3B-2

Application of Chatbot with a Sense of Humor in E-Commerce Customer Service

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Outline

- Introduction
- Literature review
- Customer service chatbot
- Preliminary experimental results
- Conclusion and future directions

Introduction

- Online shopping has become a common behavior among modern people.
- Many businesses engage in e-commerce, selling products or providing services through online channels.
- An increasing number of e-commerce platforms are now utilizing chatbots to respond to customer inquiries, aiming to provide services in a more real-time and cost-effective manner.

Introduction

- However, in the e-commerce environment, due to the lack of physical interaction, customers often encounter more service issues.
- When faced with service issues, customers may feel dissatisfied and experience negative emotions.
- Humor can help individuals relieve stress, redirect anger, and reduce negative emotions (Eisend, 2022; Weinberger & Gulas, 1992).

Introduction

- Therefore, in this study, we attempted to integrate humor into the design of the customer service chatbot.

- Our goal is to enable the chatbot to engage in conversations with customers in a more humorous manner, with the aim of alleviating negative emotions and enhancing customer satisfaction.

Literature review

- Humor is defined as a stimulus that elicits or is intended to elicit laughter, amusement, or the perception that something is funny (Warren et al., 2018).

- Most research on humor in marketing is primarily focused on the effectiveness of humor appeals in advertisements. A meta-analysis of the effect of humor in advertising demonstrates that a humor appeal significantly enhances attention, positive affect, attitude towards the advertisement and purchase intention (Eisend, 2009).

- In the context of e-commerce, humor integrated into website design increases positive consumer evaluation of the firm in terms of satisfaction with the service encounter, website revisit intention, and recommendation intention of the service provider (van Dolen et al., 2008).

- In services, research on humor primarily focuses on the dyadic interactions between service employees and customers (Mathies et al., 2016), finding humor as an enhancer of rapport between them (Gremler & Gwinner, 2000).

Customer service chatbot

- A chatbot is a computer program that simulates human conversation through voice commands or text chats or both. (Caldarini et al., 2022) :

- Types of chatbots:
  - Rule-based model
  - Retrieval-based model
 - Generative model

Customer service chatbot

- Our current chatbot is rule-based. It responds to customer service questions using pre-designed dialogue texts.

- Our chatbot was built as follows:
  - Collect customer service questions from Shopee (https://shopee.tw)
  - Crawl relevant posts on Facebook (https://facebook.com)
  - Conduct a pre-test. Chose the responses that were considered the most humorous as the humorous dialogue texts.
  - Collect the responses from Shopee as the normal dialogue texts.
  - Build the chatbot by using ManyChat and Messenger.

Customer service chatbot
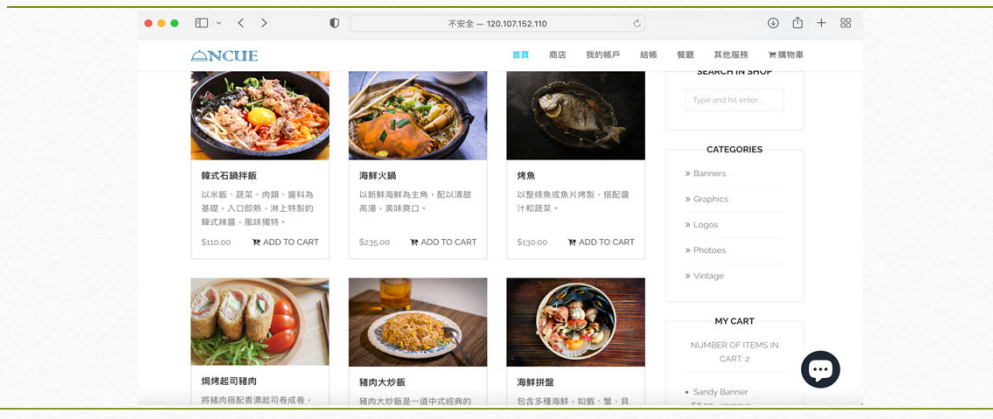
Case I: Normal response of a delivery question

Why haven't I received the two large boxes of strawberry ice cream that I ordered?
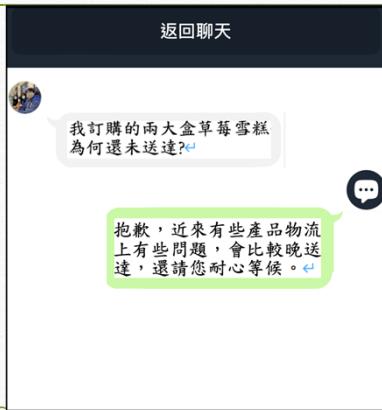
We apologize for the delay. There have been some logistical issues recently, resulting in delayed deliveries. Please be patient and your order will arrive soon.

Case I: Humorous response of a delivery question

Why haven't I received the two large boxes of strawberry ice cream that I ordered?

返回聊天

我訂購的兩大盒草莓雪糕為何還未送達?↵

抱歉,近來有些產品進貨的國家海象惡劣,會比較晚送達,還請您耐心等候

We apologize for the delay. Due to bad weather conditions (same pronunciation in Chinese as walrus) in the country of origin for the products, there may be delays in delivery. Please be patient and your order will arrive soon.

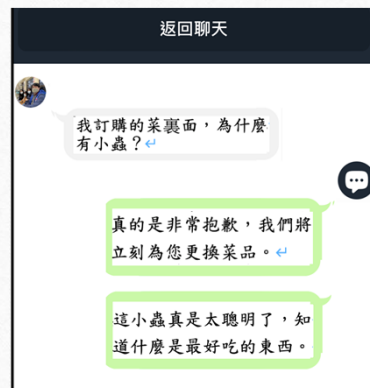## Case II: Normal response of a product question

Why are there bugs in the dishes I ordered?

返回聊天

我訂購的菜裏面,為什麼有小蟲?↵

真的是非常抱歉,我們將立刻為您更換菜品。↵

We are really sorry, and we will replace the dish for you immediately.

Case II: Humorous response of a product question

Why are there bugs in the dish I ordered?

返回聊天

我訂購的菜裏面,為什麼有小蟲?

真的是非常抱歉,我們將立刻為您更換菜品。

這小蟲真是太聰明了,知道什麼是最好吃的東西。

We are really sorry, and we will replace the dish for you immediately.

This bug is really smart, knowing what the most delicious thing is.

Experimental setup

- Participants were involved in the experiment. All participants were randomly assigned to one of two groups: the humorous group and the normal group.
- Each participant was provided with tokens to shop on our experimental website.
- Then each participant was presented with a customer service question to interact with the chatbot.
- A questionnaire was used to assess their satisfaction level on customer service.

Sample structure

- 248 participants
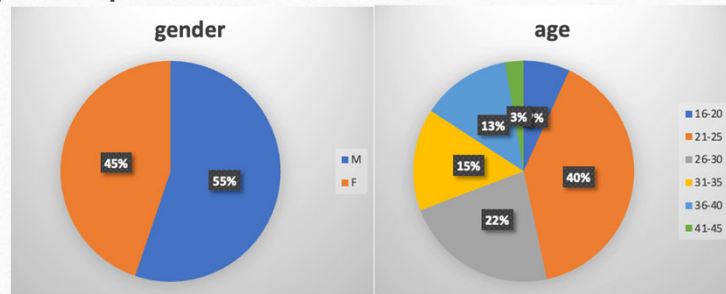
Findings:

- Humor has a significant positive impact on service satisfaction of a chatbot ($p<.001$), particularly for the group under age 30.

- Humor has a significant positive impact on service satisfaction of a chatbot, regardless of the gender of the individuals.

Conclusion

- In this study, we integrate humor into the design of the customer service chatbot.

- The experimental results indicate that humor has a significant positive impact on service satisfaction of a chatbot.

Future directions

- Build customer service chatbot by using AI generative model to enhance the flexibility of conversations.

- Delve deeper into the process of interaction between customers and service chatbots from the perspective of consumer psychology, serving as a basis for future theoretical development.