Commerce

ANALYSIS OF FACTORS INFLUENCING TECHNOLOGY ACCEPTANCE OF CHATBOTS IN BANKING INDUSTRY

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ABSTRACT   This study focuses on studying the factors influencing technology acceptance of chatbots in banking industry. Out 114 respondents 38 were found to be using chatbots in online banking on a high frequency and 76 were found to be using on a moderate frequency. Most of the respondents preferred text command and also both text and voice command for using chatbot in online banking. This study is limited to the survey of customers in Coimbatore who are aware of chatbots in banking.

1. INTRODUCTION

The Indian banking system consists of 18 public sector banks, 22 private sector banks, 46 foreign banks, 53 regional rural banks, 1,542 urban cooperative banks and 94,384 rural cooperative banks as of September 2019. In FY07-18, total lending increased at a CAGR of 10.94 per cent and total deposits increased at a CAGR of 11.66 per cent. India's retail credit market is the fourth largest in the emerging countries. It increased to US$ 281 billion on December 2017 from US$ 181 billion on December 2014.

A chatbot is a computer program which conducts a conversation in natural language via auditory or textual methods, understands the intent of the user, and sends a response based on business rules and data of the organization. (Source: Bluewolf). Chatbots can save up to 30% in customer support cost and can help businesses save on customer service costs by speeding up response times and answering up to 80% of the routine questions. According to Gartner's expectations after 2020 an average Messenger user will be more often talking to bots than to a partner every day, and 85% of interactions between a client and a brand will not be based on a direct contact with a human. (Source: inform.tmforum).

These chatbots are developed with many features facilitating both the banks and the customer. However, the acceptance of this technology among the Indian is unknown.

OBJECTIVE:

To study the factors influencing technology acceptance of Chatbots in banking industry.

The Chatbot advisor services industry is in a nascent stage, in developing economies like India. Though these applications are implemented to enhance customer service and experience, the awareness of consumer on chatbot and the acceptance of such technology is still unknown at least in the demography where our research is conducted. By the end of the study the influential factors of customer's intention to chatbots could be determined.

2. LITERATURE REVIEW

Chatbot Kim et al., (2018) mentioned that chatbot enables its users to communicate with it to form an intelligent communication along with providing results or completed tasks as the user instructed it to. Jonsson & Bredmar (2018) stated the implementation of chatbot has existed for years, but in various formsit gained popularity ever since the release of Apple's Siri and Alexa for Amazon. Okuda & Shoda (2018) mentioned the advancement of chatbot technology development, mainly in programming language, drives the performance of chatbot known nowadays. Letheren & Dootsan (2017), While it is used to performed tasks and answers questions, Chatbot are now capable of doing the business itself. Lau & Leimer (2019) mentioned that chatbots are still vulnerable to web attacks and needs serious attention in development of its security systems. Regardless of it, Chatbot are still proven to be in the leading position of business enabler, due to having various utilities. Bluewolf (2019) had mentioned seven characteristics a good chatbot should have. Rollason (2019) has mentioned that a chatbot should have

eleven characteristics. These are Ability to learn, Ability to fail usefully, Ability to transfer complex request to human agent, accessible, secure, explainable, knowledge cantered service, Omni channel, free to explore and analytical.

Alzaidi (2018) explored the impact of Artificial intelligence on performance of the banking industry in middle east. Goel & Mehta (2017) discussed how AI is used in financial sector and what are the benefit that AI offers to fintech and different ways in which it can improve a financial institute. Bergstrom et al., (2018) explored the attitude that customer have towards AI in customer services, as a substitute to local brick and mortar offices within the Swedish bank industry, as well as uncover any significant factors that could influence these attitudes. Jewandah (2018) focus on the how AI is changing the banking sector. Capon & Dunne (2017) discussed a number of themes that have emerged in recent years resulting in a significant broadening of the areas in which argumentation-based methods are used.

Ameme & Wireko (2016) stated that satisfaction of customers is not merely introducing innovative products and services rather it is much more than that. Kaur & kiran (2015) stated public, private and foreign shows that customer is more satisfied with the services quality of the foreign banks then the private and public banks. Kundu & Datta (2015) found that there is a significant relationship among e-service quality, trust and customer satisfaction. Internet banking service quality has huge impact on trust.

Most of the studies had different factors considered with respect to the time of publish of the paper, the demography where the study was conducted, TAM model, extended TAM model for study as so on.

3. RESEARCH METHODOLOGY

research is descriptive because it explains the factors influencing technology acceptance of chatbots in banking industry. A structured questionnaire has been adopted from previous researches (Viviensius et al., 2019). The questionnaire constitutes of 34 variables of 6 constructs. The 6 constructs include innovativeness, attitude towards using, perceived ease of use, perceived usefulness, customer service and behavioural intention. These variables were measured on the standard measurement scale (Five-point scale of Likert). All the 30 respondents returned the questionnaire and were found to be valid.

The Alpha (Cronbach) reliability test was performed on the data collected through the pilot study and the Coefficient Alpha value was 0.912. The coefficient alpha values exceeded the minimum standard of .70. Snowball sampling, where research participants circulate the questionnaire to other participants, data 167 customers were selected. Smart PLS is applied

4. Analysis and Interpretations

The measurement model used in this research consist of six constructs, Innovativeness (IV) as external variable, Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Customer service as mediating variables, Attitude Towards Using (AT) and Behavioural Intention (BI). Data analysis was supported using SmartPLS version 2 software.

Scenario analysis was carried out using the Structural Equation Model Partial Least Squares (SEM-PLS) method.

Fig. 1 - TAM for Chatbots in online banking
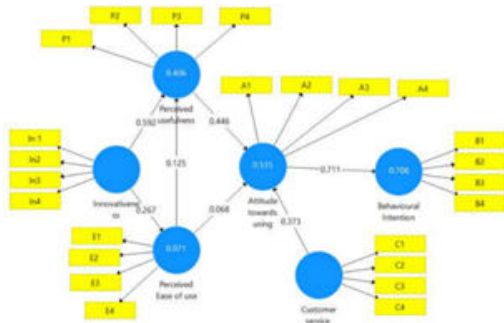
Bootstrap function, a nonparametric procedure was used to test the statistical significance of various PLS-SEM results such path coefficients, T values, P values, Mean, standard deviation and R^2 values.

Table 1. Showing the mean, standard deviation, P value & T values of the smart PLS output

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Attitude towards using -> Behavioural Intention	0.711	0.715	0.040	17.796	0.003
Customer service -> Attitude towards using	0.373	0.382	0.072	5.201	0.004
Innovativeness -> Perceived Ease of use	0.267	0.288	0.101	2.633	0.009
Innovativeness -> Perceived usefulness	0.592	0.594	0.060	9.853	0.007
Perceived Ease of use -> Attitude towards using	0.068	0.075	0.063	1.082	0.280
Perceived Ease of use -> Perceived usefulness	0.125	0.128	0.081	1.535	0.125
Perceived usefulness -> Attitude towards using	0.446	0.436	0.072	6.174	0.007

The R^2 value was found to be 0.706 indicating that 70.6% of the dependent variable can be explained with the chosen independent variables. The remaining 29.4% could be from any factors other than these which could be further studied.

From the above table it is found that innovativeness has significant impact on perceived usefulness with P value 0.007 and t value 9.853. innovativeness in chatbots influences customer's perceived usefulness on Chatbots. From innovativeness has significant impact on perceived ease of use with P value 0.009 and t value 2.633. innovativeness in chatbots influences customer's perceived ease of use on Chatbots. perceived ease of use has insignificant impact on perceived usefulness with P value 0.125 and t value 1.535. perceived ease of use of Chatbot does not influence the customer's perceived usefulness. Perceived usefulness has significant impact on attitude towards using chatbots with P value 0.007 and t value 6.174. perceived usefulness of customers on chatbots in banking industry influences their attitude towards using chatbot. From perceived ease of use has insignificant impact on attitude towards using chatbot with P value 0.280 and t value 1.082. This could be interpreted as customer's perceived ease of use does not influence their attitude towards using chatbot. From CSF offered by chatbot has significant impact on their attitude towards using chatbots with P value 0.004 and t value 5.201. CSF in chatbot offered by the bank influence their attitude towards using chatbots in banking. attitude of customers towards using chatbot has significant impact on their behavioural intention on chatbots with P value 0.003 and t value 17.796. customer's attitude towards using chatbots

customers in banking industry influences their behavioural intention.

5. Findings

From the PLS-SEM analysis, it is found that Innovativeness, perceived usefulness, customer service, attitude towards using has positive influence on Behavioural Intention.

Since perceived ease of use has insignificant impact on the behavioural intention of customers for using chatbot. Hence it could be suggested that the Banks could enhance the ease of use of chatbots by focusing on the development of emotional bots and also localization of chatbots with respect to language.

Since people prefer both voice and text command for interaction with chatbot. So, Banks can implement this feature to enhance customer experience and improve customer satisfaction

6. CONCLUSION

The research has helped in identifying the factors influencing the technology acceptance of chatbots in banking industry. The study conducted being descriptive in nature snowball sampling technique was used. This study is limited to the survey of customers in Coimbatore who are aware of chatbots in banking. Although, Coimbatore district is a two tier city and 2nd major city in TamilNadu, the findings may not entirely reflect the views of customers in using chatbot of entire state in general. Hence, research in other cities and other customers is required to examine the validity and reliability of the identified factors influencing the technology acceptance of chatbot. This research can be carried out the acceptance of chatbots in other industries too.

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