

# Chapter 7

## Measuring the Service Quality of Artificial Intelligence in the Tourism and Hospitality Industry

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### ABSTRACT

*The tourism industry is rapidly adopting artificial intelligence (AI) to enhance customer experiences and improve service delivery. However, the adoption of AI has raised concerns about concierge chatbots, digital assistance, proactiveness, anthropomorphism, and security, and its impact on overall customer satisfaction. Therefore, the aim of this research is to measure the service quality of AI in the tourism industry, with primary data collected in Pondicherry. This study is a quantitative research study that utilized a survey method to collect primary data. A total of 350 respondents were targeted, with 307 valid responses obtained. The data were analyzed using confirmatory factor analysis and structural equation modeling. The study highlights that AI technology has a significant positive impact on the service quality of the tourism industry. This study contributes to the literature by providing empirical evidence to service quality in the context of AI technology and the importance of AI technology to enhance service quality and customer satisfaction.*

### INTRODUCTION

Artificial intelligence (AI) technology has advanced significantly in recent years, and more and more applications are now leveraging this technology (Huang & Rust, 2021). The utilisation of technology like machine learning, huge data, interpreting, and processing natural language is referred to as artificial

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intelligence (AI) (Poole & Mackworth, 2010). These software agents are created to carry out operations that ordinarily need human intellect, such as problem-solving, in a methodical manner in order to obtain the optimal result given the facts at hand (Russell & Norvig, 2021). There is a commonly held notion that AI will have large and far-reaching impacts on the services industry, acting as a primary driver of its expansion, according to several studies (Huang & Rust, 2021; Noor et al., 2022). The potential advantages of AI for organizations and suppliers of services include increased revenue through better support for business and marketing decisions and decreased operational costs through automation (Davenport et al., 2020; Neuhofer et al., 2021; Prentice et al., 2020). Makadia (2020) points out that market value growth projections for AI agents additionally highlight their potential. As a result, it is widely believed that AI will be essential to the expansion and advancement of the services sector in the years to come. One of the most significant aspects of AI is its capacity to offer customers customer service that is comparable to that of a human. Comparatively to other types of technology-based self-service (Wirtz et al., 2018). Additionally, there is evidence to support the idea that AI is superior to people and non-AI self-service technologies in several service-related tasks. Because AI is not limited by human flaws like unintentional biases and relative inefficiency, it can perform some parts of service more efficiently than human service workers (Wirtz et al., 2018). Also, compared to non-AI self-service systems, which are typically pedantic in following specified interaction rules, AI can adapt and provide greater possibility for tailored social engagement with personalisation to consumers in service encounters (Wirtz et al., 2018).

According to industry analysts, AI is becoming more significant in the services sector (Mustak, et al., 2021). The application of AI in marketing research has attracted more interest in recent years (Feng et al., 2021; Mustak et al., 2021). Most recent research in the field of services marketing has concentrated on customer acceptance of AI and its continuous use (Kong et al., 2022; Gursoy et al., 2019; Wirtz et al., 2018; Xu et al., 2020). Recently, conceptual studies investigating the potential effects of AI on services have been published (Mustak et al., 2021). According to Wirtz et al., (2018), research into the use of service robots at the micro, meso, and macro levels is advised. In addition, Huang and Rust (2020) did research on the effects of various forms of Artificial intelligence on societal norms, services, and consumer behaviour. Moreover, Dwivedi et al., (2019) put forth frameworks that take public policy issues into account and offer instructions for reducing security and social desirability worries connected to AI applications. There is currently no research on how the usage of AI might affect consumer assessments of service quality, which is a vital topic for study, even if these studies lay the groundwork for additional research in the quickly developing field of AI.

## **THEORETICAL BACKGROUND**

### **Service Robots**

A service robot is defined as “a robot that performs helpful activities for humans or equipment” by the International Federation of Robotics (Tung & Law, 2017). The two main kinds of service robots are personal and professional service robots. Robots used for personal or non-commercial chores are referred to as personal service robots, whilst those used for professional reasons are referred to as professional robots. In fields including medicine, agriculture, and logistics, professional robots have already demonstrated a significant impact (Cheng Hong et al., 2019). For example, medical robots are worth more than \$6 billion in 2018 (Tian et al., 2019). The market for professional service robots is anticipated to

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