


Users' Acceptance of Artificial Intelligence-Based Chatbots: An Empirical Study

Mahendar Goli, School of Management, Anurag University, India

Anoop Kumar Sahu, Department of Mechanical Engineering, School of Studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, India

Surajit Bag, Department of Transport and Supply Chain Management, University of Johannesburg, South Africa*

 <https://orcid.org/0000-0002-2344-9551>

Pavitra Dhamija, LM Thapar School of Management, Thapar Institute of Engineering and Technology, Patiala (Punjab), India

ABSTRACT

This research examines the effects of factors such as perceived ease of use, perceived usefulness, perceived enjoyment, innovativeness, perceived information quality, and perceived customisation on behavioural intention to use Chatbots. The research model designed is empirically validated using structural equation modelling with the aid of AMOS software. A five-point Likert scale-based structured questionnaire was used to collect data from 378 Chatbot users in an online method. The results indicated that the perceived ease of use, perceived usefulness, innovativeness, perceived information quality, and perceived customisation have positive effects on intention to use Chatbots, whereas perceived enjoyment is found to exert no effect. The research further discussed implications and future directions of research.

KEYWORDS

Artificial Intelligence, Chatbots, Technology Acceptance Model

1. INTRODUCTION

'Artificial Intelligence' (AI) denotes conception of intelligent machines that can imitate humans (Stoeffler et al., 2019; Casillo et al., 2020). Simply put, AI extends innovation of machine(s) that can perform like humans (Zheng et al., 2019). Intelligent machines are categorised as weak and strong. The former can address specific situations as weak AI machines cannot think and act independently (Tran and Luong, 2020). In contrast, the latter are look-alike version of humans. The strong AI machines can actually replace humans as they think and act as good as a human brain does (Cuayáhuitl et al., 2019). Majorly, AI machines are designed to minimise fatalities like wars, accidents and natural calamities (Peng et al., 2019). Some real-life examples of AI include self-driven vehicles, google maps and Chatbots (Cameron et al., 2017; Lee et al., 2017; Huang et al., 2018). Undoubtedly, the

DOI: 10.4018/IJTHL.318481

*Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

rise of AI based applications opened the gateway of opportunities to the business firms to offer enriched customer experience (Cheung et al., 2003; Tran and Luong, 2020). Amongst all, 'Chatbots' are drawing human attention immensely (Tran and Luong, 2020). The reason is that Chatbots allow interactions between human and services like a real time human to human experience (Peng et al., 2019). This virtual assistant is used by top brands for virtual interaction with the customers for a better service (Ren et al., 2019).

Shawar and Atwell (2007) define Chatbots as 'computer programs that interact with humans through natural language'. The available literature confirms different types of Chatbots depending upon their usage. The foremost is dialogic Chatbots, which are expected to understand user and their expectations. In this, the Chatbots are provided with oral inputs, further analysed with desired language processing tools that produces suitable responses (Peng et al., 2019). The second type is rational Chatbots (Yang and Evans 2019). These Chatbots use existing external knowledge base and common sense to answer and solve human queries (Cuayáhuatl et al., 2019). Generally, they provide user specific content information (Tran and Luong, 2020). The third category is embodied Chatbots. These are the earliest Chatbots and are generally preferred by ordinary users who are not machine savvy (Cummings and Kunzelman, 2015). The present stage of Chatbots is reasonably advance (Ni et al., 2017; Oh et al., 2017). Contemporarily, the companies are adopting Chatbots due to three main reasons. Firstly, Chatbots are capable of answering customer service requests (Gu et al., 2019). Moreover, Ren et al. (2019) argues that after few rounds of training/coaching, Chatbots genuinely ensure improved results (Yang and Evans 2019). Secondly, Chatbots provide a convenient experience to exchange information through text messages. It is as good as natural way of interaction (Cummings and Kunzelman, 2015). Thirdly, Chatbots enable companies to understand the aspects of digital customer service experiences (Blythe and Buie, 2014; Przegalinska et al., 2019). The anticipation of required customer services by Chatbots is really providing benefits to companies (Cuayáhuatl et al., 2019). Companies implement Chatbots services for varied reasons like cost savings, product recommendation, 24X7 access, brand awareness and promotion (Patel, 2019). Major firms using Chatbots in India include HDFC, Fify, Meru cabs, Yatra, Gaana, Niki, Funds tiger and Yes tag (Maharshi, 2017). Despite the potential Chatbots offer, very limited research has been conducted to examine the motives that influence users to choose Chatbots (Blythe and Buie, 2014). This research attempts to study the factors influencing individuals' intention to adopt Chatbots. The current study is founded on the technology acceptance model and studies users' behavioural intention to use Chatbots for customer service support during online purchase.

The rest of the paper is organised as follows. The next section details the literature review followed by section three on hypotheses development and section four on research design. The fifth section comprises data analysis. The final sections presents the discussion, unique contributions and conclusion drawn from empirical study.

2. LITERATURE REVIEW

2.2 Underpinning Theoretical Framework

In the current digital era, it is imperative for business firms to adopt digital innovations in order to provide hassle-free and superior services to their customers (Cummings and Kunzelman, 2015). Online customer service is the need of the hour to meet the ever-demanding customer needs (Cameron et al., 2017). Recent developments like artificial intelligence (AI) and natural language processing (NLP) creating a great impact on digital customer service (Yang and Evans 2019). A Chatbot is a text or voice-based customer assistant uses artificial intelligence and natural language processing for human interaction (Shawar and Atwell, 2007, Zhang et al., 2017). Chatbots enable a dialogue system between human and computer along with natural language (Ni et al., 2017). The Chatbots are widely used

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/users-acceptance-of-artificial-intelligence-based-chatbots/318481

Related Content

Social Media and Gender Issues

Lynne M. Webb and Nicholas Temple (2016). *Handbook of Research on the Societal Impact of Digital Media* (pp. 638-669).

www.irma-international.org/chapter/social-media-and-gender-issues/136691

Occurrence of Cyberbullying in Slovenian Schools and the Need for Communication

Miha Dvojmo, Teja Lobnikar and Valentina Kubale (2023). *Analyzing New Forms of Social Disorders in Modern Virtual Environments* (pp. 99-124).

www.irma-international.org/chapter/occurrence-of-cyberbullying-in-slovenian-schools-and-the-need-for-communication/328106

ICTs and Improvement of Agriculture in the North West Region of Cameroon

Wuchu Cornelius Cornelius Wutofeh (2019). *International Journal of Information Communication Technologies and Human Development* (pp. 1-19).

www.irma-international.org/article/icts-and-improvement-of-agriculture-in-the-north-west-region-of-cameroon/221308

Exploring the Factors Influencing Continuance Usage of Over-the-Top Services: The Interactivity, Consumption Value, and Satisfaction Perspectives

Po-Chien Chang and Horng-Yan Chang (2020). *International Journal of Technology and Human Interaction* (pp. 118-138).

www.irma-international.org/article/exploring-the-factors-influencing-continuance-usage-of-over-the-top-services/261219

Technologies for Digital Inclusion: Good Practices Dealing with Diversity

Jorge Morato, Alejandro Ruiz-Robles, Sonia Sanchez-Cuadrado and Miguel Angel Marzal (2016). *Handbook of Research on Comparative Approaches to the Digital Age Revolution in Europe and the Americas* (pp. 332-351).

www.irma-international.org/chapter/technologies-for-digital-inclusion/138042