

I WANT TO BUY LOVE. PLEASE, DON'T BE A ROBOT!

by

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Dalhousie University is located in Mi'kma'ki, the  
ancestral and unceded territory of the Mi'kmaq.  
We are all Treaty people.

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## ABSTRACT

Understanding consumer responses to online product recommendations is crucial, particularly for handmade products and when the recommender is either a chatbot or a human. Existing research has mainly focused on factors that enhance chatbot interactions, yet there is scant knowledge about how these digital agents influence consumer responses to products depending on their production mode (handmade vs. machine-made). Addressing this gap, we are interested in uncovering the underlying mechanisms to determine if consumers find these recommenders credible and if they have positive attitudes toward their recommendations. Our research further investigates whether the 'handmade effect' is effectively conveyed when chatbots serve as recommenders. We conducted a 2 (recommender source: human vs. chatbot)  $\times$  2 (production mode: machine-made vs. handmade) experiment to test our predictions. Our findings reveal that recommendations from human agents significantly amplify the perception of love in handmade products, thereby positively impacting consumer attitudes and satisfaction. In contrast, chatbot recommendations do not lead to a differentiation between handmade and machine-made products in terms of perceived love, highlighting a shortfall in chatbot-led interactions.

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## CHAPTER 1 INTRODUCTION

The continuous advancement of information and communication technology has resulted in a transition from traditional retailing to online retailing (Massey et al., 2007; Nguyen et al., 2018). COVID-19 restrictions made online shopping even more attractive to shop safely and easily from home. During the pandemic, with many people forced to stay at home, traditional customer service methods have become more difficult to access. To accommodate this shift, companies have responded by expanding their online retailing activities, such as enhancing their online shopping platforms (Karray and Sigué, 2018), and turned to digital technologies, including those based on artificial intelligence (AI), to replace human service agents on their online retailing platforms (Looney et al., 2008).

The prevalence of AI-based interactive agents in our daily lives has given rise to chatbots. Chatbots are virtual chat representatives run by computer programs (Følstad et al., 2020) and are increasingly becoming integral in our daily interactions (Pazos, 2021). Chatbots mimic human dialogue, allowing individuals to engage with electronic devices seamlessly to obtain information and services (Følstad et al., 2020). With the growing integration of AI-based agents in our lives, we encounter chatbots through various communication modes (Adamopoulou and Moussiades, 2020). These include text platforms like Google Dialogflow, Facebook Messenger Bots, and Microsoft's Azure Bot Service; and voice assistants such as Apple's Siri, Google Assistant, and Amazon Echo's Alexa (Jang et al., 2021). Text-based chatbots have especially surged in popularity (Go and Sunder, 2019), thanks to the widespread use of messaging applications. Recognizing this trend, Facebook's Messenger incorporated chatbots in 2016 and over 100,000 chatbots were created in less than a year (Johnson, 2017). This shift means that

businesses and customers can now interact without always needing a live support agent (Zalinska and Agopian, 2022).

There has been extended research on chatbots in recent years particularly focusing on the reasons behind using these virtual assistants (e.g., Brandtzaeg and Følstad, 2017) and how human-like features can be effective in the use of chatbots (e.g., Van den Broeck et al., 2019; Chandra et al., 2022). However, the impact of different product features on the way people interact and react to chatbots remains understudied. This research is investigating how people react when a chatbot or a human agent recommends a product, considering whether the item is handmade or machine-made.

Understanding the evolving dynamics of chatbot interactions in recommending products with different production modes becomes even more pertinent in light of the shifting market trends toward handmade items. Most of the market has been comprised of machine-made products ever since the Industrial Revolution, which enabled mass production and wholesale distribution of standardized goods (Park and Yang, 2016). However, as the landscape of consumer shopping continues to evolve with advancements in technology, there has been an emergence of handmade products on online retail platforms such as Etsy.com in the last two decades. The global market size of handmade products has reached US\$ 752 Billion in 2022 (IMARC Group, n.d.). This can be an indication of a rise in demand for handmade products. Following this trend, products from many categories now highlight their handmade nature, such as Lush (handmade cosmetics), Vans (sneakers), and Armani (eyewear) (J Song et al., 2023). Considering the growing craft industry, scholarly inquiry has started to examine the factors contributing to the increased appeal of handmade items and found that these products are attractive

because their production represents humanity (Campbell, 2005) and transfers the love of artesian to the buyer (Fuchs et al.,2015).

The integration of traditional craftsmanship with online retailing platforms combines the attractiveness of handmade products with the accessibility and reach of online shopping. Digital innovations such as chatbots play a crucial role in guiding consumers in this context and have become increasingly sophisticated (Zogaj et al., 2023). Our study aims to investigate how chatbots influence customer attitudes and satisfaction in the context of recommending handmade items on online platforms. Furthermore, we aim to examine the role of the love contained in handmade products and how it shapes consumers' responses to the recommendations provided by chatbots or human agents. Additionally, we investigate the influence of source credibility on consumer reactions to these recommendations.



## CHAPTER 2 LITERATURE REVIEW

### 2.1 Prevalence of chatbots

Chatbots have become increasingly prevalent in various sectors, from healthcare (Zhang et al., 2020) to education (Shaha et al., 2020), to tourism (Li et al., 2021) and the financial industry (Suhel et al., 2020). A significant trend is the adoption of chatbots for customer services and support functions (Følstad et al., 2018). Through a variety of technological capabilities, such as seamless live communication and 24/7 customer support, chatbots efficiently link businesses with their consumers and increase customer service (Korman, 2022). This growing adoption of chatbots aligns with the wider industry shift towards self-service technologies, which are designed to replace the roles traditionally held by human agents (Meuter et al., 2000; Ostrom et al., 2019). Hence, chatbots are viewed as a potential replacement for conventional customer support (Xu et al., 2017). Another driving factor behind the adoption of chatbots is millennials' (Ogbeide et al., 2013) and Gen Z's (Text Groove Team, 2023) appreciation of using technology for their communications, positioning chatbots as a preferred medium for these demographic (Richad et al., 2019; Silvany, 2022).

Research on the role of chatbots has grown as businesses increasingly rely on these technologies. Early studies mainly focused on the technological aspects, looking at how chatbots interacted with people (e.g., Ciechanowski et al., 2019) and how they learned (e.g., Go and Sundar, 2019). As chatbots became more common, research expanded to address chatbots' characteristics that are most likely to positively influence consumers' evaluation, such as chatbots' intelligence and ability to understand and use natural language (Mimoun et al., 2012). Previous studies showed that while people can

communicate with chatbots using natural language skills, there are distinct differences in the quality and content of such interactions compared to human conversations. For example, in a study examining human-chatbot communication patterns, it was found that participants interacted with chatbots over longer durations but sent shorter messages than they would with another human (Hill et al., 2015). These conversations lacked the vocabulary diversity seen in human-to-human interactions and contained more profanity. However, when the chatbot uses a human-like language and has a name, it increases the user's perception of talking with a human. This can result in positive effects on relationship building with customers and enhance the company's emotional connection (Araujo, 2018). Hence, researchers advise retailers to incorporate chatbots on their websites to enhance this buying interest.

Despite the growing use of chatbots, consumers typically favor human interaction, which offers a more personalized response compared to the more generalized communication often provided by chatbots (Elliott, 2018). This bias against machines manifests itself in various ways; for example, Mou et al. (2019) assessed how participants evaluated conversations between a target individual and either a human or chatbot, and the findings indicate that individuals adapt their communication style based on whether they are interacting with a human or a machine. Similarly, people are less likely to accept advice from chatbots than human agents (Luo et al., 2019). In healthcare services, Longoni et al. (2019) found that consumers are hesitant to accept healthcare services driven by chatbots, fearing these systems might not recognize and value their individual traits. This skepticism extends to financial sectors as well and individuals tend to rely less on algorithms than on human advice when forecasting stock prices (Önkal et al., 2009).

Even when AI demonstrates superior performance, the general tendency is to trust human judgment over that of machines (Eastwood et al., 2012). The evidence suggests that people usually trust and feel more satisfied with human interactions than with chatbots. This preference could affect how consumers view products and their satisfaction with the interaction. This study aims to investigate these effects in more detail.

While there is a clear preference for human interaction over chatbots across various sectors, emerging research is beginning to shed light on the factors that influence consumer engagement (Duncan and O'Dwyer, 2023). For instance, when the personalities of the consumer and chatbot are aligned—such as both being introverted or extroverted—and the chatbot's responses are tailored with language that resonates with the user's personality traits can lead to an improved user experience (Shumanov and Johnson, 2020). Trust is another factor influencing consumers' intentions to use chatbots in online shopping (Silva et al., 2023). Since trust is one of the major components of credibility, it provides a basis for further investigation into the role of source credibility in shaping consumer interactions with chatbots.

## **2.2 Credibility**

Source credibility refers to the believability of the information that is provided by the source (Ohanian, 1990). In consumer interactions, several dimensions of source credibility, such as trustworthiness and expertise, have been found to impact persuasive effectiveness (Ohanian, 1990). Trustworthiness reflects how unbiased and truthful a source is perceived to be, and expertise refers to the source's perceived skill, knowledge, and capability to share trustworthy information (Ohanian, 1990). Source credibility research suggests that the characteristics of an information provider can influence a user's

trust in and reaction to shared information (Hovland and Weiss, 1951). Research has shown that credibility can impact purchase intention, brand perception, and reactions to an advertisement (Amos et al., 2008). The existing literature on source credibility demonstrates that credible sources are more persuasive than less credible sources (Ohanian, 1990; Pornpitakpan, 2004; Clark and Evans, 2014), and consequently, customers are more likely to accept recommendations from credible sources (O'Keefe, 2002).

### **2.2.1 The impact of source credibility on persuasion**

Most researchers believe establishing source credibility is essential during the initial interaction, as its absence makes subsequent communication less effective (Roy Dholakia and Sternthal, 1977). Consumers often activate self-generated thoughts that a salesperson's primary aim is to make a sale, which can hinder the acceptance of the salesperson's message (Sharma, 1990). Furthermore, this aligns with the concept of persuasion knowledge, which indicates that consumers possess insights and understanding about the tactics and motivations behind marketing efforts (Friestad and Wright, 1994). However, if the salesperson is perceived as credible, these self-generated thoughts are minimized and enhance the consumer's acceptance of the message (Sharma, 1990). Moreover, research also indicates that when consumers see a celebrity as credible, they are more likely to have a positive attitude toward the brands that are endorsed by that celebrity (Bhatt et al., 2013). People tend to trust recommendations that are coming from credible sources; hence, the credibility of the recommendation platforms plays a vital role in enhancing message acceptance (Jiang et al., 2000; Shin, 2022).

Yoo and Gretzel (2010) posited that when digital platforms, such as embodied agents, provide recommendations, they are perceived as social entities. Consequently, users evaluate their credibility based on the displayed social signals (Yoo and Gretzel, 2010) such as ethnicity and similar personality types (Nass and Moon, 2000). In the context of social media, Lin et al. (2016) discovered that on platforms like Twitter, message credibility influenced the content people chose to engage with or overlook on social media. Notably, a larger follower count enhanced source credibility on platforms such as Twitter (Jin and Phua, 2014) and Instagram (De Veirman et al., 2017). Moreover, Shareef et al.'s (2019) findings showed that product promotions on social media are more persuasive when shared by regular members of the community, who are generally perceived to be more credible, compared to when they are shared by marketers. Lastly, Colton (2018) emphasized the influence of credibility on blogs, pointing out that readers' attitudes towards a blog are positively impacted by its perceived credibility.

### **2.2.2 Credibility of chatbots**

Previous research has identified the importance of the credibility of chatbots in digital interactions. For example, Beattie et al. (2020) found that chatbots using emojis seemed more credible because they provided more conversational cues and relational information. Additionally, specialist virtual agents are perceived as more expert than generalist ones for multi-product online stores (Liew and Tan, 2018). Liew and Tan (2018) further show that this perception leads to higher purchase intentions and is influenced by the perceived credibility of the agent.

Fogg and Tseng (1999) explained that in computer-mediated environments, credibility is intricately linked to the perceived expertise of the technology. The expertise

of chatbots is primarily judged by users based on their perceived usefulness and helpfulness attributes, which are central to user continued use (Brandtzaeg and Følstad, 2017) and their attitude toward them (Zarouali et al., 2018). The perceived usefulness of a chatbot is determined by the degree to which a consumer believes it will improve their job performance or productivity (Davis, 1989). Perceived helpfulness, as defined by Johnson et al. (2006), refers to consumers' perception of the chatbot's responses as relevant to meeting their information needs. It reflects the degree to which consumers feel that the chatbot's responses effectively address their questions or concerns. This includes seeking efficient assistance and information to complete the tasks in a timely manner. Chatbots can be seen as the digital equivalent of a salesperson in a physical store; both aim to intelligently address customer queries and provide assistance in a timely and efficient manner (Singh et al., 2018). Earlier research has shown that when people perceive online services to be more helpful, they are more likely to hold positive attitudes toward them (Coyle et al., 2012; Walther et al., 2012).

The existing body of research has mostly focused on several characteristics associated with chatbots that enhance their credibility and positively impact consumers' reactions. For example, the inclusion of visual cues such as the use of human-like figures and interactive features was found to significantly influence the credibility of the information presented (Kim and Sunder, 2012). Similarly, identity cues like human-associated names or identities (Araujo, 2018); and conversational cues including the use of natural language, message interactivity, and perceived helpfulness (Van den Broeck et al., 2019) can endow chat agents with human-like qualities that enhance user engagement, interaction satisfaction, and brand likability (Chandra et al., 2022). A major

gap in the existing body of literature pertains to the investigation of the factors associated with the products that are being recommended by chatbots. More specifically, we are interested in determining if chatbots (vs. human agents) are equally effective when recommending machine-made or handmade products.

### **2.3 Handmade production**

Industrialization and digitalization have made companies manufacture products rapidly, accurately, and in large quantities (Letzel et al., 2020). However, most people place extra value on objects made by hand, like a sculpture or artifacts such as wine glasses, oriental rugs, or watches (Kreuzbauer et al., 2015). Historically, handmade products have been perceived as genuine and personal, contrasting with the impersonal nature of mass-produced goods (Campbell, 2005). It's suggested that handmade products, as opposed to machine-made products, help fulfill the desire for uniqueness especially when the symbolism of the product matters. For example, in the case of a pair of glasses, when self-expression is more important than utilitarian use, the relative importance of frames (vs. lenses) being handmade increases (Granulo et al., 2021). Consumers value handmade products over machine-made products (Kruger et al., 2004), mostly because they find them more attractive (Fuchs et al., 2015). This perception has opened doors for businesses like Etsy or Amazon Handmade, which sell arts and crafts online (Cheng, 2018).

The use of handmade elements in design and marketing has been shown to have a significant impact on consumers' perceptions and engagement with brands. For instance, Liu et al. (2019) explore how using handwritten typefaces in menus can improve customers' perceptions of a restaurant's healthiness, customers' positive attitudes toward

the menu and their subsequent social media engagement. (Liu et al., 2019). Additionally, using a handwritten typeface on product packaging can create a sense of human presence and enhance consumer evaluation of the product by signaling an emotional attachment (Schroll et al., 2018). When consumers see that humans have been involved in the production process, they believe that the product's natural quality has been preserved (Schroll et al., 2018).

### **2.3.1 Consumers evaluations of handmade products**

Consumers tend to evaluate handmade products positively (Kruger et al., 2004). Consumers utilize a wide range of methods to evaluate products (e.g., Meyers-Levy and Tybout, 1989; Liberman and Trope, 1998; Miyazaki et al., 2005; Kim et al., 2009). They usually tend to consider subtle or unexpected attributes as valuable characteristics when assessing the worth of an object (Kreuzbauer et al., 2015). For example, products made at a company's initial manufacturing site are perceived as more genuine and valuable because they embody the brand's core essence (Newman and Dhar, 2014). Similarly, consumers' judgments can be influenced by their understanding of the production process of a product (Frizzo et al., 2020). According to Beverland (2006), the primary reason for consumers' interest in the method of production is “a need to know what went into producing the final product” (p. 225). Further, the knowledge that a specific individual has been involved in creating a particular product holds significance (Beverland, 2006).

According to the literature, there is often a congruence between how a product was manufactured and the consumers' evaluation of the product. Consumers commonly perceive products to possess characteristics associated with their creation process (Fuchs et al., 2015). This perception significantly influences their assessment of the product's



value, even when there are no tangible differences between the products themselves (Kruger et al., 2004). For instance, Kruger et al.'s (2004) research demonstrated that consumers tend to view products created with more human effort as higher in quality compared to identical products that are made with less effort. Despite some indication that the relationship to handmade products might be nuanced (J. Song et al., 2023), the value and positive perception associated with the human effort in the creation process is perceived positively.

### **2.3.2 Handmade effect and Contagion theory**

The general popularity of handmade products (Major et al., 2020) has prompted an investigation of the factors explaining consumers' enthusiasm. For instance, Campbell (2005) suggests that making handmade items is a way for artisans to show their human qualities and express themselves. Luckman (2015) posits that in a world that often feels insincere, handmade items bring a touch of genuineness. They also create a bond between the person who made the product and the consumer. Fuchs et al. (2015) conducted empirical studies to explore these ideas and found that some consumers have the perception that handmade products symbolically carry the producer's love for the product in its production process, resulting in the perception that handmade products are more attractive than the identical machine-made ones. Fuchs et al. (2015) showed that consumers are willing to pay 17% more for a bar of soap that is presented as handmade rather than machine-made, especially in the context of gift giving, when the goal of the gift giver is to convey love. Additionally, further studies support the existence of a positive "handmade effect" on attitude toward the brand offering handmade products (Letzel et al., 2020) and customers' purchasing decisions (Hsu and Ngoc, 2016).

These findings align with consumer contagion theory, which proposes that the essence of the product makers—their passion and thoughts—are infused into their handmade products (Rozin and Nemeroff, 1989). This belief suggests that when a source touches an object, the source gives some or all of its properties to the object through a contagious entity or "essence" and that it stays with the object even after they stop touching it (Nemeroff and Rozin, 1994). For example, Argo et al.'s (2018) study revealed that products that have been touched by individuals deemed highly attractive are subsequently evaluated more favorably. This heightened evaluation comes from the belief that such individuals transfer a "positive physical essence" to the items they handle.

When considering handmade products, we anticipate a positive contagion effect. The label of handmade has been shown to further contribute to the perception that a product embodies the personality of its producer (Johnston and Baumann, 2007). In opposition, machine-made products are perceived to lack passion because the production process often involves minimal or no physical contact with the product itself (Markoff, 2013). Building on the existing literature we anticipate that if the recommendation source is human and the recommended product is handmade, consumers will have more positive product attitudes and higher satisfaction with their interaction with the agent and that love will mediate this relationship.

It's important to note that this effect of transferring essence is not always positive and can vary based on the context and the source of the contagion. In a retail setting, when there are signs indicating that a product has been touched, people value it less, are less likely to buy it, and are willing to pay less for it (Argo et al., 2006). Merely imagining a product as having been touched by another individual can induce feelings of

disgust and influence product evaluations and purchasing intentions (Argo et al., 2006). Similarly, a study conducted by Morales and Fitzsimons (2007) provides evidence that consumers' perceptions of a product can be negatively influenced if it comes into contact with another product perceived as undesirable. They showed that a package of rice cakes in contact with a package of lard was perceived to be less healthy and appealing than when it was not in contact with the package of lard. This effect was primarily driven by the emotion of disgust.

Similarly, one can assume that if a handmade product is recommended by a chatbot agent, consumers may not be as affected by the handmade effect. The personal touch and artisanal value that is typically associated with handmade items could be contaminated by the impersonal nature of a chatbot recommender. This potential disconnect might influence consumers' attitudes towards the product, possibly diminishing the unique appeal that being handmade typically carries including love of the product. Additionally, satisfaction with the interaction could be affected, as the experience of engaging with a chatbot lacks the human element that often fosters a personal connection with handcrafted items. The absence of this human touch could make the experience feel less engaging and more impersonal, potentially leading to decreased satisfaction in the overall interaction. Therefore, consumers should perceive more love in a handmade product than a machine-made product when it is recommended by a human agent. However, we anticipate that perceived love may not be impacted by the mode of production when the recommender is a chatbot.

## **2.4 Conceptual model and predictions**

This study focuses on how the agent recommending a product being a chatbot or a human may influence consumers' evaluation of the product. Building on existing literature, negative perceptions of machines are often rooted in the belief that they lack the uniqueness (Longoni et al., 2019), empathy (Lue et al., 2019), and interpersonal skills characteristic of human interactions (Puntoni et al., 2020). This can become particularly significant in the context of handmade products, where consumers are often seeking the 'handmade effect'—that sense of artisanal craftsmanship and personal connection. When it comes to such products, one might assume that consumers would prefer recommendations to come from a human rather than a chatbot.

### **2.4.1 Credibility as a potential mediator**

Consistent with the literature we expect that the credibility of the recommendation source will play a central role in how consumers will evaluate the product being recommended (Pornpitakpan, 2004; Clark and Evans, 2014; Shin, 2022). When the recommender is a chatbot, its credibility may be more affected in the context of a handmade product. The authenticity and expertise presumed in human advice might align better with the values and expectations that lead consumers to seek out handmade items in the first place. Therefore, interfaces that fail to capture or reflect these human elements are often seen as cold and distant, limiting their effectiveness and trustworthiness (Brave and Nass, 2009); thus, they are less credible than the human agent. Hence, we propose:

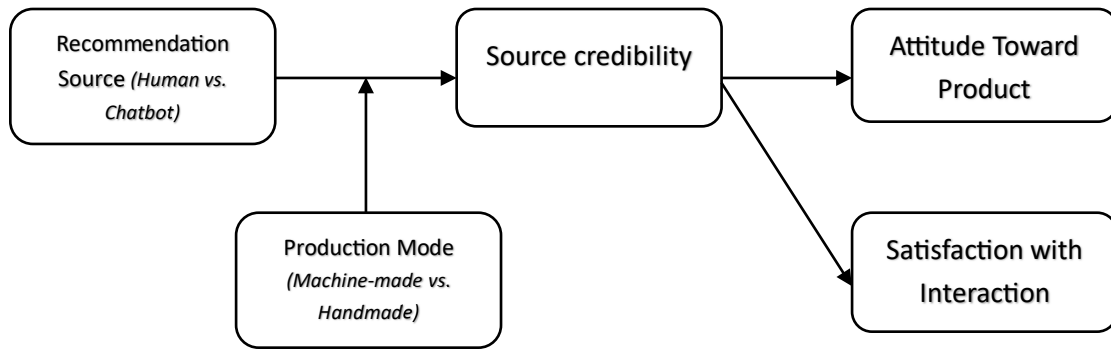
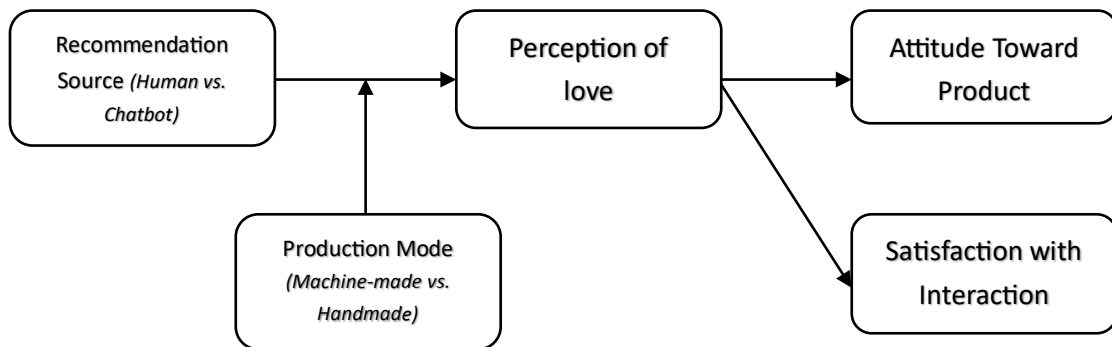


Figure 1 - Proposed model with source credibility as mediator

In summary, we predict that when a chatbot recommends a product, consumers will have a lower perception of its credibility when the recommended product is handmade rather than machine-made. This lower credibility will negatively affect both consumers' satisfaction with the interaction and their attitude toward the product.

#### 2.4.2 Love as a potential mediator

Another key aspect of the handmade effect is the love that people perceive is contained in the product (Fuchs et al., 2015). If the recommender is a chatbot, an impartial but also impersonal and dispassionate agent, it could create a discordance that would prevent the usual positive impact associated with a product being handmade. We anticipate a potential contamination that will negate the relationship between the handmade product and the increased perceived love it contains. This would further impact consumers' attitude toward the recommended product and taint their satisfaction with the interaction.



*Figure 2 - Proposed model with perception of love as mediator*

We, therefore, predict that when a human agent recommends a product, it will lead consumers to hold a higher perception of love for a handmade product than a machine-made product. This heightened perception of love will result in a more positive attitude toward the product and more satisfaction with the interaction. In contrast, when a chatbot recommends a product, consumers may fail to perceive that the handmade product contains more love than the machine-made product. When a chatbot recommends a handmade product, the perceived love may not increase, failing to result in a more positive attitude toward the product or a higher satisfaction with the interaction.

## CHAPTER 3 RESEARCH METHODOLOGY

### 3.1 Overview of our study

We conducted an experiment to test our predictions. We aimed to investigate how the recommendation source and production mode impacted consumers' perceptions in the context of shopping for a gift online. Specifically, we expected that customers who received a recommendation for a handmade product from a chatbot agent would perceive the source as less credible, leading to more negative product attitudes and lower satisfaction with their interaction with the agent. Additionally, we expected that when a human agent recommended a handmade product, consumers' perception of love would increase and consequently, have a more positive product attitude and higher satisfaction with their interaction with the agent.

#### 3.1.1 Participants and design

A total of 177 undergraduate students from Dalhousie University voluntarily participated in the experiment in exchange for extra course credit. We excluded participants who did not consent for their data to be used in the analysis. Thus, the final sample comprised 168 participants (49.4% female,  $M_{Age} = 20$ ). Participants were randomly assigned to one of four experimental conditions, following a 2 (recommender source: human agent vs. chatbot agent) by 2 (production mode: machine-made vs. handmade) between-subjects design.

#### 3.1.2 Procedure

All participants were asked to imagine that they were buying a gift from an online store for someone whom they have a close relationship with. We selected the gift-giving context deliberately because it is emotionally engaging, and gift-givers are inherently

motivated to express their affection for the recipient (Mauss, 1954; Fuchs et al., 2015).

All participants were provided with a description of the store underlining the high quality of the products offered. Then they were asked to imagine that they were seeking a recommendation from the online service agent of the website.

For the recommendation source manipulation, participants were randomly assigned to a human or a chatbot agent and were shown two screenshots of a conversation with an agent and either saw *“I’m Alex. How can I help you today?”* (human condition) or *“I’m Alex, the store’s powered AI agent. How can I help you today?”* (chatbot condition; see Appendix A for details).

The agent recommended a scarf, and it was introduced as either *“manufactured”* or *“handmade”* (See Appendix A for more details) constituting our manipulation of production mode. The other parts of the conversation with the agent in the presented screenshots were identical. After the conversation screenshots, a picture of the scarf was presented to all participants, accompanied by a brief one-line description highlighting key features of the product and whether it was *“manufactured”* or *“handmade”*. All other features of the recommended product remained identical across conditions (See Appendix A for more details).

Following the presentation of the recommended product, participants answered several questions that measured their attitude toward the product, satisfaction with the interaction, attitude toward the agent, purchase intention, perceived source credibility, perception of love, and manipulation checks, in that order. Participants then answered basic demographic questions and were debriefed and dismissed (See Appendix B for more details).



### 3.1.3 Measures

*Recommender Source Manipulation check.* On two separate items, the participants reported whether they agreed that the agent was a human and whether they agreed that the agent was a chatbot (1 = strongly disagree; 7 = strongly agree).

*Production Mode Manipulation Check.* On two separate items, the participants reported whether they agreed that the recommended product was machine-made and whether they agreed that the recommended product was handmade (1 = strongly disagree; 7 = strongly agree).

*Attitude toward the product.* After seeing the scarf, participants evaluated the recommended product on a five-item 7-point semantic differential scale anchored on *dislike/like, bad/good, negative/positive, unappealing/appealing, and unfavorable/favorable*. This scale is commonly used in marketing research to measure attitude (e.g., El Hazzouri and Hamilton, 2019). All items showed high internal consistency ( $\alpha = .92$ ) and were averaged in a single attitude score.

*Satisfaction with interaction.* We asked participants to evaluate their interaction with the agent on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) using three items adapted from (Chin et al., 1988) and adjusted based on the context of our study. The items were “*Overall, I am happy with the service I just received.*”; “*The agent performed their duties as I anticipated.*”; and “*This store’s service agent really focused on customer service.*” We aggregated all three items because they showed high internal reliability ( $\alpha = .84$ ).

*Attitude toward the agent.* The participants evaluated the agent on a four-item 7-point semantic differential scale anchored on *dislike/like, bad/good, negative/positive,*

*and unfavorable/favorable*. All items were averaged into a single factor because they showed high internal consistency ( $\alpha = .95$ ).

*Perceived source credibility*. The participants described their beliefs about the recommendation source on a 7-point bipolar scale adapted from Ohanian (1990). The items measure trustworthiness and expertise and include untrustworthy/trustworthy, dishonest/honest, unreliable/reliable, insincere/sincere, unqualified/qualified, unskilled/skilled, unknowledgeable/knowledgeable, and inexperienced/experienced. These items were averaged to constitute perceived source credibility score as they showed high internal reliability ( $\alpha = .92$ ).

*Perception of love*. We measured the perception of love that is symbolically embedded in the product. This measure was adapted from Fuchs et al. (2015) and has five items: “*The scarf can figuratively be described as warm (warmhearted)*.”; “*The scarf can figuratively be described as full of love*.”; and “*The scarf can figuratively be described as full of passion*.”; “*I think the products are 'made with love'*.”; and “*I think the products are 'made with passion'*.” We aggregated the five items as a single measure of perception of love based on the high internal consistency ( $\alpha = .86$ ).

### **3.1.4 Results**

Our analysis tested our predictions to help understand the dynamics of consumer responses to online recommendations. Below are our findings.

*Manipulation check – human vs. chatbot*. A 2 (recommendation source: human vs. chatbot)  $\times$  2 (production mode: machine-made vs. handmade) ANOVA showed only a significant effect of recommendation source on whether participants believed the recommender was a chatbot ( $M_{Chatbot} = 5.84$  vs.  $M_{Human} = 4.93$ ,  $F(1,168) = 15.28$ ,  $p <$

.001) and whether they believed that the recommender is a human ( $M_{Chatbot} = 2.42$  vs.  $M_{Human} = 3.75$ ,  $F(1,168) = 26.83$ ,  $p < .001$ ).

*Manipulation check – machine-made vs. handmade.* A 2 (recommendation source: human vs. chatbot)  $\times$  2 (production mode: machine-made vs. handmade) ANOVA showed an effect of production mode on participants' belief that the product was machine-made ( $M_{Handmade} = 4.12$  vs.  $M_{Machine-made} = 4.67$ ,  $F(1,168) = 5.99$ ,  $p = .015$ ) and on their belief that the product was handmade ( $M_{Handmade} = 4.16$  vs.  $M_{Machine-made} = 3.85$ ,  $F(1,168) = 1.80$ ,  $p < .182$ ). Additionally, we observed that our recommendation source manipulation had an unanticipated marginal effect on participants' perception of production mode ( $F(1,168) = 3.22$ ,  $p < .075$ ). The chatbot manipulation interfered with participants' perceiving the product as being handmade. We didn't anticipate it would affect our understanding of how chatbots influence perceptions of production mode.

*Attitude toward the product.* We submitted our attitude toward product score to a two-way ANOVA using recommendation source and production mode as factors. Results showed no significant effect of recommendation source on attitude toward the product ( $M_{Chatbot} = 4.50$  vs.  $M_{Human} = 4.47$ ,  $F(1,168) = .055$ ,  $p = .815$ ) and no significant effect of production mode on attitude toward the product ( $M_{Machine-made} = 4.59$  vs.  $M_{Handmade} = 4.38$ ,  $F(1,168) = 1.20$ ,  $p = .274$ ). More importantly, the interaction between production mode and recommendation source on participants' attitude toward the product was not significant ( $F(1,168) = .22$ ,  $p = .64$ ).

*Satisfaction with interaction.* We submitted our satisfaction with the interaction score to a two-way ANOVA using recommendation source and production mode as factors and observed a main effect of recommendation source on satisfaction ( $M_{Chatbot} =$

3.73 vs.  $M_{Human} = 4.05$ ,  $F(1,168) = 5.15$ ,  $p = .025$ ). The participants were more satisfied with the interaction with the human agent rather than the chatbot agent. Additionally, no effect of production mode was found ( $M_{Machine-made} = 3.80$  vs.  $M_{Handmade} = 3.90$ ,  $F(1,168) = .03$ ,  $p = .58$ ) was found. Although we expected to find a significant effect of recommendation source and production mode on satisfaction with the interaction, our ANOVA revealed no such effect ( $F(1,168) = .41$ ,  $p = .52$ ).

*Attitude toward the agent.* Our analysis showed a significant main effect of recommendation source on agent evaluation ( $M_{Chatbot} = 5.20$  vs.  $M_{Human} = 5.80$ ,  $F(1,168) = 8.60$ ,  $p = .004$ ) and no significant effect of production mode on agent evaluation ( $M_{Machine-made} = 5.40$  vs.  $M_{Handmade} = 5.63$ ,  $F(1,168) = 1.01$ ,  $p = .315$ ). We found no significant interaction effect between production mode and recommendation source in agent evaluation ( $F(1,168) = 1.97$ ,  $p = .162$ ). Participants evaluated more positively the human agent rather than the chatbot.

*Source credibility.* Contrasting with what we expected, our 2 (recommendation source: chatbot vs. human)  $\times$  2 (production mode: machine-made vs. handmade) ANOVA showed no significant interaction between production mode and recommendation source on source credibility ( $F(1,168) = .17$ ,  $p = .679$ ). However, consistent with our results on agent evaluation and satisfaction with the interaction, we found a significant effect of recommendation source on source credibility ( $M_{Chatbot} = 4.70$  vs.  $M_{Human} = 5.10$ ,  $F(1,168) = 5.90$ ,  $p = .016$ ). The participants rated the human agent as more credible than the chatbot. The result showed that the production mode had no effect on source credibility ( $M_{Machine-made} = 3.80$  vs.  $M_{Handmade} = 3.90$ ,  $F(1,168) = .15$ ,  $p = .699$ ).

*Perception of love.* We submitted our love score to a two-way ANOVA using recommendation source and production mode as factors. No significant main effect of recommendation source ( $M_{Chatbot} = 4.07$  vs.  $M_{Human} = 4.08$ ,  $F(1,168) = .001$ ,  $p = .98$ ) or production mode ( $M_{Machine-made} = 3.99$  vs.  $M_{Handmade} = 4.16$ ,  $F(1,168) = .931$ ,  $p = .336$ ) was found. More interestingly, our results showed an interaction between recommendation source and production mode on love ( $F(1,168) = 4.13$ ,  $p = .04$ ).

To decompose the interaction, we conducted a series of independent-sample t-tests. When the recommendation source was human, participants had a higher perception of love if it was handmade rather than machine-made ( $t(83) = -2.14$ ,  $p = .03$ ,  $M_{Handmade} = 4.33$ ,  $SD = 1.11$ ,  $M_{Machine-made} = 3.80$ ,  $SD = 1.2$ ). This result is consistent with the handmade effect observed in the literature (e.g., Fuchs et al., 2015). When the recommendation source was a chatbot there was no significant difference between participants' perception of love for the machine-made and handmade product ( $t(81) = .75$ ,  $p = .46$ ,  $M_{Machine-made} = 4.16$ ,  $SD = 1.16$ ,  $M_{Handmade} = 3.97$ ,  $SD = 1.17$ ). In other words, when participants interacted with human agents, there was a positive handmade effect similar to what is observed in the literature. When participants were interacting with chatbots, the handmade effect disappeared. This is consistent with the fact that when they were assigned to the chatbot condition, participants were less likely to perceive the product as being handmade even when it was presented as such. Thus, this could indicate that a product is perceived with a less of a handmade product and embodies less love when it is recommended by a chatbot.

When the product was handmade, participants had a higher perception of love if it was recommended by human agent rather than chatbot ( $t(81) = 1.47$ ,  $p = .15$ ,  $M_{Human} =$

4.33,  $SD = 1.11$ ,  $M_{Chatbot} = 3.97$ ,  $SD = 1.17$ ), However, these results did not reach statistical significance. When the product was machine-made, participants had more perception of love when the product was recommended by chatbots rather than human agent ( $t(83) = -1.40$ ,  $p = .16$ ,  $M_{Human} = 3.8$ ,  $SD = 1.20$ ,  $M_{Chatbot} = 4.16$ ,  $SD = 1.16$ ) However, these results did not reach statistical significance. This lack of significant differences may have several reasons including that our manipulation was not strong enough to make people believe that the recommender was human when the agent in the scenario was presented as human and not a chatbot.

*The mediating role of perception of love.* We conducted a moderated mediation analysis (Hayes 2013; SPSS PROCESS model 7, bootstrapped with 5,000 samples) using production mode as the independent variable, recommendation source as the moderator, perception of love as mediator, and attitude toward product as the depended variable. The index of moderated mediation was significant (CI [ -.6202, -.0091]), indicating that the moderated mediation model was significant. Further, results revealed a significant interaction of recommendation source and production mode to predict perception of love ( $\beta = -.73$ ,  $t(168) = -2.03$ ,  $p = .044$ ). Results also revealed a significant effect of perception of love on attitude toward the product, indicating the higher the perception of love, the higher the attitude toward the product ( $\beta = .405$ ,  $t(168) = 5.50$ ,  $p < .001$ ). The results also indicate a significant conditional indirect effect of production mode on attitude toward the product through the perception of love when the recommendation source is a human ( $\beta = .22$ ; 95% CI [.0137, .4678]). This indicates that when a human agent is recommending a handmade (vs. machine-made) product, people perceive more love in the product and consequently, they have a more positive attitude towards it. When

the recommendation source was a chatbot, there was no significant conditional indirect effect ( $\beta = .077$ , 95% CI contained 0). This indicates that when a chatbot agent is recommending the product, there is no significant effect of production mode (handmade vs. machine-made) the dependent variables.

We did the same analysis with satisfaction with interaction as the dependent variable. The index of moderated mediation was significant (CI [  $-.3602$ ,  $-.0015$ ]), indicating that the moderated mediation model was significant. Specifically, results revealed a significant effect of perception of love on satisfaction with the interaction with the agent, indicating a higher the perception of love, the higher the satisfaction with the interaction ( $\beta = .233$ ,  $t(168) = 4.05$ ,  $p < 0.001$ ). The result also indicates a significant conditional indirect effect of production mode on satisfaction with the interaction through the perception of love when the recommendation source is a human ( $\beta = .126$ , 95% CI [  $.0073$ ,  $.2634$ ]). This indicates that when a human agent is recommending a handmade (vs. machine-made) product, people perceive more love in the product which in turn increases their satisfaction with their interaction. When the recommendation source was a chatbot, there was no significant conditional indirect effect ( $\beta = .044$ , 95% CI contained 0). This indicates that when a chatbot agent is recommending a handmade (vs. machine-made) product, there would be no significant perception of love.

## CHAPTER 4 GENERAL DISCUSSION

This research extends our understanding of how consumers respond to recommendations on online platforms whether it is coming from a chatbot or a human, especially when the recommended product is handmade. Previous studies have investigated the effect of using chatbots vs. humans (Go and Sunder, 2019; Shi et al., 2020) on consumer responses and identified several factors that impact the effectiveness of chatbot agents including visual cues (Kim and Sunder, 2012), conversational styles (Thomas et al., 2018), and human-associated names (Araujo, 2018). However, to date, studies mainly focused on chatbots' characteristics that are most likely to positively influence consumers' evaluation, such as chatbots' intelligence and ability to understand and use natural language (Mimoun et al., 2012); how they interact with people (e.g., Ciechanowski et al., 2019) and how they learn (e.g., Go and Sundar, 2019). To our knowledge, no studies have investigated the reaction to chatbot service agents in the context of recommending handmade products.

Our research shows that when a human agent recommended a product, participants felt that the recommended handmade product contained more love compared to a machine-made product. This led to a more positive attitude toward the product and higher satisfaction with the agent, consistent with prior literature about the handmade effect (Fuchs et al., 2015). However, when a chatbot recommended a product, participants didn't perceive a significant difference in love between handmade and machine-made products. This suggests that the handmade effect only held when a human was making the recommendation, not a chatbot.



Our results did not show the anticipated effect of the production mode on the credibility of the recommender. Whether the product was handmade or machine-made did not affect the perceived credibility of the recommendation source. However, the recommendation source itself played a significant role, with human agents being rated as more credible than chatbots. This suggests that the human touch remains a crucial factor in establishing source credibility, regardless of the product type. The lack of impact from production mode on recommender's credibility highlights that consumer trust in online recommendations is influenced by more than just the product's origin.

Moreover, the anticipated direct effect of the interaction between recommendation source and production mode on consumers' attitudes toward the product and their satisfaction with the interaction were not observed. In other words, the data did not show a significant difference in how participants viewed the product based on who recommended it—chatbot or human—nor was there a significant distinction in product perception between handmade and machine-made items. Similarly, while there was some indication of greater satisfaction with human agents, this did not extend to a direct effect when considering the interaction between recommendation source and production mode. These results suggest that there may be other contributing factors at play that influence consumers' attitudes and satisfaction levels, which could provide interesting avenues for future research.

#### **4.1. Theoretical contributions**

On a theoretical level, our study contributes to the existing literature by being the first to investigate how using a chatbot as a recommender can negate the handmade effect. In expanding the scope of our analysis, we go further than simply evaluating the

importance of how products are made; we also probe the impact of the recommender's identity—human or chatbot—on consumer perceptions. Our findings suggest a preference for congruent recommenders. Particularly when the product is handmade consumers exhibit a more positive attitude only if the recommender is human. Our study indicates that the involvement of chatbots can contaminate the handmade effect. This adds a new dimension to our understanding of consumer behavior in the digital marketplace.

In addition, our research adds to the new and growing literature on the concept of love in consumer-product relationships. Interestingly, while love does play a role in the evaluation of handmade products, we find that its presence is somewhat conditional—love seems to disappear when recommendations are made by a chatbot. This introduces a touch of irony, suggesting that in the digital marketplace, love can be quite elusive. Once the authentic human touch innate to handmade products is contaminated by the chatbot agents, the magic of love vanishes. This insight adds a new dimension to our understanding of the fragile and conditional nature of consumer love for handmade products in the digital marketplace.

#### **4.2. Managerial contribution**

Given that consumers respond differently to recommendations from human agents versus chatbots, especially for handmade products, managers of online platforms should consider customizing their recommendation strategies. Our results suggest that the retailers of handmade products should employ human agents as opposed to chatbots. Employing chatbots that recommend handmade products could contaminate consumers' sense that the products contain love. This could wipe away any preferences that

consumers usually have toward handmade products. Hence, investing in training for human agents to enhance their product knowledge and customer interaction skills could be beneficial.

Our study suggests that the effect of love is present when the recommender has a personal and human touch that reinforces what makes a handmade product special. This could imply that other elements of branding, such as storytelling and authentic narratives, could further strengthen that affective rapport with consumers. Such narratives can be powerful in marketing (Escalas, 2004), particularly for products where craftsmanship and human involvement are central to their value proposition. Managers, therefore, might find it beneficial to develop marketing strategies that highlight these human-centric aspects, thereby building narratives that resonate with and engage consumers on a more personal level.

#### **4.3. Limitation and direction for future research**

Our study provides valuable insights with both theoretical and practical implications. However, it is crucial to acknowledge certain limitations that point towards avenues for future research.

Firstly, the design of our study may have affected its external validity. We relied on a single study with a convenience sample, which may not comprehensively represent the broader population. Consequently, future studies could benefit from a more diverse and extensive sampling approach to validate and expand upon our findings. Additionally, in our experimental setup, we did not utilize an actual chatbot for the manipulation. This aspect could have impacted the study's results. Future research should consider

incorporating a fully functional chatbot to simulate real-world online shopping experiences more accurately.

Lastly, one of the key areas that our study could not address is the role of anthropomorphism in chatbot interactions, especially in the context of handmade products. Anthropomorphism is the attribution of human-like characteristics to non-human entities (Epley et al., 2007). Applying this to chatbots, one might anticipate that making them more human-like can enhance customer communication experiences. Supporting this idea, Söderlund (2022) found that when users believe chatbots possess human-like qualities and abilities, it positively influences their perception of the chatbot's service quality. Moreover, anthropomorphized chatbots, by fostering social presence and initial trust, can enhance user engagement, interaction satisfaction, and brand likability (Chandra et al., 2022). Given that our findings highlight a distinct preference for human agents over chatbots in recommending handmade products, future studies should investigate whether increasing the human-like qualities of chatbots could change this dynamic. Our result indicates that the involvement of chatbots contaminates the handmade effect; it would be insightful to explore whether the humanization of chatbots can mitigate their negative impact on the perceived love of handmade items, ensuring that the emotional connection typically evoked by these products is not lost in digital recommendations.

Such research would not only extend the theoretical understanding of digital marketing and consumer behavior but also offer practical implications for enhancing the effectiveness of chatbots on online platforms, particularly in the marketing of products where emotional value and human craftsmanship are significant selling points.

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## APPENDIX A STUDY MATERIALS

### Condition 1 – Recommendation source: chatbot, Product: handmade

Please imagine you want to buy a gift for someone with whom you have a close relationship e.g., a close family member (siblings or parents), a very good friend, your relationship partner, etc.

Imagine you go to an online store which sells high quality products.

*[Page break]*

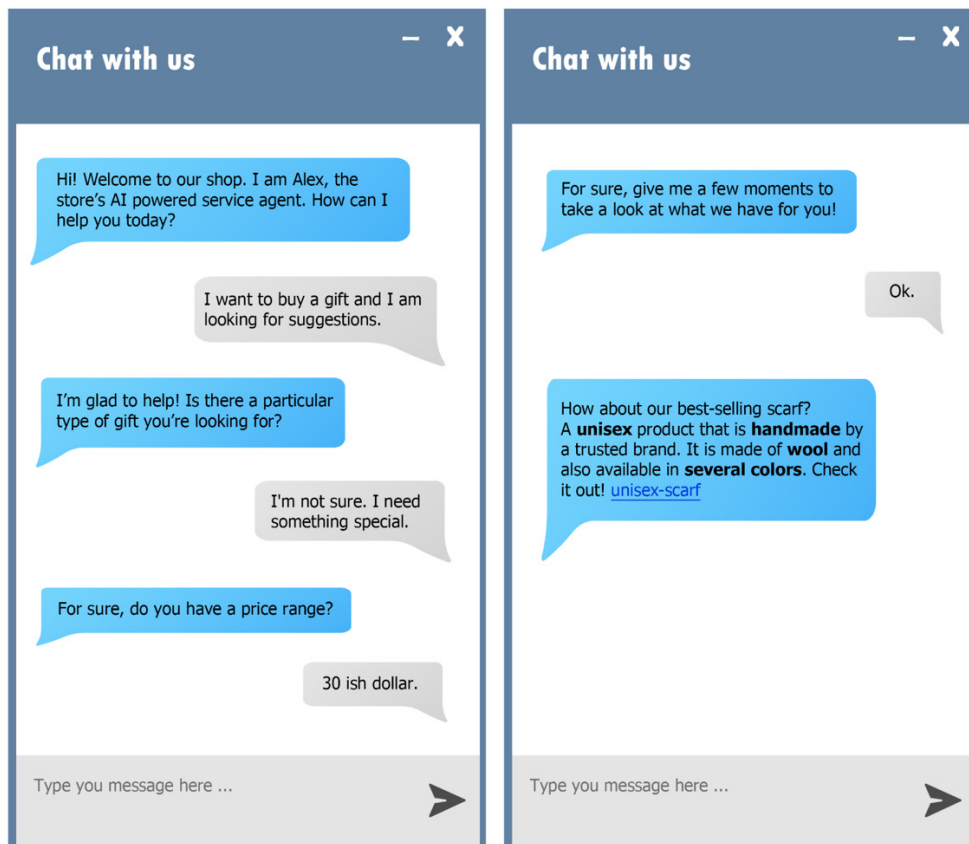
Here is the store description:

We are a contemporary store that offers a curated selection of high-quality products. Our sophisticated designs reflect the latest trends and innovations. From stylish ceramics to modern leather goods to fashion accessories, our collection showcases the finest products available in the market.

*[Page break]*

As you are not sure about what gift to buy for your loved one, you contact the online service agent to get a product recommendation. You are assigned to a chatbot service agent.

Here are the screenshots of the conversation that you had with the agent.



Following you can see this suggestion provided by the service agent.

Handmade - Unisex - 100% Wool - Available in Several Colours



**Condition 2 – Recommendation source: chatbot, Product: machine-made**

Please imagine you want to buy a gift for someone with whom you have a close relationship e.g., a close family member (siblings or parents), a very good friend, your relationship partner, etc.

Imagine you go to an online store which sells high quality products.

*[Page break]*

Here is the store description:

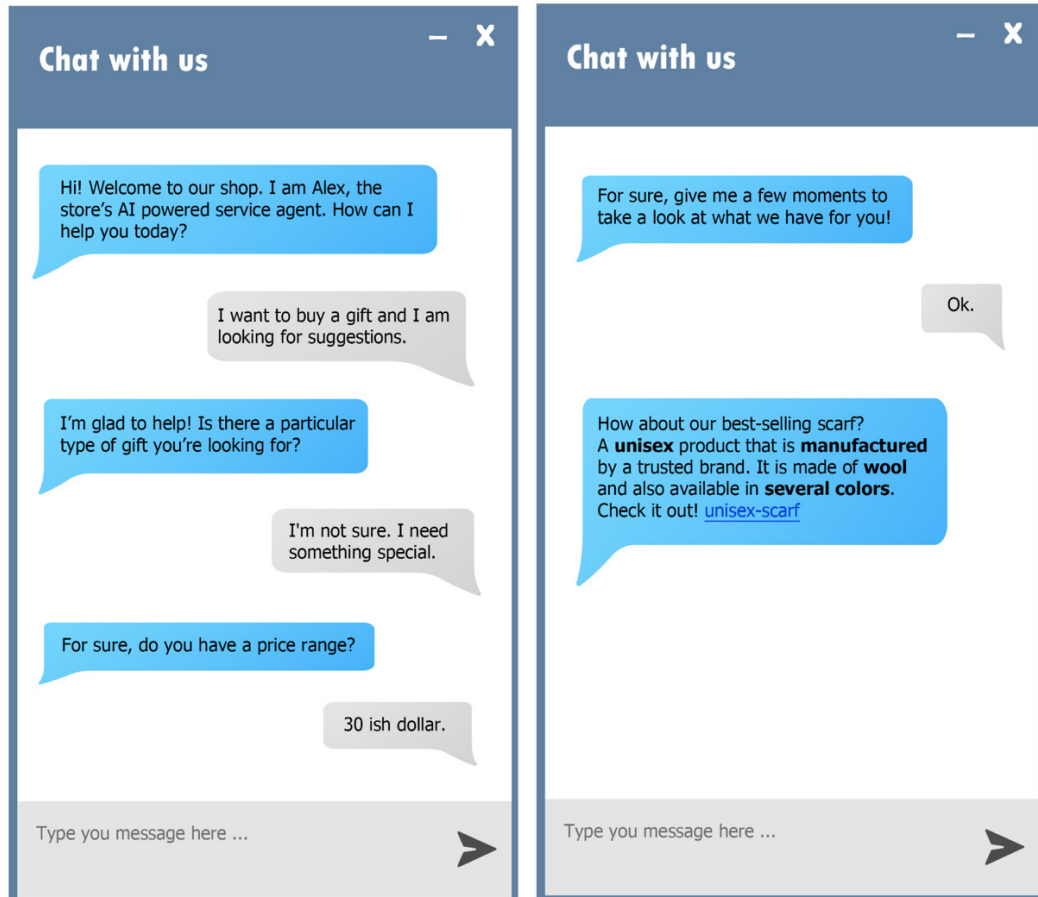
We are a contemporary store that offers a curated selection of high-quality products. Our sophisticated designs reflect the latest trends and innovations. From stylish ceramics to modern leather goods to fashion accessories, our collection showcases the finest products available in the market.

*[Page break]*

As you are not sure about what gift to buy for your loved one, you contact the online service agent to get a product recommendation. You are assigned to a chatbot service agent.

Here are the screenshots of the conversation that you had with the agent.





Following you can see the suggestion provided by the service agent.

Manufactured - Unisex - 100% Wool - Available in Several Colours



### Condition 3 – Recommendation source: human, Product: handmade

Please imagine you want to buy a gift for someone with whom you have a close relationship e.g., a close family member (siblings or parents), a very good friend, your relationship partner, etc.

Imagine you go to an online store which sells high quality products.

*[Page break]*

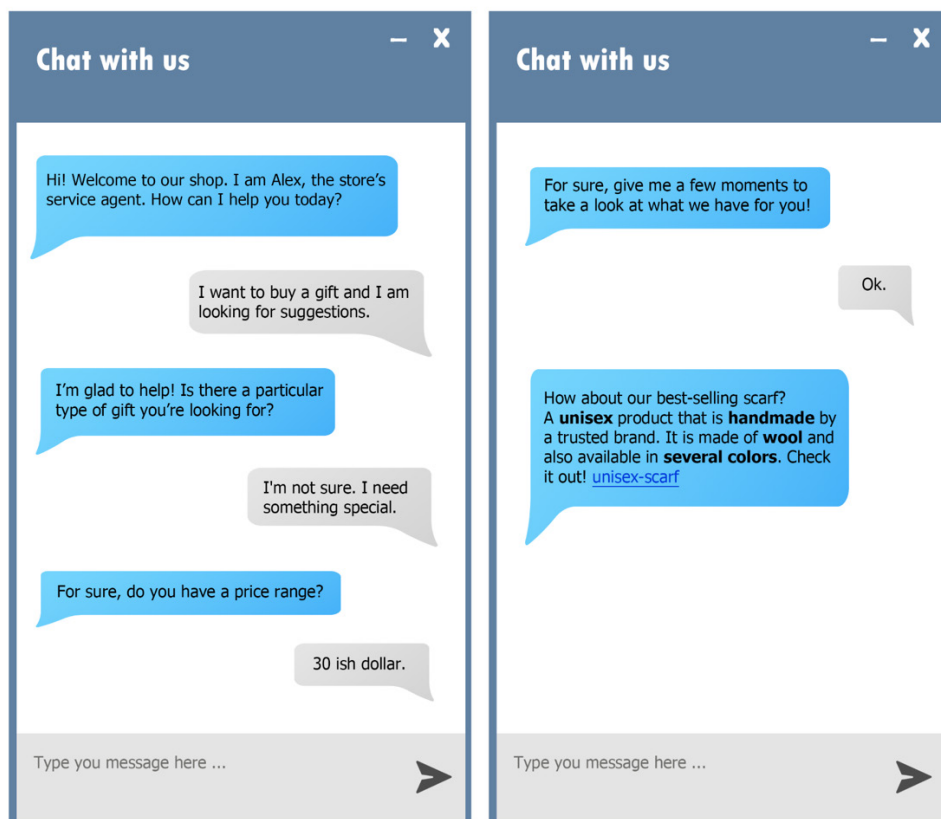
Here is the store description:

We are a contemporary store that offers a curated selection of high-quality products. Our sophisticated designs reflect the latest trends and innovations. From stylish ceramics to modern leather goods to fashion accessories, our collection showcases the finest products available in the market.

*[Page break]*

As you are not sure about what gift to buy for your loved one, you contact the online service agent to get a product recommendation. You are assigned to a human service agent.

Here are the screenshots of the conversation that you had with the agent.



Following you can see the suggestion provided by the service agent.

Handmade - Unisex - 100% Wool - Available in Several Colours



**Condition 4 – Recommendation source: human, Product: machine-made**

Please imagine you want to buy a gift for someone with whom you have a close relationship e.g., a close family member (siblings or parents), a very good friend, your relationship partner, etc.

Imagine you go to an online store which sells high quality products.

*[Page break]*

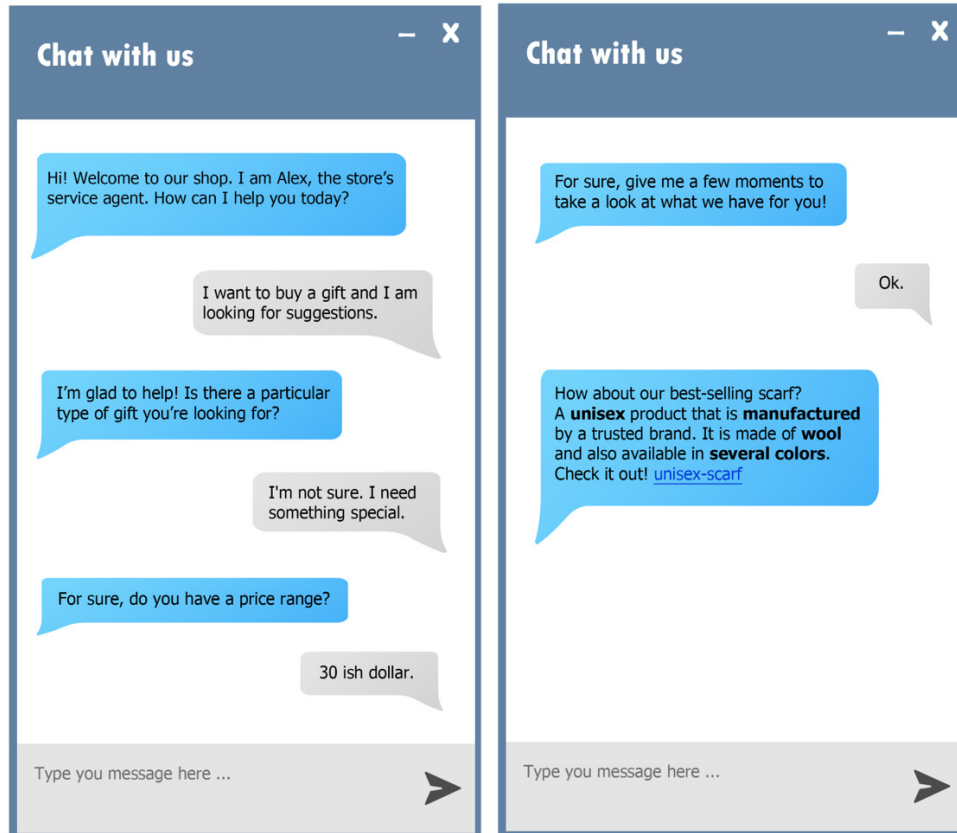
Here is the store description:

We are a contemporary store that offers a curated selection of high-quality products. Our sophisticated designs reflect the latest trends and innovations. From stylish ceramics to modern leather goods to fashion accessories, our collection showcases the finest products available in the market.

*[Page break]*

As you are not sure about what gift to buy for your loved one, you contact the online service agent to get a product recommendation. You are assigned to a human service agent.

Here are the screenshots of the conversation that you had with the agent.



Following you can see the suggestion provided by the service agent.

Manufactured - Unisex - 100% Wool - Available in Several Colours



## APPENDIX B MEASURES OF INTEREST

Q1- How would you evaluate the scarf?

1.	Dislike	1	2	3	4	5	6	7	Like
2.	Bad	1	2	3	4	5	6	7	Good
3.	Negative	1	2	3	4	5	6	7	positive
4.	Unappealing	1	2	3	4	5	6	7	Appealing
5.	Unfavorable	1	2	3	4	5	6	7	Favorable

Q2- How likely would you be to buy the suggested product as a gift?

Unlikely	1	2	3	4	5	6	7	Very likely
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Q3- How would you evaluate the service agent?

1.	Dislike	1	2	3	4	5	6	7	Like
2.	Bad	1	2	3	4	5	6	7	Good
3.	Negative	1	2	3	4	5	6	7	positive
4.	Unfavorable	1	2	3	4	5	6	7	Favorable

Q4- Please indicate to what degree you agree with the following statements about your satisfaction with the service agent.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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1. Overall, I am happy with the service I just received.
2. The agent performed their duties as I anticipated.
3. This store's service agent really focusses on customer service.

Q5- Please indicate to what degree you agree with the following statements about the **recommended product**.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

1. There is a sense of human contact in this product.
2. There is a sense of personalness in this product.
3. There is a sense of sociability in this product.
4. There is a sense of human warmth in this product.

5. There is a sense of human sensitivity in this product.

Q6- Please indicate to what degree you agree with the following statements about the **service agent**.

Strongly disagree      1      2      3      4      5      6      7      Strongly agree

1. There is a sense of human contact with the agent.
2. There is a sense of personalness in the agent.
3. There is a sense of sociability with this agent.
4. There is a sense of human warmth with the agent.
5. There is a sense of human sensitivity with the agent.

Q7- Please indicate how you feel about the service agent.

- |                  |   |   |   |   |   |   |   |             |
|------------------|---|---|---|---|---|---|---|-------------|
| 1. Undependable  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dependable  |
| 2. Dishonest     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Honest      |
| 3. Unreliable    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Reliable    |
| 4. Insincere     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Sincere     |
| 5. Untrustworthy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Trustworthy |

Q8- Please indicate how you feel about the service agent.

- |                    |   |   |   |   |   |   |   |               |
|--------------------|---|---|---|---|---|---|---|---------------|
| 1. Unexpert        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Expert        |
| 2. Unexperienced   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Experienced   |
| 3. Unknowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Knowledgeable |
| 4. Unqualified     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Qualified     |
| 5. Unskilled       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Skilled       |

Q9- Please indicate to what extent do you agree with the following statements about the scarf.

Strongly disagree      1      2      3      4      5      6      7      Strongly agree

1. The scarf can figuratively be described as Warm (warmhearted).
2. The scarf can figuratively be described as Full of love.
3. The scarf can figuratively be described as Full of passion.

Q10- Please indicate to what extent do you agree with the following statements about the scarf.

Strongly disagree      1      2      3      4      5      6      7      Strongly agree

1. I think the scarf is made with love.
2. I think the scarf is made with passion.

Q11- Please indicate to what extent do you agree with the following statements.

Strongly disagree      1      2      3      4      5      6      7      Strongly agree

1. I have a generally positive attitude towards new technologies.
2. I am generally enthusiastic about new technologies.

Q12- Please indicate to what extent do you agree with the following statements.

Strongly disagree      1      2      3      4      5      6      7      Strongly agree

1. The service agent is a human.
2. The service agent is a chatbot.
3. The recommended product is handmade.
4. The recommended product is machine-made.

Q13- From the list below, please choose your favorite fast-food restaurant.

This is an attention question, please choose “Blue”.

- Taco Bell
- McDonald’s
- Pizza Hut
- KFC
- Blue
- Domino’s Pizza
- Wendy’s
- A&W
- Subway
- Five Guys

Q14-What year were you born?

(YYYY)

Q15- My current gender identity is:

Woman

Man

non-binary

Transgender

none of the above, I prefer to identify as: \_\_\_\_\_

Q16- Is English your first language?

1. Yes

2. No