# Impact of Knowledge Management System Acceptance Behaviour on Value Creation in the Banking Sector

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**ABSTRACT**

*Nowadays,Knowledge Management System (KMS) in the modern bank management system enhances value creation bank performance and fostering their competitive advantage. Despite many benefits of KMS, low acceptance of KMS has been a common problem for successfully implementing KMS in the Bangladeshi banking sector. Therefore, this paper tried to identify the factors that led to the acceptance of Knowledge Management System by extending the UTAUT model to promote value creation. Data were collected from 240 respondents from 15 different branch employees who had used KMS in their daily banking activities in Bangladesh. In the current study, survey data were analysed using Partial Least Square (PLS) method. Our research findings showed that performance expectancy and effort expectancy significantly influenced behaviour intention; on the other hand, social impact has no considerable effect on behaviour intention. The empirical study also revealed that employee facilitating conditions and behaviour intention play a significant role in employees' acceptance behaviour of KMS. Therefore, the current findings of this paper will enrich KMS adoption and value creation literature. This study has confirmed the applicability of the extended UTAUT model in the context of KMS acceptance behaviour among employees for value creation performance. It will also help Bangladeshi bank owners take proper initiative to emphasize this specific area. As a result, the employee can use KMS frequently for improving the organizational outcome.*

**Keywords**: Knowledge Management System, Acceptance Behaviour, Value creation.

## 1. Introduction

Over the past decade, the global marketplace is transitioning into a knowledge-based economy. Consequently, most organizations recently focus more on investments within Knowledge Management System (KMS) to quickly solve operational problems and make strategic decisions (van Zyl, Henning, & van der Poll, 2020). KMS, known as knowledge-based information and communication technologies such as computers, telecommunication, different types of electronic gadgets and robots, has been deployed to collect, classify, store, and retrieve data and information.

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The significance of KMS is increasingly recognized; many organizations are exploring knowledge management (KM) to sustain their competitiveness and gain intangible assets (Soleman, Abdelrahman, Skoumpopoulou, & Wood-Harper, 2017). Therefore, globally different financial institutions and non-financial institutions have engaged actively in KMS to obtain benefits from using the system (Cham, Lim, Cheng, & Lee, 2016). KMS adoption is needed to collect information or knowledge to develop their products and services in the banking sector. KMS adoption also benefits their banking activities and increases customer satisfaction (Okour, 2019). Prasetya, Shihab, and Sandhyaduhita (2015) found that KMS helps bank managers formulating strategic, tactical and operational activities in the best ways to achieve desired objectives. Migdadi Mahmoud (2020) highlighted that KMS could lead to many benefits for the bank, such as a better solution to problems and decision-making, improved customer services and increased profits. Thus, effective use of different knowledge management systems in a bank has been recognized as the most significant aspect for understanding market conditions, investment strategies, and customer demand identification. The success of KMS in a bank depends on how effectively an organization's employees share and use their knowledge. However, KMS practices and adoption are inferior in Bangladesh's banking sector compared to highly developed countries (Faruk, Al-Faruque, & Akhter, 2015). In Bangladesh after 1990s, Islami Bank Bangladesh Limited (IBBL) is the first commercial bank to adopt KMS. The majority of the government-run banks face a problem with an underdeveloped KMS, particularly in terms of the customer's services and customer care provider (M. Rashed, Bhattacharjee, & Biswas, 2018).

Furthermore, many commercial banks are trying to imitate the KMS of the more developed countries. But this attempt is often foiled by a flawed customer relationship management system. Therefore, to set up a comprehensive KMS in the country's banking sector, many remain to be done. M. Rashed, Bhattacharjee, S., & Biswas, S (2018) found that information system usage in the banking sector is inferior because of the technology phobia adopted by Bangladesh employees.

Therefore, to implement the KMS successfully and obtain benefits from using KMS; every bank employee requires accepting this system in Bangladesh.

On the other hand, several surveys result found adoption of KMS by employee which improves an organization's decision making and innovation capabilities. It improves how the organization networks with customers, suppliers and other stakeholders within and outside organizational boundaries. Krenz, Basmer, Buxbaum-Conradi, Redlich, and Wulfsberg (2014) have claimed that accepting KMS systems can help organizations enhance value creation in their customers' minds to get a competitive advantage. Alolayyan, Alalawin, Alyahya, and Qamar (2020) revealed that KM plays a vital role in improving bank value creation performance; with this in mind, available research in this field indicates the phenomenon of customer value creation. Easa (2019) claimed that KMS is crucial in the banking sector because it increases competition and most of

the works in the business are knowledge-based. The rapid change in the global business environment has led commercial banks to give good reasons to examine the role of KMS on bank performance (Figueiredo, 2016). Commercial Banks have ongoing work to develop knowledge assets to develop efficient quality services and broader scope to fight for market share and enhanced performance (Kinyua, 2015).

Therefore, many corporations have empirically tested knowledge management system to improve their value creation performance, and the literature advocating the benefits of the knowledge management system has virtually boomed (P. Pawlowsky, Pflugfelder, N. S., & Wagner, M. H, 2021; Valacherry, 2020). But, some researchers also claim that the knowledge management system used in an organization has taken antecedence for value creation that remains limited in developing countries (Riaz, 2019). Most of the research is based on qualitative approaches such as case studies, where they claimed rather than empirically (Mudrychová, 2020; ZD, 2020).

KMS adoption has been hardly studied comprehensively concerning Bangladesh's banking sector for value creation. However, the concept has received substantial acknowledgement from distinct researchers on practice, problem, and the benefit of KMS in the banking sector in Bangladesh (Faruk et al., 2015). Nonetheless, no existing UTAUT model test can predict a knowledge management system's acceptance of value creation in developing economies like Bangladesh. Prior research links KMS acceptance behaviour with value creation of employee performance based on non-theoretical and past IT investments through post hoc analysis (M. Rashed, 2016).

Moreover, knowledge management system adoption by employees has resulted in the emergence of several adoption theories and models such as Theory of Reasoned Action (TRA), Theory of planned behavior (TPB), Technology Acceptance Model (TAM, TAM2, TAM3) and Unified Theory of Acceptance and Use of Technology (UTAUT). The technology acceptance model researchers currently cite the UTAUT model to investigate the information system's user behavior. There has been much research used to test the UTAUT model, and results have been reliable. Still, few research studies are using the UTAUT model to investigate knowledge management systems' acceptance in less developing countries and developing the country.

To fill this research gap, the following research question formulated in this study: What are the key factors affecting the acceptance behaviour of KMS among employees that contribute to value creation in the banking sector?

Therefore, The Unified Theory of Acceptance and Use of Technology (UTAUT) was used, as the theoretical framework underpinning current research, to empirically test the factors that influence the bank employee in adoption of KMS for value creation. Thus, this study's first objective is to develop and test a comprehensive conceptual research framework that assesses the employee KMS adoption behaviour impact on value creation in their employee performance based on previously developed theories and the literature. The second objective of the current study is to create an extension of the

UTAUT model to investigate employee KMS acceptability, leading to value creation in their customers' minds. Finally, the findings provide awareness for the bank manager to effectively and efficiently practice the KMS in their respective organization and reduce the shortcomings of prior studies in KMS adoption.

## 2. Literature Review

### 2.1 Knowledge Management System

Several studies have discovered that KMS work to manage all knowledge by designing various IT tools and procedures (Prasetya et al., 2015). Knowledge Management System shows the structural relationship model how people, knowledge and technology work together in a Bank (Chuang, Shen, & Judge, 2016). According to World Bank (2018), KMS facilitates the bank for synthesis and identifies knowledge needs through their website and advisory service to get internal clients information. Bourini, Khawaldeh, and Shaker (2013) said that Knowledge Management System (KMS) manages, formalizes and automates bank operating knowledge. Faruk et al. (2015) point out that KMS used by a bank, uses a bank to address a range of strategies and practices used in a bank to identify, create, organize operational information, store, share, and disseminate to the employee. Alrawi and Elkhatib (2009) noted that KMS, capturing a bank's collective expertise knowledge into a databases information system and distributing it to wherever it can help, produce the biggest payoffs. A bank used KMS for credit management, marketing management, customer relationship management and performance evaluation (EDEH, 2018). The majority of bank investments in Knowledge Management systems such as Decision Support Systems, Data Warehouses and Data Mining are rapidly growing(Arpaci, 2020).

### 2.2 UTAUT Model

Numerous studies have attempted to test diffusion theories in developed countries to determine how influential factors motivate employees to accept information systems. Yet, very few studies have examined acceptance and diffusion theories in the context of developing countries like Bangladesh (Khanam, Mahfuz, & Ahmed, 2016). There are several adoption theories and models such as Theory of Reasoned Action (TRA), Theory of planned behaviour (TPB), Technology Acceptance Model (TAM, TAM2, TAM3), Unified Theory of Acceptance and Use of Technology (UTAUT) model, UTAUT 2 model, innovation diffusion theory (Wen Chong, Holden, Wilhelmij, & Schmidt), Task-technology fit (TTF) theory, grounded theory method (GTM) used to identify acceptance behaviour of KMS by the employee. Researchers currently cited the widely UTAUT model to investigate the information system's user behaviour among all technology acceptance models. The number of research works that have been using to test the UTAUT model, have been reliable. More recently, different authors have attempted to explain the reason behind accepting a knowledge management system by utilizing the UTAUT model (Sharifian, Askarian, Nematolahi, & Farhadi, 2014). UTAUT model has been used mostly in developing countries to identify reasons behind

the acceptance of different information systems by the customer and employer, such as Kuwait, Saudi Arabia, Tunisia, Gambia, Nigeria and Bangladesh (Khanam, Uddin, & Mahfuz, 2015). Still, few studies have been using the UTAUT model to investigate the knowledge management system's acceptance in developing countries like Bangladesh. However, several researchers recommended that extended factors from different theoretical perspectives provide a holistic understanding of information system adoption's potentially influential factors (Keong, Ramayah, Kurnia, & Chiun, 2012). Venkatesh and Bala (2008) suggest that UTAUT needs to strengthen by including additional elements in its structures. Yet, the existing literature revealed limited research involving a broader perspective that considers multifaceted factors. None of the extant studies has taken a holistic view of KMS acceptance by the employee in Bangladesh, examining the banking sector's UTAUT model. Therefore, we decided to adopt the most commonly used constructs in this study. The conceptual research model (Figure. 1) developed in this current study has six basic constructs of the UTAUT model: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Condition (FC) which act as determinants of users' Behavioural Intention (BI) and Acceptance Behaviour (AC). Here the following Table 1 showed a synopsis of some previous studies where to investigate the factors that influence the adoption of KMS based on TRA, TPB, TAM, IDT, KMS diffusion model, UTAUT and UTAUT 2 model.

**Table 1: Summary of the previous research-based KMS acceptance behavior in a developed and developing country**

| **Researcher** | **Independent variable** | **Dependent variable** | **Country** | **Theories** |
|---|---|---|---|---|
| Ayaz (2020) | Performance expectancy, effort expectancy, social influence | Acceptance and use of technology KMS | Turkey | UTAUT |
| Arpaci (2020) | Perceived usefulness, Perceived ease of use, behavior intention to use | Actual behavior | Malaysia and Turkey | TAM |
| Novira (2019) | Performance expectancy, effort expectancy, social influence, facilities conditions, habit system quality and information quality | Acceptance of KMS | Indonesia | UTAUT2 model and the IS Success Model |
| Khanam and Mahfuz (2017) | Performance expectancy, effort expectancy, social influence, facilities conditions, Organizational Factor, Individual factor, KMS Characteristics, External inspiring, Perceived Risk | Usages behavior | Bangladesh | UTAUT and KMS diffusion model |
| Mosweu, Bwalya, and Mutshewa (2016) | Performance expectancy, effort expectancy, social influence, facilities conditions | Adopt Document Workflow management system | Botswana | **UTAUT** |
| Girish (2015) | Subjective norms, task complexity, task technology | Actual use of KMS | India | TAM and TTF model |

| | | | | |
|---|---|---|---|---|
| | fit, perceived self-efficacy, Perceived usefulness, Perceived ease of use, behavior intention to use | | | |
| Huang and Lai (2014) | Perceived Usefulness, Complexity, Subjective Norm | Attitude toward Knowledge Management Adoption | Taiwan | Innovation Diffusion model |
| Xu and Quaddus (2013) | Performance expectancy, effort expectancy, social influence, facilities conditions, business size | KMS Usage | Western Australia | UTAUT model |
| Shibl, Lawley, and Debuse (2013) | Performance expectancy, effort expectancy, social influence, facilities conditions, Trust in the knowledge base | Usages behavior | Australia | UTAUT model |
| Matayong and Mahmood (2011) | Organizational norms, organizational initiation, introduction | KMS adoption | Malaysia | TAM and Grounded Theory |
| Huang and Quaddus (2007) | Environments and Industrial Factors, Individual Characteristics, IT Support, KMS Promotion, Organisational Characteristics, Cultural Factors, Perceived Usefulness, Complexity, Subjective Norm | Attitude toward KMS Adoption | Taiwan. | TAM2 and KMS diffusion model |
| Ericsson and Avdic (2003) | Perceived relevance, System accessibility, Management support | Acceptance KMS | Sweden | TAM and Requirements of Acceptance Model (RAM) |

## 2.3 Value creation

A considerable amount of literature has been published on value creation that is essential in the organization performance literature. Still, relatively new, technology-driven phenomena such as KMS raise questions regarding value creation and whether KMS creates value inside the organization (Lepak, Smith, & Taylor, 2007). Value creation means that knowledge management increased employee capability for increased organizational ability (Rezgui, 2007). Malik and Malik (2008) demonstrated that KM practice created a central database or information storage system where shared material is kept, brainstorming sessions are arranged, and records on lessons are learnt and community practice is enhanced through an intranet. Yeh (2008) argued that the value creation through information systems for a company, such as business capacity enhancement, improves innovation, opportunities, and competitiveness. Ruël and van der Kaap (2012) noted a positive relationship with the knowledge management system used on value creation in Netherland hospitals. On the other hand, in Pakistan, one empirical study found that acceptance of KMS enhance employee value creation performance.

**Table 2 Summary of the previous research based on employee acceptance behaviour impact on value creation**

| Researcher | Independent variable | Dependent variable | Country | Theories |
|---|---|---|---|---|
| Weaven, Grace, Dant, and R. Brown (2014) | Value Creation Networks through KMs | Trust, commitment, knowledge transfer, customer satisfaction | | Review theories |
| Ruël and van der Kaap (2012) | Value Creation through KMS | Time spent, Service quality, organizational structure | | Review theories |
| Schiuma et al. (2012) | value creation | supportive culture, support systems, teams, structures, collaboration, ICT tools | Italy | Descriptive study |
| Ng, Guo, and Ding (2012) | Value Creation through KMS | Perceived usefulness, context variety | Germany | TPB |
| Malik and Malik (2008) | Value creation through KMS | KM Facilitator, budget | Pakistan | Proposed model |
| Vorakulpipat and Rezgui (2007) | Value creation through KMS | Technology asset, social capital, organization structure, community practice | UK | Proposed model |
| Kautz and Mahnke (2003) | Value creation through KMS | User attitude, IT usage | | Review theories |
| Rezgui (2007) | Knowledge systems and value creation | social and intellectual capital | UK, French, Germany, Finland | Review paper |
| KOHANSAL, SADEGH, and HAGHSHENAS (2016) | Value creation | HRIS system usage | Tehran | TAM |

## 3. Conceptual Framework and Research Hypotheses

Our conceptual model was shown in Figure 1. The current study shows that three factors act as predictors of employee behaviour intention to use KMS, and one factor determines the acceptance of KMS behaviour. Using a review of prior studies of UTAUT in KMS, we decided to adopt the most previously developed and tested scales from the literature to measure Performance Expectancy (PE), Effort Expectancy (EF), Social influence (SI), Facilities condition (FC), Behavioural intention, acceptance behaviour (AB), on the predictors of individuals' acceptance behaviour for value creation in their performance.

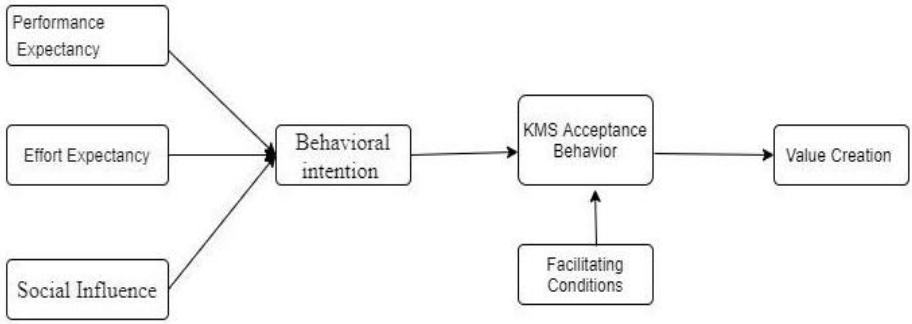


**Figure1:** Research Model

**Performance Expectancy**

Performance expectancy (PE) means an individual believes that using a KM system would provide fitness to perform a task or fulfil a requirement as of time and place. The performance expectancy component of the UTAUT model was similar to five different constructs from different model perceived usefulness (TAM/TAM2 and C-TAM-TPB), and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), the relative advantage and outcome expectations (SCT) (Chong, Holden, Wilhelmij, & Schmidt, 2000).In this study, performance expectancy is how bank employees feel adopting KMS would increase their job performance. Performance expectancy means organizational employees believe that actual usage of KMS will help them attain their job performance individually and collectively correctly. Using the KMS would allow them to achieve their job tasks (Alotaibi, 2017). Knowledge Management System has to be helpful for the employee; otherwise, organizations and individuals won't be interested in adopting or using it (Mosweu et al., 2016). Employees feel that accepting and later employing a KMS will improve their work performance; they are most likely to adopt that system. Previous research reports that performance expectancy was a significant forecaster of behavioural intention for KMS (EDEH, 2018; Welch, 2020). Therefore, the following first hypothesis is:

Hypothesis 1: Performance expectancy has a direct positive influence on behavioural intention to use KMS.

**Effort Expectancy**

Effort expectancy (EE) is defined as how easy it is to use a knowledge management system. The root constructs from TAM and TAM2 models for effort expectancy are perceived ease of use, complexity, and ease of use (Surendran, 2012). According to Quaddus and Xu (2005), effort expectancy refers to learning and using the KMS, being assessable when employees are required to do their tasks. Khechine, Lakhal, Pascot, and Bytha (2014) found that high user experience enhanced the relationship between

effort expectancy and behavioural intention. Previous research supports that latent variables related to effort expectancy were significant in determining a person's choice to adopt KMS (Khanam & Mahfuz, 2017). In the context of this study, effort expectancy is the extent to which the bank employee believes that using KMS would be easy to use and limited training would need to bring employees up to speed for appropriate utilization of the KMS (Mosweu et al., 2016; Welch, 2020). However, far too little attention has been given to study of how effort expectancy directly influences behaviour intention to use KMS in the banking sector for value creation in organization performance in developing countries like Bangladesh. Thus, this study suggested the following hypothesis:

Hypothesis 2: Effort Expectancy has a direct positive influence on Behavioural Intention to use KMS.

**Social Influence**

Social Influence (SI) refers to peer pressure, supervisor encouragement to use Knowledge Management Systems. This construct's social influences are similar to the subjective norm in TRA, TAM2, TPB,/DTPB and C-TAM-TPB, social factors in MPCU, and IDT image (Venkatesh et al., 2012). S Ayaz (2020) have found that other individuals' attitudes and behaviours in a user's social and work circles significantly impact that user's use of technology. Welch (2020) argued that individuals' behaviour has been influenced by social influence through three mechanisms: internalization, identification, and compliance. (Mosweu & Bwalya, 2018). Wall (2020) include the social impact of experts, mass media reports, word of mouth from superiors, friends and colleagues for using KMS. Numerous studies have attempted to explain a positive relationship between social influence and behaviour intention of accepting KMS based on a developed country survey (Mosweu et al., 2016). As a result, the author's third hypothesis is:

Hypothesis 3: Social Influence has a direct positive influence on Behavioural Intention to use KMS.

**Facilitating Conditions**

Facilitating Conditions (FC) means the extent of technical support and the infrastructural environment for using the new technology (Venkatesh, Thong, & Xu, 2012). FC is a set of all possible encouragements and initiatives to create a favourable work atmosphere to facilitate exciting adoption. (Mosweu et al., 2016) .Raman, Don, Khalid, and Rizuan (2014) summarised that knowledge of resource availability facilitates using a KMS. Several studies have revealed that facility conditions directly influence the acceptance behaviour of KMS (Yoo & Huang, 2014). Therefore, facilitating conditions constituted a strong predecessor of information system acceptance for analysis in the developed country's current research. Thus, the researcher suggested the following hypothesis:

Hypothesis 4: Facilitating Conditions has a direct positive influence on the acceptance of KMS.

**Acceptance Behaviour**

Behavioural intention (BI) is the degree to which an individual has made a thoughtful and strategic plan to do a specific potential behaviour. In Botswana's public sector 74% of employees indicated that they had the intention to use the KMS (Mosweu et al., 2016). Attuquayefio and Addo (2014) found that behavioural intention is a predictor of banking information technology's actual acceptance behaviour. Welch (2020) revealed that knowledge management systems significantly influence the Knowledge Management System's (KMS) user behaviour in developed countries. Individual intentions forecast and influence individual behaviour (Yu, 2012). Several studies have found that behaviour intention positively influences KMS acceptance behaviour (AB) (van Zyl et al., 2020). Therefore, behaviour intention constituted a strong predecessor of KMS acceptance for analysis in the developed country's current research. Thus, the following hypothesis is:

Hypothesis 5: Behaviour intention has a direct positive influence on the acceptance of KMS.

**3.1 Value Creation**

Value creation (VC) means that knowledge management increased employee capability for increased organizational ability (P. Pawlowsky, Pflugfelder, N. S., & Wagner, M. H., 2021). Bettiol (2020) demonstrated that KM practice value created in an organization such as facilities group discussion, central database or information storage system and enhance community practice through intranet. Krenz et al. (2014) argued that the value creation through information systems for a company, such as business capacity enhancement, improves innovation opportunities and competitiveness. KOHANSAL et al. (2016) define value creation by information system when organizations develop new ways of doing things, using new methods. Weaven et al. (2014) also claimed that value creation in the customer mind when KMS usages by employees develop new things. Previous studies have reported that the KMS usage behaviour constituted a strong predecessor of value creation for the organization based on a developed country study (Ruël & van der Kaap, 2012). However, to the best of the author's knowledge, no report has been found using the UTAUT model to investigate KMS acceptance behaviour influences value creation banking sector employees in developing countries like Bangladesh. Therefore, the current studysuggested the following hypothesis for the proposed model:

Hypothesis 6: Acceptance behaviour of KMS has a direct positive influence on value creation

## 4. RESEARCH METHODOLOGY

### 4.1The target population

The study considered population among employees who are users of the knowledge management system in commercial banks of Bangladesh. In recent years, the commercial bank has transformed Bangladesh banking sector into one of the fastest-growing service sectors. The digitalization of banking processes shifted paper-based banking into modern banking established on more updated information and knowledge provider to their customers (Faruk et al., 2015). In Bangladesh, total bank fifty-seven including State-Owned Commercial Banks six, Specialized Banks two, Private Commercial Banks thirty-nine, Foreign Commercial Banks nine (Bangladesh Bank 2021). Fifty-seven scheduled banks have 182610 employees, among them private commercial bank employees 533,715 (Sarker 2021).

### Sampling frame

This study conducted a survey in Dhaka city based on some commercial bank employees to identify KMS acceptance behaviour impact on their value creation performance. Dhaka is the capital city in Bangladesh, and it is the financial hub of Bangladesh and granted as a center of trade and the banking industry. The sampling frame of this study was commercial bank employees located in Dhaka city. Most banks don't have KMS all tools their all branch (Faruk et al., 2015; M. Rashed, 2016). Therefore, we choose 15 private commercial bank branches employees in Dhaka city frequently using KMS among thirty-nine banks. For collecting data, a convenience sampling method adopted to test the hypotheses. When sampling was voluntary, the convenience non-random sampling technique is easy to assemble (Etikan, 2016).

### Sample size

According to Taherdoost (2017), to analyse a small sample size to study in the field of Management Information Systems (MIS) and social science, the Partial Least Squares (PLS) approach is an appropriate technique for analysing than multiple regression and LISREL. Biju and Bhasi (2014) revealed that maximum sample size is required to test the structural equation model depending on the maximum number of arrows pointing at a latent variable in the structural equation model. Bentler and Chou (1987) have proposed at least five cases per parameter when the data is entirely normalised distributed without any missing or outlying issues. The present study aims to examine seven constructs with 25 items within the basic model; therefore, the minimum required sample size needed is 175, i.e., 25x7=175

### 4.2 Measures

The design of the questionnaire consists of two sections with one cover letter. The first section included five questions, which consisted of the demographic profiles. The second section 25 questionnaire by using Interval scaling 7 points Likert scale. The

items and scales for the UTAUT constructs were adapted from Venkatesh, Morris, and (2003) for this study and value creation items taken from KOHANSAL et al. (2016). The items developed for the research model each construct was shown in Appendix A.

### 4.3 Data collection and Questionnaire Design

The study used cross-sectional data because it considered only the current level of adoption of knowledge management systems in the employee's Bangladeshi banking sector (Setia, 2016). Furthermore, choosing a cross-sectional design because of the time limitation of the research project. Hence, Data from Bangladeshi commercial banks were collected using self-administered questionnaires, hand-delivered and hand-collected from January 12, 2020 to February 12, 2020. It also posted by regular mail, provided on-site, or distributed online from April 01 and July 31 2020

### 4.4 Pretesting

Before distributing questionnaire-experimental research, it was pre-tested and modified and translating the Bangla version of this question. The original questionnaire developed in the English language, but a translation into Bangla conducted because some respondents did not speak English as Bangla was their first language. Therefore, the researcher provided the questionnaire in English and Bangla to maximize the data collection effectiveness.

### 4.5 Data Analysis Tools

SPSS version 23 was used to analyse the descriptive data analysis (Mertler & Vannatta, 2016). For further data analysis, the current study used partial least squares-structural equation modelling (PLS-SEM) with the help of Smart PLS 3.3.3 software. Recent studies employ the second generation technique (PLS) for regression analysis rather than SPSS because PLS-SEM is superior for the complex causal modelling that dominates behavioural research (Lowry & Gaskin, 2014). On the other hand, PLS-SEM was performed to measure whether the data fit the theoretical framework and test the anticipated hypotheses (Gye-Soo, 2016). Therefore, Smart pls 3.3.3 used to analyse the model's goodness of fit, reliability, validity test, and SPSS was used for data screening and descriptive statistics.

## 5. Results

### *5.1Demographic details of the Respondents*

Total of 558 survey questionnaires distributed to 15 commercial banks of Bangladesh. Out of 558 distributed questionnaires, the returned rate was 53.76 % (n=300), from which 20 % (n=60) questionnaires discarded due to uncompleted sections and a large number of missing data. Finally, 43.10% (n=240) sample selected for the final analysis.

**Table 3 Demographic profile description**

| | Group | Frequency | Percentage | | Group | Frequency | Percentage |
|---|---|---|---|---|---|---|---|
| **Gender** | Male | 165 | 68.8 | **Education** | Bachelor | 40 | 16.7 |
| | Female | 75 | 31.3 | | Diploma | 53 | 22.1 |
| | Total | 240 | 100.0 | | Master | 147 | 61.3 |
| | | | | | Total | 240 | 100.0 |
| **Age** | Above 18 | 41 | 17.1 | **Position in the organization** | Lower Level | 52 | 21.7 |
| | Above 25 | 154 | 64.2 | | Mid Level | 72 | 30.0 |
| | Above 35 | 42 | 17.5 | | Top Level | 116 | 48.3 |
| | Above 45 | 3 | 1.3 | | Total | 240 | 100.0 |
| | Total | 240 | 100.0 | | | | |
| **Married** | Single | 72 | 30.0 | | | | |
| | Married | 162 | 67.5 | | | | |
| | Widowed | 6 | 2.5 | | | | |
| | Total | 240 | 100.0 | | | | |

The respondents profile shown in table 3. In this study, researchers collected data; both males and females participated, i.e., 69% (n=190) and females 31%. The largest age groups were between age 25-35 years (81%, n=200). The category educational level revealed that most respondents had a master's degree (62%, n=147), and fewer had bachelor's degrees (Bachelor 17 %, n=40).

### *5.2 Assessment of normality, Multicollinearity and outlier*

### Normality

Ghasemi and Zahediasl (2012) recommend that the statistical technique softesting normality are sensitive to the size of research data; as a result, it is recommended to check the histogram with the values of skewness and kurtosis to evaluate univariate normality. This test confirms that the data distribution is non-normal and acceptable values of skewness fall between − 3 and + 3, and kurtosis is appropriate from a range of − 10 to + 10 when utilizing SEM (Effendi, bin Mohd Matore, & Khairani, 2020).Therefore, it shows that data were supporting for further use of PLS-SEM analysis.

### Multicollinearity

A widely used technique of identifying multicollinearity calculates variance inflation factor (VIF) between all independent variables. The VIF is an index of the amount that the variance of each regression coefficient increases over that with uncorrelated

independent variables (Black & Anderson, 2010). A rule of thumb of collinearity VIFs is 3.3 or lower to suggest no multicollinearity in the model.As can be seen in the findings, the study calculated VIF for all independent variables in SPSS. The results revealed that all of the VIF results are below the threshold of 3.3, indicating no multicollinearity problem for the data. On the other hand, table 7 also provides PLS VIF results, indicating no multicollinearity problem.

### *5.3 Assessment of the measurement model*

Hair, Sarstedt, Ringle, and Mena (2012) noted that PLS-SEM data analysis included a two-step approach using a measurement model and a structural model Reflective measurement model examining internal reliability, convergent and discriminant validity.

### Convergent validity

According toWong (2013), evaluated internal reliability with Cronbach's alpha (α) and composite reliability, the level of value 0.70 is an indicator of acceptable internal consistency. Table 4 demonstrates that the current study Cronbach's alpha (α) tested values ranged from 0.84 to 0.90 and composite reliability values ranged from 0.893 to 0.918, which supports solid internal reliability. On the other hand, Fornell and Larcker (1981) noted that an AVE value of 0.50 and higher indicates a sufficient convergent validity degree. Table 4 provides that the AVE ranged from 0.676 to 0.789 are more significant than the recommended levels. Therefore, the current study conditions for convergent validity are satisfied with the standard level.

**Table 4Reliability and convergent validity**

| Constructs | Items | Outer loading | AVE | CR | α |
|---|---|---|---|---|---|
| Acceptance Behavior(AB) | AB1 | 0.86 | | | |
| | AB2 | 0.88 | | | |
| | AB3 | 0.78 | | | |
| | AB4 | 0.89 | 0.733 | 0.916 | 0.878 |
| Behavioral Intention (BI) | BI1 | 0.89 | | | |
| | BI2 | 0.89 | | | |
| | BI3 | 0.89 | 0.789 | 0.918 | 0.860 |
| Effort Expectancy (EE) | EE1 | 0.84 | | | |
| | EE2 | 0.84 | | | |
| | EE3 | 0.84 | | | |
| | EE4 | 0.87 | 0.718 | 0.910 | 0.870 |

| | | | | | |
|---|---|---|---|---|---|
| Facilitating Conditions (FC) | FC1 | 0.87 | | | |
| | FC2 | 0.85 | | | |
| | FC3 | 0.83 | | | |
| | FC4 | 0.85 | 0.727 | 0.914 | 0.874 |
| Performance Expectancy (PE) | PE1 | 0.86 | | | |
| | PE2 | 0.82 | | | |
| | PE3 | 0.83 | | | |
| | PE4 | 0.77 | 0.676 | 0.893 | 0.840 |
| Social Influence(SI) | SI1 | 0.88 | | | |
| | SI2 | 0.94 | | | |
| | SI3 | 0.90 | | | |
| | SI4 | 0.75 | 0.755 | 0.915 | 0.900 |
| Value Creation(VC) | VC1 | 0.90 | | | |
| | VC2 | 0.85 | | | |
| | VC3 | 0.90 | 0.782 | 0.915 | 0.860 |

**Note: α = Cronbach,s Alpha; CR = Composite Reliability; AVE = Average Variance Extracted**

**Discriminant validity**

Henseler, Ringle, and Sarstedt (2015) referred that discriminant validity represents the degree to which a construct is empirically different from other constructs. Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014) recommend using three ways for measured discriminant validity: the cross-loading criterion, Fornell- Larcker criterion and the Heterotrait-Menotrait ratio (HTMT). The correlation matrix,with the help of Fornell-Larcker Criterion shown in Table 5 and Table 6, the heterotrait-monotrait ratio of correlations (HTMT) based on the multitrait-multimethod matrix was more significant than the corresponding correlation, confirming the data's discriminant validity. According to Wong (2013), the Fornell-Larcker Criterion correlation tested result showed that all diagonal elements were higher than the off-diagonal elements in the corresponding rows and columns to satisfy discriminant validity. Therefore, in Table 5, validity with the help of the Fornell-Larcker Criterion test of all constructs in this study was satisfied.

**Table 5 Correlation Matrix Fornell-Larcker Criterion and Square Root of the Average Variance Extracted (AVE)**

| | AB | BI | EE | FC | PE | SI | VC |
|---|---|---|---|---|---|---|---|
| AB | 0.856 | | | | | | |
| BI | 0.679 | 0.888 | | | | | |
| EE | 0.536 | 0.447 | 0.847 | | | | |
| FC | 0.495 | 0.468 | 0.566 | 0.852 | | | |
| PE | 0.573 | 0.504 | 0.517 | 0.406 | 0.822 | | |
| SI | 0.211 | 0.157 | 0.259 | 0.286 | 0.250 | 0.869 | |
| VC | 0.778 | 0.615 | 0.507 | 0.477 | 0.578 | 0.183 | 0.884 |

On the other hand, Henseler et al. (2015) also recommended checking the discriminant validity with the help of the HTMT ratio. Gold, Malhotra, and Segars (2001) proposed that the HTMT ratio value less than 0.90 or .85 means discriminant validity accepted all constructs. The table 6 showed that the Heterotrait-Monotrait (HTMT) ratio values HTMT <0.85, so the current study discriminant validity has been established.

**Table 6 Heterotrait-Monotrait Ratio (HTMT)**

| | AB | BI | EE | FC | PE | SI | VC |
|---|---|---|---|---|---|---|---|
| **AB** | | | | | | | |
| **BI** | 0.770 | | | | | | |
| **EE** | 0.607 | 0.508 | | | | | |
| **FC** | 0.557 | 0.537 | 0.646 | | | | |
| **PE** | 0.655 | 0.576 | 0.600 | 0.464 | | | |
| **SI** | 0.212 | 0.145 | 0.279 | 0.321 | 0.266 | | |
| **VC** | 0.779 | 0.647 | 0.506 | 0.479 | 0.619 | 0.149 | |

### *5.4 Structural model*

In this stage, the current study tested the relationship between the dependent and

independent variables by path coefficient (β) and t-statistics at a significance level of 0.05 ($p < 0.05$). The structural equation model results are shown in Figure 2, and the PLS results of the hypotheses tests presented in Table 7. The results show that the relationships between PE and BI ($t = 5.390$, $\beta = 0.372$, $p < .001$), EE and BI ($t = 3.388$, $\beta = 0.255$, p value = .000), FC and BI ($t = 3.310$, $\beta = 0.44$, p value = .000), and BI and AB ($t = 8.940$, $\beta = 0.573$, p value=.000), AB and VC ($t = 19.266$, $\beta = 0.83$, p value=.000), were significant. Thus, H1, H2, H4, H5 & H6 were supported. However, surprisingly, SI and BI ($t = 0.029$, $\beta = 0.002$, p value = .97), were not significant. Thus, in this study, only H3 was not supported at the $p > 0.05$ level. As seen in Figure. 2, the conceptual model could also predict variance in the value creation with an $R^2$ value of 0.605. Also, recorded good $R^2$ for the actual use behaviour 0.502. This result supports the predictive validity of the current study model. The following Fig. 2 and table 7 shows the testing results of the structural model.

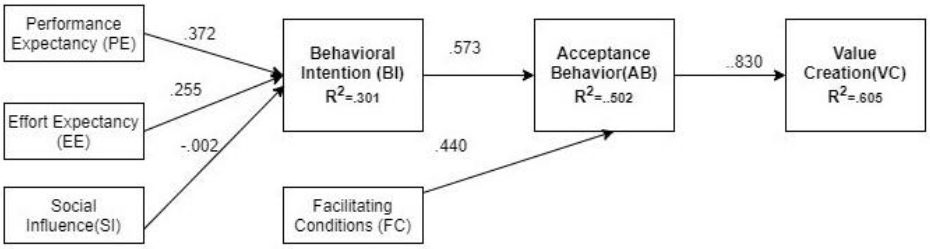


**Figure 2 Results of the PLS model with loading values (p<.05 significance value at confidence level is 95%)**

**Table 7 PLS results of the hypotheses test PLS results of the hypothesis tests**

| Hypothesis | Path | β | t- Statistics | p-VALUE | Comments | VIF |
|---|---|---|---|---|---|---|
| H1 | PE -> BI | 0.372 | 5.390 | 0.000 | Supported | 1.392 |
| H2 | EE -> BI | 0.255 | 3.388 | 0.000 | Supported | 1.398 |
| H3 | SI -> BI | -0.002 | 0.029 | 0.970 | Not supported | 1.094 |
| H4 | BI -> AB | 0.573 | 8.940 | 0.000 | Supported | 1.281 |
| H5 | FC -> AB | 0.440 | 3.310 | 0.000 | Supported | 1.181 |
| H6 | AB -> VC | 0.830 | 19.266 | 0.000 | Supported | 1.000 |

## 6. Discussion

This study objective was to construct and test an adapted UTAUT model that, based on reviews of the technology acceptance and KMS user literature, should be more suitable to Bangladesh's context. The model has shown partially acceptable quality, most of the hypothesis path support. The model showing the significant paths are performance expectancy with behaviour intention, facility conditions with acceptance behaviour, behaviour intention with acceptable behaviour. The research result supports hypothesis H1, which states that performance expectancy (PE) positively predicts behavioural intention (BI) to use KMS by the employee. The effect of performance expectancy (PE) on behavioural intention (BI) was significant and robust, reflecting the employee's perceived benefits obtained from using KMS. Prado Tamez (2014) found that the employee intends to use more KMS if it is useful in their job and quickly accomplish their activities, which benefits employee promoting their job position on time. Huang and Lai (2014) revealed that employees recently are willing to accept KMS and realize that applying KMS is essential for organizations and beneficial for themselves.

On the other hand, H2 link between effort expectancy (EE) and behavioural intention (BI) was significant and supported by the previous research findings. It was found that there is indeed a significant positive, as was to be expected from looking into the TAM2 and UTAUT models (Venkatesh & Davis, 2000; Venkatesh et al., 2003). Findings revealed an insignificant impact of social influence on behavioural intention by the employee in Bangladesh. This result contradicts the model's TRA, TPB, UTAUT and TAM2 (Ajzen, 1991, 2012; Xu & Quaddus, 2013). Employee work in a bank found no influence outside people to use KMS in their banking activities. H4 hypothesis results proved that increasing facility conditions for usage KMS in the banking sector day by day influences the employee to adopt KMS properly for providing better customer service. The current study involves investigating the effects of acceptance behaviour of KMS by the employee with value creation individual performance. An employee in a bank must equip with the proper learning and correct information about their organization (Rowledge, 2004). Good practices of KMS ensures sustainable competitive advantages for the organization. The result showed that a knowledge management system effectively used by employees provides many benefits for the bank, such as process innovation by reducing the transitional time and cost to provide quick services to the customer. KMS enhances managerial capability and productivity by taking problem-solving decisions quickly (Ruël & van der Kaap, 2012). It is possibly the first time to demonstrate its application to investigate the Knowledge Management System acceptability within a Bangladeshi banking arena.

### 6.1 Theoretical Contributions

The current study's theoretical contribution filled the research gap between KMS adoption and individual IT-related value creation performance literature in developing countries. Over the years, most previous studies were conducted based on KMS

adoption and value creation issues, primarily in developed nations. As per the authors' knowledge for the first time, this research attempts to fill up the empirical research gap by analysing KMS adoption issues impact on employee value creation performance in Bangladesh. This study is also a demonstration of applying the UTAUT model within a non-Western country's context.

### 6.2 Practical Contributions

This study gives some vital implications for practice, especially in financial institutions in Bangladesh. Based on this study examining PE, EE, SI, FC, variables from UTAUT. On the other hand, EE also has an essential factor for acceptable behaviour. Therefore, a manager should consider the role of FC more because it is the most influencing predictor of KMS acceptance behaviour among Bangladeshi employees. PE also has an essential effect on the acceptance behaviour of bank employees, and managers should focus on emphasizing several advantages of using KMS through different KMS tools. Besides, the managers should confirm the user-friendly interface of KMS during design and development in their organization. Decision-makers should also be concerned about creating a positive vibe about the advantages of KMS acceptance and its positive consequences among employees. Finally, this study proposed that if the adopters of KMS feel they would have a value creation when using the system, they will adopt it. Bank can benefit from this by ensuring that necessary facilities are available to aid the usage of KMS.

### 6.3 Contextual Implication

It is essential to research this topic in Bangladesh arena because the rapid development of financial markets in the competitive global economy forced Bangladeshi bankers to manage their information systems in their banking operations. On the other hand, Bangladesh is socially and culturally different from developed countries. Most developed country, KMS reached maturity stage usages by the employee in their banking sector where Bangladeshi employee usage of KMS for value creation their performance in the banking sector grows gradually. Despite the amount invested by the bank owner in the IT sector huge in Bangladesh, the employee's acceptance rate did not reach the mark. This research attempts to fill the gap by analysing adoption issues of KMS in the context of Bangladesh from banking and financial organization perspectives. This study will help bank management authorities identify those factors that influence employee acceptance of the knowledge management system in Bangladesh.

## 7. Limitations and Direction for Future Research Perspective

Although this study has produced exciting findings in presenting an extended model of an individual's acceptable behaviour, these findings carry important limitations relevant to future research, as detailed below.

One of the limitations of the study takes respondents from one city. According to

Saunders (2011) the sampling method chosen to collect the data was the probability method suitable for explanatory research when distributing population geographically, organizationally, working positions, experience, age, and gender. In this study, 558 survey questionnaires distributed to 15 branches of the commercial bank of Bangladesh. Out of 558 distributed questionnaires returned rate was 53.76 % (n=300), from which 20 % (n=60) questionnaires were discarded due to uncompleted sections and having a large number of missing data. Finally, the 43.10% (n=240) sample was selected for the final analysis, which was lower than the SEM model's expected requirement. So, future research should be conducted with larger sample size. Even though the study gathered data from 15$^{th}$ different branches from different bank contexts in Dhaka city only, it is not sure that the findings would be similar to another town other than the study's current context. In other words, the results reported here are subject to the usual caveats about the inadvisability of comprehensive generalization. Furthermore, the moderating effects based on the UTAUT model not tested in this present study. Therefore, future research should explore the influence of culture or demographic variables as moderators or determine the perceived benefit trust as external variables, influencing behaviour intention to use the KMS in Bangladesh better than our current research. The third limitation of this study is related to the cross-sectional design that restrained the understanding of the extent to which causality inferred. Even though cross-sectional design allowed the researcher to collect a large data sample in a short period, it remained futile to understand the impact of the key predictors concerning time towards acceptance intentions usage behaviour. Realistically, the current study's extended model is based on the UTAUT model based on behavioural theories of cognition. These require continuous interaction/feedback with the factors under examination. Venkatesh et al. (2003) found that the direct impact of social influence on behaviour intention became weaker with time and experienced gained. Therefore, future research, particularly longitudinal studies, is needed to replicate the current study and address the issues related to time and long-term usage.

## 8. Conclusion

Evidence suggests that practices and acceptance of KMS are still at the beginning stage but that banking institution employee's used KMS effectively reached in their operations excellence. This first-time research attempt proposed a conceptual model that explains the factors of employees' acceptance behaviour of the knowledge management system using the UTAUT model in the banking sector in Bangladesh. This model is unique because it has been developed based on the data obtained from both field studies and literature. Many factors and variables are different and specific for knowledge management system acceptance, leading to value creation performance. It highlights developing countries like Bangladesh's performance expectancy, effort expectancy, and facility conditions that are more dominant in the employee's knowledge management system adoption. These studies provide new effective assessment measures of acceptance of the knowledge management system by the employee. To provide a practical contribution to organizations and managers by offering a tool that

enables the employee to plan KMS adoption effectively and successfully, improve performance, competitive advantage, and enhance their work for value creation. KMS practices in Bangladesh the banking situation should be actions aimed at improving the internal flow and use of information and knowledge, and banks can be a significant participant in these activities.

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## Appendix A

### Measurement Finial constructs

| Variables | Measure scale or Item | Characteristics |
|---|---|---|
| | Latent Variables | Internet/KMS adoption Literature |
| Performance Expectancy | PE1: I find the Knowledge management helpful system in my job.<br>PE2: Using a Knowledge management system enables me to accomplish tasks more quickly.<br>PE3: Using a Knowledge management system increases my productivity.<br>PE4: Using a Knowledge management system increases my chances of getting a good grade for the performance appraisal report. | ( Venkatesh et al. 2003) |
| Facilitating Conditions | FC1: I have the resources necessary to use the KMS<br>FC2:I have the knowledge required to use the KMS<br>FC3:A specific person (or group) is available for assistance with KMS difficulties to me<br>FC4:Specialized instruction and education concerning KMS is available to me. | (Venkatesh et al. 2003) |
| Effort Expectancy | EE1:Learning to operate KMS would be easy for me<br>EE2:My interaction with KMS is clear and understandable<br>EE3:I find KMS easy to use<br>EE4:It is easy for me to become skilful at using KMS | (Venkatesh et al. 2003) |
| Social Influence | SI1. People who influence my behavior think that I should use the KMS<br>SI2:The senior management of this business has been helpful in the use of the KMS<br>SI3:In general, the organization has supported the use of the KMS<br>SI4: The bank staff are useful for the benefit of KMS. | (Venkatesh et al. 2003) |
| Behavioral intention | BI1: I intend to use the KMS for performing my job as often as needed<br>BI2: To the extent possible, I would frequently use the KMS in my job<br>BI3: I want to have the most advanced means of communication | (Venkatesh et al. 2003) |
| Acceptance | AB1: I spent a lot of time using KMS | |

| | | |
|---|---|---|
| Behavior | AB2: I used KMS frequently<br>AB3: I used KMS intensively. | (5Venkatesh et al. 2003) |
| Value Creation | VC1:Using KMS to reduce the operational cost of service provided to the customer for our organization<br>VC2:Using KMS enhance managerial capability and productivity of the performance<br>VC3:Using KMS developed a strategic ability for the employee | (KOHANSAL et al., 2016) |