



# ChatGPT and Pi AI under the Microscope: Artificial Empathy for Enhancing Digital Customer Service

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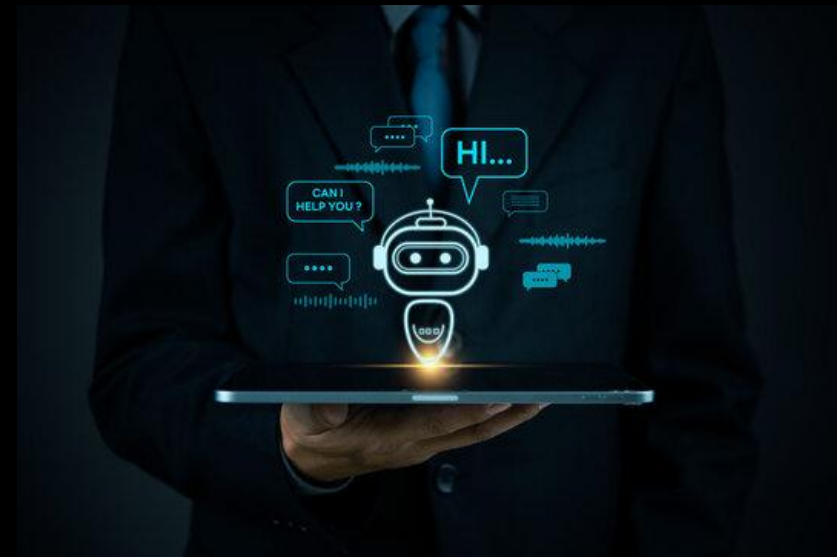
Many remarkable advancements in technologies, particularly AI and LLM, have transformed the way companies digitally support their customers!



# AI Chatbots - Definition

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AI-powered systems that engage in human-like conversation, understanding inputs and delivering relevant responses



# BENEFITS OF AI CHATBOTS

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- Online (24/7) instant responses
- Low business cost
- Personalized service (through user data analysis)
- Multilingual Support



AI chatbots, have considered as popular digital business tools, enhancing employee productivity and improving customer service effectiveness





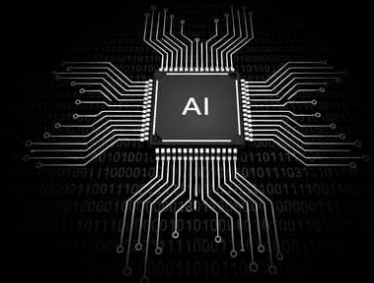
Today, chatbots tend to become  
more and more **empathetic!**



# Artificial Empathy & Anthropomorphism

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- **Artificial empathy:** The capability of an AI system to recognize human emotions and respond to in a manner that simulates human empathy.
- **Anthropomorphism:** The attribution of human characteristics (such as emotions) to non-human entities such as AI systems.



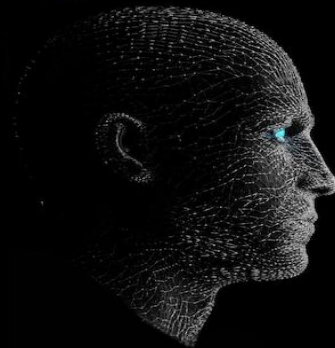
# RESEARCH QUESTIONS

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This research explored the impact of artificial empathy of an AI chatbot on today's digital customer service.

## MAIN RESEARCH QUESTIONS:

- **RQ1:** Are users able to feel artificial empathy of a chatbot?
- **RQ2:** Does perceived empathy impact customer's perception?
- **RQ3:** Are there differences between ChatGPT and Pi AI in how they provide empathy in digital customer service?
- **RQ4:** Are these 2 LLMs capable in providing personalized & individualized service?





ChatGPT: An LLM that is not designed with emphasis on providing empathy



Pi AI: An Empathetic LLM that is designed to provide high level of empathy



# METHODOLOGY OF THE RESEARCH

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An experiment of 2 TEAMS was performed (n=100) that based on a predefined scenario in which participants faced hypothetical customer service problems, such as malfunctioning computer or service delay.

TEAM 1: 50 participants interacted only with ChatGPT

TEAM 2: 50 participants interacted only with Pi AI

# Ai

# METHODOLOGY OF THE RESEARCH

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Participants forced to set **both models** to a professional representative role prior to the start of their communication

They also asked 15 predefined questions (typical customer's problems) to each LLM.

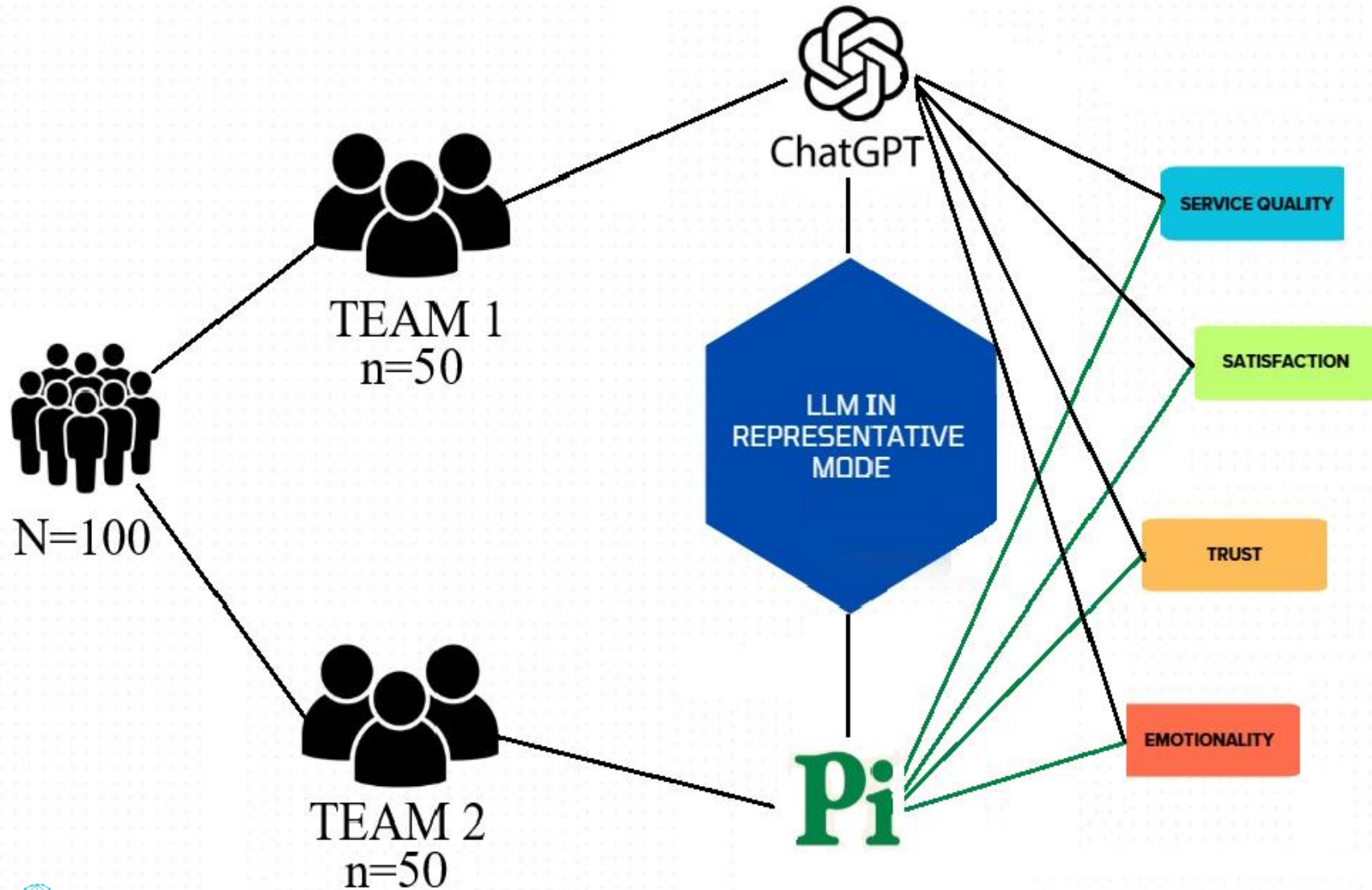
Afterwards, they were asked to evaluate their digital service experience across 4 variables:

1. Trust
2. Emotionality
3. Satisfaction
4. Service Quality



# The overall experimental process

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# Results of the Research

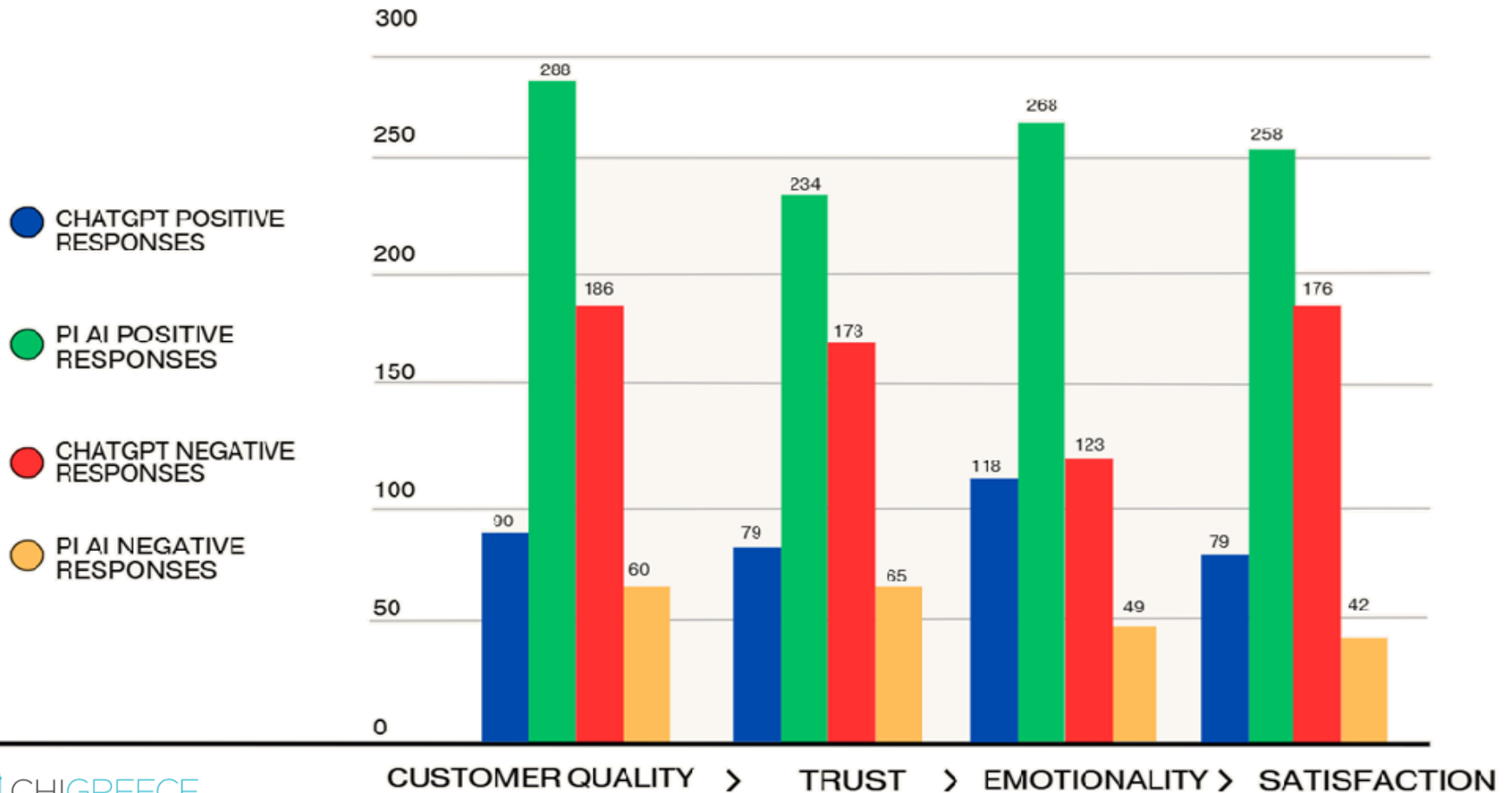
Pi AI **outperformed** ChatGPT in all 4 evaluated variables

- **Trust:** Pi AI achieved 60% positive responses, compared to 14% for ChatGPT.
- **Empathy:** Pi AI had higher emotional responsiveness by 20% of participants, versus only 6% of ChatGPT.
- **Service Quality:** 56% of participants perceived Pi AI's service quality as comparable to human service, while only 4% felt the same with ChatGPT.
- **Satisfaction:** 24% of participants were highly satisfied with Pi AI, compared to 6% of ChatGPT.

# Visualization of the Data

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## COMPARISON OF POSITIVE AND NEGATIVE ANSWERS CHATGPT & PI AI





# CONCLUSIONS

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Both AI chatbots struggled providing truly personalized customer service, as only 4% (for ChatGPT) and 10% (for Pi AI) of participants found them capable of delivering **personalized experience**.

Artificial empathy & anthropomorphism can significantly improve customer perceptions of service quality, trust, and satisfaction.

Users remain cautious as full trust in AI chatbots is not yet widespread.



# PROPOSALS FOR FUTURE RESEARCH

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- Investigate whether repeated interactions with empathetic AI can influence trust and satisfaction.
- Future developers should focus on balancing empathetic and human-like elements in AI chatbots.
- They should give priority to personalization in digital customer service (memory capability, user data analysis).



# Thank you so much for your time!



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