An Experimental Study on the Use of AI in Online Dating and Relationship Communication

Exploring how AI influences authenticity and trust in dating apps.

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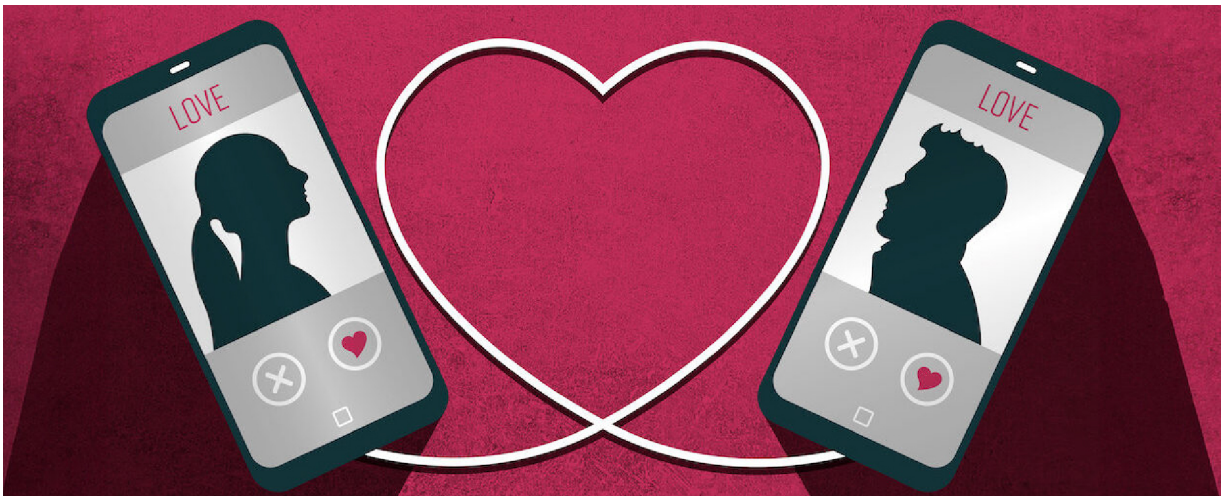

Figure 1: Finding love with AI: From algorithms to developing trust.

ABSTRACT

This study investigates the growing integration of artificial intelligence (AI) in online dating platforms and its effects on user perceptions of trust, authenticity, and relationship communication. Through a questionnaire survey of 50 participants conducted between June 10-29, 2025, we examined user comfort levels with AI-mediated communication, emotional reactions to AI disclosure, and beliefs about the impact on long-term relationship trust. Results reveal conflicted attitudes toward AI use in dating contexts: while 58% expressed discomfort with AI-assisted messaging, participants showed conditional acceptance based on relationship stage and purpose. Notably, 48% felt deceived and 42% felt betrayed upon discovering AI involvement in conversations. The study found that 54% of participants believe AI use could damage long-term relationship trust, while 46% advocate for mandatory disclosure of AI assistance. These findings contribute to the emerging literature on human-AI interaction in intimate communication contexts and highlight the complex ethical considerations surrounding authenticity in digital relationships.

Index Terms: artificial intelligence, online dating, authenticity, trust, algorithmic communication, relationship technology

1 INTRODUCTION

The digital transformation of romantic relationships has accelerated dramatically in recent years, with artificial intelligence (AI) increasingly integrated into online dating platforms and relationship communication tools [11, 13]. From algorithmic matchmaking to AI-generated conversation starters and innovative reply suggestions, technology fundamentally alters how individuals connect, communicate, and form romantic bonds in digital spaces [14, 12, 10].

Recent statistics indicate that approximately 25% of US singles are reportedly using AI tools in their dating lives. In contrast, more than 350 million people worldwide use dating apps, a record high that continues to grow [14, 1]. This widespread adoption of AI-mediated communication tools raises critical questions about authenticity, trust, and the long-term implications for the formation and maintenance of relationships [8].

The rise of AI tools designed explicitly for dating contexts, including applications like RizzAI, which analyses conversation screenshots to generate reply suggestions, and chatbots that can compose entire dating profiles, represents a paradigm shift in how individuals present themselves and interact in romantic contexts. However, this technological integration also introduces the potential for deception and raises fundamental questions about what constitutes authentic communication in romantic relationships [2, 3].

Previous research has shown that AI-generated content can trigger moral discomfort and reduced authenticity perceptions. At the same time, studies show that users often struggle to distinguish AI-written communications from human-authored ones. Furthermore, research indicates that perceived AI use in communication contexts can lead to negative interpersonal evaluations, even when AI improves communication quality [5].

This study addresses the gap in empirical research that examines user attitudes toward AI in dating and relationship communication contexts. By investigating both comfort levels with AI use and emotional reactions to AI disclosure, the aim is to understand how this technology affects perceptions of trust and authenticity in romantic relationships.

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2 Research Questions

Main Research Question: To what extent are individuals comfortable with the use of AI in relationship communication or online dating, and what are its effects on trust and authenticity?
Sub-questions:

- What are user perceptions of AI use in dating conversations?
- What motivations drive individuals to use AI in dating contexts?
- How does AI use affect perceived authenticity in romantic communication?
- What are the implications for long-term relationship trust when AI assistance is disclosed?

3 Related Work

3.1 AI in Communication and Social Relationships

Previous research has established that AI-mediated communication significantly affects language patterns and social relationships. Hohenstein et al. (2021) demonstrated that algorithmic response suggestions (smart replies) increase communication speed and positive emotional language use, while simultaneously improving interpersonal perceptions of cooperation and affiliation. However, their research also revealed a crucial paradox: While actual AI use improved relationship outcomes, perceived AI use led to negative evaluations of conversation partners [5].

This finding aligns with broader research on trust in AI systems, which shows that transparency about AI involvement can actually harm social perceptions. The "transparency dilemma" suggests that while ethical considerations favour disclosure of AI use, such transparency may undermine the very relationships the technology aims to enhance [9].

3.2 Authenticity and AI-Generated Content

Kirk and Givi's research on AI-authorship effects reveals that emotional AI-generated content triggers moral discomfort and reduces authenticity perceptions among recipients. This finding is particularly relevant to dating contexts, where emotional expression and authentic self-presentation are central to relationship formation [7].

Jakesch, Hancock, and Naaman (2022) further demonstrate that humans struggle to accurately identify AI-generated self-presentations, highlighting the potential for undetected deception in online dating profiles and communications. Their work suggests that the technical capability for AI to mimic human communication convincingly may outpace users' ability to detect such interventions [6].

3.3 Trust and Algorithmic Beliefs in Dating Apps

Recent research has examined how algorithmic beliefs—users' confidence in dating app matching systems—affect user experiences and outcomes. Studies suggest that stronger algorithmic beliefs can buffer negative experiences and improve dating outcomes, indicating that trust in AI systems plays a crucial role in their effectiveness [3, 8].

However, research also reveals concerning trends regarding AI's potential for facilitating deception in online dating. Reports indicate a 2000% increase in attacks on dating platforms between 2023 and 2024, with AI-enabled fraud becoming increasingly sophisticated. This growing threat landscape underscores the importance of understanding user attitudes toward AI in dating contexts.

3.4 Second-Person Authenticity in AI-Mediated Relationships

Recent philosophical and ethical analyses have introduced the concept of "second-person authenticity" in AI-mediated relationships. This framework suggests that authentic communication requires both personal performance of communicative acts and alignment with one's practical identity. AI-generated messages may fail these criteria even when they accurately reflect the user's intended meaning, raising fundamental questions about the nature of authentic communication in romantic relationships. [1].

4 Methodology

4.1 Research Design

This study employed a quantitative cross-sectional survey design to examine user attitudes toward AI in online dating and relationship communication. The survey methodology was selected to enable systematic collection of data on user perceptions, comfort levels, and hypothetical behavioural intentions across multiple dimensions of AI use in dating contexts.

4.2 Participants

A total of 50 participants completed the online questionnaire between June 10-29, 2025. The sample consisted of 31 males (62%) and 19 females (38%), with participants ranging in age from 18 to 35 years. Notably, 21 participants (42%) reported active current or past use of dating applications, providing both user and non-user perspectives on AI integration in dating platforms.

4.3 Data Collection Procedure

Data were collected through an online survey form distributed via convenience sampling methods. The questionnaire was structured into four main sections:

- **Background Information:** Demographic data and dating app usage history
- **Awareness & Attitudes Toward AI:** General comfort levels with AI in dating contexts
- **Hypothetical Scenarios:** Responses to specific AI use cases and disclosure situations
- **Trust, Identity & Authenticity:** Beliefs about long-term implications and disclosure requirements

4.4 Measures

The survey employed Likert-scale questions (1-5 scale) to assess comfort levels and behavioural intentions, along with multiple-choice questions to capture emotional reactions to AI disclosure scenarios. Participants were presented with hypothetical scenarios involving AI use in various dating contexts, including initial messaging, conflict resolution, and romantic expression.

4.5 Data Analysis

Descriptive statistics were calculated for all survey responses, with particular attention to distribution patterns across comfort levels, emotional reactions, and trust-related beliefs. Cross-tabulations were performed to examine relationships between demographic variables and attitudes toward AI use.

5 Results

5.1 Comfort Levels with AI in Dating Communication

Participants demonstrated low overall comfort with AI use in dating contexts. When asked about comfort with someone using AI to help write dating app messages, 58% expressed discomfort (30% very uncomfortable, 28% uncomfortable), while only 16% indicated comfort (12% comfortable, 4% very comfortable). The

remaining 26% reported neutral attitudes.

5.2 Emotional Reactions to AI Disclosure

Discovery of AI use in dating conversations elicited strong negative emotional responses. When presented with a scenario where they discovered a conversation partner had used AI to write most messages, participants most commonly reported feeling:

- Deceived: 48% (24 participants)
- Betrayed: 42% (21 participants)
- Curious: 18% (9 participants)
- Unbothered: 18% (9 participants)
- Impressed: 2% (1 participant)

These findings reveal that nearly half of participants experienced feelings of deception and betrayal upon AI disclosure, consistent with prior research on the negative effects of perceived AI use in communication [5].

5.3 Acceptance of AI in Different Contexts

Participant willingness to use AI themselves varied significantly based on the intended purpose:

Breaking the ice: 30% willing (18% definitely, 16% likely), 44% unwilling (26% unlikely, 18% definitely not), 26% neutral

Making texts charming/witty: 18% willing (6% definitely, 12% likely), 58% unwilling (28% unlikely, 30% definitely not), 24% neutral

Writing difficult messages during disagreements: 18% willing (6% definitely, 12% likely), 68% unwilling (22% unlikely, 46% definitely not), 14% neutral

Crafting romantic messages for special occasions: 26% willing (14% definitely, 12% likely), 50% unwilling (20% unlikely, 30% definitely not), 24% neutral

These results suggest that AI acceptance is conditional on relationship stage and message type, with greater acceptance for casual early-stage interactions than for emotionally significant communications.

5.4 AI Use in Conflict Resolution

Participants showed strong opposition to AI use during relationship conflicts. When asked about their reaction to a romantic partner using AI for apologies or emotional support during conflicts, 62% disapproved (30% disapproved, 32% strongly disapproved), while only 18% approved (16% approved, 2% strongly approved). This suggests that authentic emotional expression is considered particularly important during relationship difficulties.

5.5 Trust and Long-term Relationship Implications

The majority of participants (54%) believed that AI use in dating communication could damage long-term relationship trust, while only 8% disagreed. An additional 30% responded ”maybe,” indicating uncertainty but concern about potential trust implications.

5.6 Disclosure Expectations

Participants showed strong support for transparency regarding AI use. When asked whether people should be required to disclose AI assistance in dating contexts:

- Yes, always: 46% (23 participants)
- Only in serious situations: 26% (13 participants)
- No, not necessary: 24% (12 participants)

Combined, 72% of participants favoured some form of disclosure requirement, reflecting the high value placed on transparency in romantic communication.

5.7 Trust Impact of AI Disclosure

Discovering heavy AI reliance in early conversations significantly impacted trust levels. When asked if they would trust someone less upon discovering heavy AI use:

- Much less trust: 36% (18 participants)
- Somewhat less trust: 26% (13 participants)
- No change: 22% (11 participants)
- Somewhat more trust: 10% (5 participants)
- Much more trust: 6% (3 participants)

A total of 62% indicated they would trust the person less, while only 16% would trust them more, demonstrating the significant reputational cost of AI disclosure in dating contexts.

6 Discussion

6.1 Conflicted Attitudes Toward AI in Dating

Discovering heavy AI reliance in early conversations significantly impacted trust levels. When asked if they would trust someone less upon discovering heavy AI use:

The results reveal fundamentally conflicted attitudes toward AI use in dating contexts. While participants expressed general discomfort with AI-mediated communication, their responses to specific use cases showed more nuanced patterns of conditional acceptance. This suggests that public attitudes toward AI in dating are context-dependent rather than uniformly negative.

The finding that AI acceptance varies by relationship stage aligns with theories of relationship development that emphasise increasing authenticity expectations as emotional investment grows. Participants showed greater tolerance for AI assistance in low-stakes early interactions (ice-breaking) but strong opposition to AI use in emotionally significant contexts (conflict resolution, romantic expression).

6.2 The Authenticity-Efficiency Paradox

Our findings highlight a tension between the efficiency benefits of AI communication tools and users' authenticity expectations. While AI can enhance communication speed and quality—as demonstrated in prior research —users perceive such assistance as fundamentally inauthentic when disclosed. This creates a paradox where the most beneficial AI tools may also be the most socially costly when detected [4].

This paradox is particularly acute in dating contexts, where authenticity is central to relationship formation and maintenance. The high rates of feelings of deception (48%) and betrayal (42%) upon AI disclosure suggest that users view AI assistance as a form of misrepresentation, even when the AI accurately reflects the user's intentions.

6.3 Trust Implications and Social Costs

The finding that 62% of participants would trust someone less upon discovering heavy AI use demonstrates the significant social costs of AI assistance in dating contexts. This trust penalty occurs despite evidence from other research showing that AI can improve communication outcomes.

The majority belief (54%) that AI use could damage long-term relationship trust suggests that users view authenticity in early communication as predictive of future relationship dynamics. This perception may reflect underlying concerns about partner selection accuracy and the sustainability of relationships built on AI-mediated foundations.

6.4 Ethical Complexity and Contextual Judgments

The finding that 72% of participants favoured some form of disclosure requirement reflects the complex ethical landscape surrounding AI use in dating. Rather than viewing AI assistance as inherently unethical, participants demonstrated nuanced thinking about when and how such tools should be disclosed [5].

The preference for context-dependent disclosure rules suggests that users recognise potential benefits of AI assistance while maintaining concerns about deception. This indicates an emerging social norm that balances technological utility with authenticity expectations.

6.5 Limitations and Drawbacks

Several limitations constrain the interpretation and generalizability of these findings:

Limited Sample Diversity: The sample was relatively small (n=50) and skewed toward younger participants (76% aged 18-24), with only 42% having actual dating app experience. This demographic concentration limits generalizability across age groups and dating experience levels.

Self-Reported Hypothetical Data: The study relied on self-reported responses to hypothetical scenarios, which may not accurately predict actual behavioural and emotional responses in real dating situations. Social desirability bias may have influenced responses regarding ethical attitudes.

Cross-Sectional Design: The survey captured attitudes at a single time point and cannot assess how perceptions might change with actual AI exposure or evolving social norms around AI use in dating.

Limited AI Experience: Few participants had direct experience using AI tools for dating purposes, meaning responses were based on imagined rather than experienced scenarios.

Cultural Context: The study was conducted in a specific cultural context that may not generalize to other cultural settings with different norms around dating, technology use, and authenticity expectations.

7 Conclusion

This study reveals that AI integration in online dating and relationship communication elicits complex and conflicted user responses. While participants express general discomfort with AI-mediated communication, their attitudes show conditional acceptance based on relationship stage, communication purpose, and transparency practices.

The research demonstrates that comfort with AI use is highly contextual, with greater acceptance for early-stage, low-stakes interactions than for emotionally significant communications. However, the discovery of AI involvement triggers strong negative emotional reactions, with nearly half of the participants feeling deceived or betrayed upon disclosure.

Most significantly, the study reveals a substantial trust penalty associated with AI use in dating contexts. The majority of participants (62%) indicated they would trust someone less upon discovering heavy AI reliance, while 54% believe such use could damage long-term relationship trust. These findings suggest that while AI tools may offer efficiency benefits, they carry significant social and relational costs when disclosed.

The strong preference for transparency (72% favouring disclosure requirements) indicates that users value authenticity highly but recognise the potential utility of AI assistance. This creates a challenging landscape for both users and platform developers, who must balance technological capabilities with authenticity expectations and trust considerations.

These findings contribute to the growing literature on human-AI interaction in intimate contexts and highlight the need for careful consideration of ethical implications as AI becomes more sophisticated and widespread in dating and relationship communication. The study underscores the importance of developing AI tools that enhance rather than undermine authentic human connection.

8 Future Work

Several directions for future research emerge from these findings:

Larger and More Diverse Samples: Future studies should employ larger, more demographically diverse samples to improve generalizability across age groups, cultural contexts, and levels of dating app experience.

Experimental Validation: Controlled experiments manipulating actual AI exposure (rather than hypothetical scenarios) would provide more robust evidence of behavioural and emotional responses to AI disclosure.

Longitudinal Studies: Research tracking attitude changes over time as AI use becomes more normalised could reveal how social norms evolve around AI in dating contexts.

Mixed-Methods Approaches: Combining quantitative surveys with qualitative interviews could provide deeper insights into the reasoning behind user attitudes and the factors that shape acceptance or rejection of AI assistance.

Cross-Cultural Research: Investigating how cultural differences in dating norms, technology adoption, and authenticity expectations affect attitudes toward AI in relationship communication.

Trust-Building Interventions: Research examining whether certain disclosure practices, AI design features, or user education approaches can mitigate the trust penalties associated with AI use.

Real-World Field Studies: Partnerships with dating platforms to study actual user behaviour and outcomes when AI tools are available versus unavailable could provide ecological validity currently lacking in the literature.

These research directions would advance both theoretical understanding of human-AI interaction in intimate contexts and practical knowledge for designing AI systems that support rather than undermine authentic human connection.

Supplemental Materials

All supplemental materials are available on GitHub at https://github.com/pepper-paneer/AI-in-Online-Dating, released under a CC BY 4.0 license. In particular, they include (1) CSV files containing the raw data from the survey, (2) PDF files of the consent form signed by the participants, (3) figures used in the paper and (4) a full version of this paper.

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