ผลกระทบและการปรับใช้เทคโนโลยีสารสนเทศและการสื่อสาร ในธุรกิจการธนาคารของประเทศเมียนมาร์

Impact of ICT Implementation and Adaptability in Myanmar Banking Sector

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลกระทบและการปรับใช้เทคโนโลยีสารสนเทศและการสื่อสารในธุรกิจการธนาคารของประเทศเมียนมาร์ โดยทำการศึกษาความสัมพันธ์ระหว่างสภาวะการทำงานเชิงกายภาพ การควบคุมดูแลการฝึกอบรม การสื่อสารภายในองค์กรกับความผูกพันของพนักงานในองค์กร และความสัมพันธ์ระหว่างความสามารถในการปรับใช้ตามการรับรู้ในบทบาท การสื่อสาร ทัศนคติที่มีต่อเทคโนโลยีสารสนเทศและการสื่อสารกับความผูกพันในองค์กร โดยใช้การสำรวจด้วยแบบสอบถามด้วยวิธีการสุ่มตัวอย่างตามความสะดวก กลุ่มตัวอย่างได้แก่ พนักงานจำนวน 620 คนที่ทำงานในธนาคารพาณิชย์เอกชนจำนวน 10 แห่งในประเทศเมียนมา

ผลการวิจัยโดยใช้แบบจำลองสมการเชิงโครงสร้าง พบว่าการใช้เทคโนโลยีสารสนเทศและการสื่อสารและการปรับใช้เทคโนโลยีสารสนเทศและการสื่อสารในองค์กรช่วยให้พนักงานมีความพึงพอใจในงานมากขึ้นและทำให้เกิดความผูกพันของพนักงานต่อองค์กร โดยตัวแปรสำคัญที่มีผลต่อความพึงพอใจในงานคือ การควบคุมดูแล การสื่อสารและการรับรู้ในบทบาทของเทคโนโลยีสารสนเทศและการสื่อสาร นอกจากนี้การสื่อสาร และการรับรู้ในบทบาทของเทคโนโลยีสารสนเทศและการสื่อสาร ยังมีผลต่อความผูกพันของพนักงานด้วย นอกจากนี้ยังพบว่าปฏิสัมพันธ์และการปรับใช้เทคโนโลยีสารสนเทศและการสื่อสารร่วมกันยังมีผลเชิงบวกต่อความพึงพอใจในงานอีกด้วย ผลการวิจัยนี้ช่วยให้ผู้บริหารในธุรกิจธนาคารพาณิชย์ในประเทศเมียนนำไปใช้ในเพื่อสร้างความพึงพอใจในงานและความผูกพันของพนักงานเพื่อให้องค์กรประสบความสำเร็จโดยเฉพาะอย่างยิ่งในประเด็นการมีปฏิสัมพันธ์ร่วมกันระหว่างการใช้เทคโนโลยีสารสนเทศและการสื่อสาร และการปรับใช้เทคโนโลยีสารสนเทศและการสื่อสาร

คำสำคัญ : การใช้เทคโนโลยีสารสนเทศและการสื่อสาร /การปรับใช้ เทคโนโลยีสารสนเทศและการสื่อสาร / ความพึงพอใจในงาน /ความผูกพันของพนักงาน

Abstract

The purpose of this paper is to evaluate the impact of Information and Communication Technology (ICT) implementation and adaptation in Myanmar banking sector. This paper studied the relationship between work condition, supervision, training, internal communication and employee engagement. This paper also studied the relationship between ICT adaptation, role perception, attitudes on ICT and employee engagement. By using questionnaire survey and convenience sampling method, ten private banks in Myanmar and 620 employees of various levels were used in the study

The results, using structural equation modeling, showed that not only the organization's ICT implementation together with ICT adaptation of its employees led to higher level of job satisfaction, which in turn results in employee engagement in Myanmar banking sector. The important factors affecting job satisfaction included supervision, communication, and role perception. The communication and role perception can also affect employee engagement. Moreover, the result of interaction effect of ICT implementation and ICT adaptation on job satisfaction showed that the interaction of role perception and ICT implementation has a positively significant effect on job satisfaction. The results of this study can be useful to the management of banking sector in Myanmar to identify the motivation factors to improve employees' job satisfaction and employee's engagement to achieve the success of organization, especially the interaction effect of ICT implementation and ICT adaptation

Keywords : Information and Communication Technology Implementation, Information and Communication Technology Adaptation, Job Satisfaction, Employee Engagement

Introduction

Job characteristic and job design play important roles in successful adaptation of Information and Communication Technology (ICT) in an organization (Dewett & Jones, 2001; Gaimon, 1997; Gephart, 2002; Hulin & Roznowski, 1985). In addition, studies also suggested that employees' ICT adaptability playeda significant role in successful transformation of ICT in an organization (Steven, 1997; Lee, Kim, Paulson & Park, 2008; Saeed & Bampton, 2013).

Steven (1997) mentioned that Socio-Technical Systems (STS) Theory was probably the most extensive body of conceptual and empirical work underlying employee involvement and work design applications today. In this study, conceptual framework was drawn on STS theory (Avgerou & Madon, 2004; Bostrom & Heinen, 1977) explaining the effect of ICT implementation in a service organization influencing employees' job characteristics and job outcomes. STS theory exhibited a framework to understand the interdependencies between the human and technology factors of modern organizations (Bostrom & Heinen, 1977). The STS theoretical perspective was developed in response to findings that showed that organizations were not attaining expected benefits from new technology implementations. In STS theory, organizations comprised two sub-systems—namely,

a technical system and a social system (Cherns, 1976; Mumford, 2000). The social sub-system comprised the structural and human elements in an ICT, while the technical subsystem included the technology and tasks that individuals would perform using the ICT (Avgerou & Madon , 2004). The technology was used to perform tasks and when there was a new technological system, employees must not only learn how to communicate with the system but also learn how to perform old tasks using the new technology.

Moreover, employees perceived that technologies could increase uncertainty in the work condition, particularly if a technology was radically different from those they were accustomed to. This, in turn, could positively influence some aspects of job characteristics(e.g., attitude and role perception, communication) as employees would need to develop a variety of skills (e.g., training) for handling unpredictable job situations and might perceive their job as highly significant (e.g., role perception) (Brass, 1985; Morris & Venkatesh, 2010; Krishna & Bindiya , 2014 ; Kokila, 2016).
Thus, not only the organization's ICT implementation and facilitation strategy but also the employee's involvement and adaptability in ICT implementation of organization were critical for successful job outcomes.

Recently, Myanmar government had placed a great emphasis on financial sector reforms. One of the requirements for the financial sector development was the establishment of financial ICT systems, which was essential in modern financial market (JICA, 2012). Banking is the business operation that requires ICT to achieve competitive advantage. The use of ICT in management, services, work system and communication can result in employees "working smarter" as well as providing high-quality performance and more efficient services to customers.

Therefore, the implementation of ICT in banking has become a subject of fundamental importance and concern of all banks and indeed a pre-requisite for local and global competitiveness. In every organization, employees are end users of information systems and therefore, their roles are very important in successful adoption of ICT. Employees are invaluable human capital of the bank and their satisfaction greatly contributes to the success of the bank. Therefore, the relationship between bank's ICT implementation, employees' ICT adaptability, Job Satisfaction (JS) and Employee Engagement (EE) were examined in this study.

This research also helped management in the prevention of high turnover, arising from job dissatisfaction at banks in Myanmar. This was because the replacement of employees in ICT-driven banks is more costly and time consuming than the replacement of employees in traditional banks.

Therefore, "Would organizations such as banks in Myanmar successfully adopt and implement ICT? "Would employees from banking sector have adaptability in ICT implementation?" "Is there any significant effect of ICT Implementation on job satisfaction and employee engagement?" are problem statements for the Myanmar banking sector nowadays. Based on these problem statements, this study focused on the effect of ICT implementation and employees' ICT adaptability on job satisfaction towards employee engagement. The findings not only contributed to the development of more comprehensive understanding on role of human factor in successful

ICT implementation in an organization, but also to the development of the Myanmar banking sector by identifying the ICT related job satisfaction and motivation issues which management needs to take into account.

This paper was organized as follows. In the following section 2, theoretical development, model and hypotheses were discussed. In section 3, methodology and the survey methods were explained. Section 4 described the findings, which was followed by conclusion in section 5.

Literature Review

In this study, conceptual framework was developed based on the Job Characteristics Model (JCM) (Hackman & Oldham, 1974) and the Socio-Technical Systems (STS) Theory (Avgerou & Madon , 2004).

Job Characteristics Model (JCM)

Hackman & Oldham (1974) introduced the concept of JCM to describe how and why core job characteristics affected key job outcomes, i.e. job satisfaction and job performance. JCM proposed that job enrichment could stimulate positive employee attitudes and better quality of work. A job can be enriched through five job characteristics, which are known as skill variety, task identity, task significance, task autonomy and feedback. Skill variety refers to the extent to which a job requires various challenging skills and abilities; task identity means the degree to which a job is seen as accomplishment of an identifiable piece of work; task significance means the job has a perceivable effect on the lives of others within the firm or on the world; task autonomy refers to the amount of freedom and independence that an employee has in performing the work; and feedback refers to the amount of information which an employee receives about the effectiveness of his or her performance, either directly from the work itself or from others (Hackman & Oldham, 1974). Therefore, recognition for the work and delivery of consistent output are considered as skill variety; workload of employees and work performance within the required specifications are considered as task identity; care about satisfaction at work is considered as task significance; ease in working is considered as task autonomy; and feedback and opinion, and efficiency in work are considered as feedback in this study.

The JCM model included that organizations could encourage positive employee attitudes and enhanced quality of work by enriching a job along five job characteristics (Hackman & Oldham, 1980). Moreover, role perception is defined as perception of opportunity, tools and resources, recognition and amount of work in the workplace (Saha, 2008). Therefore, employee perception of recognition for the work, delivery of consistent output, care about satisfaction at work, feedback and opinion and efficiency in work were included under the role perception in this study.

Moreover, attitude on ICT is defined as one of the components for ICT adaptability and includes attitude on workload, delivery of outputs, performance and interesting work (Yalew, 2015; Kozma, 2007). Therefore, employee attitude on workload of employees, work performance within the required specifications, and ease in working were measured under attitude in this study.

The relationship between organizational ICT implementation and job characteristics has become a topic of interest for many years (Dewett & Jones, 2001; Gaimon, 1997; Gephart, 2002; Hulin & Roznowski 1985). Although there was a research suggesting that job characteristics could influence ICT (Slocum & Sims, 1980; Thompson, 1967), many research studies suggested that ICT influences employees' job characteristics (Morris & Venkatesh, 2010). Therefore, correlation between ICT implementation and job characteristics was applied in this study. Lee, Kim, Paulson & Park. (2008) described that alignment of business and Information System (IS) groups resulted in improved IS effectiveness. It could be inferred that socio-technical aspects of a firm's infrastructure could be arranged in a way to achieve business-IT alignment and ultimately to achieve better business performance. Moreover, technology can bring uncertainty in the work condition, particularly if the new technology is significantly different from the existing technology, which employees are already familiar with. On the other hand, this can have positive impact on some aspects of job characteristics such as attitude, role perception and communication. Employees may need to develop new set of skills (e.g., through training) to handle unpredictable job situations. They may also perceive their job as highly significant, i.e. role perception. (Brass, 1985; Morris & Venkatesh, 2010) This paper, consistent with the latter theoretical arguments, considered that enterprise-level ICT would have a positive impact on employees' job characteristics and job outcomes (i.e. job satisfaction and employee engagement) in the banking sector in Myanmar.

Socio-technical Systems (STS) Theory

Steven (1997) mentioned that Socio-technology System (STS) Theory was probably the most extensive conceptual and empirical work pertaining to employee involvement and work design applications. In this study, conceptual framework was evolved around STS theory (Avgerou & Madon. 2004; Bostrom & Heinen, 1977) to explain how ICT implementation in a service organization influenced employees' job characteristics and job outcomes. STS theory provided a framework to recognize the interdependencies between human and technology factors in modern organizations (Bostrom & Heinen, 1977). STS theory illustrated the interactions between social structure, people, technology, and tasks. It showed how the introduction of a new technology could affect other subsystems. Tasks were performed with the use of technology and whenever there was a new technological system, employees must learn how to communicate with the system as well as how to perform the old tasks by using the new technology. Organizational structure was often influenced by new technology implementation as new technology might possibly change organizational functions.

To sum up, this study addressed key aspects related to generalizability of JCM. Then, JCM was incorporated with ICT implementation to illustrate how ICT enhanced job characteristics of employees in service organizations, particularly banks. After that, theoretical framework was developed based on STS theory to investigate how ICT implementation was related to job characteristics. For ICT implementation and adaptation, work condition, communication, training, supervision, role perception and attitude were considered in job characteristics stage. Job satisfaction

was considered in psychological states and employee engagement was considered as outcomes.

Information and Communication Technology (ICT) Implementation

In this study conceptual framework was constructed based on the review of the previous literatures related to job satisfaction and Bank's ICT implementation with Socio-technical systems (STS) theory (Venkatesh, Morris, Davis & Davis , 2003). The concept of the study was to examine the power of influence Bank's ICT implementation and ICT adaptability had on job satisfaction in banking sector. Successful ICT implementation in a bank led to job satisfaction (Kaleem & Ahmad, 2008) and ICT adaptability of employee also directly supported job satisfaction (Winter, Gaglio & Rajagopalan, 2009). Moreover, employees' good adaptability of ICT also led to successful ICT implementation in the bank (Winter et al, 2009).

ICT Implementation consisted of the work condition (Selvarajan & Ranasinghe, 2013), supervision (Nijsen et al, 2009), training (Krishna & Bindiya, 2014) and communication (Perrewe & Ganster, 2010). Current information system capacity, power supply, security system, skill level of the staff and response rate of computers were important for ICT implementation in the workplace. Therefore, these factors were considered as work condition of ICT implementation in this study (Selvarajan & Ranasinghe, 2013). ICT implementation is also related to supervision in the bank. Interest in ICT innovations, handling critical ICT/IS issues, initiating ICT/IS projects, introducing ICT/IS strategies, improving the administration of the bank and using management system are factors related to top management. These factors were considered for supervision with regards to ICT implementation. (Selvarajan & Ranasinghe, 2013). Successful ICT implementation depended on how much ICT training was provided to employees in the bank (Krishna & Bindiya, 2014). Efficiency of training, usefulness of training, timing of training, and arrangement of training are also factors to be considered for training of ICT in the bank. Another important ICT implementation component is the amount of ICT used in communication. Banking operations, office management and business communication works, decision making process, sending various documents via on-line, feedback/suggestions, and preparing financial statements were considered under communication with regards to ICT in this study. Therefore, work condition, supervision, training and communications were considered for ICT implementation in the bank.

Research Model and Hypotheses

According to Socio-technical systems (STS) theory, organizations and employees benefit the most when the social and technical sub-systems of ICT are in alignment (Trist & Bamforth 1951; Molleman & Broekhuis, 2001). Venkates, Morris, Davis and Davis (2003) used JCM and STS theory to investigate the impact of ICT on five job characteristics in a service organization, a bank in India. Avgerou & Madon (2004), Bostrom & Heinen (1977) drew on STS theory to explain how ICT implementation affects a service organization and job outcomes. In view of this, job satisfaction and employee engagement were considered as psychological states and outcomes in this study. Based on the usage of ICT factors, JCM and STS theory, theoretical framework was developed.

Moreover, in the study of Tennakoon & Syed (2008), three factors: a) ICT adaptation of individuals, b) ICT factor and c) ICT implementation in organization, influence employees' job satisfaction when an organization implements ICT. In the same vein, the studies of Mazidabadi (2004), Krishna & Bindiya (2014) and Kokila (2016) also confirmed that ICT implementation in an organization and ICT adaptation are significantly related to job satisfaction and employee engagement.

According to previous literature, both ICT implementation and ICT adaptation could influence job satisfaction and employee engagement, which in turn influenced business performance. Employee attitude (Shaw, 2005; Martin & Hetrick, 2006), role perception (Kahn, 1990a; Maslach, Schaufelli & Leiter, 2001; Sundaray, 2011), work condition (Hewitt, 2017), communication, training (Robinson, Perryman & Hayday, 2004; Penna, 2007), and supervision (Kumar, 2011; Wiedemann, 2016) were considered as drivers for employee engagement in this study. Supervision (Griffin, Patterson & West, 2001; Spector, 1997), work condition (Rue & Byars, 2003; Spector, 1997), role perception, communication (Spector, 1997) and attitude (Hackman & Oldham, 1976) were also considered as drivers for job satisfaction in this study.

Thus to examine the impact of a bank's ICT implementation and employee's ICT adaptability on job satisfaction towards employee engagement, ICT implementation and ICT adaptability were considered as independent variables for job satisfaction. At the same time, job satisfaction was also considered as an independent variable for employee engagement in this study. Based on the literature above, the conceptual framework that explained job satisfaction and employee engagement with ICT implementation and adaptation was expounded as figure (1).

Selvarajan & Ranasinghe (2013) pointed out that the external infrastructure such as power supply, network availability and internal infrastructure such as laptops, system availability must be improved in order to adopt ICT in "work condition". It would support the employees to work faster, easily, accurately and to save their time. Therefore, this variable was expected to relate positively to job satisfaction (Selvarajan & Ranasinghe, 2013). Moreover, Maslach, Schaufelli and Leiter (2001) and Hewitt (2017) considered work conditions as one of the factors of employee engagement. Thus, the first hypothesis (H1a) measured the relationship between Bank's ICT implementation in work condition and job satisfaction and the relationship between work conditions with employee engagement was measured in hypothesis H6a.

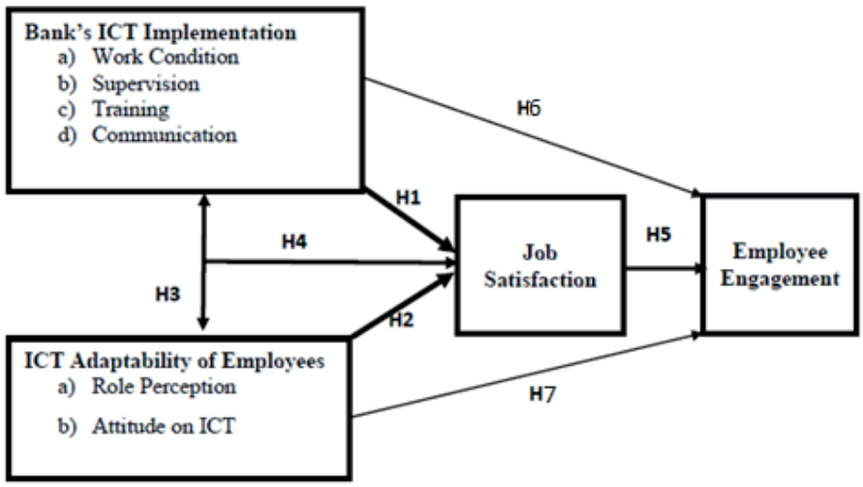

Figure (1) Conceptual Framework

Source: Author's development for the study

Without good supervision level supports, there might not be significant improvement in ICT implementation and there might be a negative effect on job satisfaction (Nijsen et al, 2009). Therefore, interest in ICT innovations, handling critical ICT/IS issues, initiating ICT/IS projects, introducing ICT/IS strategies, improving the administration of the organization and using management system should be the factors related to top management (Poongothai & Ranasinghe 2013). The studies of Crim & Seijts (2006), Markos & Sridevi(2010), Kumar (2011) and Wiedemann (2016) also pointed out to check if the organization was on the right track of achieving its goals. Therefore, supervision was necessary to consider for employee engagement. The relationship between supervision and job satisfaction; supervision and employee engagement were tested in hypotheses H1b and H6b respectively.

Moreover, suitable training for the employees was needed for successful ICT implementation towards job satisfaction. Without necessary training, employees would find it difficult to work with new technology in the bank and they would not be happy in the work place (Krishna & Bindiya, 2014). Moreover, training was considered as a factor for employee engagement by Robinson, Perryman and Hayday (2004); Penna (2007); Shashi (2011); Crim & Seijts (2006). Therefore, effective training was also important for job satisfaction and employee engagement and these were measured in hypotheses H1c and H6c.

Work condition can be considered as a physical condition, supervision as a policy on ICT implementation and training as readiness of employees in the bank. Another variable to be considered is communication with regards to ICT implementation. It measures the usage level of ICT in the work place. The degree to which ICT is used in banking operations, office management and business communication works, decision making process, sending various documents through on-line, feedback/suggestions, and preparing financial statements were considered under communication with regards to ICT in this study. If employees used ICT successfully, they could work effectively in their job and ICT implementation would have positive effect on job satisfaction

(Perrewe & Ganster, 2010). Communication wasalso considered as a factor for employee engagement by Robinson, Perryman & Hayday (2004); Penna (2007); Shashi (2011); Crim & Seijts (2006). These were tested in hypotheses H1d and H6d. Therefore, based on the above literature, the following hypotheses were derived.

H1a: There is a significant relationship between work condition and job satisfaction.

H1b: There is a significant relationship between supervision and job satisfaction.

H1c: There is a significant relationship between training and job satisfaction.

H1d: There is a significant relationship between communication and job satisfaction.

H6a: There is a significant relationship between work condition and employee's engagement.

H6b: There is a significant relationship between supervision and employee's engagement.

H6c: There is a significant relationship between training and employee's engagement.

H6d: There is a significant relationship between communication and employee's engagement.

Kaleem & Ahmad (2008) examined the impact of ICT on job satisfaction of employees in banking industry and they found that job satisfaction was largely influenced by complexity of ICT systems. They examined the perceptions of employees towards the benefits and risks associated with e-banking and their findings showed that bank employees were satisfied with ICT implementation (i.e. e-banking). It showed that there was a relationship between the perceptions of employees towards the benefits and risks associated with e-banking and job satisfaction.

Moreover, ICT adaptability is one of the important factors in today's working culture and it will create positive effect on job satisfaction. Ghobakhloo, Hong, Sabouri & Zulkifli (2012) said that the characteristics of users which determined the success of ICT adaptability could be classified as IT knowledge, training, attitude towards IT and degree of their involvement in adoption process. Role perception and attitude on ICT were considered as determining characteristics of users. Role perception of employees was directly related to job satisfaction (Winter et al, 2009). Kahn (1990b), Maslach et al (2001), Saks (2006), Zinger (2010), Mani (2011) and Sundaray (2011) considered the impact of role perception on employee engagement. Therefore, the relationship between role perception and job satisfaction and the relationship between role perception and employee engagement were examined with H2a and H7a respectively.

H2a: There is a significant relationship between employees' role perception and job satisfaction.

H7a: There is a significant relationship between employees' role perception and employee's engagement.

Attitude towards ICT was an important variable for adaptation of new technologies (Heigh, 2010). Kozma (2007) claimed that people were likely to feel good if they had to provide some kind of contribution in any innovation. This implied that employees were more willing to accept a new system if they had provided some kind of contribution as they felt a sense of ownership in the system. Therefore, attitude on ICT becomes one of the measurements in adaptation of ICT and it is directly related to job satisfaction. Moreover, May, Gilson & Harter (2004), Thackray (2001), Robinson, Perryman & Hayday (2004), Shaw (2005) and Martin & Hetrick (2006) showed that attitude

was one of the important factors for employee engagement. Therefore, the relationship between Attitude on ICT and job satisfaction was examined with hypothesis H2b; and the relationship between Attitude on ICT and employee engagement was examined with hypothesis H7b.

H2b: There is a significant relationship between employees' attitude on ICT and job satisfaction.

H7b: There is a significant relationship between employees' attitude on ICT and employee's engagement.

Moreover, Winter, Gaglio & Rajagopalan (2009) suggested that the success of ICT implementation was determined by ICT competence of employees and their attitudes towards ICT. The success of ICT implementation depends on both external factors such as regulations, infrastructure as well as internal factors such as IT literacy of employees and their attitudes. It is also widely accepted that ICT adaptability is largely influenced by internal factors.

Many researchers showed that having skilled employees was an important factor for successful adaptation of ICT. Aladwani (2001), Wondwossen & Tsegai (2005), Daghfous & Toufaily (2007) and Winter, Gaglio & Rajagopalan (2009) studied the relationship between ICT implementation and ICT adaptation. The results showed that successful ICT adaptation was positively related to ICT implementation. Hypothesis H3a and H3b were derived for Bank's ICT implementation and ICT adaptability with Pearson's correlation test in this study.

H3a: There is a significant relationship between employees' attitude and ICT implementation.

H3b: There is a significant relationship between employees' role perception and ICT implementation.

Therefore, two key factors, namely, ICT implementation and ICT adaptation influence employees' job satisfaction when a bank implements ICT. These two factors are highly and significantly related to job satisfaction and employees' job satisfaction in turn is positively related to employee engagement. However, implementation of ICT in the organization is a complex task. It affects the way staffs adapt, the way administrators manage as well as the way leaders lead the organization. Therefore, the interaction effect of ICT implementation and ICT adaptation were also considered in the model. Thus to relate the interaction effect, the following hypotheses were derived.

H4a: There is a significant relationship of ICT implementation and role perception with job satisfaction.

H4b: There is a significant relationship of ICT implementation and attitude with job satisfaction.

Kumar (2011) suggested that great focus on employee engagement strategies increased the organizational effectiveness in terms of individual outcomes and organizational outcomes such as increased productivity, profit margins, quality, customer satisfaction, employee retention and increased adaptability. When ICT is implemented in the organization, employee engagement is an important factor to achieve organizational effectiveness. Kumar (2011) advised various factors influencing employee engagement and factors that an organization should follow to achieve employee engagement. One of the important factors for employee engagement is job satisfaction

among others. Many studies also highlighted that employee engagement was greatly influenced by job satisfaction (Locke, 1976; Lin, 2007; Swathi, 2013; Danish, Saeed, Mehreen, Aslam & Shahid, 2014; Madan & Srivastava, 2015). Based on above literature the following hypothesis was derived.

H5: There is a positive and significant relationship between Job satisfaction and Employee's Engagement.

Research Methodology

The target population of the study was employees from the banking sector in Myanmar. Therefore, bank employees of different levels/ranks were respondents of this survey. Among the 24 private banks, they have employed around 36, 965 employees. Those mega banks started traditional banking operations 25 years ago but only 5 years ago they started to utilize ICT. The banks and their employees are facing challenges to cope with the changes during their transition from traditional banking to ICT banking. Therefore, 36, 965 employees from the private banks were considered as the size of population.

Among the 24 private banks, 10 private banks were selected by using convenience sampling method. The reason for choosing these ten private banks was because they represent about 89% of the total private banks' employees and they have started to utilize ICT in their bank. All respondents of senior management level and junior management level were selected for this survey. However, convenience sampling method was used to select the respondents from senior staff level and junior staff level. For 10 banks, 750 questionnaire forms were used and after entering data, only 620 were used for analysis.

Before the final survey was conducted, 34 sets of questionnaire were used for pre-test purpose. Based on the pre-test results, necessary corrections were made to the questionnaire. The survey was conducted in July 2018. Before the survey was conducted, a request letter for permission to conduct the survey for the education purpose was sent to the selected banks.

Once the approval letter was received, 750 copies of questionnaire were distributed to the staff (Senior Management, Junior Management, Senior staff and Junior staff) from different branches of each bank. Among them, 620 questionnaires were returned with full information. The researcher conducted the survey on senior management level and junior management level staffs by using face to face interview. The rest of the respondents were interviewed by 9 trained interviewers. All interviewers were given 2-day intensive training. The training for the field staff covered research ethics, the importance of data, detail meanings of each item in data collection form, frequently occurring errors, and "dos" and "don'ts", etc.

Bank employees of different levels in Myanmar were under this study. Using convenience sampling, data were collected using questionnaire from 620 employees of ten private banks in Myanmar.Respondents were asked to rate their responses on a 5 point Likert scale. The questionnaire used in this study was adapted from previous studies. Data was analyzed by using Structural Equation Modeling, SEM.

In this study, ICT implementation and ICT adaptability were considered as independent variables for job satisfaction. And, job satisfaction was also considered as an independent variable for employee engagement. ICT implementation consisted of work condition, supervision, training and communication; and ICT adaptation included role perception and attitude on ICT.

Results and discussion

1. Results

Descriptive statistics were used to describe demographic information of respondents in this study. As shown in the Appendix Table 1, there were 320 male respondents which represented 52% of the total respondents, while there were 300 female which represented 48% of the total respondents. Considering the age groups of the respondents, the higher number of respondents was in the range of 23-39 years, which represented 78%, followed by age groups of 40-49 and 60 or above, which represented 10.5% and 7.4% respectively. The table also showed that out of the total participants, 414 and 193 of the respondents had a Bachelor's Degree and Master's degree/ Postgraduate Degree respectively, while respondents who had college diploma were only 6.

In this study employees were classified as Senior Management Level, Junior Management Level, Senior Staff Level, and Junior Staff Level. Out of the respondents, the higher number of respondents was in Junior Management Level, who represented 38.4%, followed by Senior staff level and senior management level, who represented 33.4% and 16.3% respectively. Junior staff level had the lowest percentage of respondents with 11.9%.

Moreover, it could be seen that only 30 of the respondents served their current bank for less than one year. Out of the respondents, 317 employees representing 51.1% served in the bank from one to five years while 181 employees who represented 29.2%, served in the bank from five to ten years. 41 respondents were employees with more than 20 years' experience who represented 5.7%.

The results of SEM were summarized in the following table 1.

Table (1) Summary Table for Data Analysis by Hypotheses

Hypothesis	IDV	DV	Beta	C.R	p-value
H1a	IMWC	JS	-0.077	-0.761	0.447
H1b	IMSUP	JS	0.136*	1.781	0.075
H1c	IMTRA	JS	-0.099	-1.112	0.266
H1d	IMCOM	JS	0.306***	4.773	0.000
H6a	IMWC	EE	-0.420***	-4.065	0.000
H6b	IMSUP	EE	0.049	0.699	0.485
H6c	IMTRA	EE	0.053	0.637	0.524
H6d	IMCOM	EE	0.180**	2.931	0.003
H2a	ADRP	JS	-0.061	-0.661	0.508
H2b	ADATT	JS	0.456***	6.681	0.000
H7a	ADRP	EE	0.440***	5.501	0.000
H7b	ADATT	EE	0.162***	3.427	0.000
H4a	RPIM	JS	0.371***	6.031	0.000
H4b	ATTIM	JS	-0.177**	-3.028	0.002
H5	JS	EE	0.406***	6.870	0.000

*p<0.1 ** p<.05 ***p<.001

Notes:

IMWC = Work Condition IMSUP = Supervision IMTRA = Training
IMCOM = Communication ADRP = Role Perception ADATT = Attitude
JS = Job Satisfaction EE = Employee Engagement RPIM = Role perception and implementation
ATTIM = Attitude and implementation

ICT implementation of work condition (WC) has shown insignificant (p-value= 0.447, C.R.= -0.76) effect on the job satisfaction, thus hypothesis H1a was not accepted. However, work condition had significant (p-value = 0.000) and negative effect on employee engagement with the beta of -0.420. Therefore, hypothesis H6a was significant with negative impact.

ICT implementation of supervision (SUP) had significant and positive effects on job satisfaction with beta value 0.136 with p-value 0.075. Therefore, hypothesis H1b was supported at 10% level of significance and it was not so strongly supported. It showed that the greater the supervision on ICT, the greater the level of job satisfaction. However, supervision had insignificant (p-value = 0.485, C.R. = 0.699) effect on the level of employee engagement. Therefore, hypothesis H6b was not supported.

ICT training (TRA) has shown insignificant effect on both job satisfaction and employee engagement. Hypotheses H1c and H6c were not supported and training did not affect job satisfaction and employee engagement.

Communication (COM) has shown a significant (p-value < 0.000, C.R. = 4.773) and positive influence on the level of job satisfaction with beta = 0.306. The result supported hypothesis H1d and stated that communication with ICT could improve the level of job satisfaction. Moreover, communication has also shown a significant (p-value=0.0, C.R =2.931) and positive influence on the level of employee engagement with beta value 0.180. The result also supported hypothesis H6d and stated that communication with ICT could improve the level of employee engagement.

The result of role perception has shown insignificance (p-value = 0.508, C.R = -0.661). Thus, the hypothesis H2a was rejected. However, highly positive significant effect could be seen on employee engagement which had beta value 0.440 with p-value < 0.01 and C.R was 5.501. Therefore, the result supported hypothesis H7a which showed significant positive relationship between employees' role perception and employee engagement.

Attitude on ICT has shown a significant (p-value < 0.001, C.R. = 6.68) and positive influence on the job satisfaction with the coefficient value 0.456. Thus, the hypothesis H2b was supported and the higher attitude could increase employee's satisfaction. Further, the hypothesis H7b was also supported with beta value 0.162, p-value < 0.001 and C.R.= 3.427. Therefore, both hypotheses H2b and H7b were supported in the model.

The interaction effect of role perception and ICT implementation (RPIM) has shown significant and positive effects on job satisfaction and it supported H4a with beta value 0.371.

However, the interaction effect of attitude and ICT implementation (ATTIM) had negatively significant effect on job satisfaction with beta value -0.177, p-value = 0.002 and C.R = -3.028. Therefore, it did not support hypothesis H4b which had significant negative relationship between interaction effect of role perception and ICT implementation on job satisfaction.

Job satisfaction (JS) has shown a significant (p-value < 0.000, C.R. = 6.87) and positive influence on the employee engagement (EE) with the coefficient value 0.406. Thus, the hypothesis H5 was supported and explained that the greater the level of job satisfaction on ICT, the greater the level of employee engagement.

Summary results of correlation coefficients between ICT adaptability and implementations were presented in Table (2). Hypothesis H31 and Hypothesis H32 were tested for correlation between ICT implementation and ICT adaptation measures. The results showed that attitude and ICT implementation variables (IMWC, IMSUP, IMTRA) had significant positive correlation coefficients but IMCOM did not have a significant correlation value. Therefore, it supported H3a1, H3b1, and H3c1 but it did not support H3d1. Correlation coefficient between role perception with work condition and supervision had positive and significant values. Therefore, H3a2 and H3b2 were supported. Correlation coefficients between role perception with training and communication were significant but these were negative values and did not support H3c2 and H3d2.

Table (2) Summary Table for Correlation Analysis by Hypotheses

Hypothesis	V1	V2	Correlation coefficient	C.R	p-value
H31	**ATT**	**IM**			
H3a1	ATT	IMWC	0.128***	3.418	0.000
H3b1	ATT	IMSUP	0.175***	4.490	0.000
H3c1	ATT	IMTRA	0.113***	2.818	0.000
H3d1	ATT	IMCOM	0.019	0.607	0.544
H32	**RP**	**IM**			
H3a2	RP	IMWC	0.628***	10.019	0.000
H3b2	RP	IMSUP	0.128***	3.498	0.000
H3c2	RP	IMTRA	-0.114**	-2.948	0.003
H3d2	RP	IMCOM	-0.247***	-7.132	0.000

Notes:

IMWC = Work Condition IMSUP = Supervision IMTRA = Training
IMCOM = Communication RP = Role Perception ATT = Attitude

2. Discussion

This study was conducted to investigate how ICT implementation and ICT adaptation affected job satisfaction and employee engagement in the banking sector in Myanmar.

Before assessing the path model fitness, it was required to specify a measurement model to verify that the 51 measure¬ment variables written to reflect the ten unobserved constructs (JS, EE, ADATT, ADRP, IMWC, IMTRA, IMCOM, IMSUP, ADIM, ATTIM) did so in a reliable manner. Confirmatory

factor analysis (CFA) was presented in Table 4.1.

Table 3: CFA's Indices

CFAs	CMIN/df	NFI	RFI	IFI	TLI	CFI	PRATIO	RMSEA
Modified	5.47	.8	.8	.9	.8	.9	0.9	0.08

The results of unstandardized regression weights showed that all values were significant by the critical ratio test at 1 % level (> 2.58, p-value <0.01). The range of standardized regression weight values were from 0.5 to 0.99. These values suggested that the 51 observed variables were significantly represented by their respective latent constructs.

Although Chi-squared result showed that the model did not fit well, the baseline comparison indices values of NFI, RFI, IFI, TLI and CFI ranged from 0.8 to 0.9 showed that the model was a good fit. Moreover, according to the RMSEA value of 0.08, it also indicated good fit of the model (Hair, et al., 2006; Ho, 2006).

The findings for ICT implementation in organization factor showed that work condition and training had no significant impact on employee job satisfaction. Work condition factors such as current ICT systems at bank, hard and soft facilities such as speed, security and current ICT staff skill level were found to have no relationship with the job satisfaction of bank employees. However, these factors were significantly positively related to employee engagement. Thus to make employee to be engaged more, banks should improve working conditions of the bank soft and hard facilities.

In addition, the role of training in enhancing job satisfaction in terms of job burden reduction, status, opportunity to use own talent and employee engagement was found to be insignificant. Providing more training was found to be negatively related to job satisfaction but positively related to employee engagement though these relationships were not significant. The employees were not satisfied with training provided at the bank whenever the versions of Application Software and Operation Software were upgraded, to handle new hardware, systematic arrangement of users' courses and timing of the training at the bank. They seemed to be not happy with the problem solving skills that they obtained from training and with the performance appraisal using ICT. Since this negative relationship was not significant, banks should be cautious in generalizing the findings. However, it was also found that all these training related variables led to higher employee engagement though the relationship was not significant. Thus banks should improve and repackage the training related issues to meet employees' expectations.

However, employee job satisfaction was positively and significantly related to management supervision, introduction of high level ICT strategies and management handling of Fintech problems, level of ICT usage at management level. In the same vein, these factors led to higher level of employee engagement though relationships were insignificant. These findings suggested that banks should at least maintain or improve the current practices regarding above mentioned management

supervision variables.

The use of ICT in the banking operations, office management and business communication works, decision making process, sending various documents through on-line, feedback/suggestions, and preparing financial statements enhanced job satisfaction and employee engagement significantly.

The findings discussed role perception exhibited insignificant negative effect on job satisfaction. Employee's perception on opportunity, tools and resources, recognition and amount of work were not related to the job satisfaction of employee in the banking sector. On the other hand, the results of correlation coefficient between role perception and ICT implementation showed that it was significantly correlated with work condition and supervision but it had negatively significant correlation with training and communication. Therefore, banks should improve employee's training program and communication system to get positive correlation with job satisfaction. However, these factors were positively related with employee engagement. Therefore, to get more engagement in the work place, banks should improve their opportunity, tools and resources, recognition and amount of work.

With regards to attitude to ICT adaptation, the result revealed significantly highest effect on the job satisfaction and employee engagement. Therefore, employees performed their work within the required specifications, delivered consistent output and worked easier when ICT was implemented in the banking sector and it enhanced job satisfaction and employee engagement significantly.

Implementation of ICT in the organization is a complex task. It affects the way staffs adapt and often the way administrators administrate as well as the way leaders lead the organization. Therefore, the interaction effect of ICT implementation and ICT adaptation were necessary to be considered in the model. The result of interaction effect of ICT implementation and ICT adaptation on job satisfaction showed that the interaction effect of role perception and ICT implementation had a positively significant effect on job satisfaction. Therefore, ICT implementation factors such as work condition, supervision, training and communication, together with employee's role perception enhances job satisfaction in the banking sector.

However, the result revealed that the effect of attitude and ICT implementation had negative significant effect on job satisfaction. Although the direct effect of attitude was significant, interaction effect was negatively significant to the job satisfaction. Moreover, direct effect of work condition and training factors were negatively insignificant to job satisfaction. Therefore, these two ICT implementation factors might not support together attitude to job satisfaction. To improve interaction effect of attitude and ICT implementation on job satisfaction, the banks should improve working conditions of the banks' soft and hard facilities as well as needed to repackage the training related issues to meet employees' expectations.

Moreover, job satisfaction was positively significantly related to the employee engagement factors of enthusiastic, meaningful job, work intensely, become absorbed in the job, gives energy,

persevere. Factors such as working on e-channels gives an opportunity to use their own talents, offer good status in the society, more benefits and job burden is considerably reduced enhanced employee engagement. Therefore, higher level of job satisfaction provides more employee engagement in the banking sector.

Conclusion

Most of the previous studies measured ICT implementation, ICT adaptation with job satisfaction but did not include interaction effect in their models. Outcomes of this study provided a starting point for the researchers to include interaction effect in SEM model. Findings of interaction effect proposed that role perception and ICT implementation were good indicators in the measurement of job satisfaction.

Since the finding revealed that the higher level of job satisfaction led to more employee engagement in the organization, the study also found the factors that led to higher level of job satisfaction.

With reference to the findings, it is concluded that supervision consisting top management's support, introduction of high level ICT strategies and management handling of Fintech problems, level of ICT usage at management level and the use of ICT in banking operations, office management and ICT communication variables such as the use of ICT in business communication works, decision making process, sending various documents through on-line, feedback/suggestions, and preparing financial statements were recommended as the best practice for job satisfaction. In relation to individual factors, role perception on ICT adaptability was found to be a good measure for job satisfaction.

Considering organization's ICT implementation and employee ICT adaptability together on job satisfaction, it was found that the interaction effect became more operationally significant on job satisfaction. It was an important finding for the study and it showed that simultaneous consideration of organization's ICT implementation strategy with employees' role perception on ICT, enhance job satisfaction even more.

Though there were positive relationships between ICT implementation strategy and employee attitude to ICT implementation, interaction between ICT implementation and employees' attitude to ICT have negative and significant support to job satisfaction. To improve interaction effect of attitude and ICT implementation on job satisfaction, ICT implementation strategy should be matched with employees' attitude to ICT. From the research findings it could be interpreted that banks' ICT implementation strategy was a way for employeesto recognize ICT implementation will help their life. If ICT communication such as the use of ICT in banking business communication, employees' perception on ICT and their attitude to ICT implementation are good, employee engagement is enhanced.

From the findings, the following recommendations were provided. It could be inferred that top management was most responsible for creating higher level of job satisfaction. Individual

factors provided employees with a sense of pride in what they do. Top management could improve individual factors, i.e. role perception and attitude within their organizations in terms of the following;

- Providing the right amount of recognition
- Being open to employees' voice and listening to their opinions
- Giving reward and recognition
- Sharing organizational rewards
- Showing concern and raising employee engagement
- Developing the skills and potentials of employees
- Evaluating and measuring job satisfaction.
- Improving working conditions of the banks' soft and hard facilities as well as repackaging the training related issues to meet employees' expectations

As there were dissimilarities among demographic groups, practitioners can adjust according to the characteristics of an individual's education background, age, services, position and motivation on the job function in general. If the manager wants to improve job satisfaction and employee engagement, the following practices are recommended.

- Individual positions should be entailed with appropriate responsibility and authority in line with their position.
- Compensation should be commensurate with job demand, individual education or skill level and industry pay standards
- Management must ensure that supervisors try to understand subordinates' needs and wants, consider personal interest, treat them fairly and encourage participative environment.

However, the negative relationship between work condition factors such as current ICT systems at the banks, hard and soft facilities such as speed, security and current ICT staff skill level, and employee engagement should be studied further to know the effect of different demographic groups.

This study was designed for successful ICT implementation and adaptation to job satisfaction towards employee engagement in Myanmar banking sector. As the public banking sector could not be included in the sample, the study did not cover the whole banking industry. Public banking sector is still using traditional banking system and has not changed to ICT system yet. Therefore, the study could only cover the private banking sector which has started to use ICT system in Myanmar. In order to generalize the whole banking industry in Myanmar, future research should include private, public and foreign banks.

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Variable	Classification of Variables	Frequency	Percent	Valid Percent
Gender	Male	320	51.6	51.6
	Female	300	48.4	48.4
	Total	620	100.0	100.0
Age (Years)	Less than 22	6	1.0	1.0
	23-30	296	47.7	47.7
	31-39	192	31.0	31.0
	40-49	65	10.5	10.5
	50-59	15	2.4	2.4
	more than 60	46	7.4	7.4
	Total	620	100.0	100.0
Work Experience (Years)	Less than 1	30	4.8	4.8
	1-5	317	51.1	51.1
	6-10	181	29.2	29.2
	11-20	51	8.2	8.2
	21-30	6	1.0	1.0
	31-40	33	5.3	5.3
	41-50	1	.2	.2
	more than 51	1	.2	.2
	Total	620	100.0	100.0
Education Level	High School Graduate	1	.2	.2
	College Level	6	1.0	1.0
	Bachelor Degree	414	66.8	66.8
	Post Graduate Degree	193	31.1	31.1
	Others	6	1.0	1.0
	Total	620	100.0	100.0
Designation	Junior staff	74	11.9	11.9
	Senior staff	207	33.4	33.4
	Junior Management	238	38.4	38.4
	Senior Management	101	16.3	16.3
	Total	620	100.0	100.0

Source: Survey Results, 2018