THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Technological Change Management:
A Comparative Study between Public and Private Sector Banks in India

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Abstract:
There has been incredible technological advancements in the Indian banking industry due to increasing competition. The strategic step taken by most of the banks is to adapt technological changes as fast as possible to create a competitive edge in the market. Technology is a critical factor which decides the performance of the banks. This is one of the vital reasons why private banks have survived and thrived success in the market in such a short period. This paper assessed the attitude of employees of both public and private sector banks towards technological change initiatives. The study established the association between demographic profile of the respondents and response for technological organizational change. The study also reveals that lower the age of employee higher will be the responsiveness towards technological change. It also led to the finding that employees with technical and professional degrees are more responsive to technological change initiatives. It identified the interlink different level of performers and attitude towards technological change management. This study which has been conducted on 6 different banks in India, by using primary data collected from 100 respondents through a structured questionnaire based on own developed questionnaire consisting of 5 questions for measuring the attitude employees towards technological change initiatives and the questionnaire developed by Pearce and Porter (1986) and Moorman (1993) for measuring the performance level of employees reveals that there exists a strong association between performance level of employees and attitude towards technological change management The findings are based on analysis of the data through Descriptive Statistics and ANOVA.

Keywords: Bank, technological change, performance

1. Introduction

The role of banking sector is very essential to face global challenges as it is one of the most essential service sectors. Today, in India the service sector is contributing half of the Gross Domestic Production and the banking industry is a major contributor to it. The significant role of banking industry is indispensable to speed up the economic development. Banking industry is going through a period of rapid change of technology and is focused on technological innovation. Change in technology is very evident in current banking system. Internet banking has emerged as the biggest focus area in the "Digital Transformation" agenda of banks. Technology is one of the major key differentiators in the performance of banks. Banks need to look at technological change not only for the future prospects but also for the daily operations.

Technology plays an important role in determining the quality of services provided by the banks. Organizational performance and development are determined by the state and types of technologies being used. Technology, workforce and performance are interlinked. Human resource performance is directly related to technological change. If technological changes are effectively managed in banking industry, it can result in better performance of banks. The increase in investment on training and development by banks in India is caused by a variety of motives, which include — new technology adoption, productivity, responding to skills deficiencies, new hire inculcation, and staff performance management. The workforce requires skill development programmes like effective training to adapt the emerging technological changes.

1.1 Recent Trends of Technological Changes in Banking Sector

The opening up of the Indian economy created the path for new generation technologically advanced banks. All the banks were quick to leverage evolving technology. It created a competitive environment among nationalized and privatized banks in India. This helped to generate a sense of urgency in public sector banks to change their technology to speed up banking operations in India. The liberalization of the Indian economy corresponded with the internet revolution which completely changed the scenario of banking sector in India. Establishment of computerized inter-connectivity across bank branches, modernization of payment services and settlement through Electronic Clearing Services (ECS), National Electronic Fund Transfer (NEFT), were all significant landmarks in the banking technology revolution. However, there is a wide variation in the technology implementation capability across different participants of the banking industry.

2. Review of Literature

Robertson and Seneviratne (1995) explained that changes in technology and physical setting to the ways change can be accomplished, which they group with organization arrangements and social factors into a category they label organizational work setting. Their model of the organizational change process has three phases: (a) planned interventions create changes in the organization work setting; (b) these changes in the work setting lead individuals to change their behavior; (c) these individual behavioral changes impact organizational performance and individual development, the key organization outcomes.

Go and Pine (2005), stated that rapid and unpredictable changes in customer attitudes and information technology makes the need to manage changes inevitable and that the ability to manage is the key to the long- term survival of telecommunication companies.

Jetter and Neus (2009) intended to find the impact of technological innovation on business model, organisation and corporate culture with reference to IBM. The findings of the study are: Trends and technical developments must be anticipated better to take an active part in company's model; corporate organisation and its processes must be kept flexible along the lines of adaptive systems and service oriented architectures in the context of business process, such as IBM has realised in recent years in its IT service factories, may be considered a promising concept in that respect. Involving employees early and making them aware of the need for change are critically important for further development of corporate culture is highly dynamic world. In Germany, for example, IBM launched a number of transformation initiatives in 2007, underscoring the personal responsibility of employees for shaping their role in globalised world economy.

Lee, Bennett and Oakes (2000) examined the extent to which a learning organisation perspective is attainable in small-to-medium-sized manufacturing companies. The author developed an audit tool to assess the learning organisations. The study tried to show the ways in which the companies are responding to change which are represented together with the result of self-assessment using the developed audit tool. The work revealed that small-to-medium-sized companies have limited confidence in their employees' ability to understand and become committed to all aspects of companies' strategies for change. The study also found that vocational qualification and training are required for employees to cope the rapid change of technology in business environment. The research found that newer employees are more responsive to change than the older employees of the organisation.

Figuerou, Grey and Ceiro (2008) focused to investigate the effects of technological and organisational changes on markets, business strategies, employment levels and skill requirements. At the same time the study endeavoured to find the implications for labour management relations and the distribution of any additional revenue stream generated by the new technologies. The key findings of the work reveal that new technologies have expanded the industry's market through new distribution platforms, creating additional revenue streams, increasing employment and changing the occupational mix. The effects of these changes have been an intensification of the labour management conflicts over the distribution of the new revenue streams.

Duada (2010) tried to examine the relationship between technological innovation and organisational performance. The study also explained how employee relation strategies could be employed for technology innovation for improved organisational performance and for national advances in economic and social changes. The study concludes that technological innovation and employee development and motivation are essential ingredients of productivity. It is necessary for an organisation to continuously embark on technological innovation and develop its personnel to cope with the emerging technologies. Any organisation that intends to remain viable and competitive in present global economy has no other choice to than to be innovative and invest heavily on employee development. Industrial relations could also be used to stimulate technological innovation when combined with organisational planning and analysis of new technologies and with technological changes.

Dauda and Akingbade (2011) endeavored to examine how employee relation could be employed for technological change management. They also tried to determine effective method of using technological innovation for improved performance in Nigerian manufacturing industry. Findings of the study reveal that employee relations do not have significant relationship with technological change. The paper recommends that employee relation should be considered in management of technological change for, profitability, competitiveness and survival of the Nigerian Manufacturing Industry.

Brown (1993) aimed to find out the management tools that can facilitate technological changes in organisations. Brown found that successful technological change requires transformational leadership. The study also concluded that the principal tool employed by the transformational leader is "rites". As rites are elaborate, dramatic, planned sets of activities that promote change in individuals at both the psychological and behavioural level.

Lyytinen, Rose and Yoo (2010) investigated with the aim to examine the software development organisations' response to hyper competition and disruptive technological innovations. The study also focused on the learning skills of successful software development organisations. The work concluded that the successful software development organisations practice "hyper learning" to adapt the technological changes. It includes inventing, selecting and configuring learning routines. Distributed gate keeping and

brokering of external knowledge are the two learning routines which help to create systematic connections between dynamic technical changes in organisational sub units.

3. Objectives of the Study
- To find out the association between demographic profile of the respondents and the organisational change.
- To find out the difference in technological change management in public and private sector banks.
- To study the possible association between employee performance and their attitude towards technological change initiatives.

4. Methodology
The following methodology has been adopted for the study:
- Data Source and method of data collection: The study has been conducted mainly on primary data collected through our own developed attitude scale. The scale consisting of 5 items were distributed among the respondents selected through convenient sampling from 6 different public and private sector banks, namely, State Bank of India (SBI), United Commercial Bank (UCO Bank), Indian Overseas Bank (IOB), Housing Development Finance Corporation Ltd. (HDFC), Axis Bank and Kotak Mahindra in Odisha and collected back upon being filled up by the respondents. The questionnaires used for measuring workplace performance consisted of 10 questions (as given in the annexure) divided into two categories respectively developed by Pearce and Porter (1986) and Moorman (1993). The task and contextual performance have been evaluated out of total score of 58 and based on the total score the executives have been categorised in three categories as:
Performance I: Executives having low performance score, i.e., performance score less than score 46.
Performance II: Executive having medium performance score, i.e., performance scores between 46 to 49.
Performance III: Executive having high performance score, i.e., performance scores above 49.
- Sample size and sampling: A total of 120 sets of questionnaires were distributed among the respondents of which 100 questionnaires were included in the study for being complete in all respect.
- Demographic profile: Overall response of survey questionnaire ready for further analysis was 83.33%. 30 respondents were between the age group of 20 to 30, 37 respondents were between the age group of 30 to 40 and rest of the respondents were more than 40 years of age. 30 respondents were general graduates, 36 were post graduates and rest 34 were professional and technical graduates. 48 respondents belonged to public sector banks and 52 were from private sector banks

S. No.	Variables	Categories	Total respondents	Percent
1.	Age	20<30	30	30%
		30<40	37	37%
		Above 40	33	33%
Total 100100%				
2.	Qualification	Graduate	30	30%
		Post Graduate	34	34%
		Technical/Professional Graduate or Above	36	36%
Total 100100%				
3.	Sector	Public Sector	48	48%
		Private Sector	52	52%
Total 100 100%				

Table 1: Demographic profile

- Tools and techniques used: The important statistical technique used in the study are One Way Anova and Descriptive Statistics. One Way Anova has been used to test the hypothesis and Descriptive Statistics for overall responses of the samples. MS Excel-13 version package has been used for all the statistical calculations.
- Sample Units:3 different public sector banks, namely, State Bank of India (SBI), United Commercial Bank (UCO Bank), Indian Overseas Bank (IOB) and 3 different private sector banks, i.e., Housing Development Finance Corporation Ltd. (HDFC), Axis Bank and Kotak Mahindra were taken as sample units.

4.1. Hypothesis
- → H_o1: Technological change management in banks are independent of employee's demographic profile.
- → H_o2: There is no significant difference technological change management between public and private sector banks.
- → H_o3: There is no significant association between employee performance and their attitude towards technological change initiatives.

5. Data analysis and interpretation

5.1. Descriptive Statistics

	All respondents		High performers		Medium performers		Low performers	
	All level mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1. There is a convenient climate for change in technology in the organization.	3.56	1.33	**3.92**	1.21	3.75	1.34	3.15	1.33
2. Supervisors guide and encourage employees to learn new technology.	3.6	1.39	3.82	1.38	**3.96**	1.17	3.17	1.43
3.My organization provides required training to adapt new technology.	3.66	1.31	3.75	1.29	**4**	1.16	3.3	1.36
4.Change in technology is dealt effectively to improve employee performance.	3.62	1.36	3.82	1.33	**4**	1.13	3.17	1.46
5. Change in technology is managed in a way to facilitate organizational development.	3.63	1.31	**4.03**	1.13	2.81	1.30	2.22	1.36

Table 2: Response to technological changes by different levels of performers

As it is evident from the Table 2 that high performers are more satisfied with regard to the climate for change than the middle and low performers. It is also clear from the table that medium level performers are supervised and guided more effectively than the high and low level performers to accept the technological changes. Medium level performers are even more satisfied with the training programmes provided to adapt technological changes. They also believe that change in technology is dealt effectively to improve employee performance. It is also apparent from the above table that high performers agree more that change in technology is managed in a way to facilitate organization development.

	All respondents		Public Sector Banks		Private Sector Banks	
	All level mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1. There is a convenient climate for change in technology in the organization.	3.56	1.33	3.18	1.37	**3.90**	1.20
2. Supervisors guide and encourage employees to learn new technology.	3.6	1.39	3.14	1.39	**4.05**	1.19
3. My organization provides required training to adapt new technology.	3.66	1.31	3.25	1.32	**4.01**	1.17
4. Change in technology is dealt effectively to improve employee performance.	3.62	1.36	3.27	1.48	**4.01**	1.17
5. Change in technology is managed in a way to facilitate organizational development.	3.63	1.31	3.33	1.40	**3.90**	1.17

Table 3: Response to technological changes in public and private sector banks

Table 3 shows that the private sector employees are more satisfied with the initiatives of their organizations with regard to technological change management. Private sector employees find their organizational climate more conducive for technological change. They are also more pleased with the guidance, supervision and training provided to them to adapt technological changes. The respondents from private sector believe more than the public sector employees that technological change is managed in a way to facilitate organizational development in their concerned organization.

	All respondents		20<30 years age group		30<40 years age group		Above 40 years age group	
	All level mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1. There is a convenient climate for change in technology in the organization.	3.56	1.33	**3.9**	1.21	3.62	1.29	3.18	1.42
2. Supervisors guide and encourage employees to learn new technology.	3.6	1.39	**3.93**	1.25	3.67	1.35	3.24	1.45
3. My organization provides required training to adapt new technology.	3.66	1.31	**3.9**	1.15	3.75	1.27	3.24	1.45
4. Change in technology is dealt effectively to improve employee performance.	3.62	1.36	**4**	1.11	3.64	1.39	3.30	1.42
5. Change in technology is managed in a way to facilitate organizational development.	3.63	1.31	**3.86**	1.19	3.64	1.39	3.24	1.47

Table 4: Response to technological changes by different age groups of respondents

As it is evident from Table 4 that respondents between the age of 20 to 30 years' age group are more satisfied with regard to the climate for change than respondents of higher age groups. It is also clear from the table that respondents between the age of 20 to 30 years' age group feel are supervised and guided more effectively than respondents of higher age groups to accept the technological changes. Respondents of lower age group are even more satisfied with the training programmes provided to adapt technological changes. They also believe that change in technology is dealt effectively to improve employee performance. It is also apparent from the above table that respondents between the age of 20 to 30 years agree more that change in technology is managed in a way to facilitate organization development.

	All respondents		Graduates		Post graduate		Technical/Professional graduates	
	All level mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1. There is a convenient climate for change in technology in the organization.	3.56	1.33	**4**	1.20	3.61	1.25	3.13	1.41
2. Supervisors guide and encourage employees to learn new technology.	3.6	1.39	3.23	1.52	3.64	1.41	**3.88**	1.16
3. My organization provides required training to adapt new technology.	3.66	1.31	3.43	1.35	**3.76**	1.23	3.72	1.34
4. Change in technology is dealt effectively to improve employee performance.	3.62	1.36	3.16	1.44	3.73	1.28	**3.88**	1.32
5. Change in technology is managed in a way to facilitate organizational development.	3.63	1.31	3.33	1.48	3.73	1.28	**3.80**	1.16

Table 5: Response to technological change by respondents of different educational qualification

Table 5 shows that the respondents who are qualified with a graduate degree are more satisfied with the initiatives of their organizations with regard to technological change management. Respondents with technical or professional degrees find that they are supervised and guided properly to adapt technological change in their organization. Respondents with Post Graduate degree are pleased with training provided to them to adapt technological changes. The respondents having technical or professional degree believe more than other respondents that technological change is managed effectively and it facilitates organizational development in their concerned organizations.

5.2. Hypothesis testing for analysis of variance among different groups of performers and their response to technological change. (Table 6 to Table 10)

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	117.3333	4	29.3333	4.583333	0.023195	3.47805
Within groups	64	10	6.4			
Total	181.3333	14				

Table 6: There is a convenient climate for technological change in my organization.

It is apparent from Table 6 that the calculated value of F is 4.583333 against its tabulated value of 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It is therefore concluded that climate for technological change and performance of employees are significantly related to each other.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	146.6667	4	36.66667	6.043956	0.009731	3.47805
Within groups	60.66667	10	6.066667			
Total	207.3333	14				

Table 7: Supervisors guide and encourage employees to learn new technology.

It is evident from Table 7 the calculated value of F 6.043956 is against its tabulated value of 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that guidance and encouragement of supervisors are directly related with the performance of employees.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	154.6667	4	38.66667	7.073171	0.005701	3.47805
Within groups	54.66667	10	5.466667			
Total	209.3333	14				

Table 8: My organization provides required training to adapt technology.

It is apparent from the Table 8 that the calculated value of F is 7.073171 against its tabulated value of 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be inferred from the table that training provided by the banks to adapt new technology has an important relation with the performance of employees.

One way Anova						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	3	4	38.16667	6.981707	0.005966	3.47805
Within groups	54.66667	10	5.466667			
Total	207.3333	14				

Table 9: Change in technology is dealt effectively to improve employee performance.

It is evident from Table 9 that the calculated value of F 6.981707 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table effective management of technological change in the organization leads towards better performance of employees.

One way Anova						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	166	4	41.5	8.084416	0.003543	3.47805
Within groups	51.33333	10	5.13333			
Total	217.3333	14				

Table 10: Change in technology is managed in a way to facilitate organization development.

Table 10 shows that the calculated value of F is 8.084416.The calculated value being more than the table value leads to rejection of the null hypothesis. It can be inferred from the table that Change in technology is managed facilitate organization development will lead to improved performance of employees.

5.3. Hypothesis testing for analysis of variance between public and private sector banks with their response to technological change. (Table 11 to Table 15)

One way Anova					
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	176	4	44	2.55814	0.165397	5.192168
Within groups	86	5	17.2			
Total	262	9				

Table 11: There is a convenient climate for technological change in my organization.

It is apparent from Table 11 that the calculated value of F is 2.55841. The calculated value being less than the table value leads to acceptance of the null hypothesis. It can be inferred from the table that there is no significant difference in climate for technological change in public and private sector employees.

One way Anova					
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	220	4	55	1.833333	0.260202	5.192168
Within groups	150	5	30			
Total	370	9				

Table 12: Supervisors guide and encourage employees to learn new technology.

Table 12 shows that the calculated value of F is 1.833333.The calculated value being less than the table value leads to acceptance of the null hypothesis. It can be inferred from the table that there is no significant difference in supervision and guidance to employees to learn technological change in public and private sector employees.

Single way ANOVA					
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	232	4	58	2.377049	0.183965	5.192168
Within groups	122	5	24.4			
Total	354	9				

Table 13: My organization provides required training to adapt technology.

It is evident from Table 13 that the calculated value of F 2.377049 and the tabulated value is 3.47805. The calculated value being less than the table value leads to acceptance of the null hypothesis. It can be derived from the table that there is no difference in training provided to adapt new technology in private and public sector units.

Single way ANOVA					
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	273	4	68.25	3.922414	0.083141	5.192168
Within groups	87	5	17.4			
Total	360	9				

Table 14: Change in technology is dealt effectively to improve employee performance.

It is apparent from Table 14 that the calculated value of F is 3.922414. The calculated value being more than the table value leads to acceptance of the null hypothesis. It can be inferred from the table that there is no significant difference in dealing with change in technology to improve employee performance in public and private sector employees.

One way Anova					
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	249	4	62.25	4.51087	0.064861	5.192168
Within groups	69	5	13.8			
Total	318	9				

Table 15: Change in technology is managed in a way to facilitate organization development.

It is apparent from Table 15 that the calculated value of F is 4.51087. The calculated value being more than the table value leads to acceptance of the null hypothesis. It can be inferred from the table that there is significant difference in dealing with managing change in technology to facilitate organization development in public and private sector employees.

5.4. Hypothesis testing for analysis of variance among different age groups with their response to technological change. (Table 16 to Table 20)

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	117.3333	4	29.33333	6.111111	0.009381	3.47805
Within groups	48	10	4.8			
Total	165.3333	14				

Table 16: There is a convenient climate for change in technology in the organization.

It is evident from Table 16 that the calculated value of F 6.981707 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among different age groups of employees with regard to climate for change in technology in their organizations.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	146.6667	4	36.66667	10.57692	0.001288	3.47805
Within groups	34.66667	10	3.466667			
Total	181.3333	14				

Table 17: Supervisors guide and encourage employees to learn new technology.

It is apparent from Table 17 that the calculated value of F is 10.57692 against the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among different age groups of employees with regard to supervision and guidance for change in technology in their organizations.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	154.6667	4	38.66667	7.073171	0.005701	3.47805
Within groups	54.66667	10	5.466667			
Total	209.3333	14				

Table 18: My organization provides required training to adapt new technology.

Table 18 shows that the calculated value of F is 7.073171. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be inferred from the table that there is significant difference in level of satisfaction among different age groups of employees with regard to training provided adapt new technology.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	152.6667	10	38.16667	5.558252	0.012786	3.47805
Within groups	68.66667	4	6.866667			
Total	221.3333	14				

Table 19: Change in technology is dealt effectively to improve employee performance.

It is evident from Table 19 that the calculated value of F 6.981707 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among different age groups of employees with regard to effectiveness of change in technology to improve employee performance.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	166	4	41.5	7.238372	0.005259	3.47805
Within groups	57.33333	10	5.733333			
Total	223.3333	14				

Table 20: Change in technology is managed in a way to facilitate organizational development.

It is apparent from Table 20 that the calculated value of F 7.238372 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among different age groups of employees with regard to effectiveness of change in technology to facilitate organizational development.

5.5. Hypothesis testing for analysis of variance among respondents of different educational qualification with their response to technological change. (Table 21to Table 25)

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	117.3333	4	29.33333	5.866667	0.010733	3.47805
Within groups	50	10	5			
Total	167.3333	14				

Table 21: There is a convenient climate for change in technology in the organization.

It is evident from Table 21 that the calculated value of F 5.866667 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among the employees having different educational qualification with regard to climate for change in technology in their organizations.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	146.6667	4	36.66667	6.962025	0.006025	3.47805
Within groups	52.66667	10	5.266667			
Total	199.3333	14				

Table 22: Supervisors guide and encourage employees to learn new technology.

It is apparent from Table 22 that the calculated value of F is 10.57692 against the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among the employees with different educational qualification with regard to supervision and guidance for change in technology in their organizations.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	154.6667	4	38.6667	15.67568	0.000262	3.47805
Within groups	24.66667	10	2.466667			
Total	179.3333	14				

Table 23: My organization provides required training to adapt new technology.

Table 23 shows that the calculated value of F is 15.67568. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be inferred from the table that there is significant difference in level of satisfaction among the employees with different educational qualification with regard to training provided to adapt new technology.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	152.6667	4	38.16667	6.291209	0.008514	3.47805
Within groups	60.66667	10	6.066667			
Total	213.3333	14				

Table 24: Change in technology is dealt effectively to improve employee performance.

It is evident from Table 24 that the calculated value of F 6.291209and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among the employees of different educational qualification with respect to effectiveness of change in technology to improve employee performance.

One-way ANOVA						
Source of variation	Sum of squares (SS)	Degree of freedom (df)	Mean Square (MS)	F value	P- Value	Critical value of F
Between groups	166	4	41.5	7.5	0.004639	3.47805
Within groups	55.33333	10	5.533333			
Total	221.3333	14				

Table 25: Change in technology is managed in a way to facilitate organizational development.

It is apparent from Table 25 that the calculated value of F 7.5 and the tabulated value is 3.47805. The calculated value being more than the table value leads to rejection of the null hypothesis. It can be derived from the table that there is significant difference in level of satisfaction among employees of different educational qualification with respect to effectiveness of change in technology to facilitate organizational development.

6. Findings with Respect to the Formulated Hypotheses

As stated before, three hypotheses were formulated for the study, which were tested through ANOVA. The findings are given in Table 26 as follows:

Hypo-thesis No.	Broad description of Hypothesis	Tools applied	Status of hypothesis upon testing (Accepted/Rejected)	Implications
H_01	Technological change management in banks are independent of employee's demographic profile.	ANOVA	Rejected	**1.** Age of the employees have significant effect on their response to technological change management, lower the age higher the positive attitude to technological change. **2.** Employees with higher academic degrees like post-graduation or technical or professional qualification have better response to technological changes.
H_02	There is no significant difference technological change management between public and private sector banks.	ANOVA	Accepted	There is no significant difference in the attitude towards technological changes among the employees of private and public sector**.**
H_03	There is no significant association between employee performance and their attitude towards technological change initiatives.	ANOVA	Rejected	Employees with higher performance level are more responsive to technological changes.

Table 26: Findings with respect to the formulated hypotheses

7. Findings

1. Higher the workplace performance, higher is the response to technological change.
2. Age of the employees have significant effect on the response to technological change.
3. Employees with higher educational qualification (such as post-graduate or technical/professional graduates) appear to have more positive response to change.
4. There is no significant difference in response to technological change in both private and public sector banks.

8. Suggestions

1. Banks need to have different climate for employees of different age groups and different educational qualifications to face technological change.
2. Banks need to design customized training programmes for different employees in order to succeed in technological change management.
3. More supervision and guidance is required to facilitate employees with lower educational qualification to adapt technological change.
4. Employees having low performance level must be facilitated with proper training programmes to improve their skills to adapt new technology.
5. Banks should try to create an environment of vibrancy and progressiveness by becoming a learning organization.

9. Conclusion

The banking sector in India has undergone significant technological transformation in last two decades. The human aspect to change management must be effectively addressed in ordered to avoid resistance to technological change. Successful management of change in technology is a critical factor to achieve any degree of long range attainment as well as sustainability of strategy to manage technological change. Participative style of management such as training employees to adapt technological change during implementation is effective to enhance their efficiency in managing daily operations. Managers should demonstrate strong leadership throughout the organization to aspire employees in implementing the change.

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Annexure I

Questionnaire

1. Section I
<u>About Your Organisation</u>
This section asks for some details on your organization.
1. Name of your organization _____
2. Type of entity [Put a tick (√) mark for the appropriate option]
 (i) Public Sector Unit ☐   (ii) Private Sector Unit ☐

2. Section II
<u>About Yourself</u>
This section asks for some details on you, which will help to classify your answer.
  1. Designation:_____
  2. Age group [Put a tick (√) mark according to your age]
      (i)   20>30 Years   ☐   (ii) 30>40 Years   ☐   (iv) More than 40 Years   ☐

  3. Educational Qualification [Put a tick (√) mark according to your educational qualification]
      (i)   Graduate   ☐   (ii)Post Graduate   ☐

      (ii) Technical or professional graduate [Specify Degree (s)_____]

3. Section-III
There are 5 statements in the following table. Please mark satisfied or dissatisfied with the same on a five point scale of,
1 = Strongly Dissatisfied; 2 = Dissatisfied; 3 = Can't Say; 4 = Satisfied; 5 = Strongly Satisfied; (Single Coding Only).

1.	There is a convenient climate for change in technology in the organisation.	1-------2-------3-------4-------5
2.	Supervisors guide and encourage employees to learn new technology.	1-------2-------3-------4-------5
3.	My organisation provides required training to adapt new technology.	1-------2-------3-------4-------5
4.	Change in technology is dealt effectively to improve employee performance.	1-------2-------3-------4-------5
5.	Change in technology is managed in a way to facilitate organisation development.	1-------2-------3-------4-------5

Annexure II

Standard Measures of Workplace Performance (By Pearce and Potter- Task performance; Niehoff and Moorman- Contextual Performance)

1. Name of the employee……………………………………………………………………………

2. Current designation………………………… Dept./Unit/Division/etc…………………………...

3. Period of assessment from……………………….to……………………………………………..

Note: Please appraise the employees placed under you, allow the following ten parameters, on an impartial basis, after the employee himself/herself has made his/her own assessment.

Items	Maximum weightage (nominal scale)	Weightage under self-appraisal	Weightage under supervisor's appraisal
I. Task based performance	**28**	-	-
1. Overall task performance	7		
2. Completing task on time	7		
3. Quality of performance	7		
4. Achievement of work goals	7		
II. Contextual performance	**30**		
5. Help others who have heavy workloads	5		
6. Help others who have been absent	5		
7. Willingly gives his/her time to help others with work problem	5		
8. Never takes long lunch or breaks	5		
9. Doesn't take unnecessary time off work	5		
10. Doesn't take extra breaks	5		
Total	**58**		