



Sanjeev Kumar Singh, Kaushiki Singh

Abstract: Knowledge management is now becoming the driving force for the success of any business. This paper presents the framework for understanding the critical success factor that impact the execution of knowledge management in a bank. We had entered the era where future will depend on the creation, acquisition, integration and application of knowledge at right time to innovate and take competitive edge. Knowledge can be used as asset, resource or strategy. The motivation of this study is to identify the impact of critical success factors on knowledge management process in Indian nationalised banks. The construct identified as critical success factors such as information technologies, leadership in knowledge management, knowledge management culture, and measurement of knowledge management were tested using structural equation model. 236 response were collected from the respondent employed in Indian nationalised bank in Gorakhpur with the help of questionnaire as a data gathering instrument. The finding of the study reveals that all the critical success factors used in the proposed model significantly influence the knowledge management process. Leadership in knowledge management is identified as most important predictor among the critical success factor.

Keywords: Information technology, culture, leadership, measurement and knowledge management process.

I. INTRODUCTION

Indian banking system is an important sector and play a significant role in development of economy. It showed massive growth since post-independence [17]. Banking industry and financial institution are consistently shifting towards automation [2] and upgrading their technology due to dynamic environment. Banking sector also recognized the importance of knowledge management thus enhancing its efficiency to take competitive edge and acquire share market [6]. In the era of digitalization, prospects will be determined by our capability to prudently use knowledge [3]. Task was digitalized and sharing of knowledge became a common practice.

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* Correspondence Author

Sanjeev Kumar Singh*, Department of Commerce, DSMNR University, Lucknow, India. sanjeevsingh2727@gmail.com.

Dr. Kaushiki Singh, Department of Commerce, DSMNR University, Lucknow, India. kaushikinirupamsingh@gmail.com

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Bridging the knowledge kept in virtual domain with practical world required standardization in order to understand it in the same manner [4]. In Banking sector, huge number of transactions took place and generated every day and extracting knowledge from the data in a specific context is essential enhance the service quality. As older societies transferred, hard work was done by them to preserve the knowledge acquired through experience [5] and practice. In current scenario, people now started accepting that importance of knowledge resource cannot be avoided in order to utilize the resource of an organization [1] effectively.

Knowledge can be used as resource that will provide the competitive edge [19] but resource held by the organization not essentially deliver any kind of benefit [20] until and unless it is applied at a right time. "Knowledge" is now considered as valuable assets and considered as key weapon to take competitive edge [9]. Only those organizations are in position to set the benchmark in the industry who grab the opportunity emerged from knowledge-based assets [10]. Knowledge management is a systematic process that enhance the employees understanding in specific context [4]. It includes the knowledge creation, transfer, sharing, embedding and using it have the extreme impact on operational process [11]. The process of knowledge management is at top priority of emerging firm [13]. Moreover, if employees will participate effectively then only knowledge management will achieve its anticipated objective [8].

Continuously challenges are emerging, and simultaneously rapid dynamic environment force the organization to enhance the knowledge and expertise across the organization on consistent basis [8]. Further, issue of sustainability has emerged for the organization due to dynamic environment and competitive scenario [6]. In current scenario, Indian banking sector specifically nationalised bank is facing numerous challenges and to overcome from the issues; merger of loss-making banks with profit making banks is initiated by the government recently. Moreover, these decisions are taken in context of SBI & associates and nationalised banks. Further, this sector is sensitivity to technology [6] and required consistent upgradation. There are various issues existing in organizational activities and management is unaware about most of the issues [18].



The knowledge management concepts is still in developing phase in Indian nationalised bank and its effect is still underestimated within these banks as they are aware about concepts but they have no clear understanding about its implementation, knowledge management process, knowledge management techniques, tools, benefits and key enablers of knowledge management process. Hence, it is required to study the key enablers of knowledge management in Indian nationalised bank which empower the knowledge management process in order to innovate, sustain, reduce the impact of dynamic environment and have competitive edge.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The knowledge - based view of the firm [21], knowledge related resource has been continuously recognised as significant asset and used as strategy to innovate. In present days, companies are viewing towards new source of knowledge that exist within organization, started developing and managing the knowledge and its application towards organizational goal [16]. Hence, physical resources need to be linked with knowledge supported by knowledge-based approach [11]. Moreover, managerial capabilities can be linked strategically [12]. When people, process and technology come together, it leads to enhancing organisational effectiveness [11]. Individuals are considered as the main mediators for knowledge [11] as utmost valuable knowledge is retained by individuals mind [14]. Human factor that contribute in learning process is fundamental base for organisational capabilities [16]. When core competencies are integrated, it results in value creation and provide the competitive edge [12]. Likewise, firm need to innovate consistently in order to retain competitive advantage [15]. Moreover, they need to adopt the constant self-modification to counter the varying factor [7] of dynamic environment. Learning based on experience or from others should be used in context of organization in order to reduce the response time to adjust the environmental changes [8]. In available literature, authors have suggested various success factor for knowledge management. With reference to knowledge management, it referred to the activities and practices that are employed in a way to confirm the successful implementation [22]. There are four critical success factors for knowledge management process i.e. information technology, culture, leadership, measurement suggested by author [6,23].

A. Information technologies:

In present days, information technology became the important tool for knowledge management to take decisions and capture the target audience and grab the opportunity at the earliest. Further, technology help the organization to build repositories and help to identify the knowledge object as per requirement to address their need [24]. However, technology cannot be considered as the solution for knowledge management need but essential to enable the firm's knowledge management process [25]. In current scenario, the importance of information technology is consistently increasing but specifically in banking sector required substantial investment as well as suitable administration of information technology projects [6].

B. Knowledge management culture:

Author stated that culture supports knowledge management and innovation [12]. Moreover, it affects the thought and decision-making ability to respond opportunity and threat [7]. Cultural knowledge is generated through belief and values that prevailing in firm [18]. Organizational culture must be open to inspire knowledge management initiative for innovation performance [12]. Hence, organizational culture must be able to give the expected bases to sharing the knowledge while deploying knowledge management and boost its creation and share concentrating on the value of knowledge [27].

C. Leadership in knowledge management:

It is essential to develop leaders at each level of function to sustain the success of enduring knowledge management initiative [28]. Top level management support is essential requirement and help in successful deployment of knowledge management [23]. With regards to knowledge management, leadership have some essential special features that leads to knowledge management [27]. Establishing a strong leadership structure would confirm an effective knowledge management process and would have a positive result on performance [6].

D. Measurement of knowledge management:

It is required to validate the worth of knowledge management initiative [22]. It is key aspect of knowledge management initiative to maintain the balance among the technological and organizational changes [25]. Author supported that measurement includes the assessment of processes and knowledge resources [28]. Measure and evaluate the knowledge to get insight and enhance knowledge management in the firm [33]. Hence, the activities deployed related to knowledge management were subject to examination [13].

E. Knowledge management process:

Knowledge management referred to systematic way of handling organizational knowledge [35]. Knowledge management processes are the organized stages which deliver the knowledge for the organization [37] to take competitive edge. It is a process of transferring information that exists in organization in disorganised form [27]. It assists to resolve issue in short period of time [35], viewed as quick response to threats [16] and empower the firm to produce and obtain new knowledge, storage and transferring knowledge [36]. Knowledge transfer process plays significant role in supportive organizational effectiveness related to best practices [11]. Further, it includes the effective association to take out the best from existing knowledge [11]. Once the depository is established will enhance the development of individual knowledge [34]. This theoretical discussion along with prevailing empirical evidence the following hypothesis are proposed in the context of Indian nationalised banks:

H1: There is significant positive influence of information technologies on knowledge management process.

H2: There is significant positive influence of knowledge management culture on knowledge management process.



H3: There is significant positive influence of leadership in knowledge management on knowledge management process. **H4:** There is significant positive influence of measurement of knowledge management on knowledge management process.

III. RESEARCH METHODOLOGY

A. Research in Indian nationalised Banks

Indian nationalised bank plays a crucial role in development of Indian economy. In the knowledge- based economies as well as in dynamic environment, their contribution can be enhanced by way of research related activities and innovative ideas. In line of this, most of the bank had developed the knowledge management portal and collected huge data but they are not effective. Hence, in this research we propose to relate the critical success factor and knowledge management process in Indian nationalised bank.

B. Population and data collection

In this study, target population consisted of managerial and clerical staff (other than managerial staff) of Indian nationalised bank operated in Gorakhpur, Uttar Pradesh, India. Data gathering instrument i.e. questionnaire was employed for survey for testing the hypothesis above mentioned. 370 questionnaires were administered through convenience sampling technique. 261 questionnaires received having response rate of 70.54%. However, 25 responses were invalid and after discarding 236 response (63.78%) were taken for statistical analysis. This sample size is enough for structural equation model as suggested by Author [38].

C. Measures

In this study, the scale was taken from the existing literature as specified in Table 1. The questionnaire contains three nominal data question to obtain the demographic profile of respondent and 23 question on 5-point likert scale as a component of knowledge management scale specified in Table 1.

Conceptual Research Model

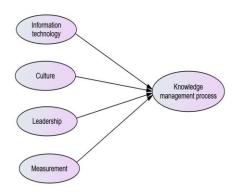


Figure:1
Table: 1 Source of measurement instruments

Variable	Dimension	No. of item	Source

Critical	Information	6	Ozlem, Y.U. &
success	technologies		Duygu, K. (2013)
factors	(IT)		[6]
(CSF)			
	Knowledge	4	Author reported
	management		that:
	culture		
	(CUL)		"Knowledge
			Management
	Leadership in	4	Measurement
	knowledge		Tool" developed
	management		by "Arthur
	(LDP)		Andersen" and
			''American
	Measurement	4	Productivity and
	of knowledge		Quality Center''
	management		has been used in
	(MES)		forming the
	. ,		questionnaire
Knowledge		5	form (O'Dell et
management			al., 2003).
process			
(KMP)			

D. Data analysis procedure

This study implement cross sectional design and it is quantitative in nature. First step, we employ exploratory factor analysis to identify any problematic variable and reliability of construct; second step, measurement model specification i.e. convergent validity & discriminant validity and last step, use structural equation model to test the hypothesis.

IV. DATA ANALYSIS AND RESULTS

A. Demographic profile of respondent

The demographic profile of respondents is analysed in this section. 62.70% respondents are from managerial post where 37.30% belongs to other than managerial post. In case of experience; 33.5% respondent have experience of less than five years in banking sector where 40.7% respondent have experience between 5 to 10 year and 25.8% respondent have more than 10 year of experience. 29.7% respondent are post graduate where 47% respondents were graduate and remaining 23.3% were qualified higher secondary (upto XII).

B. Exploratory factor analysis

Exploratory factor analysis is important to employ to identify the underlying dimension endorsed by respondent and interrelated variable are clustered in same factor as it exists in literature and confirmed the theory. The result of exploratory factor analysis is interpreted below, and rotated component matrix shown in Table II confirms that factors are in accordance with existing literature.

A principal component analysis was performed on the 23 items with orthogonal rotation-varimax. The Kaiser -Meyer – Olkin measure confirmed the sampling adequacy for the analysis, KMO = .906,



and all KMO values for individual items were > .850, which is well above the acceptable limit of .50. Bartlett's test of sphericity χ^2 (253) = 3606.945, p < .001, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Five components had eigenvalues over Kaiser's criterion of 1 and in combination explained 72.61% of the variance. Given the large sample size, and Kaiser's criterion on five components, this is the number of components that were retained in the final analysis. Table II shows the factor loadings after rotation. The items that cluster on the same components suggest that component 1 represents information technologies, component 2 represents knowledge management process, component 3 represents knowledge management culture, component 4 represents measurement of knowledge management and component 5 represents leadership in knowledge management (Field, 2009). Further Cronbach's a specify the internal consistency of construct. All the values are greater than .70 [40] as suggested by author. Details were listed in table II.

> Table II **Rotated Component Matrix**

	Component						
	1	2	3	4	5		
A1	.875						
A3	.875						
A4	.874						
A2	.869						
A5	.841						
A6	.831						
F4		.787					
F1		.761					
F2		.719					
F3		.718					
F5		.701					
B4			.850				
В3			.832				
B2			.821				
B1			.810				
D3				.799			
D1				.792			
D2				.790			
D4				.757			
C2					.780		
C3					.775		
C1					.758		
C4					.743		
Eigenvalues	8.50	3.13	2.00	1.68	1.39		
% of variance	36.95	13.5	8.73	7.30	6.04		
		9					
Cumulative %	36.35	50.5	59.2	66.5	72.6		
		4	7	7	1		
1) Cronbach's	.947	.851	.901	.853	.852		
alpha, α							
Extraction Mathad: Principal Component Analysis							

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

C. Measurement model assessment

In second stage, measurement model was assessed as

suggested by Author [40]. Convergent validity and discriminant validity were computed with the help of average variance extracted (AVE), factor loading and composite reliability (CR). The measurement of the model was verified with the help of confirmatory factor analysis in AMOS.

C1. Convergent Validity

The factor loading of information technologies ranges from .830 to .899, knowledge management culture varies from .781 to .865, leadership in knowledge management ranges from .749 to .811, measurement of knowledge management ranges from .747 to .785 and knowledge management process ranges from .640 to .783. Table III specify that all the value of AVE and CR is greater than suggested value i.e. .50 and .70. Likewise, value of all factor loadings is above the suggested value i.e. .60. Hence, the convergent validity holds true.

> Table III **Convergent Validity**

Cons tructDim ensiIte mMe anS.D. dinLoa din	CR
on g	
CFS IT A1 3.9 .995 .89 .753	.94
7 9	8
A2 3.9 1.071 .87	
6 3	
A3 3.9 1.098 .88	
1 2	
A4 3.9 1.059 .88	
5 3	
A5 3.9 1.073 .83	
2 9	
A6 3.9 1.133 83	
7 0	
CUL B1 3.7 1.061 .78 .697	.90
8 1	2
B2 3.8 1.193 .86	
6 5	
B3 3.8 1.123 .83	
9 8	
B4 3.8 1.134 .85	
0 3	
LDP C1 3.8 .970 .75 .591	.85
3 5	2
C2 3.8 .967 .75	
5 8	
C3 3.6 1.004 .74	
6 9	
C4 3.8 1.107 .81	
7 1	
ME D1 3.8 .960 .77 .595	.85
S 6 3	5
D2 3.9 .932 .74	
1 7	
D3 4.0 1.120 .78	
4 0	
D4 3.9 .941 .78	
8 5	





KMP	F1	4.0	.879	.78	.538	.85
		3		3		3
	F2	3.8	.864	.72		
		8		4		
	F3	3.9	.817	.73		
		7		0		
	F4	4.0	.920	.78		
		7		2		
	F5	3.7	.894	.64		
		8		0		

Note: S.D. refers to standard deviation

C2. Discriminant Validity

Author [41] laid down the criterion which is employed to estimate the discriminant validity. As per Table IV, it can be determined that the model meets the necessities of the discriminant validity and holds true as measure suggested by author. Table III and Table IV depicted that all the construct have fulfilled the essential requirement of convergent and discriminant validity.

Table IV Discriminant Validity

	MES	IT	CUL	LDP	KMP
MES	0.771				
IT	0.282	0.868			
CUL	0.388	0.400	0.835		
LDP	0.595	0.384	0.451	0.769	
KMP	0.503	0.410	0.496	0.554	0.734

The specific measures used to determine the goodness of fit are; χ2/df, GFI, CFI, TLI, NFI and RMSEA. The details were shown in Table V portrayed that measurement model is a good fit. CMIN/df = 1.603 and p-value .000, is below the recommended value i.e. 5 [43,46]. Further, the value of comparative fit index (CFI) is .962, Tucker–Lewis index (TLI) is .956 and Normed fit index (NFI) is .906 which is greater than recommended value i.e. .90 [43, 44, 45]. The value of GFI is .887 is also above the recommended value [44, 47]. Moreover, value of Root-mean square error of approximation (RMSEA) is .051 which is less than .08 recommended by author [43]. Hence, it is apparent from Table V that all the fit indices reported had met their desired criteria and the outcome of confirmatory factor analysis specify that model is acceptable for structural evaluation.

TABLE V Fitness index for measurement model

Timess mack for measurement moder							
χ2	df	χ2/df	GFI	CFI	TLI	NFI	RMSE
							A
352.	220	1.603	.887	.962	.956	.906	.051
62							

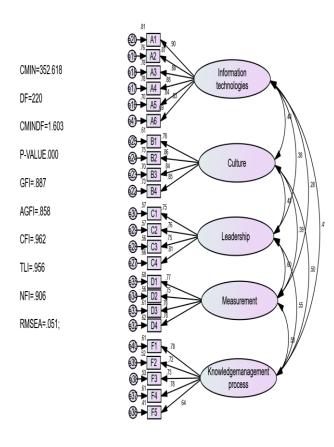


Figure 2: Measurement model

D. Structural model assessment

After confirmatory factor analysis, structural model was developed with the help of software i.e. AMOS shown in figure 3. The proposed hypothesis was tested with the help of p-values shown in Table VI. All the p-values reflected in Table VI are less than .05 of all the independent factors. All the proposed hypothesis H1, H2, H3 and H4 were supported by the findings of the study.

TABLE VI RESULT OF HYPOTHESIS

	Estim	S.E.	C.R.	P-val	Result
	ates			ue	
KMP←	.115	.05	2.318	.020	Supported
IT		0			
KMP←	.166	.05	3.142	.002	Supported
CUL		3			
KMP←	.202	.07	2.901	.004	Supported
LDP		0			
KMP←	.197	.07	2.499	.012	Supported
MES		9			



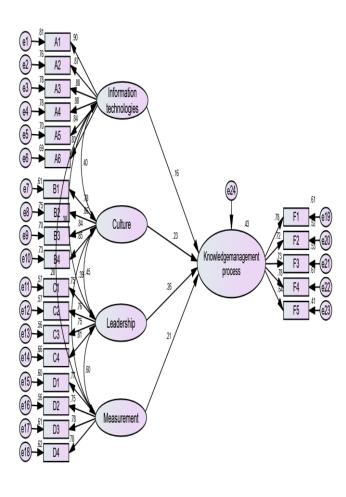


Figure 3: Structural model with path estimates

V. DISCUSSION AND CONCLUSION

Based on the review of relevant literature, this study proposed the relationship between independent and dependent variable by way of a structural model i.e. critical success factor and knowledge management process. The aim of study is to identify that to what extent the critical success factors are effective in enhancing knowledge management process. To get the insights regarding the relationship of critical success factor and knowledge management process; the research performed the examination to assess the path coefficient of each critical success factor with knowledge management process. As per Table VI, the finding of AMOS-SEM indicate that all the critical success factors are the predicator of knowledge management process.

Leadership in knowledge management is found to be most powerful indicator among the critical success factor of knowledge management process. This finding is supported by existing literature. For instance, author said that the vision of leader is clear with regards to their business, business environment and knowledge goals and hence, undoubtedly articulate an idea of knowledge management and its agenda [31]. They provide the support for the deployment of knowledge management practices to enhance the knowledge acquisition and application in firm [30]. Moreover, Leaders

are emphasising on identifying reason and other critical success factor of knowledge management [32]. Top management should dedicate themselves to encouraging a corporate attitude that highlights the knowledge sharing across the organization [29]. The next important critical success factor is knowledge management culture. Organisational culture is considered as a significant factor of the climate and main impetus of a business [7]. A knowledge sharing culture must be cultivated for successful implementation of knowledge management as the ability of firm to use the knowledge based on level of passion among employees [23]. The motive behind knowledge management is to motivate the employees to work effectively and the processes, role of employees and technologies needs to be considered during knowledge management initiative to save the time of employees [26]. Further measurement has another factor that affect the knowledge management process. It is essential to compare the business results with knowledge management activities but not consider it as cause and effect relationship [26]. Many people are afraid with term measurement and consider it as synonym of ROI and not aware to link knowledge management effort to ROI [26]. However, its goal is to measure the effectiveness of knowledge management initiative [26]. Moreover, it would be difficult to link the knowledge management initiative with the financial results as there are other various variable exist that affect it at the same time [22]. At last information technology impacted and it has the significant positive influence on knowledge management process. Author stated in their study that, technology lay down the basis for solution as well as the enabler of knowledge management [23]. Further, it is supported by another author that information technology is key enablers for knowledge management, and it is unquestionable [22]. In the absence of strong information infrastructure, it would be difficult for firm to enable their employees to share information at large scale [26].

The conclusion of this study contributes the literature in several way. Firstly, it highlights the critical success factor such as information technologies, knowledge management culture, measurement of knowledge management & leadership in knowledge management to facilitate the activities related to knowledge management in Indian nationalised banks. Finding of this study describe that these critical success factors have significant positive influence on knowledge management process. Interestingly, this study contradicts with finding of [6] who did not find the significant influence of knowledge management culture measurement of knowledge management on knowledge management process at 0.05 level. However, result of this study validate most of the previous studies [22, 27, 32, 48, 49]. These authors stated that leadership, culture, information technologies and measurement are the critical success factors for effective implementation of knowledge management process. Secondly, these results also validate the knowledge-based view in context of Indian nationalised bank.





PRACTICAL IMPLICATION

Knowledge management is one of the important driving forces in present days especially for the success of Indian nationalised banks. This study is based on the empirical evidence to provide the outlook of critical success factors for employing knowledge management in Indian nationalised banks that help this industry to accomplish knowledge management. This study will assist the managers, top level management and practitioners of knowledge management in banking sector by providing the innovative idea and determinants of knowledge management process. Further, it acts as aid for banks to consider these critical success factor in order to make the effective execution of knowledge management process to enhance the speediness of innovation, take competitive edge and to set the benchmark in industry.

LIMITATION AND FUTURE SCOPE

There is limitation to this study which can be addressed by the future research work. Future research is required to identify the key areas where it to be practiced. It is restricted to nationalised banks of India and finding are based on the respondent who are employed in Gorakhpur. This study has the cross-sectional design and future work can be undertaken on longitudinal design to get better insights. Also, future studies can be undertaken on other segment of commercial bank such as state bank of India and associates, private banks, foreign banks operated in India in order to verify that same critical success factor exist for them as well.

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AUTHORS PROFILE



Sanjeev Kumar Singh has completed his Post graduation and pursuing Ph.D. from Dr. Shakuntala Misra National Rehabilitation University, Government of U.P., Lucknow and awarded JRF. His area of interest includes financial management, marketing management, knowledge management and its

interdisciplinary subjects. He had published research paper in various national and international journals and have presented paper in conferences and seminors.



Dr. Kaushiki Singh has done Ph.D. in Commerce, MBA in Marketing management and currently working as Assistant Professor, Department of Commerce, Dr. Shakuntala Misra National Rehabilitation University, Government of U.P., Lucknow. She deals in banking, marketing management, consumer behaviour, business

communication, organisational behaviour, public finance and principle of management. She has more than 17 years of experience in academics as well as also hold administrative post. She has written 4 books and 20 research paper for various established national and international journals and has completed 2 minor research projects sponsored by UGC, New Delhi.

