

Implementation of Chatbots in Mental Healthcare: A Human Factor Perspective

Addressing Global Mental Health Challenges with AI

Zhenqi Zhao

University of Twente

z.zhao-2@student.utwente.nl

Onur Asan

Stevens Institute of Technology

oasan@stevens.edu

Mo Mansouri

Stevens Institute of Technology

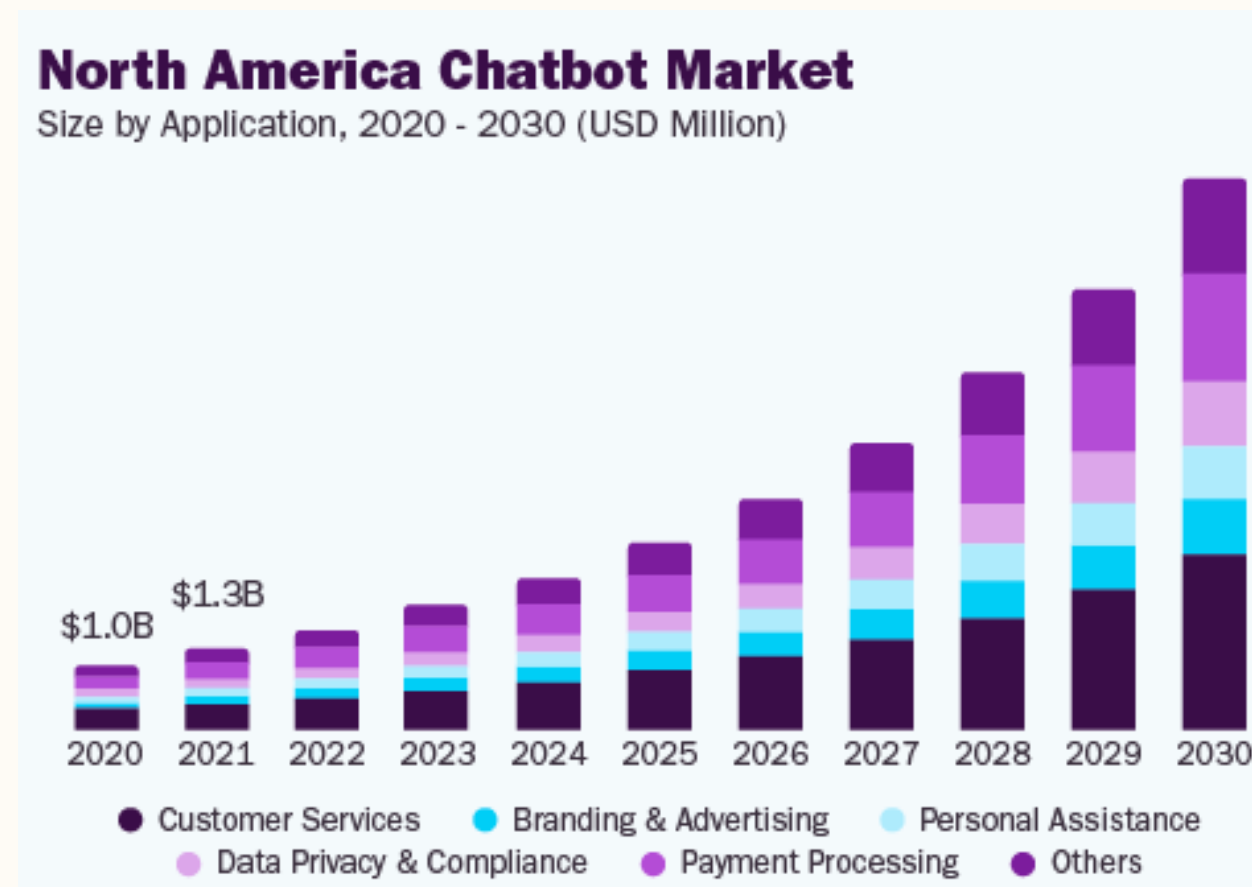
mmansour@stevens.edu



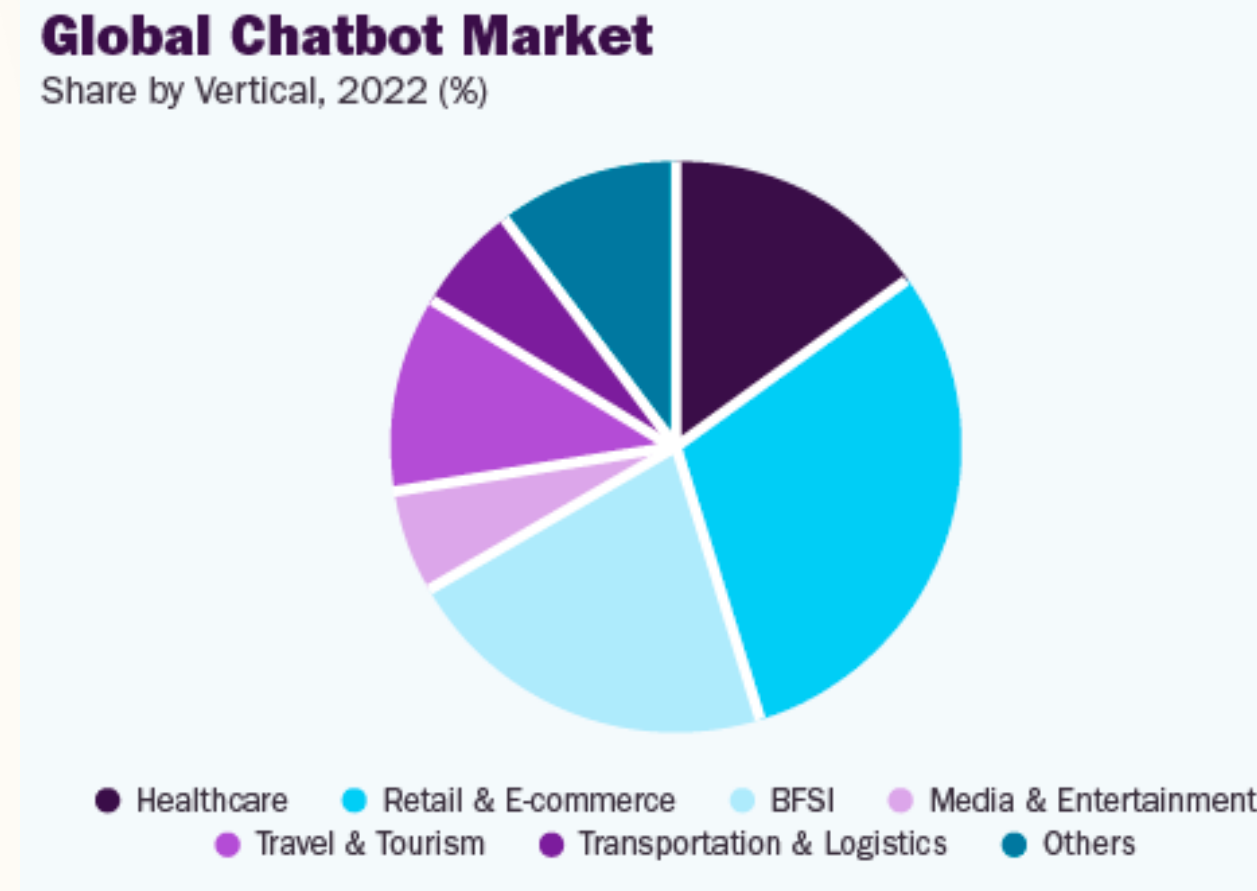
About Me

- Master student in University of Twente, majoring in Business Information Technology
- Currently working on researching the influence of lexical alignment in text-based negotiation chatbots about negotiation results and user perceptions for my thesis

Introduction



The significant increase in chatbot implementation



The rising popularity of chatbots in healthcare

Current Role of Healthcare Chatbots

Current healthcare chatbots serve as supplementary tools rather than replacing medical professionals

Technique Issues

- Majority rely on decision trees, limiting user inputs.
- Reliability of responses is a concern.
- Lack depth and clarity in dialogues, causing confusion.

Practical Issues

- Integrating chatbots into clinical practice is challenging.

Mental Health Challenges

- 1 in 8 individuals worldwide suffers from mental disorders
- 15% of the Netherlands population admits to psychological issues.



Can chatbot implementation in mental health address this situation?

Stakeholder Analysis

Identification of Stakeholders



National Level

- Governments
 - Develop mental health system



Organizational level

- Insurance companies
 - Therapy costs
- Universities
 - Firsthand data for research purposes.

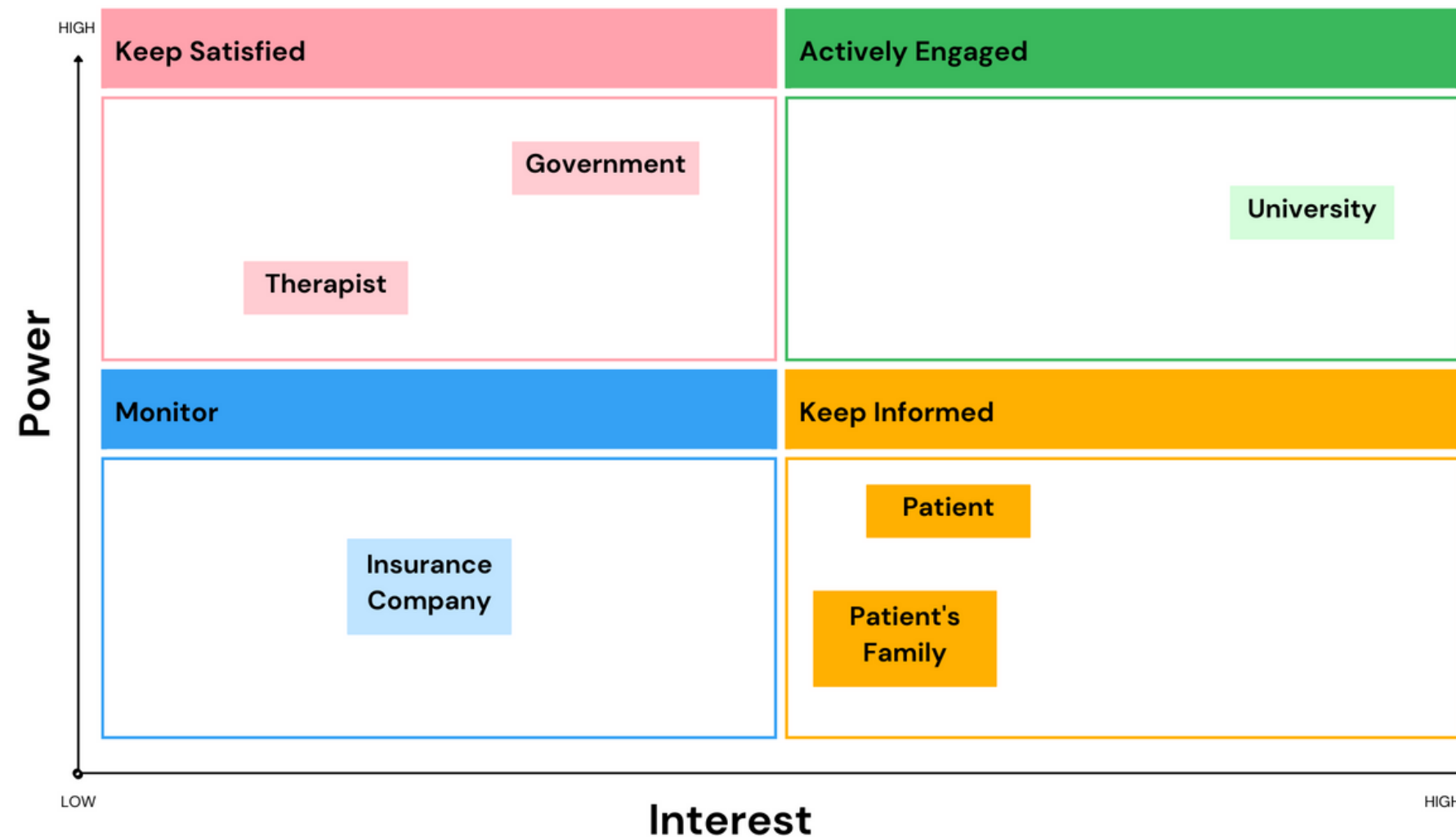


Individual level

- Patients
 - Physical illness
- Therapists
 - Managing own health
 - Job opportunities
- Patient's family members
 - Burnout
 - Negative emotion

Stakeholder Analysis

Mapping of Stakeholders



- Governments
 - Considerable influence but limited interest
- Therapists
 - Significant influence and limited interest
- Insurance companies
 - Limited influence and interest
- Universities
 - Considerable influence
- Patients and Patient's family members
 - Considerable interest but limited influence

Shaping Forces Analysis

Demanding of Potential Patients (Students)

Culture Barrier

- Students facing emotional challenges during education abroad.

Language Barrier

- Students facing language challenges during education abroad.

Shameful Feeling

- Hesitate to seek help because of shameful feelings

Shaping Forces Analysis

Drawbacks of Current Therapy System

Scheduling Barrier

- Difficulty in finding compatible therapists.

Unaffordable Cost

- High costs

Shortage of Theropists

- Shortage of qualified therapists and social workers

Burst of Technologies

Machine Learning & Natural Language Process

- Rapid advancements in AI and chatbot capabilities.

Challenges and Future Work

- **Challenges**

- Data security
- Patients Trustworthiness

- **Future Work**

- Large Language Models (LLMs)
- Explainable AI.

**Thank You For
Your Listening**
