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Employees' acceptance of AI integrated CRM system: Development of a conceptual model

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Abstract

Artificial Intelligence (AI) integrated Customer Relationship Management (CRM) systems can maximize firms' value by identifying and retaining best customers. The success of such advanced technologies depends on employee's adoption. However, research on examining employee's acceptance of AI integrated CRM systems is scarce. Therefore, this study has taken an attempt to propose conceptual model to predict the use-behaviour of employees to use AI integrated CRM system in organizations. This study adapted meta-UTAUT model as theoretical lens and extended the model with constructs such as compatibility, CRM quality, and CRM satisfaction specific to the organizational context. Future researchers can empirically test the proposed model with data gathered from employees using AI integrated CRM system

Keywords: AI- CRM, CRM Quality, CRM satisfaction; User Behaviour; UTAUT Model

1. Introduction

Customer Relationship Management (CRM) is considered as an effective tool that can help organization's to understand the customers in a more systematic way by "identifying a company's best customers and maximizing the value from them by satisfying and retaining them" [1]. CRM can achieve customers' satisfaction and organizational performance [2, 3]. CRM ability is measured by the capability of this tool to analyse the customers' huge amount of data accurately and to proceed accordingly [4]. However, analysing such huge volume of customers' data by human endeavour is difficult and here comes the need of application of modern Information and Communication Technology (ICT) that calls for Artificial Intelligence (AI) application in CRM known as AI integrated CRM [5-7]. It is thus perceived that business organizations would emphasize to use AI integrated CRM to achieve best results. Report transpires that AI integrated CRM system would ensure to earn a revenue of \$1.1 trillion from 2017-2021 [8]. Moreover, with the help of AI integrated

CRM system, Organizations can analyse huge volume of customers' data with less cost and ease [9]. Analysis of customers' data by the organizations provides effective inputs to the organizations to strengthen their CRM quality [10]. Since such data is huge in volume, accurate analysis is ensured quickly through AI as is observed in other studies [11, 12]. With the help of AI, it is possible for the organizations to arrive at an accurate decision by analysing huge volume of customers' data easily [13, 14].

Organization's successful AI integration with their CRM system depends on employee's motivation to use such systems. The employees responsible for analysing customers data using AI integrated CRM system need to be sincere. This will help the organizations to accurately realize the likings, habits, disliking of the customers [15, 16]. The users of AI integrated CRM system in organizations would exhibit their attitude and intention towards using the system if they feel the technology is compatible with existing technology and helps them to use the new system [17, 18]. However, there is limited understanding on various factors influencing employees use behaviour towards integration of AI with CRM systems in organization context. To this end, this research proposes a conceptual model based on review of dominant technology acceptance theories/models to provide holistic understanding on factors determining employee's acceptance of AI integrated CRM system.

The remaining parts of the paper are arranged as follows. Section 2 provides overview on dominant technology acceptance theories/models. After that, section 3 provides background to meta-UTAUT model and how it is extended to propose the conceptual model. The subsequent section 4 provides overview on the proposed research methodology and data analysis for empirical validation of the proposed model. The paper ends with conclusion in section 5.

2. Overview of Technology acceptance Theories and Models

Understanding individual acceptance of information technology (IT) is considered as one of the mature streams within the information systems (IS) research arena [19, 20]. Efficient implementation of any Information System principally depends on the acceptance of the users [21]. In recent times, in the domain of IS, psychology, and sociology, it is observed that a plethora of theoretical models have been developed for exploring and predicting users' acceptance of IS. Among these models, many researchers advocated in favour of Technology Acceptance Model (TAM) [22-25]. But on the contrary, some scholars observed that TAM has some specific drawbacks [26]. It does not provide sufficient insights towards individuals' perspective concerning a new system, it directly investigates the external variables like perceived usefulness and perceived ease of use neglecting the indicators, it is found to have ignored the linkage between use and attitude as well as use and intention [27, 28].

2.1 UTAUT Theories

In the quest to address the limitations of existing technology acceptance models such as TAM, many competing theories emerged towards the end of 20th century, such as diffusion of innovation (DoI) theory, Innovation Diffusion Theory (IDT), and model of

personal computer utilization to explain individual adoption of IS/IT. This multitude of contexts and theories presented new challenge of plurality to IS researchers [29]. Venkatesh, Morris, Davis and Davis [17], developed comprehensive model - Unified Theory of Acceptance and Use of Technology (UTAUT) based on thorough review of eight dominant technology adoption models to overcome limitations of existing theories [see 17]. UTAUT model postulates performance expectancy, effort expectancy, and social influence as direct determinants of individuals behavioural intention towards using focal technology that together with facilitating conditions affects their use behaviour. The focal phenomenon of UTAUT was organizational users of technology primarily driven by their extrinsic motivation emphasizing on the utilitarian value. Since then, UTAUT model has been extensively used in different contexts including field communication technology [30], home-health services [22], mobile-health [31] and so on. The UTAUT model has effectively contributed the exploration towards technology acceptance and usage. Despite the comprehensiveness and popularity, many researchers were doubtful about UTAUT model ability to analyse the individuals' technology acceptance behaviour [18, 32]. It has been criticized by many scholars on different grounds [33, 34]. Recently, Li [35] observed that, for gaining high variance (R²), the UTAUT model considered four moderators which are impractical and not necessary and it was observed that good predicting power would have been achieved using simple model by applying appropriate initial scoring procedure. Besides, many researchers felt necessity to extend the UTAUT model by dropping some factors and including some other factors according to the contextualization [32, 36-39].

2.2 Meta-UTAUT model

Researchers have acknowledged the inherent limitations of UTAUT both explicitly and implicitly during their empirical investigations. Dwivedi, Rana, Jeyaraj, Clement and Williams [18], re-examined the model using combination of meta-analysis and structural equation modelling (MASEM) techniques to address some of those limitations. Henceforth, this study will refer to the re-examined model as meta-UTAUT. The findings revealed UTAUT model lacked individual differences variable attitude that could be influential in explaining their dispositions towards the use of focal technology. In meta-UTAUT model, attitude was found to partially mediate the effects of all four UTAUT exogenous variables (i.e. performance expectancy, effort expectancy, social influence, and facilitating conditions) to behavioural Intention and had direct effect on use behaviour. In addition, the study found significant association between facilitating conditions and behavioural intention that was not part of the original UTAUT model [see 18 for model]. Finally, meta-UTAUT excluded moderators as they are relevant only if significant variation exist among individuals examined in same context making the model more parsimonious and easier to use [39]. Meta-UTAUT model based on MASEM is a robust alternative to examine individual technology adoption and use as it addresses the shortcoming of UTAUT [18].

3. Proposed extension to meta-UTAUT

Attitude plays significant role on individual intentions towards performing underlying behaviour especially during early stages of technology adoption [40]. Employee's adoption of AI integrated CRM systems in organization's are still at the early stages. Therefore, this study deemed meta-UTAUT model as appropriate theoretical lens to evaluate antecedents in relation to employees use of AI integrated CRM system.

Table 1: Synopsis of the constructs

Construct	Explanation	Source(s)
Performance Expectancy (PE)	It is defined as the extent to which an individual would believe that use of a system would help to enhance one's job performance.	Venkatesh, Morris, Davis and Davis [17]
Effort Expectancy (EE)	It is defined as the extent of easiness concerned with the usage of a new system.	Venkatesh, Morris, Davis and Davis [17]
Facilitating Condition (FC)	It is conceptualized as the degree to which an individual would possess a belief that the existing available technological infrastructure would help and effectively support to use a new system.	Venkatesh, Morris, Davis and Davis [17]
Behavioral Intention (BI)	Strength of an individual's intention in the context of performance of a specific behavior is construed to be the measure of Behavioral Intention.	Fishbein and Ajzen [41]
Attitude (ATT)	It is associated with a conception that people can be ambivalent to an object through jointly exhibiting positive or negative feelings towards the same object.	Wood [42]
Compatibility (COM)	It is defined as the extent to which an innovation is perceived to be consistent with the existing values and access with the help of previous experience.	Rogers [43]; Wang, Cho and Denton [44]
CRM Quality (CRQ)	CRM quality refers to the employees as to how valuable information that the employees get from the CRM. AI CRM should help the decision-making process by automating the user recommendation field. To get the accurate and good quality CRM output, the data input to the AI CRM tool must be of good quality.	Battor and Battor [45]; Chatterjee, Ghosh and Chaudhuri [12]; Nyadzayo and Khajehzadeh [46]
CRM Satisfaction (CRS)	CRM satisfaction refers to the employees' delight that they are expected to get once the employees start using AI integrated CRM system in their organization.	Chatterjee, Ghosh, Chaudhuri and Nguyen [6]; Kalaignanam and Varadarajan [47]; Phan and Vogel [48]; Winer [49]

Prior research suggests researchers should focus on including attributes specific to the context rather than having the urge to replicate the entire baseline model[50]. It is argued that in the context of this study, since the organizations would adopt AI integrated CRM system, question of influencing the employees of the organizations by the society and question of voluntariness of the employees have become redundant. As such, it is thought cogent to drop social influence. Besides, this study added three new exogenous variables to meta-UTAUT model such as compatibility, CRM quality, and CRM satisfaction. This idea has been supplemented by another study where compatibility was included as a factor while dealing with UTAUT model [51]. The inclusion of other two exogeneous contextual variables CRM quality and CRM satisfaction were based on the premise that they would better explain adoption and use behaviour. This is in consonance with the observation that the UTAUT based models can be extended from the light of other contextual constructs which may be deemed to explain better adoption and usage behaviour of individuals [18]. The synopsis of all the constructs is shown in a tabular form in Table 1. With all these information and discussions, the proposed conceptual to examine employee use behaviour towards AI-CRM in the organization is shown in figure 1.

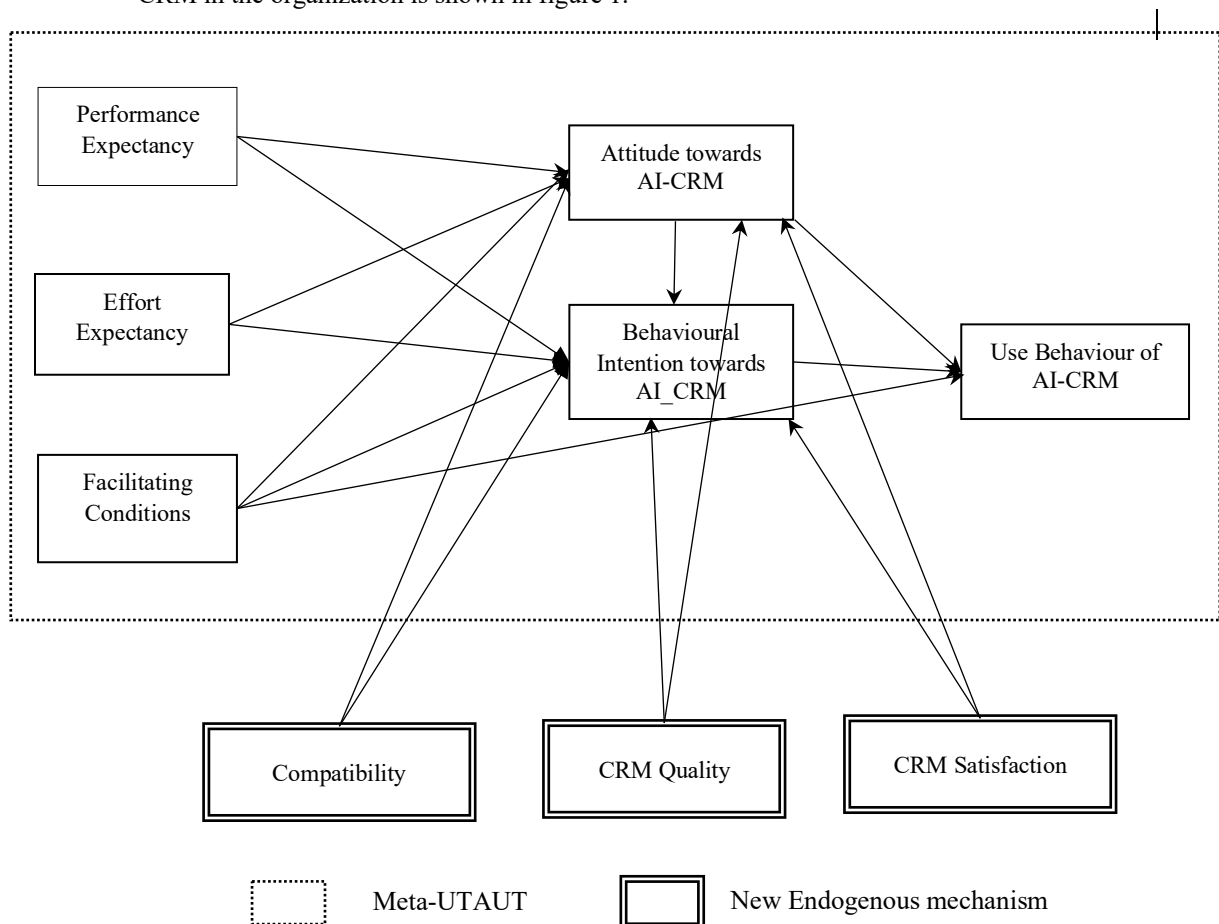


Figure 1: Conceptual Model (Source: Adapted from [18])

4. Research methodology

Researchers can employ quantitative survey methodology to empirically validate the proposed conceptual model as validated scales are readily available to measure the latent constructs [52, 53]. Partial Least Square (PLS) – Structural Equation Modelling (SEM) can be employed for data analysis once the data is collected. PLS-SEM approach is helpful to analyse an exploratory study like this [54]. In addition, a complex model with comparatively small sample size (as it involves organizational users) can be best analysed by PLS-SEM approach [55]. Besides, PLS-SEM approach is known to have yielded better results for such studies that cover marketing issues [56, 57].

5. Conclusion

This study offers several inputs to the extant technology acceptance literature. The proposed model extended the meta-UTAUT model with context specific variables such as compatibility, CRM quality, and CRM satisfaction to analyse the use-behaviour of the employees of organizations to use AI integrated CRM system. Context effects can be broadly defined as the set of factors surrounding the focal phenomenon that exerts direct or indirect influence on it [58]. The proposed new endogenous mechanism which refers to new associations between external variables (compatibility, CRM quality, CRM satisfaction) and any of the three meta-UTAUT endogenous variables such as attitudes, intentions, and usage offers better adaptation of meta-UTAUT in the context of AI integrated CRM system [39]. The proposed model reveals that attitude could directly impacts intention as well as use behaviour of employees to use AI integrated CRM system in organizations. This implies that the managers of organizations have bounden duty to shape the attitude of the employees towards intention and use behaviour to use AI integrated CRM system. However, such assumptions require empirical validation of the proposed conceptual model. Therefore, future research in technology acceptance area can further examine meta-UTAUT alongside other variables to further contribute to employee's adoption of AI integrated CRM system. The proposed model could also be empirically validated to satisfy the conditions of generalisability of the model for varied samples [59, 60, 61].

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