Literature Review: Response Time and Trust in AI Chatbots

Faisal Alzhrani
Student ID: g201829740
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Research Question (RQ). *How do instant (0–1 s) vs. delayed (1–3 s; 10 s) chatbot responses affect users'* trust in the accuracy *of the answer?*

Introduction

Response time—the delay between a user's message and a chatbot's reply—is one of the most salient cues users observe during text interaction. Prior work shows people treat timing as a social signal: very fast replies can seem glib while very slow ones frustrate, yet findings in chatbot contexts are mixed [6, 3, 4]. Understanding how timing shapes *trust in accuracy* is critical for high-stakes uses (education, health, finance), where users must believe the content to act on it.

Proxy Paper

Zhang, Tsiakas, & Schneegass (CUI '24)—"Explaining the Wait." A between-subjects online study (N=194) compared *instant* vs. *dynamic* delays and tested brief textual *justifications*. Delay alone did not significantly change trust or social presence; justifications increased perceived transparency and raised trust for *instant* responses (with minimal effect for dynamic delays) [9]. **How we extend it:** (a) test three delay bands (0–1 s, 1–3 s, ∼10 s); (b) measure *trust in factual accuracy* directly (beyond social presence/satisfaction); (c) include moderators (age, prior chatbot experience).

Thematic Summary

Theme 1: How timing shapes trust & social presence. An ECIS experiment reported that *dynamic delays* (proportional to response complexity) increased perceived humanness/social presence and overall satisfaction compared to near-instant replies [3]. A later BISE paper reconciled inconsistencies: delays raised social presence but reduced usage intentions, with *prior experience* moderating effects (novices read delays as human-like; experienced users preferred speed) [4]. A foundational psychology result found a *non-monotonic* pattern for persuasion in timing: moderate latency outperforms very short or very long latencies [6]. Outside pure chat, IP&M (2024) reports an *optimal ∼1–3 s* communication delay for AI feedback tools (performance/engagement peak)

[7]. Individual differences matter: a BMC Psychology (2025) study found younger adults preferred instant replies, whereas older adults preferred slower pacing (10–60 s) in companionship contexts [8]. In e-commerce, higher *interactivity* (fast, responsive, capable) increased trust—here speed operates as a competence signal [2].

Theme 2: Design moderators of the timing–trust link. *Typing indicators* mitigate the satisfaction drop from longer latency by increasing social presence [5]; earlier work shows indicators boost social presence especially for novices [10]. *Justifications* ("I'm retrieving sources...") improve perceived transparency and raise trust for *instant* responses [9]. Broader customer-service research connects anthropomorphic cues and social presence with compliance [1]—relevant because delay manipulations often work by shifting perceived humanness.

Research Gap

Most chatbot studies tie timing to *social presence*, *satisfaction*, or *usage intentions*; far fewer isolate *trust in factual accuracy*. Delay ranges are often coarse (e.g., instant vs. dynamic) and moderators (age, prior experience) are rarely modeled together. We will experimentally manipulate **three delay bands** (0–1 s, 1–3 s, ∼10 s), cross them with **typing indicator vs. justification** cues, and measure **accuracy-focused trust** while modeling **age** and **prior chatbot experience**.

References

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