Factors Affecting Adaptation of Information Technology Among Nationalized and Private Bank Employees

Simrat Tuteja, Anukool Manish Hyde, Parul Sharda

Abstract: For the developed nation banking industries are becoming important sector for the economies of nation, the banking sector promises that their employees or manpower are precious to them. With the adaptation of information technology organization has to motivate and should provide proper training to the employees, after declaration it is possible that employees will involve more in the job and provide optimum performance. Information technology adaptation can be stated as the acquiring of digital devices and automate all process in the banking system that helps in increasing employees efficiency, allowing them to enhance their technical skills. Adaptation of information technology in banking sector is essential for the efficient running and in achieving their goals. Various factors affect an Adaptation of information technology. The motive of the present study is to recognize the factors affecting the Adaptation of information technology in Nationalized and private sector Banks. Primary data was collected from 161 man powers working in Nationalized and Private sector Banks in Indore division (M.P.) India. Factor Analysis test was used to recognize the factors, which are contributing in Adaptation of information technology. The study identified four factors with the help of SPSS software namely: Technical assistance, Human resource information system, Competitive advantage, Cost Benefit Analysis.

Index Terms: Information technology adaptation, employees efficiency, technical skills, Technical assistance, Human resource information system, Competitive advantage, Cost Benefit Analysis..

I. INTRODUCTION

In this digital era, information technology (IT) is now regarded as an important tool in magnifying the economy of developed nation. It is now well known that adaptation of information technology has remarkable effects on the output or work rate of organization and on the performance of the organization. These significant effects will be seen with the adaptation of information technology in the organization and with its proper usage. It is difficult, to comprehend the cognitive factors of information technology adoption. Many theoretical models have been developed for information technology adoption. For adapting information technology proper technical training should be provided to employees for their significant performance. Banking processing is always consider as a highly intensive information based system, their activities are fully depends upon information. Adaptation of Information technology (IT) helps to collect, obtain, process, store and provide the information to all authentic users as per their requirement. Information technology (IT) helps banks to recognize their services and product which is different from others and helps to provide fast services to their customers. Banking process is becoming very fast and 24*7 hrs working so they have to persistently modify or update and innovate the information as per the demand of customers and to provide suitable, authentic beneficial and convenient services to them. Every banking whether it is a retail banking, wholesale banking or even investment banking are providing IT based services or online banking services so that their customer can do transaction 24*7 hrs as per their requirement such as Automated teller machine (ATMs), electronic fund transfer (EFT), CORE banking , anywhere anytime banking, smart card, internet banking, electronic Driven services by the challenges to elaborate and to capture a global banking market, few banks invest more in infrastructure to provide more space to their employees and to customers, Others banks have thought more on modern approach to deliver their banking services and products through a digital media: the Internet. The use of electronic-banking or CORE banking (centralized online real-time exchange) give their fast and better services to their consumers (Sayar and Wolfe, 2007; Jaruwachirathanakul and Fink, 2005; Eriksson, Kerem and Nilsson, 2005; Wang et al., 2003; Gerrard and Cunningham, 2003[5][6][22][16]; Mukherjee and Nath, 2003[13].Tan and Teo (2000) studied that the TAM model (technology acceptance model) is an essential component in finding the innovation in adaptation of information technology. As a result, the higher the perceived usefulness means TAM model of using internet banking services, more the user ( employees and customers) will adapt online banking services [17]. (Jaruwachirathanakul and Fink, 2005. Polatoglu and Ekin, 2001).
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CORE (centralized online real-time exchange) banking helps customers to perform their banking transactions electronically or digitally through the bank’s Web site using internet and browser window as per their convenient. Internet banking helps their customers to provide information about their services and products on their Web sites so that they can easily access their services and products. With the development of secured digital transaction technologies and different variety of technologies based software, it helps banks in providing information as well as transactional medium with the use of internet. It helps, registered Internet banking authentic users perform their common banking proceedings such as opening different types of accounts, paying bills, deposits, credit cards, writing checks, EFT (electronic fund transactions), statements printing, reconciliation and to know about their account balances etc. CORE banking means “one stop service and information unit” that provide advantages to both banks and consumers by providing updated information and fast services. “Internet banking services are crucial for long-term survival of banks in the world of electronic commerce “(Burnham 1996). “ The market for Internet banking is forecast to grow sharply in the next few years, affecting the competitive advantage enjoyed by traditional branch banks” (Liao et al. 1999; Duclaux 1996). It had been studied that banks that not providing online services , they would lose their 10% of customers as in this digital everyone needs fast and updated information as per their convenience (Orr 1998; Tower Group 1996).[19].

A. References

Literature Review

In the digital or electronic era, human or manpower resource have dynamic functions to adopt the information technologies where Information, technologies, systems and communication has been changed in the present scenario known as the “digital era” and employees should adopt this changes. (Nishad Nawaz Maditheti, 2017), (McCirdle, 2006), (Whitten et al., 2004) (Hendrickson,2003), has investigated that in the digital era every area of services and business has influenced by adaptation of information system. Banking sector or financial organization also influenced by suing computer technology CORE banking and online banking has redefined the process of banking. Online banking provide more and 24*7 services to their customer with the adaptation of information technology. Information technology is found to be as the main contribution factor for the organizations achievements and for their core competencies[9][12][14][21].

Mahdi & Mehrdad, 2010, has stated that over the time financial services based industry has changed. It termed as e-developments or ICT Information communication technology development which is growing rapidly in all sectors of financial intermediation and financial markets. It includes all the services related to financial such as e-finance, e-money, e-banking, e-brokering, e-insurance, e-exchanges, and e-supervision. The adaptation of information technology (IT) is becoming the most essential factor in the development of banking services, that influencing banks marketing and business strategies. Distribution for financial services is rapidly changing with the adaptation of internet and information technologies. Bank strategies should be designed according to the factors that cover the unforeseen developments and must be flexible to adjust the adaptation[11].

Dabholkar (2009), has investigated the advantages of adaptation of information technological developments. Adaptation of information technology helps to avoid repetition of process, it helps in reducing human error, it is time consuming tasks, and it extended access to banking related facilities. Information technology provides facilities to customers by providing information easily as and when required. Online banking allows non-cash transactions from anywhere and at anytime, rather visiting to branch. Similarly, telephone banking allows customers to perform tasks as and when and from where he required. He suggests that direct contact with such technology also gives customers a feeling of satisfaction[4].

To et al. (2008) conducted study and found that adaptation of information technology helps in instant messaging, it helps in controlling behavior of employees, self-efficacy generated a positive response of an employee’s behavior control and behavioral intention.

Berger, (2003) studied and found that Managers or officer cannot ignore technological changes in an organization as they play vital role. The application software related to information and communication technology techniques, policies, concepts and strategies that provide banking services has become a necessity and related to all banks and rather a prerequisite for local and global competitiveness. ICT put direct impact how managers take decision, how they plan to achieve goals and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery[2].

Thyaga Raju N(2016 ) has focused on latest developments in information technology of banking sector are Internet, Automated Teller Machine (ATM), Society for worldwide inter-bank financial telecommunications (SWIFT), Cash dispensers, Electronic clearing service, Bank Net, Chip card, Phone banking, Tele-banking, Internet banking or digital banking, Mobile banking. Any where banking, Voice mail, E-banking, CORE banking Etc.
The study covered the benefits related to adaptation of Information Technology in banking sector that helps in implementation of reliable techniques for control of risks, better services, product development, better market infrastructure, implementation of reliable techniques for control of risks and helps the financial intermediaries to reach geographically distant and diversified markets[18].

I Objectives
To explore the factors which contribute in Information Technology Adaptation in Nationalized and Private Banks.

II Research Methodology
Nature of research: Exploratory
Universe: Officers and Managers (Employees) Nationalized and Private Banks of Indore division (M.P.).
Sampling unit and size: 161 responses (Managerial Employees) of Nationalized and Private Banks of Indore Division (M.P.).
Technique for collecting sample: Convenient
Tool for data collection: A self designed closed ended and likert Scale its value states as “1 = strongly disagree”, “2 = disagree”, “3 = Neutral”, “4 = agree”, “5 = strongly agree”

- Based questionnaire was developed to collect data of Information technology adaptation been used. Reliability scale is 0.792 whereas Validity of the scale is 0.94.

- Tool for data analysis: Statistical tools used for data analysis were Normality, Reliability and factor analysis has been applied with the help of SPSS version 16.0 (Statistical Package for Social Sciences).

III Result and Discussion
Reliability Test: Reliability of data through Cronbach alpha is (.792) (see annexure 1) which is excellent. Reliability test measures the stability or consistency of data. According to proven theories value of reliability should be above 0.6 is good, value below 0.5 states that consistency of data is poor.

Factor Analysis: It means to correlate and observed the factors among the variables. The results of extraction from the variables of information technology adaptation factors. To determine the appropriateness of data set for factor analysis Bartlett’s test of sphericity and Kaiser-Olkin (KMO) are measured. In this study, the result of Bartlett’s test of sphericity (0.00) and KMO (0.735), (see annexure 2) indicates that the data analysis is appropriate for factor analysis. According to the theories KMO values should be in between 0.5 to 1. Varimax rotation measured for extracting factors for analysis of principle component. On the basis of “Latent Root Criterion” number of factors was extract and finalized. Eigen values greater than 1 have been selected. All factor values greater than 0.50 have been considered for further analysis. four factors were extracted, which accounted for 65.076 percent of total variance. These factors are as below-

Factor 1: Technical assistance - The first factor has been named as Technical assistance with a total factor load 8.21 and 30.762 percentage of variance. It is constituted of seven items i.e. 6,7,8,9,3,2,1. These items are “A specialist is available for assistance with hardware difficulties”, “A specialist person is available for assistance with software difficulties”, “Specialist instruction and education for new technologies are available to employees”, “Technical guidance is available in the selection of hardware, software, printers and other equipments”, “Management enthusiastically support the adoption of advanced technologies “, “Management has allocated enough resource for adaptation of advanced technologies “, “Management actively encourage employees to use the new technologies in their daily task”.

Technological assistance is the specialist provided by the top management to employees to guide them how to use software, which develops the capacity and motivate the employees to adopt information technology and increase their performance. Effective top managers give their commitment to employees and organization which motivate a employee with commitment towards the job with truthfulness, trustworthiness, honesty and efficiently hard work which motivates him for his optimum performance into work with genuineness. Goh (1995) has studied that, with the adaptation of information technology, information become easily and readily available as and when required, Internet business software helps in providing feasible banking services and will provide report as per the requirement of customers. so, people using Internet will easily adapt Internet banking. Goh also concluded that the government also motivating people towards the adaptation of information technologies[7]. It has been proved that the local government is forcing people towards the information technology (Tan 1998; Toh and Low 1993; Jussawalla et al. 1992; Gurbaxani et al. 1990.). CORE banking services or internet banking becoming more favorably, and easy to use hence people are adapting technologies easily and using more and more applications[8][10][20].

Factor 2: Human resource information system - The second factor has been named as Human resource information system with a 14.305 percentage of variance. It is constituted of three items 14,15,13 These items are “The adaptation of information technology has improved overall management activities related to employee recruitment, selection, training, promotion, and compensation.”, “The adaptation of information technology has improved overall employee management activities related to employee performance management, rewards, career development and communication (employee relations).”, “The adaptation of information technology has improved employee day-to-day record keeping activities such as entering payroll information, employee status changes, etc.”.
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Human resource information system (HRIS) is a organized way of acquiring, storing and processing information for each individual manpower working in an organization that helps in recruiting, planning, decision making, controlling and submitting the information regarding employees to top management. HRIS is a information system that provide online solution and designed for entering, acquiring, storing tracking the data. Information needs for the Human Resources, payroll, management, and accounting functions within a business. It helps in providing information to management as well as employees to keep track of their work. It is useful for tracking employee information. The importance of perceived usefulness means TAM model has been widely used in the field of electronic banking (Guriting and Ndubisi, 2006; Jaruwachirathanakul and Fink, 2005; Eriksson et al., 2005; Laforet and Li, 2005; Liao and Cheung, 2002; Polatoglu and Ekin, 2001;) has concluded that adaptation of information technology will improve the performance of employees and provide better services to the customer.

Factor 3: Competitive Advantage The third factor has been named as Competitive Advantage with a 11.659 percentage of variance. It is constituted of three items 11, 10 ,12. These items are “It is a strategic necessity to use advanced technologies to compete in the marketplace.”, “Bank will lose customers, to their competitors if they do not adopt new technologies.”, “Customers require the use of new technologies for doing business with bank.”. Competitive Advantage is define as providing better, fast and as per the requirement of customers services and products by an organization at the same quality as its competitors in the global market but at a lower price. Organization can tag more prices by providing some different and more features into it. It is matching core competencies to the opportunities. Chua (1980) has focused on competitive advantage that adaptation of information technology will significantly influence the adopter’s family, friends, and colleagues. Although there is no basis on which to predict how each of these groups will affect intentions to adopt Internet banking, it is nonetheless expected that the influence of these groups as a whole will be significantly related to the individual’s intention to adopt Internet banking. The banking system has been attempting to gather more and more information on aspects that induce people to do their banking over the Internet[3]. (Gerrard and Cunningham, 2003; Sathye, 1999) has concluded that the internet banking is becoming very common and useful services among Singapore consumers[6]. Sathye M (1999) has researched by taking Australian consumers as a sample for an empirical investigation on the adoption of Internet banking.

Factor 4: Cost Benefit Analysis - The fourth factor has been named as Cost Benefit Analysis is constituted of 2 two items 5,4. These items are “Amount of money and time invested in these technologies is very high”, “The cost of adopting these technologies is far greater than the benefits.”. Cost Benefit Analysis is the organized way to find (SWOT analysis) strengths , weaknesses, opportunity and threat of alternatives solutions provided by analyst or to find options which provide the best approach in achieving benefits while protecting savings. Beccalli (2007) had suggested that there exist a relationship between technology investment and performance of employees. In his study he considered the 737 European banks in the year 1994–2000. He used the SFA to found relationship between the costs and benefits for European banks. His main motive was to found was whether technology investments improved the efficiency of banks or not, and banks attract its customers, means bank gains a competitive advantage by investing in technology. The empirical study means based on 737 banks. Short-term profitability after adaptation of technology was measured by ROA and ROE ratios was negative. However, European banks should adapt technology and invest in the long-term costs (technological changes), hence the actual costs of production per year is reduced by approximately 3.1%. The impact of adaptation of information technology will bring changes on cost reductions consistently. A final conclusion of the research focused that the performance of European banks was not homogenous with the impact of adaptation of different types of information technology includes hardware, application software, erp, products and services. Investment in acquiring of suitable application software and hardware had a negative impact on performance and bank performance and profitability is related to information technology[1].

IV. CONCLUSION

Information technology adaptation in an organization is important for achieving their goals and objectives, for the efficient performance and for its success. While requirements for a adaptation of information technology vary from organization to organization, certain factors are generally required for any organization to adapt information technology. These minimum factors are the technical person or expert assistance for adapting information technology, proper infrastructure required to employees by top management, proper training and development programs; however, they are more inclines towards their careers and growth. For example, to adapt information technology, generally a person must be dynamic towards his work. Top level management must give commitment to their employees. The adaptation should not provide any physical discomfort or mental anguish to any employee. The employee must feel comfortable as though he is doing and learning something new. Top management should provide proper IT infrastructure and technical person who can assist them properly how to use technologies.
Finally, the employee must feel motivated, appreciated and important, as with their performance, organization will get achievements. No doubt in today’s scenario, many factors like, increasing expectation of the employees, changing demographics of the employees, dynamic changes in technologies and core competencies in every sector organizations, this all factors should be handled strategically then organization can achieve the desired objectives and goals.

**APPENDIX**

**Annexure 1**

**Reliability Statistics**

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.792</td>
<td>15</td>
</tr>
</tbody>
</table>

**Annexure 2**

**KMO and Bartlett’s Test**

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>.735</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett’s Test of Approx. Chi-Square</td>
<td>1.055E3</td>
</tr>
<tr>
<td>Sphericity</td>
<td>Df 105</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Annexure 3**

**Rotated Component Matrix a**

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>q6</td>
<td>.821</td>
<td>.279</td>
<td>-.012</td>
<td>.087</td>
</tr>
<tr>
<td>q7</td>
<td>.769</td>
<td>.236</td>
<td>.087</td>
<td>.118</td>
</tr>
<tr>
<td>q8</td>
<td>.765</td>
<td>.276</td>
<td>-.088</td>
<td>-.134</td>
</tr>
<tr>
<td>q9</td>
<td>.758</td>
<td>.291</td>
<td>-.137</td>
<td>.087</td>
</tr>
<tr>
<td>q3</td>
<td>.732</td>
<td>.000</td>
<td>.083</td>
<td>.073</td>
</tr>
<tr>
<td>q2</td>
<td>.719</td>
<td>-.050</td>
<td>.076</td>
<td>-.038</td>
</tr>
<tr>
<td>q1</td>
<td>.661</td>
<td>-.061</td>
<td>.148</td>
<td>-.005</td>
</tr>
<tr>
<td>q14</td>
<td>.128</td>
<td>.780</td>
<td>.284</td>
<td>-.096</td>
</tr>
<tr>
<td>q15</td>
<td>.153</td>
<td>.736</td>
<td>.146</td>
<td>-.281</td>
</tr>
<tr>
<td>q13</td>
<td>.161</td>
<td>.695</td>
<td>-.029</td>
<td>.171</td>
</tr>
</tbody>
</table>

**Extraction Method**: Principal Component Analysis.

**Rotation Method**: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

**Case Processing Summary**

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>159</td>
<td>99.4</td>
</tr>
<tr>
<td>Excluded</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

**Factor Analysis Summary**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Total Load</th>
<th>Factor Load</th>
<th>Eigen Values</th>
<th>% of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical assistance</td>
<td>6.014</td>
<td>3.869</td>
<td>.109</td>
<td>.221</td>
<td>.276</td>
</tr>
<tr>
<td>Human resource information system</td>
<td>4.014</td>
<td>4.014</td>
<td>.100</td>
<td>.292</td>
<td>.292</td>
</tr>
<tr>
<td>Competitive Advantage</td>
<td>2.116</td>
<td>2.116</td>
<td>.100</td>
<td>.292</td>
<td>.292</td>
</tr>
<tr>
<td>Cost Benefit Analysis</td>
<td>1.140</td>
<td>1.140</td>
<td>.100</td>
<td>.292</td>
<td>.292</td>
</tr>
<tr>
<td>Total</td>
<td>5.381</td>
<td>5.381</td>
<td>.100</td>
<td>.292</td>
<td>.292</td>
</tr>
</tbody>
</table>

**Extraction Method**: Principal Component Analysis.

**Rotation Method**: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.
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REFERENCES


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