



Creating an Advanced AI Agent to Assist Front Desk Employees in Businesses



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INTRODUCTION

Artificial intelligence is rapidly changing how businesses interact with customers. Many companies are beginning to use AI agents to assist with customer service tasks such as answering questions, scheduling appointments, and responding to messages. This project explores whether an AI front desk agent can assist or replace a human receptionist while maintaining customer satisfaction. The AI agent was designed specifically for a massage therapy business and was tested with real customers interacting with the system.

The main research question for this project is: How does customer satisfaction change when interacting with an AI front desk agent instead of a human receptionist? The goal of this project is to determine whether AI can improve efficiency while still maintaining positive customer experiences.



RESEARCH METHODOLOGIES

AI System Design: The AI agent was created using Make.com automation workflows and Google AI Studio for assisted production - GPT-5 / advanced AI models were used as the conversational brain - Twilio telephony API allowed the AI to answer phone calls and send SMS messages - Google Speech recognition allowed voice input in multiple languages. **Business Integration:** The system connected to Mindbody scheduling software used by the massage studio - Google Sheets stored customer information and booking data. **Capabilities of the AI Agent :** Answer phone calls and text messages - Book and reschedule appointments - Answer frequently asked questions - Send reminders and confirmations - Transfer complex conversations to a human receptionist.

Experimental Method:

Customers interacted with either the AI agent or the human receptionist. After the interaction, customers completed a short survey measuring

- satisfaction,
- efficiency,
- clarity of communication,
- preference for AI or human service.

DISCUSSION, ANALYSIS, AND EVALUATION

The results suggest that AI front desk agents can successfully perform many routine tasks such as answering calls and scheduling appointments. Customers generally rated the AI positively for speed and efficiency (Figure 2). However, many customers still preferred a human receptionist, which shows that emotional connection and personal interaction remain important in service-based businesses (Figure 4).

The most effective solution may be a hybrid model, where AI assists human receptionists rather than fully replacing them. AI can handle routine tasks and missed calls, while human staff handle complex or emotional situations. This combination could increase business efficiency while still maintaining a positive customer experience.

DATA AND FINDINGS

CLIENT DEMOGRAPHICS — SURVEYED PERIOD

Total clients
193

Average age
44.7

Survey responses
50

How satisfied were you with the helpfulness of the receptionist/AI Agent?

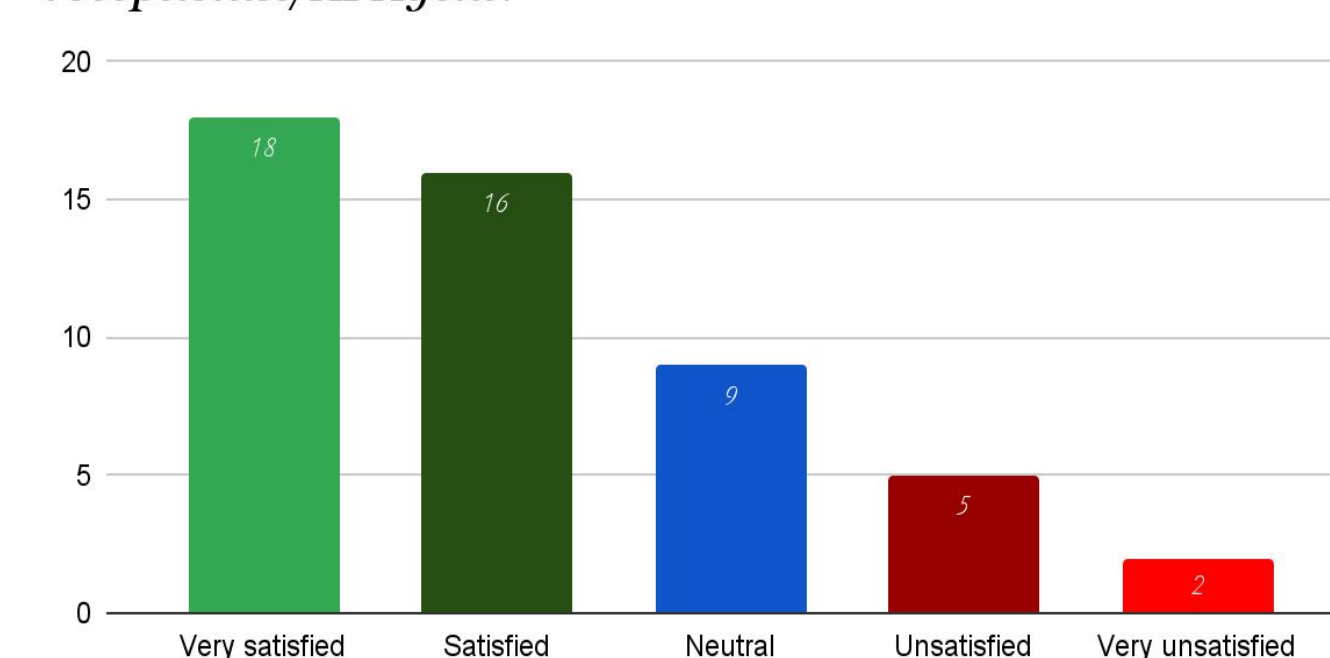
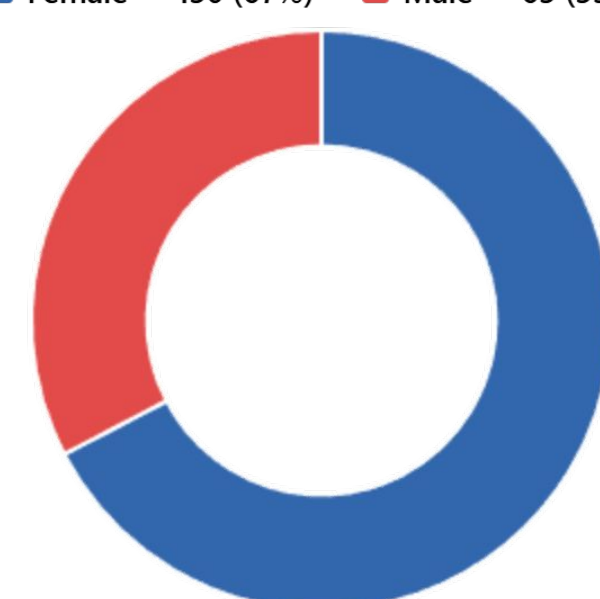


Figure 1 measures whether the AI agent met the service standards clients expect from a front desk interaction.

Female — 130 (67%) Male — 63 (33%)



How would you rate the efficiency and speed of your interaction?

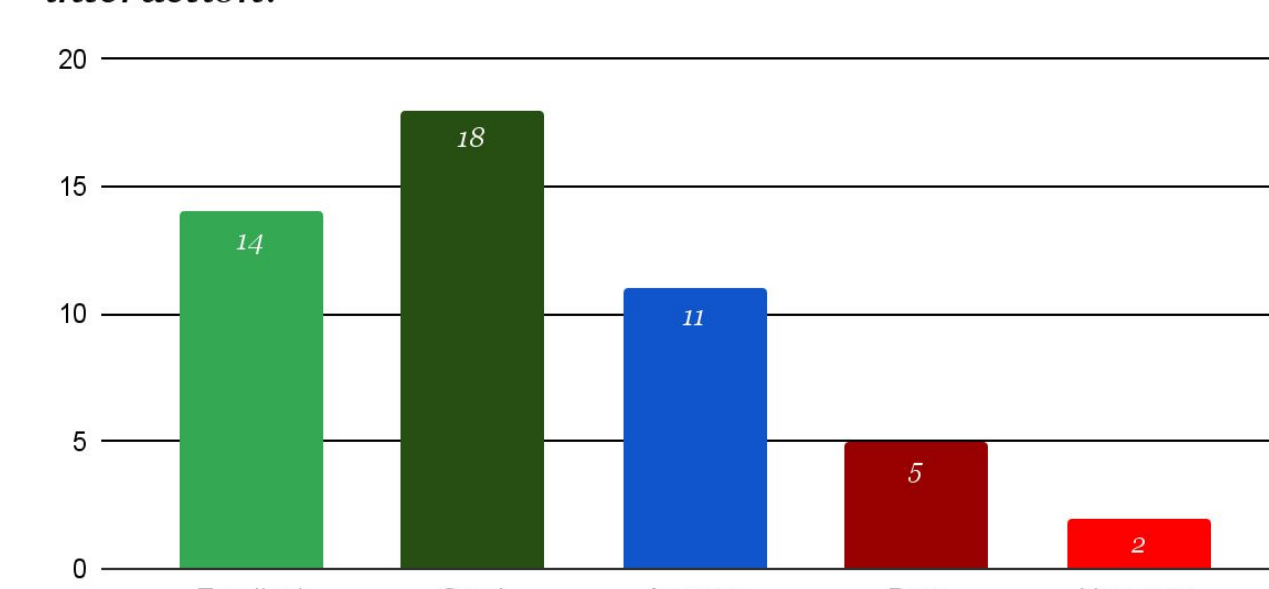


Figure 2 determines whether the AI agent matched the speed and responsiveness expected of a receptionist.

Did you feel your needs were met and clearly understood during the interaction?

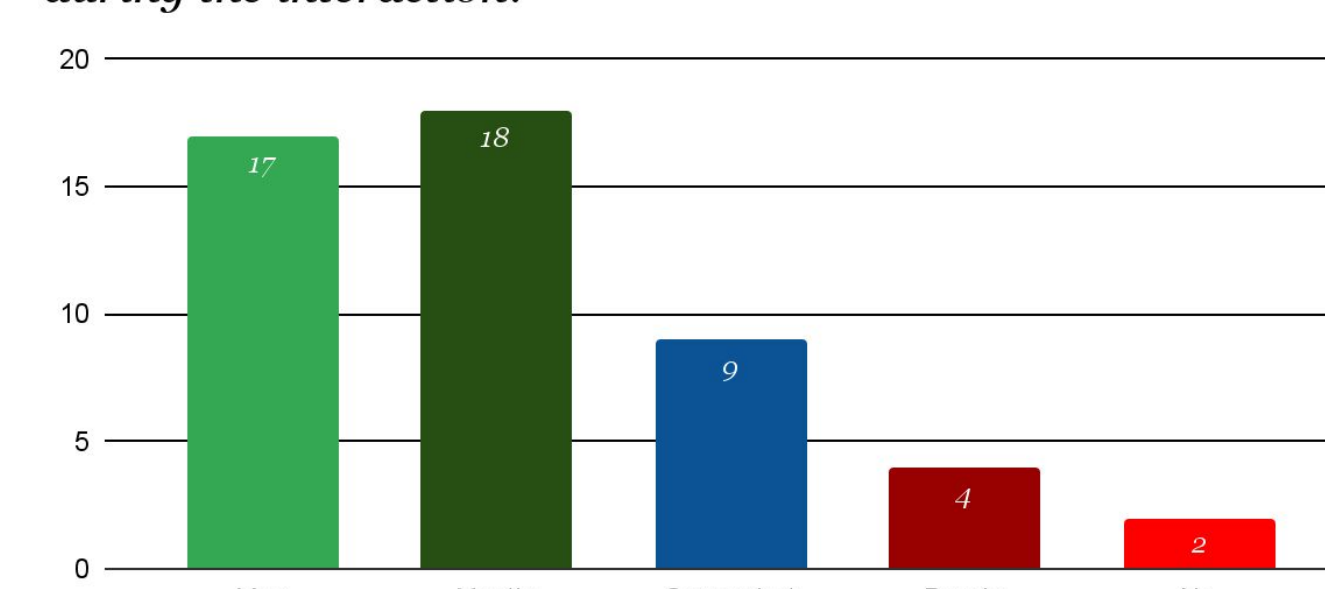


Figure 3 tests the AI agent's ability to clearly comprehend and address client needs.

Do you prefer a human receptionist or an AI agent for future front desk interactions?

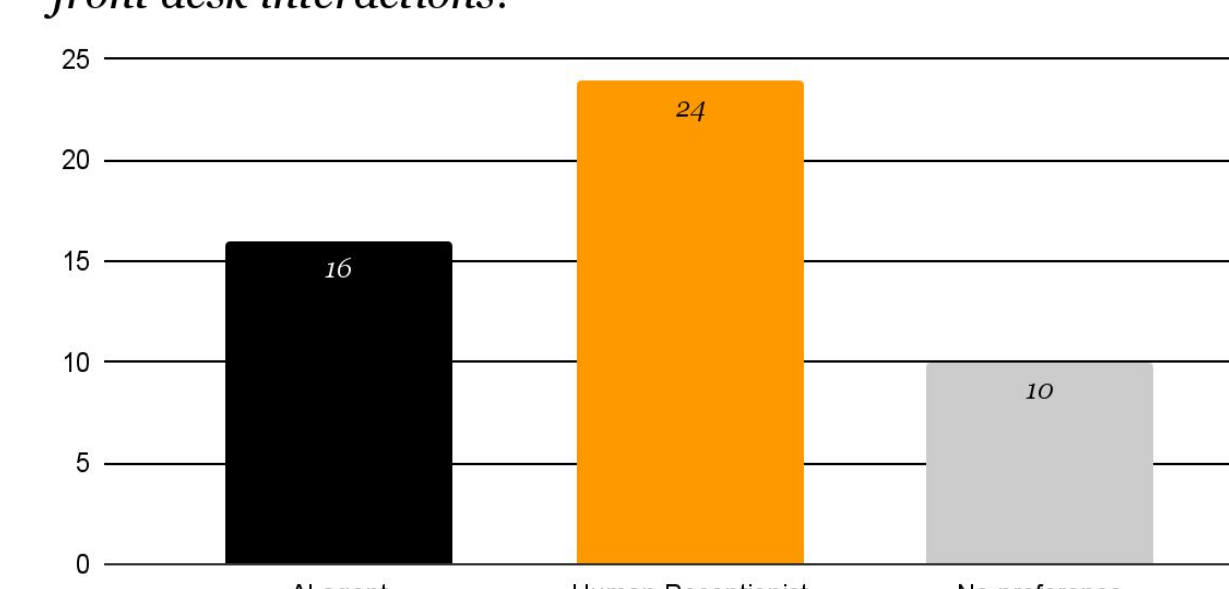


Figure 4 shows which type of interaction: AI or human, clients trust and value more for future visits

ACKNOWLEDGEMENTS / REFERENCES

Special thanks to: Mr. Morrison and Mr. Shen for project guidance, Elements Massage studio for allowing testing of the AI system, Research sources includes Simbo.ai, Zendesk, the U.S. Census Bureau, SurveyMonkey and PwC for industry data and AI research

QR CODE TO FULL PAPER:



CONCLUSIONS, IMPLICATIONS, AND NEXT STEPS

Conclusions: The AI agent successfully handled routine tasks with high marks for speed and efficiency. 68% of clients rated helpfulness as Satisfied or Very Satisfied. 48% still preferred a human receptionist, confirming that emotional connect remains important in wellness settings (Figure 1 & 3). A hybrid model with AI agents assisting humans, is concluded to be the most effective solution for this specific industry.

Implications: Given that the client base was majority female, it can be implied that female clients are more likely to prefer human receptionists due to their value of emotional connection and empathy, while male clients may lean toward the AI agent for its speed and efficiency.

Next Steps: Integrate the AI agent with a live Mindbody calendar for real time appointment booking. Connect system to a real business phone # for Elements Massage. Move from beta testing to full deployment alongside human receptionist.