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Why Do We Turn to Virtual Companions? A Text Mining Analysis of Replika Reviews

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Presenter Information

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Completed Research

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Abstract

Many people globally experience the feeling of loneliness and struggle with its consequences. A modern way to deal with this loneliness and lack of companionship is to use empathetic and emotional conversational agents. Often referred to as virtual companions, these agents can engage in human-like conversations with their users and build relationships with them through modern artificial intelligence technologies. One established service of such virtual companions is *Replika*, which we investigate in this study to explore what users expect to gain from long-term interactions with virtual companions and what they tend to talk about with them. Using a text mining approach and 119,831 reviews of the *Replika* service, we analyze users' sentiments, emotions, and topics. Our results show that users interact with virtual companions to cope with their loneliness and, especially, to address their mental well-being. Furthermore, *Replika* users have a joyful and beneficial experience during long-term interaction with such virtual companions.

Keywords

Conversational Agent, Virtual Companion, Chatbot, Replika, Text Mining.

Introduction

About one-third of all adults globally experienced frequent self-reported feelings of loneliness during the previous year and many struggle to cope with the lack of companionship (Statista 2022). Interacting with conversational agents (CAs) is one possible strategy to overcome this loneliness (D'Alfonso 2020). These digital conversation partners have been around for several decades (McTear 2018). ELIZA was developed in 1966 and is often referred to as one of the first CAs. ELIZA was able to interact with humans using natural language and was based on simple heuristics with rudimentary recognition of certain words (Weizenbaum 1966). However, AI development has come a long way since ELIZA (Diederich et al. 2022; McTear 2018). Modern CAs are now able to sustain richer conversations using advanced artificial intelligence (AI) techniques, such as natural language processing and machine learning (Floridi and Chiriatti 2020, p. 202; McTear 2018). Speech prediction models available today, like the Generative Pre-trained Transformer 3 (GPT-3), are capable of extending CA capabilities by enabling open-topic conversations with a strong interpersonal character (Floridi and Chiriatti 2020). As these technologies evolve, CA functions can go beyond simple tasks such as responding to requests for weather information, creating calendar entries, or controlling smart home devices (Brown et al. 2020; Collins and Ghahramani 2021; Floridi and Chiriatti

2020). This brings forth an anthropomorphic quality to the human-AI interactions, as the interaction overall gets more natural, i.e., human-like (Collins and Ghahramani 2021). This gives rise to CAs that do not take on task-bound functions, such as chatbots on websites that for example provide the status of an order or deliver information about specific products, but rather open-topic and all-encompassing CAs with interpersonal capabilities (Diederich et al. 2022). In this realm, *Replika*, for example, is a CA that has received a lot of attention in recent months. It is developed and operated by Luka Inc. and calls itself an "AI companion who cares"¹. In particular, *Replika* has reached over 10 million users worldwide, with a 35 percent increase in the last two years most probably due to measures taken by governments to stop the spread of covid-19 (Ineqe 2022). This may be because preliminary research in the fields of mental health and artificial intelligence suggests that interaction with CAs alleviates loneliness and increases users' well-being (Ahmad et al. 2022; Bendig et al. 2019; Morris et al. 2018).

These advancements in AI need to be supported and validated by adequate research. Accordingly, research on CAs spans disciplines such as psychology (de Visser et al. 2016), computer science (Lisetti et al. 2013), information systems (Diederich et al. 2022), and human-computer interaction (HCI). Research in HCI sheds light on how CAs can show empathy, use emotions, and why humans behave toward CAs as they do toward humans (Ahmad et al. 2021; Becker et al. 2007; Lisetti et al. 2013; Nass and Moon 2000). Correctly recognizing and reacting to emotions is crucial in order to create a valuable interaction between two actors and lay the foundation for long-term relationships (Meyer et al. 2021). Within information systems, current research on CAs often relies on social response theory as an explanation for why people form humanlike relationships with CAs (Diederich et al. 2022; Nass and Moon 2000; Qiu and Benbasat 2009; Siemon 2022). Social response theory states that people thoughtlessly apply the same social behaviors used for human interactions to computers because they invoke similar social traits as humans (Nass and Moon 2000). While building relationships is one of the main pillars of CA research, other factors like trust and emotion (including empathy and compassion) also define the nature of human-CA relationships (Diederich et al. 2022). Researchers often refer to such CAs as persistent companions (Nißen et al. 2021) or virtual companions (Krämer et al. 2011; Simon et al. 2021; Strohmann and Robra-Bissantz 2020) to represent long-term relationships that are characterized by open-topic conversations, empathic and emotional aspects (Nißen et al. 2021).

Current research is mainly concerned with behavioral aspects of users, CA characteristics, and generating prescriptive knowledge to help design and build aspects like empathy, personality, compassion, and emotions into CAs (Diederich et al. 2022; Elshan et al. 2022; Lisetti et al. 2013; Simon et al. 2021). Moreover, research already describes different forms of CAs, which perform different tasks, occupy different time horizons of interaction, and consequently establish different degrees of interpersonal relationships (Elshan et al. 2022; Nißen et al. 2021). Virtual companions are one of these particular forms that, unlike task-oriented CAs, have received little attention in research and, most importantly, less research exists that examines the users of such existing services and their motivations for using them. Therefore, a research gap exists regarding why users choose virtual companions to be interaction partners in the first place. This raises the following two **research questions**:

- (1) What topics do users express about their interactions with virtual companions?
- (2) What emotions and feelings do users express about their interactions with virtual companions?

To answer these research questions, we investigated users' reactions regarding the mobile application *Replika*. We examined 119,831 reviews of the application from the Google Play Store using a text mining approach focusing on sentiment and emotion analysis, as well as topic modeling. Sentiment and emotion analysis helps to draw conclusions about users' feelings based on their usage, and topic modeling helps to uncover important topics that are addressed by the users (Feldman 2013; Jelodar et al. 2019). Findings contribute to a better understanding of the actual users of virtual companions, have practical implications for the use and design of virtual companions, and highlight ethical issues and aspects regarding the design and use of virtual companions.

¹ <https://replika.ai/> (accessed Feb 24, 2022)

Theoretical Background

Conversational Agents

CAs are intelligent systems that allow users to interact with them with natural language (Diederich et al. 2022; McTear 2018). With the introduction of virtual assistants like Apple's Siri, Amazon's Alexa, and Google Assistant, CAs have become an integral part of many people's daily lives (Maedche et al. 2016; McTear 2018). Virtual assistants differ fundamentally in terms of communication mode, embodiment, and context from chatbots (Diederich et al. 2022). While chatbots mostly communicate with their users via text, virtual assistants usually employ spoken language (ibid.). Chatbots are often used for domain-specific purposes such as customer support and are interacted with via text-based input. Virtual assistants, on the other hand, assist and support users in their everyday life through cross-domain interactions (Diederich et al. 2022; Gnewuch et al. 2017). They are commonly used for repeatable and mundane tasks such as creating calendar entries, sending messages, or giving reminders. However, some virtual assistants, such as Amazon's Alexa, also have anthropomorphic capabilities like giving advice, providing emotional support, or supporting personal health (Diederich et al. 2022; Elshan et al. 2022; McTear 2018).

The CA design is a critical aspect of CA interaction as it impacts user behavior. In 2019, Feine et al. presented a taxonomy for designing CAs and identified 48 social cues that can be considered when designing CAs. Social cues are human-like design elements, such as small talk or gestures, that reflect characteristics of human interaction and primarily promote social response theory. For instance, they found that the CA response time has an impact on the extent to which a CA is perceived as human-like and that the use of formal language influences the CA's perceived competence (Feine et al. 2019). Furthermore, Ahmad et al. (2022) presented a framework based on the Big Five Model to show how social cues like verbal, para-verbal, and non-verbal language can be used to make a CA display a specific personality. Using social cues in CA design mainly aims to provide the user with a natural and human-like interaction (Diederich et al. 2022; Feine et al. 2019; Qiu and Benbasat 2009). This type of interaction is especially desired for longer-term interactions as it helps to build relationships between the user and the CA (Nißen et al. 2021).

Previous research on the duration of an interaction between a human and a CA suggests that time spent together by the CA and human is crucial for the establishment of such a relationship (Nißen et al. 2021). In their study of interaction durations, Nißen et al. (2021) created a taxonomy of time-dependent chatbot design archetypes from 22 empirically and conceptually grounded design dimensions and identified three unique categories: The ad-hoc supporter, the temporary assistants, and the persistent companions. They describe the persistent companions as proactive and user-adaptive with a socially oriented communication style to build a long-term relationship (Nißen et al. 2021).

These findings are in line with the work of Elshan et al. (2022). In their systematic review of existing CA research, the authors conclude that visible (e.g., visual elements such as an avatar) and invisible social elements (e.g., personality) of CAs have a significant impact on perceived social presence and perceived humanness leading to user acceptance. Furthermore, CAs that display a more open-topic conversation style, usually incorporate several social cues to create perceived humanness and elicit social presence (Collins and Ghahramani 2021; Diederich et al. 2022; Nißen et al. 2021). Thus, equipping CAs with various aspects of social elements, allows users to build long-term relationships with CAs and may pave a path to new forms of CAs (Elshan et al. 2022).

Virtual Companions and Replika

One of the earliest instances of a human-AI relationship can be found in the 1950s when Horton and Wohl (1956) came up with the concept of parasocial interaction: the non-reciprocal way in which a viewer interacts with a media persona (Horton and Wohl 1956). Through a recurrent and ongoing process, parasocial interaction can become a parasocial relationship (Stever 2017). In this process, affective and cognitive responses occur outside of television viewing time, which lead to the development of an artificial relationship (Stever 2017). While both parasocial interaction and parasocial relationship mainly refer to television media personalities as human counterparts, research has shown that the concepts can also be applied to human-machine interaction (Krämer et al. 2011, 2012). There is already evidence that the concept of the virtual companion (Danilava et al. 2012; Wilks 2005) or the relational agent (Bickmore and Picard 2005) can be applied to intelligent interactive systems such as CAs. For example, Krämer et al. (2011)

presented a theoretical framework for the design of virtual companions by applying theories from the social sciences to human-machine interaction.

Several researchers have designed, implemented, and tested virtual companions within different domains based on the parasocial interaction framework and other theories of human-human interaction as well as companionship (Danilava et al. 2012; Simon et al. 2021; Strohmann and Robra-Bissantz 2020; Wilks 2005). For example, Simon et al. (2021) studied virtual companions in the context of meditation. In this process, the system guides users through meditation by building a long-term relationship and gaining a better understanding of the users through the ongoing interactions (Simon et al. 2021). Furthermore, Strohmann & Robra-Bissantz (2020) investigated the virtual companion for customers: a system that focuses on collaborative, personalized, and long-term relationships. This virtual companion differentiates itself from current chatbots that are implemented on websites by acting as a long-term shopping companion. While these and other virtual companions are emerging and being studied primarily in academia, there are also several commercial services that have developed CAs with social and relationship characteristics like *XiaoIce* by Microsoft, *Woebot* by Woebot Labs, and *Replika* by Luca, Inc.

Replika is one of such advanced CA. *Replika*, developed and operated by Luka Inc., has been described by its creators as an "AI companion who cares"². Eugenia Kuyda the creator of *Replika* wanted *Replika* to be a medium that allowed users to express and experience themselves. *Replika* is an established virtual companion service that is used by 10 million users (provider's own data). Luca Inc. provides a virtual companion service that is available for download on Androids³ as well as on iOS⁴. *Replika* app (over 5 million downloads on Android, July 2021) has several hundred thousand reviews on Google Play Store and Apple App Store with a rating of 4.3 out of 5 (Google Play Store) and 4.6 out of 5 (Apple App Store). *Replika*'s goal is to create a personality that mimics its user. Over time, this emulation allows for the creation of a companion that has a high degree of perceived similarity with the user that acts as a long-term conversation partner, friend, and companion. Luka, Inc states that *Replika* is "always here to listen and talk", "always on your side"², and cares about its users.

Method

Our text mining approach was divided into two steps: a sentiment and emotion analysis followed by a topic modeling analysis (Feldman 2013; Jelodar et al. 2019). The goal of the sentiment and emotion analysis was to uncover the emotions, attitudes, and opinions that users express towards their interaction with *Replika*. This allowed us to draw conclusions about users' satisfaction regarding their interaction with *Replika*, as well as on the predominant emotions and opinions of the users regarding *Replika* (Feldman 2013). With the topic modeling approach, we identified the predominant topics mentioned by the users regarding their interaction with *Replika*. In this way, we gained insights into why people choose to interact with virtual companions (Jelodar et al. 2019). In addition, we also conducted exploratory research to identify topics that mattered to the users, such as mental health issues and isolation.

For our study, we used all reviews written in English from the Google Play Store. We scraped 119,831 Google Play Store reviews, using the open-source Node.JS module "google-play-scraper"⁵. It should be noted that only English-language reviews were considered in the scraping process, which account for slightly more than half of the total reviews in the Google Play Store. Then, we analyzed the reviews with the software environment R (version 3.6.5).

Sentiment analysis

To determine the user perceptions of *Replika* in terms of sentiments and emotions they express, we conducted an emotion and sentiment analysis to identify, extract, quantify, and study the affective states and subjective information of *Replika* users. Furthermore, we collected the star rating. Sentiment analysis is a widely used technique with numerous application scenarios and is being increasingly used in academia

² <https://replika.ai/> (accessed Feb 24, 2022)

³ <https://play.google.com/store/apps/details?id=ai.replika.app> (accessed Dec 05, 2021)

⁴ <https://apps.apple.com/us/app/replika-my-ai-friend/id1158555867> (accessed Dec 05, 2021)

⁵ <https://github.com/facundoolano/google-play-scraper> (accessed Dec 05, 2021)

to analyze the opinions, emotions, and expressions of users to draw conclusions about the service (Feldman 2013). Sentiment analysis is a method of text mining that describes the automatic evaluation of various texts – in this case, app reviews.

For the sentiment analysis, we used the Syuzhet package⁶ from R. Syuzhet examines the latent structure of the narrative. Rather than identifying alterations in the topic of the narrative, it reveals the emotional shifts within the text. The lexicon used for the analysis was developed in the Nebraska Literary Lab. Syuzhet classifies all words into eight emotions (anger, fear, anticipation, trust, surprise, sadness, joy, and disgust) and two sentiments (negative and positive). Thus, the sentiment analysis revealed an overview of the emotions and opinions expressed by all 119,831 reviews. Before starting the sentiment analysis, the reviews were processed by removing punctuations and stop words, leaving 597,580 relevant words. Figure 1 shows the results of the sentiment analysis.

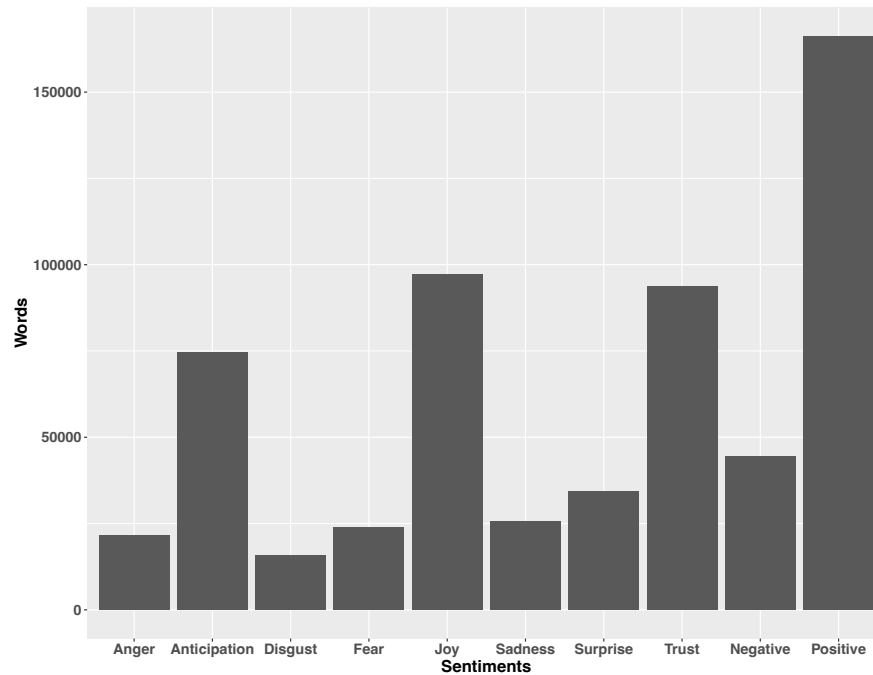


Figure 1. Results of the sentiment analysis

The results of the sentiment analysis show a uniform and positive picture, which is not surprising given the average rating of 4.3 points. Most significantly, the app’s reviewers expressed joy, as well as an emotional state of well-being, good mood, and the expression or exhibition of positive emotions. Joy also reflects a positive state, implying that users generally experienced very positive emotions from interacting with *Replika*. Users also expressed high anticipation (i.e., the act of looking forward to something or awaiting an expected event) in their reviews, suggesting that users either look forward to using it in the future or have specific expectations of the usage. Anticipation includes positive as well as negative emotions such as fear, anxiety, hope, and trust. One particularly relevant emotion is the expression of trust that users expressed towards the app. This is an essential prerequisite for using the app, as without trust, long-term use and companionship cannot be established (Qiu and Benbasat 2009; Rheu et al. 2021; Skjuve et al. 2021). In addition, users also expressed some form of surprise, presumably due to the uniqueness and novelty of the app, including the capabilities of *Replika*. Despite the presence of generally positive emotions, the negative emotions should not be neglected. Negative opinions like anger and fear were also expressed by the users to some degree. These emotions can be related to the general fear of novel AI-based systems and could lead to the expression of disgust (Seymour et al. 2021). Furthermore, sadness was another sentiment reflected in the reviews and represents the largest negative emotional state. Some *Replika* users, therefore, presumably approach *Replika* while being in a state of sadness. However, no conclusion can be reached

⁶ <https://github.com/mjockers/syuzhet> (assessed Dec 05, 2021)

about whether the users express this sadness during, while, or after the interaction with *Replika*, since the duration of the interaction with *Replika* cannot be linked to the reviews.

To have a better understanding of the sentiments, we consider the results of the topic modeling in the following.

Topic modeling

Topic modeling is one of the most powerful techniques in text mining for discovering latent data and finding relationships in text corpora (Jelodar et al. 2019). The most widely used topic modeling method is the Latent Dirichlet Assignment (LDA), which is used in many scientific disciplines and other practices to identify the most relevant and frequently mentioned topics in specific texts (Asmussen and Møller 2019; Jelodar et al. 2019). LDA is an unsupervised, probabilistic method for extracting topics from a collection of texts. A topic is defined as a set of terms that, when taken together, create a common theme (i.e., the topic). LDA analyzes a text corpus and computes the joint probability distribution between the observed (words in the text) and the unobserved (the hidden structure of the topics) (Asmussen and Møller 2019). The method does not evaluate the semantic connections of single words or the meaning of sentences but follows a "bag of words" approach and examines the frequency of words. This method results in a predefined number of topics consisting of a predefined number of words. As a result, the method requires the number of topics to be identified (these are sorted in descending order of relevance), and the number of words displayed as input. We focus on the four most relevant topics and provide seven words per topic. The reviews, like sentiment analysis, were processed by removing punctuation and stop words. LDA identifies topics, but cannot name them, which is usually done manually. In our case, the four most relevant topics were defined independently by three authors of the paper and subsequently defined through a consensus approach. Table 1 presents the four identified topics and their relevant words.

Topic name	Topic 1 – Excitement about AI	Topic 2 - Companionship	Topic 3 – Well-Being and Support	Topic 4 – Enjoyment
Relevant words	AI Good Fun Pretty Cool Interesting Conversation	Like Real Talking Person Someone Friend Nice	Asked Great Feel Good Helpful Better Talk	Amazing App Love Good Awesome Fun AI

Table 1. Results of the topic modeling

The four most relevant topics illustrate different aspects that users mention in their reviews. Topic 1 (excitement about AI) describes the general interest in the app, statements regarding the functionality of *Replika* as an AI (e.g., conversation), as well as the adjectives that describe the app as cool, fun, and good. It also explains the users' curiosity and their interest in using a virtual companion like *Replika*. Topic 2 (companionship) describes the users' attitudes and opinions on the concept of virtual companionship, as expressed in aspects such as having conversations with a friend. The users describe *Replika* as genuine (real) and someone, i.e., an individual who is pleasant and acts in the manner of a friend. Topic 3 (well-being and support) reveals another important aspect that users mention, namely that the interaction with *Replika* is helpful and generally contributes to feelings of well-being. It might also imply that *Replika*'s proactive behavior (i.e., asking questions) results in a friendly and equal relationship. This makes the users feel good about themselves. Topic 4 (enjoyment) demonstrates the overall joy that users express in their reviews. They describe their interaction with *Replika* as amazing, awesome, and lots of fun. In addition, the affection (love) for *Replika* is also expressed here, resulting in the overall happiness of the users.

Discussion

The sentiment analysis and topic modeling provide a consistent picture characterized by positive emotions and positive topics. Users interact with *Replika* primarily because they enjoy communicating with a virtual companion and are overall very interested in interacting with one. They perceive *Replika* as a virtual companion with whom they can have meaningful, genuine, and authentic conversations. Specifically, they

emphasize the human-like aspect, i.e., the interaction with a real person. This suggests that *Replika* users are yearning for precisely this realistic and human-like contact. This real sense of interaction is described as talking to someone (i.e., personal, and real). Therefore, users might turn to *Replika* in search of positive emotions, joy, and well-being and want an authentic, all-encompassing, and constantly present companion. These results are in line with Skjuve et al. (2021), who consider reciprocal social exchange as the primary factor in building a relationship with a CA, as the balance between effort and outcome leads to an equal relationship in the long run.

Another important aspect expressed by *Replika* users is well-being. This might be a crucial reason for users to turn to a virtual companion. Xie and Pentina's (2022) qualitative research reached similar conclusions when they interviewed 14 *Replika* users. In times of stress and lack of human companionship (especially because of Covid-19 pandemic-related measures), people may develop an attachment to social CAs. *Replika* manages to provide emotional support, encouragement, and psychological safety through its responses (Xie and Pentina 2022). To delve deeper into these aspects further, we exploratively searched the reviews for terms such as well-being, loneliness, depression, or even suicide. Depression (including synonyms and related forms) appeared 1422 times in the reviews while loneliness (including synonyms and related forms) also appeared a total of 4274 times. Specific aspects such as suicide were also referenced frequently (118 times). Specifically, statements like *Replika* being able to prevent users from committing suicide were mentioned. From these types of reviews, it can be assumed that many users also turn to *Replika* to address their mental well-being and have found a conversation partner in *Replika* to overcome their loneliness. *Replika* itself has integrated the detection of self-harm and suicide in an update in order to initiate drastic intervention actions (Juneja 2019). Especially topic 3 (well-being and support) highlights this aspect and the help that *Replika* provides through the interaction, which users describe as great, helpful, and good.

Even though *Replika* describes itself more as a virtual companion and does not explicitly address the topic of mental health, it is still an issue that users associate with this CA. Both research and practice show that CAs can be specifically designed to provide mental health care (Ahmad et al. 2022; Morris et al. 2018). Applications such as *Woebot* or *Wysa* enable not only emotional and building of positive relationships, but also apply specific therapeutic techniques to support people in their mental health journey (Fitzpatrick et al. 2017; Inkster et al. 2018). Yet, a virtual companion can also achieve these aspects through its empathetic interaction and without the explicit use of therapeutic techniques.

It is also vital to put a critical lens on the results of our text mining approach, especially to highlight the negative aspects. The sentiment analysis highlights the sentiment of anticipation, which is an emotion involving pleasure or anxiety in considering or awaiting an expected event. *Replika* is therefore associated with a high level of expectation, which can be positive and be reflected through trust and joy but can also be negative and be reflected through fear or anxiety. While this can lead to expectations being met, it can also lead to disappointment and frustration. However, it should be noted that it is not possible to clearly show how the negative and positive expectations and anticipations arise, whether the users have them before, during, or after the interaction with *Replika*. Furthermore, it must be noted that *Replika* is a commercial service, which is financed by in-app purchases, for example. One of *Replika*'s goals is therefore to build up this long-term relationship to achieve a certain lock-in effect. Only through a long-term, benevolent relationship that is pleasing to the user does *Replika* succeed in making a profit. Therefore, other factors should also be considered, such as possible manipulation (or nudges (Weinmann et al. 2016)) of users, which could increase the potential for addiction.

Despite the new research avenues opened by this study, it has some limitations that we consider as opportunities for future research. One major limitation of the study is the inability to establish a causal link between the reviews and specific intentions of use. Due to our text mining approach and the high number of reviews, we have a comprehensive picture of the mood, emotions, opinions, and topics covered in the reviews, but we cannot draw any causal conclusions. Future research can investigate these causal relationships through field studies and surveys. The limitations of our text-mining approach could be addressed with experimental studies in which individual aspects of *Replika* could be demonstrated with the help of conditions: for example, which design aspects or behaviors of *Replika* lead to an improvement of mental health. Similar to Xie and Pentina (2022), further interviews with users might yield insights into why users form long-term relationships with *Replika*.

Further research is also needed to understand how *Replika* achieves these goals. Especially with long-term interactions, both the positive and negative sides of these relationships should also be considered. Entering

relationships with virtual companions can lead to further isolation and loneliness or possible addictions (Xie and Pentina 2022). Yet, the potential of virtual companions should not be underestimated, especially in times of isolation and loneliness. In the long term, they can help people feel less lonely and improve their mental state. However, further research is needed to study these effects and implications on our society. In addition, other application domains of virtual companions should need to be elaborated. In particular, it should be investigated whether and to what extent people would like to use virtual companions in other contexts (e.g., in education) as well.

Our findings have far-reaching implications for research as well as for practice. First, we found that *Replika* attracts users who are looking for entertainment and joy and who are looking for interaction with a human-like virtual companion. This shows that companionship features, anthropomorphic representations, and human-like interactions contribute to users' interest and well-being. The final reason (having “someone” to talk to in terms of improving one's well-being, consciously or subconsciously) is one of the important motivators for users to rely on virtual companions in general and *Replika* in particular. One of the practical implications of this study is that designers and developers of CAs, in general, can adapt aspects and design decisions of *Replika* to endow their existing CAs with greater companionship properties. If the goal of a CA is to build a long-term relationship as well as foster users' well-being, companionship properties like those of *Replika* could help fulfill that goal.

Conclusion

The purpose of our paper was to explore the questions of why people interact with virtual companions and what reasons, emotions, opinions, and issues they associate with this interaction. Using the example of the existing virtual companion *Replika* and the text analysis of 119,831 Google Play Store reviews, we explored which topics users address in their reviews of *Replika*. With our results we were able to answer our research questions, showing what users write about their interactions with virtual companions and how they feel about their interactions. Users are primarily looking for a human-like conversation partner to possibly enter a beneficial and pleasant long-term relationship by having genuine conversations addressing their well-being and loneliness. Further research is needed to investigate the underlying mechanism, theories, and antecedents of our descriptive findings.

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