Tab 1

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DESN4000 Degree Project
Assignment 1: Research Question and Literature Review
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Research Question

How and to what extent do AI emotional companionships influence an individual's emotional well-being and interpersonal relationships?

Project Description

As the technology behind AI companions continues to evolve, it prompts critical questions about their role as potential substitutes for human relationships. In light of the growing loneliness epidemic, there has been a notable rise in the use of chatbots and AI companions, especially among the younger population, leading to an increased interest in understanding their impact on our emotions and interactions with others. Thus, this project hopes to explore how and to what extent do customizable AI emotional companionships influence an individual's emotional well-being and affect real-life relationships. I aim to investigate whether AI companionship has a positive or negative effect on our lives by analyzing the reliance on AI for companionship and delve into how these interactions influence our relationships with partners, family, and friends. Since this area of research is pretty new, I hope to contribute to the ongoing discourse surrounding AI companionship, shedding light on its implications for mental health and the future of human relationships.

Sources

Source 1:

"In A.I. we trust?" The effects of parasocial interaction and technopian versus luddite ideological views on chatbot-based customer relationship management in the emerging "feeling economy"

Citation

Youn, S., & Jin, S. V. (2021). "In A.I. we trust?" The effects of parasocial interaction and technopian versus luddite ideological views on chatbot-based customer relationship management in the emerging "feeling economy." Computers in Human Behavior, 119, 106721. https://doi.org/10.1016/j.chb.2021.106721

Source Description

Format: Journal Article
Discipline: Artificial Intelligence (AI), customer relationship management (CRM), Marketing, Consumer Behaviour

Methodology

This source uses primary research using a between-subject experiment comparing two chatbot relationship types—virtual friend vs. virtual assistant. It was conducted online where 607 participants (consumers), recruited through Amazon MTurk online panel via Qualtrics, were each assigned one of the two conditions. The experiment assessed the impact of both chatbot relationship types on

consumers' behavioural intentions and relationship marketing outcomes, including consumer ideology (Technopian vs Luddites) as a factor.

Evidence

Seounmi Youn, a professor in Marketing Communication at Emerson College, holds a B.S. and M.A. in Korea University and a Ph.D. from the University of Minnesota, with extensive industry and academic experience in marketing and advertising research, particularly in cross-cultural marketing and advertising perspectives. Youn's research spans interactive advertising effectiveness, adolescents' online socialisation (specifically privacy concerns), and consumer profiles for strategic segmentation in marketing communication. S. Venus Jin, a social scientist and data scientist, focuses on transformative artificial intelligence (AI), AI-empowered digital transformation, AI-driven digital marketing/branding, AI-VR-convergence, emerging technologies, and consumer behaviours. Jin holds a master's and doctoral degrees from the Annenberg School for Communication and Journalism at the University of Southern California. Throughout Jin's career, Jin held academic positions at multiple colleges—currently at Northwestern University in Qatar, teaching AI and machine learning, digital media, personal branding, digital innovation, social media marketing, and research methods. Together, Youn and Jin have collaborated on several studies exploring human-AI interaction.

Critical/Theoretical Concepts

This source examines how the type of relationship (virtual assistantship vs. virtual friendship) that consumers build with AI-enabled chatbots influences brand perception, parasocial interaction (PSI), and customer relationship management (CRM). Throughout the study, it explores how modern chatbots can closely stimulate human interactions, sometimes leaving consumers unaware that they are engaging with an AI rather than a human assistant. It also explores theoretical concepts, such as anthropomorphism, where human-like qualities are attributed to AI, and parasocial relationships, in which users form one-sided emotional bonds with AI companions. The study also considers consumer ideological views, contrasting technopians, those who are enthusiastic about technology, with luddites, who are skeptical of it. Additionally, the study frames the emerging shift from a "thinking economy" to a "feeling economy," which talks about companies' focus on emotional intelligence in both human (HI) and artificial intelligence (AI) for fostering interactions driven in empathy to appeal to its users.

Conclusion/Answer

This research investigated the effectiveness of AI chatbots in consumer interactions, focusing on how different relationship types—virtual friendship vs. virtual assistantship—shape psychological connections and how consumer ideological views (technopian vs. luddite) impact AI acceptance. The findings reveal that chatbots can adopt roles (friend or assistant) that significantly influence CRM, affecting behavioral intention, satisfaction, and trust. Between the two, virtual friend chatbots foster stronger PSI than virtual assistant chatbots, making them more emotionally engaging. Consumers who are technopians are more receptive to the integration of AI in brands, while luddites remain cautious of it. As this area of research is still in its early stages, the authors conclude with a call for deeper exploration into how AI acceptance intertwines with philosophical questions around AI's future in society.

How does this connect to your project?

This source supports my research question by reinforcing the general idea (and also my assumption) that the friendlier and human-like a chatbot is, the stronger the parasocial effects on users, leading to deeper emotional bonds with them. While my focus isn't surrounding brand personalities or marketing studies, I've gathered that chatbots play a significant role in representing values and building trust, which parallels how AI companions might influence users' emotional well-being and perceptions.

Source 2:

How AI Companions Are Redefining Human Relationships In The Digital Age

Citation

Sahota, N. (2024, July 18). How AI Companions Are Redefining Human Relationships In The Digital Age. Forbes. https://www.forbes.com/sites/neilsahota/2024/07/18/how-ai-companions-are-redefining-human-relationships-in-the-digital-age/

Source Description

Format: Online Web Article
Discipline: Innovation, AI, Psychology, Innovation/Technology

Methodology

This source is informed by Sahota's background and his experiences in academia, which then informed his insights into AI's implications on society.

Evidence

Neil Sahot is an AI expert and IBM Master Inventor with 20 years of work and experience across various industries, including healthcare, legal services, telecommunications, and government. Sahota serves as an AI Advisor to the United Nations, where he contributes to initiatives like the AI for Social Good Committee and works on projects assessing AI's economic impact and potential to advance Sustainable Development Goals. As a professor at UC Irvine and a leader in IBM's Academic Initiative, he fosters collaboration between IBM and top universities, developing AI-powered innovations.

Critical/Theoretical Concepts

This source examines the emergence of AI companions and how they are designed to provide emotional support, companionship, and even romantic or intimate experiences. With advancements like *Replika*, *Gatebox*, and *Harmy by RealDoll*, AI companions have evolved to offer judgement-free, accessible support, creating an appealing option for those dealing with social isolation or loneliness, especially with major health risks like the loneliness epidemic on the rise. Sahota examines the psychology behind AI companionships and how their constant availability, lack of emotional complications, and increasingly human-like interactions make users feel as though they're communicating with someone genuinely responsive rather than a robot. Yet, Sahota also dives into the concerns of heavy reliance on AI companionship, noting how it could intensify loneliness and social isolation, as people might favour AI over human relationships. Sahota also looks into the implications for traditional dating and marriage, where AI may eventually supplement or even replace human relationships.

Conclusion/Answer

Sahota concludes that AI companions, developed to provide emotional support, address the needs of users experiencing loneliness or social isolation. This is because AI avatars offer ongoing companionship and convenience that users can control. The appeal of AI companions lies in their ability to mimic human interactions, potentially helping users develop social skills and confidence transferable to human relationships. However, this shift toward AI companionship challenges

traditional ideas of emotional connection, raising questions about the nature of human relationships and the essence of being human. Sahota calls out the need for balance, suggesting that while AI can offer emotional support, human connections should still be prioritized. He calls out for the ethical responsibility of AI developers to consider the psychological and social implications of human-AI relationships.

How does this connect to your project?

This article provides valuable insight into the motivations behind AI companionship, revealing that many users seek AI for emotional support due to feelings of loneliness, isolation, or the desire for a convenient, judgement-free interaction. It affirms some of my assumptions about the positive and negative impacts of AI companionship, in which case, while AI offers an accessible form of social support, it may also further social isolation or reshape our understanding of human connection. But then again, this all depends on the individual and their personal circumstances—which I haven't really thought or considered before. It raises new questions relevant to my project, particularly about whether empathy, companionship, and emotional support are inherently human experiences or if AI can genuinely fulfill these roles.

Source 3:

Relationships 5.0: How AI, VR, and Robots Will Reshape Our Emotional Lives

Citation

Kislev, E. (2022, 21 April). Relationships 5.0: How AI, VR, and Robots Will Reshape Our Emotional Lives | Oxford Academic. Retrieved October 23, 2024, from https://academic.oup.com/book/41532

Source Description

Format: Book, online edition
Discipline: AI, Sociology, Innovation/Technology

Methodology

This source's methodology is a mixed research of quantitative and qualitative approaches, drawing on diverse data sources to create an analysis of AI's role in personal relationships. The author first researched recent literature and includes multi-site studies, analyzing large, representative datasets from sources like the American General Social Survey, the European Social Survey, and UN databases. The author also looked into technology-specific surveys conducted by specialized organizations and utilizes Eurobarometer datasets to capture public perceptions of AI, robots, and extended reality across various European countries. The author then supplemented these databases by developing a survey, featuring both open- and closed-ended questions, to gather insights from a representative sample of the American population. In addition to population-level data, six case studies of AI-related products—such as virtual avatars, chatbots, and companion robots—were examined using systematic text analysis. Lastly, The author also spoke with 50 experts in AI, XR, and social robotics, to add expert insight to his empirical findings.

Evidence

Elyakim Kislev is a senior lecturer in the School of Public Policy and Governance at Hebrew University, whose work is grounded on research in technology, relationships, and loneliness. With a Ph.D. in sociology from Columbia University and multiple master's degrees in counseling, public

policy, and sociology, Kislev is recognized for his strong credibility to his analyses examining social trends and technological advancements—specifically AI, VR/AR, and robotics—which he talked about in this book.

Critical/Theoretical Concepts

The information I have taken from this source mostly came from Chapter 6, which provides insight into the evolution of human-AI relationships, focusing on how advancements in AI technology shape the way we think about companionship and emotional interaction with machines. This chapter delves into the "cognitive revolution," a significant turning point that enabled AI systems to mimic human-like cognitive functions, allowing users to interact with AI as though conversing with a human. One of the critical concepts explored is emotional intelligence in AI—the ability of AI to exhibit emotional expressions and engage in relationships tailored to the user's preferences. For example, the *Replika* app, one of the most famous AI chatbot platforms, is highlighted as an AI chatbot that users can customize, choosing its gender, appearance, and even the nature of the relationship, whether it's friendship, mentorship, or romance. Additionally, the chapter also emphasizes the limitations of AI companionship, particularly in understanding nuanced human communication. Although AI can be of social support, users report that AI lacks the ability to grasp context and creativity, especially with sarcasm and jokes. This limitation is tied to a challenge in AI development, where chatbots often miss subtle emotional cues; unlike human friends who understand each other because they know each other's beliefs, attitudes and general disposition. One of the theoretical concepts discussed is the 'Turing Test', which evaluates whether an AI can exhibit human-like responses in conversation, and make a human guess if they're interacting with a human or AI. Kislev introduced two main types of chatbots: task-oriented bots, which function within pre-defined contexts (e.g., FAQs or customer service), and conversational bots, which utilize Natural Language Processing (NLP) to engage in more human-like interactions. These concepts altogether suggest that as AI becomes more adept at these conversational nuances, users sometimes forget they are interacting with a machine, a state of oblivion that the industry aims to achieve to enhance emotional engagement.

Conclusion/Answer

Kislev's overall message in this chapter highlights the growing phenomenon of people viewing AI chatbots as intimate partners, raising questions about the nature of companionship in the digital age. However, while AI systems are increasingly adept at simulating conversation, they still lack essential human capacities like context comprehension, creativity, and genuine empathy, which limits their potential as true partners. The chapter delves into the mechanics of conversational chatbots, revealing how their current limitations challenge the industry's aim of creating an "illusion" of companionship.

How does this connect to your project?

This source provided me valuable insights into the mechanisms of AI chatbots, particularly the use of NLP (Natural Language Processing) to adapt to user needs and emotions. Understanding how chatbots work supports my project by providing an explanation of the feature of customization and how it could foster attachment. The source also sheds light on the nuanced role of AI companions, highlighting both their potential to supplement human relationships and the risk of them replacing human connection. This dual perspective raises important questions about the evolving boundaries between human and AI interactions, emphasising the need for greater awareness about how AI operates and its implications.

Source 4:

Exploring Emotional Bonds: Human-AI Interactions and the Complexity of Relationships

Citation

Exploring Emotional Bonds: Human-AI Interactions and the Complexity of Relationships. (2023). Serena: Journal of Artificial Intelligence Research, 1(1), 1-9. https://journal.chishikinh.my.id/index.php/serena/article/view/29

Source Description

Format: Book, online edition
Discipline: AI, Psychology

Methodology

This source employs a qualitative study that gathered and analysed diverse responses of Character AI personas when confronted with expressions of love from users.

Evidence

The authors Syifa Izzati Zahira, Fauziah Maharani, and Wily Mohammad, contribute credible insights into Human-AI interactions, specifically examining Character AI Personas and user behavior when it comes to scenarios of expressing love/intimacy. Their work investigates how AI personas respond in these scenarios and how users react, highlighting AI's impact on emotional engagement. Although detailed background information on each author is limited, their research is cited in multiple Human-AI relationship studies.

Critical/Theoretical Concepts

This source explores how various Character AI personas respond to users expressing love. Each persona—ranging from the assertive "Angry Heroine" to the gentle "Princess Luna," the charismatic "Popular Girlfriend," the lively "Takanashi Kiara AI," and the brooding "Depressed Roommate"—embodies unique traits that evoke diverse romantic tropes. These AI characters provide varied responses, from confident expressions of emotional support to acknowledgments of their limitations as non-humans.

Conclusion/Answer

The source's overall message highlights AI's evolving capability to simulate emotional responses, providing users with a sense of affection, reassurance, and empathy that can support human emotional needs. These AI personas attempt to bridge the emotional gap between their artificial nature and the genuine emotions of humans, demonstrating how AI can mimic empathy and connection to foster closer bonds. However, while AI can express feelings that may resemble human emotions, the boundaries between AI relationships and traditional human connections remain clearly defined, as AI cannot fully replicate human understanding or emotional depth (perhaps as of now). The authors acknowledge that while developing affection or attachment toward an AI is not irrational, it is essential to recognize the limitations of these interactions. Human emotions are complex, and people can experience meaningful responses even from interactions with non-human entities.

How does this connect to your project?

This source connects to my project by providing quantitative data based on observations on how AI personas evoke specific emotional responses, affirming that AI can be programmed to target certain human vulnerabilities. This helps explain why users may naturally develop attachments to AI, as it

simulates empathy and reassurance, fostering emotional bonds.

Source 5

Empathy in AI Characters: Alleviating Anxiety through Supportive Interactions

Citation

Maharani, F., Mohammad, W., & Ameira, H. M. (2023). Empathy in AI Characters: Alleviating Anxiety through Supportive Interactions. Arika: Journal of Digital Marketing and Consumer Behavior, 1(1), Article 1. https://scholar.google.com/citations?view_op=view_citation&hl=id&user=DaiMpBgAAAAJ&citation_for_view=DaiMpBgAAAAJ:9yKSN-GCB0IC

Source Description

Format: Journal Article
Discipline: AI, Psychology

Methodology

This source uses qualitative descriptive research by presenting users with a single-sentence scenario where they express anxiety to various AI personas, each with unique personalities, attributes, and response patterns. The authors categorize and analyze the AI responses, identifying recurring themes, emotional tones, and advice styles.

Evidence

Fauziah Maharani and Wily Mohammad, two of the authors of this source, also contributed to source 4, while Hana Melati Ameira is a new addition. Together, they provide insights into Human-AI interactions, particularly focusing on Character AI Personas and user behavior in specific contexts. Their research explores how AI personas respond in various situations and how users react, emphasizing AI's influence on emotional engagement.

Critical/Theoretical Concepts

In the scenario that the authors constructed, it highlights the significant role AI personas play in addressing human emotional challenges, particularly when there is shyness and social anxiety involved stemming from past negative experiences. Users seek solace through interactions with these AI characters, who vary in tone, empathy, and advice, showcasing a spectrum of personalities. Each AI persona responds with varying degrees of empathy and understanding, employing tailored approaches to support users navigating their social anxieties.

Conclusion/Answer

The overall message of the text emphasizes the promising potential of AI personas in assisting individuals struggling with social anxiety. Each persona offers a unique blend of advice, encouragement, and engagement, providing a safe, non-judgmental environment for users to express their feelings without the fear of criticism or rejection. Through compassionate responses and emotional validation, these AI characters can help calm anxious users, offering practical advice and coping strategies. While AI cannot replace professional therapy, it can serve as a complementary tool, allowing individuals to practice communication skills and build confidence in low-stress interactions. Ultimately, the study suggests that AI has the potential to be a comforting presence, illustrating its role in bridging emotional gaps and enhancing user well-being.

How does this connect to your project?

This source connects to my project by reinforcing my assumption that AI can function as a comforting presence for users, particularly those experiencing anxiety. Even when these characters are characterised with negative attributes and personalities, they still exhibit support and understanding when users express feelings of anxiety. I wonder if AI developers intentionally limit emotional expressions and responses that could sway negative emotions upon users, particularly regarding serious issues like anxiety, depression, and suicidal thoughts, possibly to avoid legal repercussions such as negligence lawsuits. This leads me to question whether empathy is a mandatory aspect of AI programming.

Source 6

AI: Your New Best Friend or Dangerous Parasocial Relationship?

Citation

Gesikowski, C. (2023, February 22). AI: Your New Best Friend or Dangerous Parasocial Relationship? Medium. https://gesikowski.medium.com/ai-your-new-best-friend-or-dangerous-parasocial-relationship-f8ec5354604b

Source Description

Format: Blog post
Discipline: AI, Psychology, Sociology

Methodology

This source primarily involves secondary research, drawing on a range of journal articles and studies authored by experts in the field of AI and human interaction. The author also leverages his extensive background and academic experience to synthesize findings from reputable sources,

Evidence

Cezary Gesikowski, an accomplished Senior Policy Advisor with over 20 years of diverse industry experience across Canada, Europe, and Asia, provides reliable evidence in his exploration of parasocial relationships with AI. His background in public service data and digital context, combined with expertise in communications, business intelligence, and data analytics, lends credibility to his analysis. With a following of 2.5k on Medium and a focus on AI and technology, he shares insights that reflect ongoing learning and adaptation to industry trends through writing blog posts.

Critical/Theoretical Concepts

The source delves into the concept of parasocial relationships, defined as one-sided emotional attachments that individuals form with media personalities, such as actors, influencers, etc., based on their perceived persona rather than direct interaction. This phenomenon is increasingly evident in our interactions with AI systems, raising questions about the potential benefits and dangers of such relationships. Experts warn that excessive emotional attachment to AI can lead to feelings of loneliness, anxiety, and depression. Additionally, as AI becomes a potential substitute for human interaction, there is a risk of diminishing real-life social skills and emotional intelligence. As AI researcher, Kate Darling, observes, reliance on robots can result in a disconnection from genuine human experiences. Furthermore, concerns regarding personal data privacy arise, as AI systems collect vast amounts of user information, potentially leading to manipulation or abuse. While the article

also explores the benefits of relationships with AI, it reiterates points made in previous sources, so those aspects are not covered here.

Conclusion/Answer

Gesikowski provides an exploration of the benefits and drawbacks of parasocial relationships with AI, emphasizing the need for "social hygiene" to navigate this evolving dynamic. Acknowledging both the potential comfort AI can offer and the risks of excessive attachment, Gesikowski advocates for a mindful approach to engaging with these chatbots. Recommendations from experts include using AI in moderation, prioritizing real-life social connections, and being vigilant about privacy concerns related to data collection. The author urges readers to see AI as a source of inspiration rather than a replacement for genuine human interaction. By taking breaks from AI systems and engaging in activities that enhance physical and mental well-being, individuals can foster a healthier relationship with technology. Overall, Gesikowski highlights the importance of maintaining balance and awareness in our interactions with AI, ultimately encouraging a thoughtful consideration of how these relationships impact our emotional health and social skills.

How does this connect to your project?

This source is relevant to my project as it examines parasocial relationships with AI, highlighting both the emotional risks and benefits involved. It supports my question about the potential for emotional dependency on AI systems, which could affect users' social skills and mental health. The recommendations for maintaining healthy interactions prompt me to explore how users can balance their reliance on AI while preserving real-life connections. By spreading awareness about these risks and benefits, I can help others make more informed choices when engaging with AI companions, encouraging healthier, more balanced approaches.

Conclusion

The literature review has helped me gain a deeper understanding of the nuanced emotional impacts of AI companionship on individual well-being and real-world relationships, challenging and reshaping my initial assumptions of the topic. Each source enlightened me on the different facet of AI companionship: its potential benefits in alleviating loneliness, offering emotional support, fostering social skills, and supplementing real-life relationships, alongside significant risks like emotional dependency and over reliance, parasocial relationships, and diminished real-life social connection. For me, these insights highlight the need for balance in AI interaction and emphasize the ethical responsibilities AI developers hold in promoting healthy user interaction with these chatbots. I've come to understand that while AI can supplement human connections, it should not replace meaningful, in-person interactions. Thus, moving forward, I am curious to explore how design can guide users toward a balanced engagement with AI, promoting emotional well-being and encouraging an awareness of its limitations.

Examining my sources, it has provided me insights on how I might collect and analyse data that will supplement my research. For example, this could involve observing AI chatbot platforms and analyzing discussions on chatbot forums, or gathering users to participate in interviews or surveys to interact with AI chatbots and reflect on their perspective and experiences. From here on, a potential design concept came to mind that could resemble an interactive test, much like the Turing Test, aimed at observing how an audience interacts with AI and whether they can distinguish AI interactions from human interactions, and what results may say about AI and society. This would be especially directed at the general public, with a focus on younger users who may be less familiar with AI and are more

likely to engage with AI due to their impressionable age. While this idea is not set in stone, my goal is for the audience to take away a clearer understanding of AI companionship, especially given how overwhelming and complex the topic can seem. By breaking down AI in an accessible way, I aim to empower people with the knowledge to approach it thoughtfully, helping them understand what they're engaging with rather than adopting it impulsively.