

CHAPTER I

INTRODUCTION

1.1 Research Background

Industry 4.0 is a technology-driven industrial revolution that describes how quickly industries, technology, and patterns and procedures have changed over the previous few decades (Huang et al., 2022). The rise of big data analytics, Artificial Intelligence (Hereinafter AI), and digital twins in Industry 4.0 raises production efficiency and quality to a new level. However, Industry 4.0 certainly have a limitation on prioritizes advancing industry's flexibility and efficiency over worker welfare and industrial sustainability.

Industry 5.0 has begun to garner increasing attention as a human-centric design approach that aims to address the challenges of shared working environments between humans and robot. Issues brought to light by Industry 4.0. Furthermore, a similar idea known as Society 5.0 has emerged in recent years to address the issues facing the modern world. It envisions a futuristic, extremely intelligent society where everyone can live comfortably and well by fusing cyberspace and real space and making full use of ICT (information and communication technology). Two related ideas for the future of industry and society are Industry 5.0 and Society 5.0, respectively. When these coexisting ideas are discussed simultaneously, it might lead to some degree of pandemonium. (Huang et al., 2022). Herefore, to avoid conceptual ambiguity between Industry 5.0 and Society 5.0, this study deliberately positions its analysis within the framework of Society 5.0, as it more directly emphasizes human-centered technological integration and its implications for individual experiences in digital service interactions.

Under on the Global impact, Japan was a foundation to developed the idea of Society 5.0 in reaction to the explosive growth of digital technology in the last few decades. This framework uses cutting-edge AI to evaluate data and integrate all digital and physical systems. Practical insights that will eventually help society. According to Society 5.0, a "super-smart society" that promotes deeper human-technology connection will improve people's quality of life in a sustainable and just

world. The approach highlights the necessity of striking a balance between economic advancement and technology innovation in order to address intricate societal issues (Rohayati et al., 2024).

Current situation in Indonesia, there is several sectors combined a technology and human workers such a financial technology (Fintech), health technology (Healthtech), educational technology (Edutech), e-commerce, and online learning platforms are just a few of the technological applications that support important facets of life. However, several risks have surfaced in tandem with these achievements. These include a decrease in the quality of information, a rise in individualism, a need for immediate results, a deterioration in interpersonal relationships, a loss of customary civility, and a diminished sense of civic duty. In order to address these issues, the idea of "society 5.0" has been presented (Rohayati et al., 2024).

According to Oktradiksa et al. (2021) many different kinds of job have evolved to require different talents. In addition, AI has been implemented in about 56% of areas across numerous countries, particularly in the industrial sector. The adjustments that must be used later must be welcomed. The core of the time period of society According to 5.0, technological transformation aims to make people more human. As a result, using AI requires direction. AI is required to possess 21st-century skills, which are referred to as the 4Cs: communication, creativity, cooperation, and critical thinking.

In 2020, AI became a major focus in various sectors in Indonesia. To improve efficiency, innovation, and customer service in Indonesia, large companies and startups are competing to adopt AI technology (Hanifa et al., 2023). One of these large companies is Shopee, a Chinese company that has expanded its business to Indonesia. Shopee itself has adopted AI such as AI chatbots. Shopee, one of several e-commerce giants in Indonesia, has implemented AI chatbot technology to serve its customers. This technology allows customers to receive 24-hour non-stop service, ranging from product information to delivery status (Pitri et al, 2025). Shopee's chatbot is designed to handle various customer services, such as product

inquiries, order status, and complaint resolution, which are crucial for customer satisfaction amid high daily transaction volumes (Izuddin, 2025).

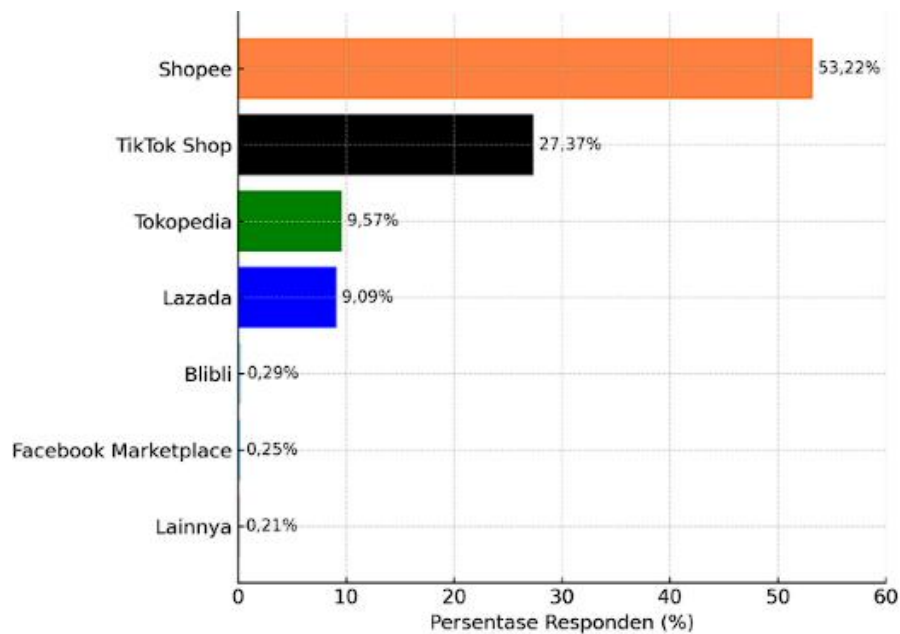


Figure 1.1 The most access e-commerce in Indonesia

Source: *Asosiasi Penyelenggara Jasa Internet Indonesia (APJII)* in 2025.

Based on a survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2025, Shopee ranked first as the most accessed e-commerce platform by Indonesians. The dominance of Shopee over other online platforms is depicted in this figure. Given the large number of Shopee users in Indonesia, a key element in raising customer satisfaction on the platform is the adoption of service innovations like chatbots.

Apart from Shopee, Tokopedia has become one of Indonesia's top e-commerce sites, with millions of active users every day. As a way to enhance customer interaction, expedite inquiries, and facilitate transaction processes, Tokopedia has

also incorporated AI technologies, such as chatbot systems. Tokopedia's implementation of AI chatbots shows that Shopee is no longer the only platform using service automation, and other significant platforms are progressively embracing comparable technological advancements. It is possible to gain a more comprehensive understanding of how AI chatbots affect consumer perceptions across various user bases by examining various platforms like Tokopedia.

In a similar vein, Lazada, a popular Southeast Asian e-commerce site, has integrated AI-powered chat systems to enhance customer support and offer tailored product recommendations. The chatbot on Lazada helps users navigate the site, answer frequently asked questions, and improve their overall shopping experiences. By including Lazada in the research scope, the study can explore whether AI chatbot adoption affects consumer perceptions consistently across different platforms with varying interface designs, service quality levels, and user demographics. A thorough understanding of AI chatbot acceptance within Indonesia's e-commerce ecosystem is provided by extending the study to include Shopee, Tokopedia, and Lazada.

This tendency is readily apparent in Padang City, particularly among its substantial Generation Z (hereinafter Gen-Z) user base. A substantial and highly active segment of the e-commerce sector is comprised of this group, who are digital natives. Because of their high level of interaction with platforms like Shopee and their expectations for prompt, tech-driven service, their opinion of AI chatbots is a crucial lens through which to evaluate the local dynamics of consumer satisfaction and purchase behavior. Understanding this specific group is necessary in order to evaluate the efficacy of human-technology interaction in a major Indonesian city outside of Java within the framework of Society 5.0.

In parallel with these technological strides, scholars have increasingly voiced concerns over *service dehumanization* within AI-mediated interactions. This phenomenon occurs when users feel reduced to mere objects or data points, devoid of their individual social and emotional needs (Haslam, 2006; Almokdad et al., 2025). Within AI-driven environments, the absence of genuine human connection,

empathy, and social nuances often leads customers to perceive service encounters as cold and mechanistic. Recent findings by Almokdad et al. (2025) highlight that mandating self-service technologies can significantly intensify these feelings of dehumanization, largely due to the loss of authentic human contact and empathy. Reinforcing this view, Söderlund et al. (2025) demonstrated that when service robots categorize users in ways that deny their essential humanness such as failing to recognize their agency or emotions it further deepens the perceived disconnect merely as spatial regions rather than as full human beings users report lower perceived categorization correctness and less favorable overall evaluations of the service encounter. These observations hold particular significance for AI chatbots operating within the e-commerce sector. If a chatbot lacks emotional intelligence, fails to offer tailored support, or ignores the human dimension of the exchange, it can trigger a distinct albeit often subtle feeling of alienation in the user. Ultimately, this sense of dehumanization risks eroding consumer trust and their perception of service quality. This impact is especially pronounced among Gen-Z users, a demographic known for its acute sensitivity to both authenticity and the responsiveness of technology (Söderlund, 2025; Almokdad et al., 2025)

However, the reality of consumer interactions with AI chatbots does not always match their theoretical promise. Although the immediacy and availability of these systems are widely valued, they often fall short in more complex areas—specifically, in grasping natural language, conveying empathy, or navigating intricate inquiries. This performance gap is acutely felt by Gen-Z consumers in Padang, who tend to hold significantly higher standards for accuracy, efficiency, and intuitive service than preceding generations. Given these disparities, it is essential to examine how specific drivers namely perceived usefulness, ease of use, and service quality shape the perceptions of these young consumers regarding AI chatbots on the e-commerce platform.

Through an in-depth examination of these variables, the present study seeks to reconcile the disparity between technological capabilities and local consumer expectations. Beyond simply assessing the readiness of Gen-Z in Padang to adopt

AI-driven support, the findings intend to enrich the wider conversation on harmonizing e-commerce strategies with the human-centric tenets of Society 5.0. Achieving this alignment is fundamental to ensuring that digital transformation serves not just operational goals, but also the social values of its users.

1.2 Problem Identification

Platforms like Shopee have championed the adoption of AI chatbots, framing them as essential tools for boosting operational efficiency and enhancing the customer support ecosystem. Yet, the actual performance of these technologies does not always align with their promise. Although these systems excel at delivering rapid, automated replies, they frequently struggle when faced with intricate requests or the need for genuine empathy deficiencies that directly undermine user satisfaction. Over time, such limitations can breed significant frustration, ultimately eroding the perceived quality of the service and diminishing consumer loyalty to the platform

This situation is especially pronounced in Padang City; it is possible to consider it in the frames of Gen-Z as a demographic generation that is not only tech-savvy but also extremely demanding in digital experience terms. Gen-Z consumers have been characterized as being mobile technology reliant, want speed and dependability as well as have little tolerance to inefficiency. Consequently, their attitude towards AI chatbots can be used as a serious predictor of the suitability of the technologies to the requirements of users in a less developed area than the major digital centers of Indonesia such as Jakarta or Surabaya.

Even though some of these studies have investigated the use of AI chatbots in e-commerce in the world market, scarce relevant empirical studies exist that concentrate on the target population (Gen-Z customers) in the secondary cities of Indonesia like Padang. The current research is more likely to generalize consumer perceptions in bigger and urbanized regions without regards to the specifics of regional consumer behavior. This leaves an existing gap in the literature of knowledge about the effect of chatbot service quality, perceived use-fulness, and ease of use on consumer perceptions in a local manner.

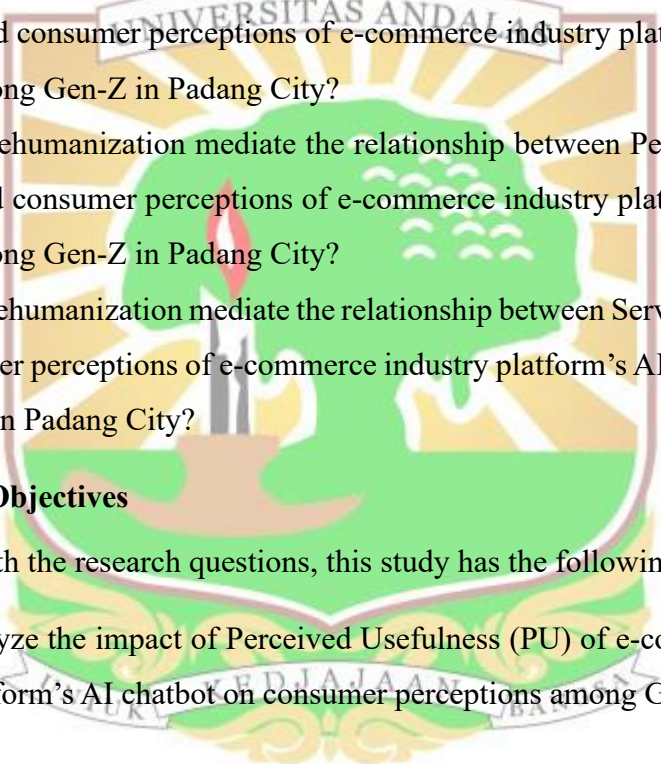
Besides, in the Society 5.0, when technological innovation is supposed to improve human well-being, the efficiency of AI chatbots is not only a technical matter. It also involves the consideration of the degree of success with which these tools can fulfill the psychological and behavioral requirements of users. To Gen-Z users, the fit between the performance and their digital expectations of the chatbot would directly influence their satisfaction, as well as their purchasing patterns and future trust in the platform.

Another burning question, which has been given increased academic consideration, is the problem of the dehumanization of services in the interaction facilitated by AI. The dehumanization takes place when the users are treated as objects or mechanical beings instead of individuals having emotional and social needs (Haslam et al, 2006; Almokdad et al., 2025). Within the framework of using chatbots, the lack of the human touch, personalization, and empathy may make the user feel like the interaction is impersonal or alien. As Soderlund et al (2025) point out, technology that fails to provide its users with a sense of humanness may reduce the perceived quality of the service, and the overall review of the experience. Although it is relevant, limited empirical research has been conducted in Indonesia to determine how dehumanization perceptions mediate or influence the relationship between the characteristics of chatbot and consumer perceptions, especially among Gen Z in the regional settings. Such a gap restricts a comprehensive comprehension of how consumers experience AI chatbots.

Therefore, the problem addressed in this study is the lack of localized empirical evidence regarding how perceived usefulness, perceived ease of use, and service quality of AI chatbots influence consumer perceptions with using dehumanization as mediation among Gen-Z users in Padang City. Addressing this issue will provide valuable insights for both academic research and practical strategies to improve customer engagement in Indonesian e-commerce platforms.

1.3 Research Questions

Based on the background and problem identification, the following research questions are formulated:

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1. Does Perceived Usefulness (PU) of e-commerce industry platform's AI chatbot affect consumer perceptions among Gen-Z in Padang City?
 2. Does Perceived Ease of Use (PEOU) of e-commerce industry platform's AI chatbot affect consumer perceptions among Gen-Z in Padang City?
 3. Does Service Quality (SQ) of e-commerce industry platform's AI chatbot affect consumer perceptions among Gen-Z in Padang City?
 4. Does Dehumanization influence consumer perceptions of e-commerce industry platform's AI chatbot among Gen-Z in Padang City?
 5. Does Dehumanization mediate the relationship between Perceived Usefulness and consumer perceptions of e-commerce industry platform's AI chatbot among Gen-Z in Padang City?
 6. Does Dehumanization mediate the relationship between Perceived Ease of Use and consumer perceptions of e-commerce industry platform's AI chatbot among Gen-Z in Padang City?
 7. Does Dehumanization mediate the relationship between Service Quality and consumer perceptions of e-commerce industry platform's AI chatbot among Gen-Z in Padang City?

1.4 Research Objectives

Aligned with the research questions, this study has the following objectives:

1. To analyze the impact of Perceived Usefulness (PU) of e-commerce industry platform's AI chatbot on consumer perceptions among Gen-Z in Padang City.
2. To examine the effect of Perceived Ease of Use (PEOU) of e-commerce industry platform's AI chatbot on consumer perceptions among Gen-Z in Padang City.
3. To evaluate the influence of Service Quality (SQ) of e-commerce industry platform's AI chatbot on consumer perceptions among Gen-Z in Padang City.
4. To assess the effect of Dehumanization on consumer perceptions of e-commerce's AI chatbot among Gen-Z in Padang City.

5. To investigate the mediating role of Dehumanization in the relationship between Perceived Usefulness and consumer perceptions.
6. To investigate the mediating role of Dehumanization in the relationship between Perceived Ease of Use and consumer perceptions.
7. To investigate the mediating role of Dehumanization in the relationship between Service Quality and consumer perceptions.

1.5 Contribution of the Research

1.5.1. Theoretical Contribution

This study contributes to the academic literature by extending the application of the Technology Acceptance Model (hereinafter TAM) and Service Quality frameworks to the context of AI-driven customer service within Indonesian e-commerce. Although previous studies have investigated technology acceptance in more broad or international terms, there are few studies that specifically focused on how AI chatbots impact on consumer perceptions in the secondary cities like Padang of Gen-Z.

Using the inclusion of dehumanization as a mediator variable, this research will fill a significant gap in the literature on the psychological and emotional aspects of the human AI interaction. The current models of TAM and service quality are often technical and functional in their perspective; the addition of dehumanization gives us a better overview of how users perceive AI chatbots in particular, the personalization, empathy, and human warmth response.

Moreover, the fact that the results were connected to the larger picture of Society 5.0 emphasizes the importance of the humancentered innovation in digital transformation. Thus, the research is valuable to the current discourse because it will shed light on the current theories of technology acceptance and offer new insights into the nature of human technology interactions in the localized e-commerce context

1.5.2. Practical Contribution

Based on managerial side, the results of the current study have practical implications on e-commerce platforms that are active in Indonesia. It can be beneficial to learn what influences the perceptions of the Gen Z towards AI chatbots the most so that businesses could create and improve chatbot systems to be not only technically effective but also emotional.

In particular, the role of dehumanization identification can give the businesses a better understanding of how excessively mechanistic or impersonal interactions with chatbots might have a negative effect on user trust and satisfaction. Through reduced dehumanization factors and heightened compassionate and user-oriented design, e-commerce platforms can be used to supplement service experiences, improving customer loyalty and purchase intentions. Also, these lessons may guide policymakers and digital service providers to adhere to the Society 5.0 principles, so that the technological innovation could positively contribute to the quality of life and help include all individuals in the digital economy.

1.5.3 Social and Local Relevance

This study helps to note that the research of the Gen-Z consumers in Padang City is crucial as it is able to focus on the regional consumer dynamics in the city, but not only in the main urban centers of Indonesia. It highlights the fact that regional cultural and behavioral conditions influence the way young and technology oriented users will interact with AI technologies.

The fact of dehumanization is another insight that psychological reactions to AI may vary in regional terms with a suggestion of how local businesses and entrepreneurs can implement AI technologies that are effective and ethical. This alignment, in the long run, could make the regional digital markets more competitive, enable the agenda of digital inclusion in Indonesia, and generate sustainable innovation in accordance with Society 5.0 principles.

1.6 Scope of the Research

This research has set limits that ensure that the research does not lose track and instead remains focused to achieve its aims and objectives. The scope can be described as follows:

1.6.1 Research Object

The main subject of the study will be the platforms of the e-commerce industry including Shopee, Tokopedia, and Lazada AI chatbot service. The research is narrowly devoted to the consumer perception and psychological reactions on chatbot such as perceived utility, user-friendly nature, quality of the services, and perceived dehumanization in their interactions. It is not a study of other operations of the e-commerce industry platform like the logistics, payment system and interaction with sellers.

1.6.2 Research Variables

The variables in the research are as follows:

- a. Independent Variables Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Service Quality (SQ).
- b. Mediating Variable: Dehumanization is what consumers think of as being treated impersonally or mechanically when communicating with the chatbot.
- c. Dependent Variable: Consumer Perception of AI chatbot of e-commerce industry platform. The research concentrates on the variables that are at the perception level and does not investigate the behavioral intentions, and other downstream consumer outcomes like the purchase behavior or the loyalty.

1.6.3 Research Population and Sample

The research population will be the consumers in Padang City with generational Z who have used the AI chatbot of Shopee, Tokopedia and Lazada. The data accumulation is done with the help of a structured questionnaire that is given to the respondents who correspond to this requirement. The sampling approach used in the study is the non probability (convenience) as a result of the consideration of accessibility and the specificity of the population.

1.6.4 Geographical Scope

The study area is geographically confined to Padang City, West Sumatra. Accordingly, the results might not be representative of the consumer perceptions or the behavior of consumers in other parts of Indonesia especially in the major metropolitan areas like Jakarta, Surabaya or Bandung.

1.6.5 Time Scope

The research design embraces cross sectional research design, as the data will be gathered within a particular time span during the academic year. Therefore, the results are based on consumer perceptions at one point in time and fail to capture longitudinal behavioral or attitudes change.

1.6.6 Theoretical Scope

This research is anchored in the TAM and Service Quality theory, which provide the theoretical foundation for examining the influence of perceived usefulness, perceived ease of use, and service quality on consumer perceptions.

Additionally, the study incorporates the concept of dehumanization, drawing from psychological literature (Haslam et al., 2006; Söderlund et al., 2025; Al-mokdad et al., 2025) to explore how human–AI interaction quality can affect user perceptions. Broader psychological or behavioral outcome variables (e.g., emotional well being, purchase intention) are beyond the scope of this study.

1.7 Research Outline

The systematics of writing in this study consists of five chapters which have their respective functions and purposes of writing. The systematics of writing are as follows This thesis is systematically structured into five chapters. Chapter I presents the introduction, which outlines the research background, problem statement, research objectives, research contributions, scope of the study, and the organization of the thesis. Chapter II provides the literature review, covering the theoretical foundations, conceptual framework, relevant previous studies, and the development of research hypotheses. Chapter III explains the research methodology, including data and data sources, data collection methods, population and sample, research

variables, and data analysis techniques employed in the study. Chapter IV includes the discussion of the research findings and analysis and outlines the results derived based on the processed data and analyzes them with references to the hypotheses suggested. Lastly, Chapter V provides the conclusion of the study summarizing the major findings and providing recommendations and suggestions on the direction of further research.

