



Behavioural Intention of AI-Chatbots by Telecom Customers – UTAUT2 Perspective with Trust

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Abstract

The emerging technologies like artificial intelligence, virtual reality, internet of things connects the customers with company and are characterized by their ability to serve the personalized needs of the customers (Venkatesan, 2017; Heavin and Power, 2018). For instance, Ajay Aluri et al (2018) states machine learning is an example of automated processes that create insights into co-creation of value through dynamic customer engagement. These new tools to enhance online customer experiences often centered on the use of “humanizing” artificial intelligence technologies, such as chatbots (Lena Steinhoff et al., 2018). A chatbot is a machine conversation system which interacts with human users via natural conversational language. The chatbots are significantly contribute to the company in terms of entertainment in business and e-commerce (Shawar and Atwell, 2007), relationship management (Saad and Abida, 2016), obtaining assertive information on what customer want (Célia Veiga et al., 2017), customers’ value cration (Mikko Riiikinen et al., 2018), improve customer experience (Ana Salazar, 2018; Y Kurachi et al., 2018), a tool to collaborate with customers (Bolton et al., 2018), etc. In advertising research, Jan Kietzmann et al (2018) describes the chatbots are used by advertisers to engage customers and accolades the chatbots helps the organizations in solving customer inquiries by reducing the resolution time of inquiries from 1.5 days to an average of five minutes. Sivaramakrishnan et al., (2007) Sabharwal (2018) outlines many Indian companies have implemented the machine learning (including AI-based chatbots), however big opportunities are not yet tapped. AI-based chatbots is still at nascent stage in Indian manufacturing and service organizations, therefore, authors like Kumar and Balachandran (2018), Jay Trivedi (2019) and De Keyser et al (2019) recommend studies to be done on adoption of disruptive technologies from the customer point. After thorough sentiment analysis, Feine, J., Morana, S., and Gnewuch, U. (2019) recommends the need for studies on adaptive reaction strategies.

On the banking industry, Tanay Kurode (2018) observed that the many of Indian banks have started using AI-based chatbots to reduce errors and quality interaction with customers. Banks uses chatbots mainly on non-banking services (Moysan and Zeitoun,2019). Shah KB et al (2017) describes user level study to be done to understand the issues of building a banking assistant like chatbots. Lova Rajaobelina et al (2019) identified ease of use (Changati and Kansal, 2019), speed and attitude are the influencers on the adoption of live chats and suggests similar studies to be done with chatbots. Very limited studies are related to telecom companies and these studies are either descriptive (Long, 2019) or technical studies (Quarteroni, 2018). Nevertheless, this research paper attempts to apply UTATU2 model to predict the customer adoption of AI-Based Chatbots with the two main hypotheses that (a) all UTAUT2 constructs (Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic motivation (HM), Habit (Ht)) positively influence the behavioural intention (BI) and (b) facilitating condition, habit and behavioural intention positively influence the user behaviour (UB). One modification with the removal of price value has been removed. Price value is defined “as the consumer’s trade-off between the perceived

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benefits of a technology and the monetary cost for acquiring and using it” (Venkatesh et al., 2012). In chatbots, the customers are not directly paying any price to the telecom service provider. Trust (Alalwan et al 2017; Van Tonder et al 2017) also included with UTAUT2 to quantify its effect on behavioural intention and user behaviour.

Methodology and Profile of the Participants

By applying the constructs of UTAUT2 model (Venkatesh et al., 2003), a structured questionnaire developed with Performance Expectancy is 4 item scale, Effort Expectancy is 4 item scale, Social Influence is 3 item scale, Facilitating Conditions is 4 item scale, Habit measured with 4 item, HM is 3 item scale, Behavioural Intention is 3 item scale, trust is 3 item scale and usage behaviour with 3 items. All scaled items measured from “strongly agree” to “strongly disagree” on a 5 point likert scale. E-mail ids were collected from various sources and more than 1000 mails were send with Google Form – questionnaire. 280 respondents have filled and received, of which 268 were selected for further analysis.

Analysis and Results

All UTAUT2 constructs met the reliability (Cronbach’s alpha) threshold value 0.9 and above. The values of all the constructs are between 0.87 (user behaviour) and 0.96 (effort expectancy). The model also fulfil the convergent and discriminant validity parameters like, Composite reliability (CR), and Average variance extracted (AVE). The R^2 values of 0.75, 0.5 or 0.25 in the model are described as substantial, moderate or weak (Chin, 1988) respectively. The R^2 value (0.852) explains 85.2% variation in BI which is substantial. However, the usage behaviour is explained by Trust, Habit, facilitating condition and behavioural intention only by 33.5% which is moderate only.

Of six constructs, performance expectancy ($\beta=0.293$, $t=2.228$) and habit ($\beta=0.335$, $t=3.347$) are positive and statistically significant with behavioural intention of chatbots acceptance. It is noted that all other constructs (effort expectancy, facilitating condition, social influence and hedonic motivation) are positive, however they are statistically insignificant with behavioural intention.

On the effect of user behaviour related to chatbots, behavioural intention, facilitating condition and habit are not the strongly influencers the user behaviour compared to trust constructs which is statistically significant at 0.10 level.

Conclusion

The positive and statistical significant Performance Expectancy (PE) describes the telecom customer’s trust influence them on the acceptance of Chatbots as a medium interaction too improve the communication between customer and company. Further, customers practice in the form of Habit (Ht) on chatbots highly impacts the behavioural intention of the customers. The results are in line with Patrick Acheampong et al (2017) findings related to modern communication tools like wechat, whatsapp etc. Contrasting to the original UTATU2 findings, this study’s results shows facilitating condition, effort expectancy, hedonic motivation, and social influence are not significant determinants on telecom customers’ adoption of Chatbots which is very similar to the findings of Paulo et al (2018) in mobile augmented reality. The study supports the finding of Van Toder (2017) that no direct relationship between trust and behavioural intention.