

# **Gendered Meanings in AI-Mediated Customer Communication: Female Chatbots in Banking and Telecommunications**

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## **Abstract**

AI-mediated customer communication has become increasingly prevalent in service industries, particularly through the adoption of chatbots as digital communication agents between organizations and consumers. Beyond their functional role in delivering information and assistance, chatbots often incorporate gendered identities that shape how users interpret and engage with digital interactions. In Indonesia, banking and telecommunications companies widely employ female-coded chatbots as part of their customer communication strategies. This study explores consumers' perceptions of female chatbots and examines how gendered meanings are negotiated within AI-mediated customer communication. Using a qualitative exploratory approach, in-depth interviews were conducted with consumers who had experience interacting with female chatbots in the banking and telecommunications sectors. The findings reveal that participants generally perceive female chatbots as extensions of frontline customer service communication in digital environments. While participants demonstrated varying interpretations of female chatbot representations, they frequently associated these chatbots with characteristics such as friendliness, patience, and helpfulness. The

findings also suggest that the predominance of female-coded chatbots may contribute to the normalization and potential reinforcement of gender stereotypes linking women to service-oriented and emotional labor roles. This study contributes to communication scholarship by highlighting how gendered meanings are embedded, interpreted, and negotiated within AI-mediated customer communication.

**Keywords:** *AI-Mediated Communication, Female Chatbots, Gendered Communication, Customer Communication, Gender Stereotypes*

## **1. Introduction**

Artificial intelligence (AI) has become a transformative force in contemporary service industries, reshaping how organizations interact with consumers and deliver services. The integration of AI-driven technologies, particularly chatbots, has accelerated across various sectors due to their ability to provide real-time responses, automate repetitive tasks, and improve service efficiency (Huang et al., 2019). In customer service contexts, chatbots have increasingly functioned as frontline communication agents, mediating interactions between companies and consumers while simulating human-like communication patterns (De Cicco et al., 2020). As AI-based communication technologies continue to expand, chatbots have evolved beyond functional tools into socially meaningful interfaces that influence consumer experiences and perceptions.

One of the most notable developments in chatbot design is the increasing tendency to anthropomorphize these technologies by embedding human-like identities, personalities, and social characteristics, intentions, or emotions to non-human entities (Epley et al., 2007). In chatbot design, anthropomorphic cues can appear through names, avatars, communication styles, and voice characteristics, all of which shape users' perceptions of the technology (Go & Sundar, 2019). Existing studies suggest that anthropomorphism can increase trust, social presence, and emotional engagement in human – chatbot interactions (Sheehan et al., 2020). However, anthropomorphic design is not neutral. It often incorporates gendered representations that reflect and reproduce broader social norms and expectations regarding femininity and masculinity.

The tendency to feminize chatbot technologies has become a recurring phenomenon in AI-mediated communication. Previous

studies show that female-coded chatbots are frequently associated with warmth, friendliness, helpfulness, and emotional support, while male-coded chatbots are often associated with competence, authority, and expertise. These patterns reflect broader gender stereotypes embedded in social structures, where women are culturally associated with communal and service-oriented roles (Ellemers, 2018). Feminist technology studies have long argued that technological systems are not socially neutral, but often reproduce existing power relations and gender hierarchies through their design and implementation (Costa, 2018). In the context of chatbot technology, assigning female identities to service-oriented AI may reinforce the historical association between women and emotional labor, caregiving, and customer service roles (Phillips et al., 2019).

This phenomenon can be better understood through the Computers Are Social Actors (CASA) framework proposed by Nass and Moon (Nass & Moon, 2000), which explains that individuals tend to apply social rules, expectations, and stereotypes to technological agents during interaction. Under the CASA framework, users unconsciously respond to computers and AI systems as if they were social beings, including applying gendered expectations based on human social norms. This framework becomes particularly relevant in understanding why consumers may interpret female chatbots not merely as technical tools, but as gendered social actors. Combined with anthropomorphism theory, CASA provides an important conceptual foundation for examining how female chatbot identities may trigger stereotypical expectations regarding communication style, service behavior, and relational roles.

Despite growing scholarship on chatbot adoption and anthropomorphic design, existing studies largely focus on user satisfaction, trust, adoption intention, and service effectiveness (Sheehan et al., 2020) While limited attention has been given to how consumers interpret the gendered identities of chatbots and their broader socio-cultural implications. Moreover, studies on gendered chatbot technologies remain predominantly situated in Western contexts (Arriagada-Bruneau & Larrondo, 2025; Mukhongo, 2023), leaving a limited understanding of how these dynamics operate in non-Western societies such as Indonesia, where gender norms and service expectations are shaped by distinct cultural contexts. This gap is important because consumer perceptions of gendered AI are socially constructed and culturally embedded.

In Indonesia, the banking and telecommunications sectors provide a significant context for examining this issue due to their high dependence on customer service interactions and extensive implementation of chatbot technologies. These sectors represent service-intensive industries where communication efficiency, customer support, and relational interaction are central to business operations. The widespread use of female-coded chatbots in these sectors raises important questions regarding how consumers perceive these digital agents and whether their gendered construction contributes to the reinforcement of traditional gender stereotypes in service labor.

Based on these considerations, this study aims to explore consumer perceptions of female chatbots in Indonesia's banking and telecommunications sectors by addressing two research questions: (1) How do consumers perceive the role and function of female chatbots in digital customer service interactions? and (2) How do female – coded chatbot representations contribute to the reproduction of gender stereotypes in service-oriented industries? By examining consumer experiences and interpretations, this study contributes to the growing discussion on gendered AI, anthropomorphism, and the socio-cultural implications of AI-mediated communication in service industries.

## **2. Method**

This study employed a qualitative exploratory approach to examine consumer perceptions of female chatbots in Indonesia's banking and telecommunications sectors. A qualitative design was considered appropriate because the study aimed to explore participants' experiences, interpretations, and perceptions regarding gendered chatbot interactions within digital customer service environments. This approach allows researchers to capture subjective meanings and socially constructed understandings related to technology and gender (Creswell, 2013).

### **2.1 Participants Selection**

The participants in this study were selected using purposive sampling. This sampling strategy was employed to recruit individuals who had direct experience interacting with female chatbots developed by banking and telecommunications companies in Indonesia. The selection criteria were not limited to simple exposure to chatbot technology but also focused on participants who were able

to reflect on their interaction experiences and perceptions regarding chatbot representations and communication styles (Adamopoulou & Moussiades, 2020; Adoui, 2024).

A total of four participants were involved in this study, consisting of two male participants (M1 and M2) and two female participants (W1 and W2). Although the number of participants was relatively small, the study prioritized depth of exploration rather than statistical representation, consistent with the exploratory nature of qualitative inquiry. During the interview process, recurring themes and patterns began to emerge across participant responses, particularly regarding the association between female chatbots and customer service roles, as well as perceptions of gender stereotypes in AI-mediated communication.

The profile and selection criteria of the informants are presented in Table 1 below:

**Table 1. Informant Profile and Selection Criteria**

<b>Informant Code</b>	<b>Gender</b>	<b>Age Range</b>	<b>Sector Interaction Experience</b>	<b>Interaction Experience</b>
M1	Male	20-30 years	Telecommunications	Had experience interacting with female chatbots in Indonesian telecommunications services and was able to reflect on communication experience and chatbot representation
M2	Male	30-40 years	Banking and Telecommunications	Had experience interacting with female chatbots in digital customer service settings and actively used

<b>Informant Code</b>	<b>Gender</b>	<b>Age Range</b>	<b>Sector Interaction Experience</b>	<b>Interaction Experience</b>
W1	Female	20-30 years	Banking and Telecommunications	chatbot features for information and service inquiries Had repeated interactions with female chatbots and was able to provide reflections regarding gender representation and customer service experience
W2	Female	30-40 years	Banking	Had experience using female chatbots in banking services and demonstrated awareness of chatbot functionality and gender-related interpretations

## **2.2 Data Collection**

Data were collected through semi – structured in- depth interviews conducted both online and offline, depending on participants' availability and preference. Each interview lasted approximately 30 minutes and was conducted in Bahasa Indonesia to allow participants to express their views more comfortably and naturally. The semi-structured interview format enabled flexibility in exploring participants' experiences while maintaining consistency across key discussion topics, including perceptions of chatbot

functionality, visual representation, communication style, and gender-related interpretations. With participants' consent, interviews were audio-recorded and supplemented with researcher notes. The recordings were subsequently transcribed verbatim to support systematic analysis.

### **2.3 Data Analysis**

The collected data were analyzed using a thematic analysis approach (Braun & Clarke, 2006). This method was selected because it enables researchers to identify, analyze, and interpret recurring patterns of meaning within qualitative data. The analysis process involved several stages, including familiarization with the interview transcripts, initial coding, identification of recurring themes, theme categorization, and interpretation of findings in relation to anthropomorphism theory, the CASA framework, and gender stereotype perspectives.

The thematic analysis generated several central themes regarding consumers' perceptions of female chatbots, including the perception of chatbots as extensions of customer service roles, differences in male and female consumers' interpretations of chatbot representation, and the perceived perpetuation of gender stereotypes through female-coded AI interfaces.

### **2.4 Ethical Considerations and Trustworthiness**

To ensure ethical research practices, participants were informed about the purpose of the study prior to the interviews and voluntarily agreed to participate. Participant identities were anonymized using code labels (M1, M2, W1, and W2) to maintain confidentiality and privacy. To enhance the trustworthiness of the study, the researchers applied several qualitative rigor principles, including credibility, dependability, and confirmability. Credibility was supported through careful transcription and repeated examination of interview data during the coding process. Dependability was strengthened by maintaining consistency in interview themes and analytical procedures, while confirmability was addressed by grounding interpretations in participants' narratives and recurring thematic patterns rather than researcher assumptions. In addition, the researchers remained aware of potential subjective bias throughout the interpretation process, particularly given the gender-sensitive nature of the topic.



**Figure 2.** Research Flow  
**Source:** Researcher Data (2024)

From the in-depth interviews, primary data were obtained in the form of interview transcripts containing the consumers' statements regarding their perceptions and experiences with female chatbots. Meanwhile, secondary data were gathered from literature, journals, and credible news sources. The primary and secondary data were then elaborated upon in the data analysis stage. The results of the data analysis were used to draw conclusions for this study.

### 3. Results

The thematic analysis generated three major themes that explain how consumers perceive female chatbots in Indonesia's banking and telecommunications sectors. These themes emerged from recurring patterns identified across participant interviews and provide an overview of the study's main findings. Table 2 summarizes the thematic categories, key findings, and their interpretations.

**Table 2.** Summary of Thematic Findings

Theme	Key Findings	Supporting Participants	Interpretation
Female Chatbot as an Extension	Female chatbots were perceived as	W1, W2, M2	Participants associated female

of Digital Customer Service	digital customer service representatives responsible for providing information, assistance, and handling routine inquiries.		chatbots with frontline service functions and communication support.
Negotiating Gendered Meanings in Chatbot Representation	Participants demonstrated differing interpretations of female chatbot identities. Some considered female representations appropriate for customer service, while others prioritized functionality over gender.	M1, W1, W2	Gendered chatbot identities are interpreted differently based on users' experiences, expectations, and perceptions of technology.
Perceived Reinforcement of Gender Stereotypes Through Female-Coded AI	Participants recognized that female-coded chatbots may reinforce traditional assumptions linking women with care, assistance, patience, and emotional labor.	W1, M2	Female chatbot design may simultaneously reflect and normalize existing gender stereotypes in service-oriented industries.

As shown in Table 2, participants generally perceived female chatbots as digital extensions of customer service functions, although they negotiated the meaning of chatbot gender in different ways. The

findings also indicate that female-coded chatbot representations may contribute to the normalization and potential reinforcement of gender stereotypes associated with service, care, and emotional labor. Each theme is discussed in detail in the following sections.

### **3.1 Female Chatbot as an Extension of Digital Customer Service**

The interviews revealed that participants generally perceived female chatbots as extensions of customer service of frontliner roles within digital communication environments. Rather than being understood merely as technical tools, female-coded chatbots were interpreted as service-oriented communication agents designed to assist consumers, provide information, and respond to customer inquiries. Across participant responses, chatbot functionality was consistently associated with relational service expectations such as friendliness, responsiveness, and accessibility. This finding supports previous studies suggesting that anthropomorphic chatbot design often encourages users to perceive AI systems as social actors rather than purely technical interfaces (Go & Sundar, 2019).

Several participants described their interactions with chatbots in banking and telecommunications services as comparable to interacting with customer service representatives. For example, participant W1 explained:

“I’ve used the chatbots from Telkomsel and Bank BCA. Both use female avatars. In terms of function, I think the chatbot’s role is like that customer service, which is often female, handling complaints or providing basic information about service.” – W1

This statement indicates that the participant interpreted chatbot technology through existing social understandings of customer service labor. The female identity attached to the chatbot was not viewed as accidental, but rather as compatible with communicative and assistive functions typically associated with frontline service role.

Similarly, other participants emphasized the practical role of chatbots in delivering efficient customer support. Participants W2 described female chatbots as systems primarily designed to address routine inquiries and improve service efficiency:

“I’ve tried Telkomsel and Bank Mandiri’s chatbots. Telkomsel’s is called Veronika, and Mandiri’s is MITA. In my opinion, these chatbots are designed to efficiently handle common queries that are systematized.” – W2

The emphasis on efficiency and responsiveness demonstrates that participants evaluated chatbots not only through their visual representation, but also through their perceived ability to perform service-related tasks effectively. At the same time, the findings suggest that participants continued to associate these communicative functions with gendered expectations regarding customer service work. Previous research has similarly found that female-coded AI systems are often associated with warmth, assistance, and relational communication styles (Feine et al., 2020).

Some participants also highlighted the limitations of chatbot interactions compared to human communication. Participant M2 noted that while chatbots were useful for obtaining general information, more urgent or emotionally sensitive situations still required direct human interaction:

“I’ve used Mandiri’s chatbot, MITA, and Telkomsel’s as well. I usually use the chatbot for general information. But if it’s urgent, I call the call center directly.” – M2

This finding suggests that participants perceived chatbots as capable of supporting transactional communication, but not fully replacing human interaction in situations requiring empathy, flexibility, or contextual understanding. Furthermore, the findings indicate that participants tended to interpret female chatbots as digital extensions of customer service labor. The recurring association between femininity and service-oriented communication suggests that participants socially positioned female-coded chatbots within broader expectations regarding assistance, communication, and relational support in service industries.

### **3.2 Negotiating Gendered Meanings in Chatbot Representation**

The interviews revealed differing participant interpretations regarding the significance of female representation in chatbot design. While some participants considered female avatars, names, and communication styles as appropriate and beneficial for customer service interactions, others viewed these gendered elements as largely irrelevant compared to the chatbot’s functional performance. These contrasting responses suggest that participants did not interpret chatbot gendering in a uniform manner, but instead negotiated its meaning based on their own expectations, experiences, and perceptions of digital communication.

Several participants perceived female-coded chatbots as more suitable for customer service roles because they were associated with

friendliness, politeness, and emotional accessibility. Participant M1 explained:

“In my opinion, female chatbots feel more suitable for customer service because they seem friendlier and more patient when responding to customers.” – M1

This statement reflects how participants attached human social expectations to chatbot interactions. The association between femininity and communicative warmth suggests that participants interpreted chatbot gender through broader cultural understandings of emotional and relational labor. Similar patterns have been identified in previous studies showing that users often associate female-coded AI systems with warmth, empathy, and supportive communication styles (Bastiansen et al., 2022).

However, not all participants considered chatbot gender representation significant. Some participants emphasized functionality and efficiency over visual or symbolic representation. Participant W2 stated:

“For me, whether the chatbot is male or female does not really matter. What matters more is whether the chatbot can answer questions clearly and solve problems efficiently.” – W2

This perspective suggests that some participants prioritized instrumental performance rather than anthropomorphic or gender-related characteristics. In these cases, chatbot technology was evaluated primarily as a functional service tool rather than as a social actor with symbolic meaning. Interestingly, the findings also revealed a tension between participants who normalized female chatbot representation and those who critically reflected on its implications. While some participants perceived female-coded chatbots as “natural” within customer service environments, others questioned why service-oriented AI systems were predominantly feminized. Participant W1 commented:

“Most customer service chatbots use female identities, and I think that reflects how service roles are still strongly associated with women.” – W1

The finding indicates that participants were not merely passive users of AI technologies, but were also capable of recognizing the social assumptions embedded in chatbot design. The contrasting participant responses demonstrate that chatbot gendering may simultaneously be perceived as practical, culturally familiar, and potentially problematic.

### **3.3 Perceived Reinforcement of Gender Stereotypes Through Female-Coded AI**

The interviews further revealed that several participants perceived the use of female identities in chatbot designs as closely connected to broader gender stereotypes within service – oriented work. Participants frequently associated female – coded chatbots with characteristics such as patience, friendliness, emotional attentiveness, and caregiving communication styles. These associations indicate that chatbot gender representation was interpreted not only as a design choice, but also as part of broader social expectations regarding femininity and service labor.

Some participants explicitly recognized that the dominance of female chatbot identities in banking and telecommunications services may reinforce traditional assumptions about women’s roles in customer-facing occupations. Participant W1 explained:

“Most customer service chatbots use female characters because women are still considered more suitable for serving, assisting, and communicating patiently with customers.” W1

This statement demonstrates how participants connected chatbot representation with existing cultural assumptions regarding women and emotional labor. The findings suggest that participants were aware that female-coded AI systems may reproduce long-standing social expectations that associate women with supportive and service-oriented responsibilities. Previous research has similarly argued that AI technologies often inherit and reproduce social biases embedded in human institutions and technological design practices (UNESCO & EQUALS Skills Coalition, 2019).

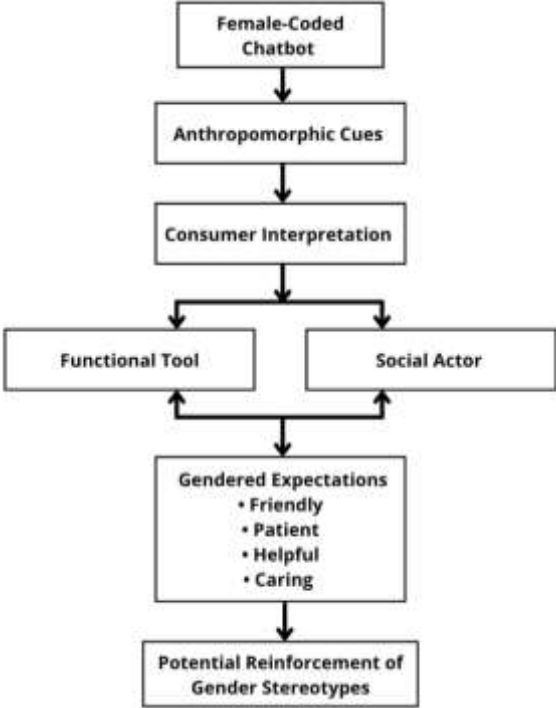
At the same time, some participants viewed the feminization of chatbot technology as a practical or commercially strategic decision rather than an intentional reinforcement of stereotypes. Participant M2 stated:

“I think companies use female chatbots because they are considered friendlier and easier for customers to accept.” – M2

This perspective suggests that participants also recognized alternative explanations behind chatbot feminization, including branding strategies, communication effectiveness, and assumptions regarding customer comfort. The findings, therefore, indicate that participants did not uniformly interpret female chatbot representation as discriminatory, but rather negotiated multiple possible meanings behind these design choices.

Although some participants acknowledged the presence of gender stereotypes in chatbot design, this awareness did not necessarily change their interaction behavior toward the technology. Several participants continue to perceive female-coded chatbots as normal or appropriate within customer service settings despite recognizing the stereotypical associations attached to them. This tension suggests that gendered AI representations may become normalized through repeated exposure in everyday digital interactions.

The three themes identified through thematic analysis are interconnected rather than independent. Figure 3 illustrates the relationship between female chatbot representation, consumer interpretations, and the emergence of gendered expectations that may contribute to the reinforcement of gender stereotypes.



**Figure 3.** Relationship Between Female Chatbot Representation and Consumer Perceptions  
Source: Researcher Data (2024)

Figure 3 depicts the relationships among the three major themes identified through thematic analysis. Initially, participants

perceived female-coded chatbots as extensions of customer service functions, based on names, avatars, and communication styles that mimic human service agents. These representations influenced participants' interpretations of chatbot gender, with some focusing on functionality and others attributing social meanings such as femininity, warmth, and emotional labor. As these gendered interpretations became linked to customer service roles, participants identified the potential reinforcement of broader gender stereotypes concerning women's suitability for service-oriented work.

The figure further demonstrates that the three themes are interconnected rather than independent findings. Instead, they constitute a sequential process in which female chatbot representation influences consumer interpretations, subsequently shaping perceptions of gender stereotypes in AI-mediated communication. This relationship underscores that technological design can have significant social and cultural implications beyond its functional objectives.

## **4. Discussion**

### **4.1 Anthropomorphism and the Social Interpretation of AI**

The findings of this study suggest that participants did not perceive chatbots merely as technical communication tools, but rather as socially meaningful actors embedded within customer service interactions. Participants frequently interpreted female chatbots through human social characteristics such as friendliness, patience, emotional attentiveness, and communicative warmth. This indicates that chatbot interactions were shaped not only by technological functionality, but also by socially constructed expectations attached to human communication and gender.

These findings can be understood through the concept of anthropomorphism, which is particularly relevant in AI – mediated communication because users often rely on human-centered cognitive frameworks when interacting with technological systems (Waytz et al., 2010). In the context of conversational AI, anthropomorphic cues such as names, avatars, and human-like conversational styles encourage users to perceive chatbots as socially recognizable actors rather than purely automated systems (Go & Sundar, 2019).

The findings are also consistent with previous studies suggesting that conversational agents are evaluated not only based on

their functional performance but also on their ability to generate social presence and relational engagement during interaction (De Cicco et al., 2020). Participants in this study frequently associated female-coded chatbots with qualities such as friendliness, supportiveness, and emotional accessibility (Gustavsson, 2005). These associations indicate that anthropomorphic design extends beyond usability considerations and influences the social meanings users attach to AI technologies. In this sense, chatbot design becomes a site where technological functionality intersects with broader cultural expectations regarding communication and interpersonal interaction.

Importantly, the findings demonstrate that anthropomorphism operates beyond enhancing user experience. Participants did not simply evaluate chatbots based on efficiency or problem – solving capacity, but also interpreted them through symbolic and relational frameworks. Female-coded chatbots were repeatedly associated with customer service characteristics such as politeness, patience, and helpfulness, suggesting that human – like design cues facilitate the transfer of social expectations from human interactions to AI – mediated communication (Dave & Kushwah, 2025; Mohammad Alzub, 2023). This finding supports previous research arguing that anthropomorphic AI systems often activate social responses similar to those observed in interpersonal communication (Sheehan et al., 2020).

At the same time, the findings also reveal the limits of anthropomorphic interaction. Although participants perceived chatbots as socially meaningful communication agents, they continued to distinguish between automated responses and human interaction, particularly in situations requiring empathy, contextual judgment, or complex problem – solving (Roesler et al., 2022). Several participants indicated a preference for communicating with human customer service representatives when facing urgent or emotionally sensitive issues. Similar observations have been reported in previous studies, which found that users may appreciate conversational AI for routine and transactional interactions while still preferring human agents for situations requiring emotional intelligence and nuanced understanding (Sheehan et al., 2020).

## **4.2 CASA Framework and Gendered Expectations in Human Chatbot Interaction**

The findings of this study can be further interpreted through the Computers Are Social Actors (CASA) framework proposed by Nass and Moon (Nass & Moon, 2000). The CASA framework suggests that individuals tend to apply social rules, expectations, and interpersonal norms to technological systems, even when they are fully aware that they are interacting with machines. Rather than responding to technology purely as a functional tool, users often engage with technological agents as if they were social actors possessing human characteristics and identities.

The findings support this proposition. Participants frequently evaluated female chatbots using social and gendered attributes commonly associated with human interactions, including friendliness, patience, politeness, and emotional attentiveness. These evaluations were not primarily based on the technical capabilities of the chatbots, but rather on social expectations attached to their perceived gender identities. This suggests that participants interpreted female-coded chatbots through the same social frameworks that shape perceptions of human communication and service work.

The findings indicate that gender plays a significant role in how users make sense of AI – mediated interactions. Several participants perceived female chatbots as naturally suited to customer service functions because they were considered more approachable, caring, and communicative. Such perceptions reflect broader gender stereotypes that associate women with communal characteristics, emotional labor, and supportive roles (Ellemers, 2018). From a CASA perspective, these stereotypes are transferred from human social interactions to human-AI interactions, resulting in gendered expectations toward technological agents.

The findings also revealed variation in how participants interpreted chatbot gender. While some participants viewed female representation as appropriate and beneficial for customer service interactions, others considered gender largely irrelevant compared to functionality and efficiency. This divergence highlights an important dimension of the CASA framework: although users often apply social expectations to technology, these interpretations are not uniform and may be shaped by individual experiences, cultural values, and technological literacy. The findings, therefore, suggest that users

actively negotiate the meaning of gendered AI rather than passively accepting the identities embedded within technological systems (Duan, McNeese, et al., 2025).

The findings contribute to existing research on gendered AI by demonstrating how social expectations can become embedded in perceptions of digital customer service. Previous studies have shown that users often associate female conversational agents with warmth and relational competence, whereas male agents are more frequently associated with authority and expertise (Bastiansen et al., 2022). The present study extends this discussion by showing that similar patterns emerge within the Indonesian context, where participants frequently linked female chatbot identities to customer service and assistance-oriented functions.

### **4.3 Gender Automation and the Feminization of Digital Service Labor**

The findings suggest that the predominance of female-coded chatbots in banking and telecommunications service cannot be understood solely as a technological design decision. (Duan, Li, et al., 2025). Rather, participants frequently associated female chatbot identities with characteristics such as patience, friendliness, helpfulness, and emotional attentiveness, indicating that chatbot design is embedded within broader social understandings of gender and service work. These findings resonate with the concept of gender automation, which refers to the ways gender norms and social expectations become embedded within technological systems and automated processes (Halberstam, 1991).

The association between femininity and customer service observed in this study reflects a longer historical pattern in which women have been positioned within caregiving, support, and emotional labor roles. Participants often described female chatbots as naturally suited for assisting customers, answering questions, and providing guidance. While such perceptions may appear intuitive, they are rooted in broader cultural assumptions that link women with nurturing and relational forms of labor. From this perspective, female chatbots can be understood as digital extensions of gendered service work, where expectations traditionally attached to women are transferred to technological agents (Ashcroft & Ashcroft, 2023; Forgas-Coll et al., 2023).

These findings are consistent with feminist technology studies that argue technologies are not socially neutral but are shaped by the

cultural values and power relations of the societies in which they are developed (Wajcman, 2010). The design of female-coded chatbots may therefore reflect existing gender norms rather than simply technical considerations. By repeatedly presenting digital assistants and customer service agents as female, organizations may contribute to the normalization of the idea that service, assistance, and emotional support are inherently feminine domains.

However, the findings also suggest the need for a more nuanced interpretation. Although several participants recognized the potential reinforcement of gender stereotypes through female chatbot representation, others viewed these design choices as practical responses to user expectations and communication preferences. Some participants argued that female chatbots may be perceived as more approachable, familiar, or effective in customer service contexts. This observation aligns with previous research suggesting that organizations often adopt female-coded AI personas based on assumptions regarding user comfort, market preferences, and perceived communication effectiveness (UNESCO & EQUALS Skills Coalition, 2019).

The coexistence of these perspectives highlights an important tension within discussions of gendered AI. On one hand, female chatbot representation may reflect and potentially reinforce traditional gender stereotypes. On the other hand, organizations may adopt such representations because they are perceived to align with existing user expectations and service branding strategies. Rather than viewing these explanations as mutually exclusive, the findings suggest that both processes may operate simultaneously. Female-coded chatbots may be designed in response to social expectations while also contributing to the continued normalization of those expectations through repeated technological encounters.

The findings indicate that participants were not passive recipients of gendered technological representations. Several participants demonstrated awareness of the gender assumptions embedded within chatbot design and questioned why customer service AI systems are predominantly female. This suggests that users are capable of critically reflecting on the social implications of AI technologies, even while continuing to interact with and accept them in everyday contexts (Camilleri, 2024; Hagerty & Rubinov, 2019).

## 5. Conclusion

This study aimed to explore how customers perceive female chatbots in Indonesia's banking and telecommunications sectors and to examine the extent to which these perceptions are shaped by gendered expectations. Drawing on anthropomorphism, the Computers Are Social Actors (CASA) framework, and the concept of gender automation, the study sought to understand how users make sense of female-coded AI within digital customer service environments.

The findings revealed three interconnected themes. First, participants tended to perceive female chatbots as extensions of customer service functions rather than purely technical systems. Second, participants negotiated the meaning of chatbot gender in different ways, with some emphasizing functionality while others associated female representations with warmth, patience, and emotional accessibility. Third, participants recognized that the predominance of female-coded chatbots may reflect and potentially reinforce broader gender stereotypes surrounding service, care, and emotional labor. These findings suggest that AI-mediated interactions are not socially neutral but are shaped by cultural assumptions and gendered meanings derived from human communication.

Theoretically, this study contributes to the literature on human-AI interaction by demonstrating that anthropomorphic design not only facilitates social engagement with AI systems but also enables the transfer of gendered expectations from human relationships to human-machine interactions. The findings provide empirical support for the CASA framework by showing that users apply interpersonal norms and stereotypes to technological agents. Furthermore, by incorporating the concept of gender automation, the study extends discussions on gendered AI beyond predominantly Western contexts and offers insights from the Indonesian banking and telecommunications sectors.

From a practical perspective, the findings suggest that organizations and AI designers should recognize that chatbot design involves not only technical considerations but also social and ethical implications. Greater attention to inclusive and gender-sensitive AI design may help prevent the uncritical reproduction of traditional gender roles within digital communication environments. At the same time, the findings may inform broader discussions among

policymakers and consumer advocacy groups concerning representation and responsibility in AI development. Nevertheless, the study should be interpreted in light of its limitations, including the small exploratory sample, its focus on two service sectors, and the use of a single qualitative method. Future research may further investigate perceptions of male-coded and gender-neutral chatbots, employ experimental approaches to examine gender-related differences in AI evaluation, and explore organizational perspectives regarding the strategic and cultural considerations underlying chatbot gender design. Ultimately, as AI technologies become increasingly integrated into everyday communication, understanding how gendered meanings are embedded within these systems remains essential for developing more socially responsible and inclusive forms of human-AI interaction.

Several limitations must be acknowledged. The study included only four participants, rendering it exploratory rather than representative of Indonesian consumers as a whole. Furthermore, the findings are confined to the banking and telecommunications sectors and are based on participants' self-reported experiences, which makes the results context-specific and not generalizable. Consequently, these limitations indicate that the findings should be interpreted with caution and regarded as an initial contribution to research on gendered AI in Indonesia.

Future research should include larger and more diverse samples, examine additional industries and cultural contexts, and compare consumer perceptions of female-coded, male-coded, and gender-neutral chatbots. Further studies could employ experimental or mixed-method approaches to investigate how chatbot gender affects trust, satisfaction, and user experience. Moreover, examining organizational perspectives on chatbot gender design may yield deeper insights into the strategic, cultural, and ethical considerations that inform the feminization of AI-mediated customer service. As AI technologies become increasingly integrated into everyday communication, understanding how gendered meanings are embedded within these systems is essential for developing more socially responsible and inclusive forms of human-AI interaction.

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