chapter outlines the relevance of this research area and is followed by the theoretical foundations.

1.1 Motivation

With advanced digital technology that is disrupting the labor markets by making jobs redundant, technological innovations continue to increase (Brynjolfsson & McAfee, 2011). These technological innovations include the chatbot ecosystem that reaches from simple text- and rule-based chatbots to far more advanced chatbots that communicate using natural language and are based on artificial intelligence (AI) (Sheehan et al., 2020). Chatbots, also described as conversational agents or digital assistants, interact with users through communication in natural language (Følstad et al., 2018; Shawar & Atwell, 2005; Ischen et al., 2019). The first chatbot, Eliza, was developed by Joseph Weizenbaum in 1966 and intended to simulate a human conversation (Przegalinska et al., 2019). Chatbots are not limited in their application area, ranging from healthcare and disease diagnosis to insurance companies. However, the recorded underperformance of commercial used chatbots that leads to a shutdown results from the lack of users' trust in the chatbot (Müller et al., 2019). With their complex but standardizable processes (e.g., claim management) and their enormous amount of customer data, insurance companies represent an excellent target for chatbots (Koetter et al., 2019). Customers benefit from the advantages of an implemented chatbot equally as the company since it reduces the customers' antipathy against the complex processes in insurance companies (Singh et al., 2019), provide a guided information flow (Koettler et al., 2019) and offer an unlimited availability (Raj, 2019). Watson and Nations (2019) called for more privacy research, Przegalinska et al. (2019) and Sheehan et al. (2020) called for more trust research and Rodríguez Cardona et al. (2019) called for more research on chatbot acceptance. Inspired by those calls, this bachelor thesis connects to the chatbot research and focuses on insurance companies with a trust and privacy based approach.

1.2 Research Questions

The main goal of this bachelor thesis is to identify the theoretical treatment of the concept of trust and its multi-dimensionality in information system (IS) and human-computer interaction (HCI) literature. Furthermore, this thesis aims to outline the factors that can approximate trust in chatbot technology, based on HCI theories with the insurance industry in focus. Consequently, two research questions were formulated for this study. The research questions to answer are:

What are the factors of trust that are important in the context of chatbot use, considering the trust in the company and the system?

What are the different trust and privacy scales that are mentioned in the IS and HCI literature?

1.3 Structure

This bachelor thesis is divided into five chapters. The first chapter gives a brief overview of the motivation and structure. Moreover, a section presents research questions that will be answered in the course of this thesis. The second chapter aims to provide a theoretical foundation and is divided into a section that provides a theoretical background on chatbots and a section that introduces trust and privacy scales. This chapter examines the characteristics and advantages of chatbot usage and gives insights into insurance chatbots. Furthermore, a subsection outlines and compares significant differences and similarities of insurance chatbots. The performed systematic literature review is presented in the third chapter and begins with the introduction of the methods. Subsequently, a Concept Matrix, according to Webster & Watson (2002) is presented, in which the current literature is divided into three dimensions. These three dimensions include chatbot, trust and privacy research. The following subsection introduces the analysis of the identified literature and highlights trust and privacy factors and scales. The discussion about the importance of trust and privacy concerns takes place in the fourth chapter. Furthermore, the limitations of this bachelor thesis are disclosed in a section that is followed by the recommendations for future research. These recommendations underline the potential in this research area and are intended to encourage further research. The thesis ends with a conclusion that outlines the most important highlights of the bachelor thesis.

5 Conclusion

This bachelor thesis's objective was to investigate the theoretical treatment of the concept of trust in the IS and HCI literature and identify variables that could model trust in a chatbot technology context within the insurance industry. The theoretical foundations have underlined the opportunities resulting from successfully implemented chatbots like the differentiation from competitors, increased service quality and time-efficiency. Besides their advantages for companies and customers, chatbots can be described as a solution for the insurance industry, which suffers from low consumer interaction and intense competitive pressure. An implication of the wide range of customer data that insurance companies control is that chatbots can use AI to process this data to create value and reduce personnel expenses. Based on a core sample, including 40 German insurance companies, currently implemented insurance chatbots in Germany were identified and compared. The comparison of current insurance chatbots was extended by four additional chatbots that were identified as relevant (i.e., Lemonade's chatbot was mentioned in the chatbot literature). The results from the comparison revealed that anthropomorphic design elements, such as typing symbols or names, are frequently implemented into insurance chatbots. Most surprisingly, it was discovered that seven out of nine analyzed insurance chatbots integrated the typing symbols into the communication, trying to imitate a human-like agent.

To answer the research questions and to enlighten the current state of the art, a systematic literature review was performed that included 32 research papers from 19 different journals that were identified in six different databases. A Concept Matrix, according to Webster and Watson (2002), including three different dimensions (i.e., chatbot research, trust research and privacy research), has highlighted that research in trust, privacy and chatbots can happen isolated or combined. The performed literature research provided evidence for the research gap in the IS and HCI literature since no study was identified that focused on trust and privacy factors in the context of insurance companies. However, domains on which the analyzed researches are based range from customer service to disease diagnosis and represent the high degree of diversification and simultaneously, the underlying problem of this research area. The diversified areas (e.g., healthcare) in which trust and privacy factors have been researched left the question open whether and to what extent these results are transferable to chatbots in insurance companies.

Therefore, identified factors were critically discussed as the applicability and transferability of factors like trust in the provider company and its developed technology, identified in the context of chatbots for disease diagnosis, are yet not proven. However, the findings from the literature analysis outlined agreements in researches, especially on the positive effects of anthropomorphism and transparency on users' trust in the chatbot and their privacy concerns. Furthermore, this bachelor thesis identified privacy risks and linguistic elements as fundamental trust and privacy factors concerning the chatbot system. Moreover, privacy factors concerning the chatbot's provider were examined and include the transparency about the chatbot's skills and limitations, the provider's integrity and third party seals. While McKnight et al. (2011) used trust scales that were developed to measure trust in technology (i.e., reliability, functionality and helpfulness), Moussawi et al. (2020) and Müller et al. (2019) used trust in people scales (i.e., benevolence, integrity and ability). An approach to explain the different scales was based on the idea that chatbots are described as human-like since they show many anthropomorphic design elements like human names (e.g., Lemonade's chatbot Maya). Furthermore, his bachelor thesis highlighted the importance of trust in the provider that enhances users' trust in the chatbot system and simultaneously reduces privacy concerns.

Implications for practice were defined and include the suggestion to introduce a feedback function to provide data sets that can be further explored. Furthermore, an implemented feedback function could increase the chatbot's integrity and consequently, users' trust. Moreover, an interface to a human client advisor can prevent frustration and escalation and should be considered. The foundation of this Bachelor thesis is based on the systematic literature review that had a restricted time frame. However, this time frame was extended by an extensive BS to include previous researches. Moreover, the findings of this bachelor thesis might not be transferable to chatbots in insurance companies. Nevertheless, this bachelor thesis has gone some way towards enhancing the understanding of factors that could enhance users' trust and reduce their privacy concerns in the context of chatbots in insurance companies.