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Technological Revolution and Its Implication on Customer Value Perception: A Study on Indian Banking Sector

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Abstract:
To-day, we cannot think about the success of a banking system without technological revolution. It has enlarged the role of banking sector in the economy. The banks with the latest technology and techniques are able to generate more and more business resulting in their greater profitability. In recent studies, customer perceived value has come up strongly as the basis of competitive advantage in the banking industry. Against this background, this study finds out the implication of technological revolution on customer's value perception in Indian banking sector.

Key words: *Technology, technological revolution, Perceived Value, Banking sector*

1. Introduction

The Indian banking sector has been evolving since the year 1770 when the Bank of Hindustan was established in Calcutta and subsequently in its various avatars-when the General Bank of India, which came into existence in 1886 again in Calcutta; and then Bank of Calcutta (later Bank of Bengal - 1806), Bank of Bombay and Bank of Madras merging in 1921 to become the Imperial Bank of India which became the State Bank of India in 1955.

The Indian banking system saw another phase of metamorphosis in 1969 when all the leading commercial banks were nationalised by the then prime minister, Indira Gandhi. The third phase which actually started changing the face of the Indian banking was the post-1991 economic liberalisation which opened up the banking sector to increased competition and transformation offering better fare to customers.In this era, Banks have changed in their operations and moved towards universal banking along with the increased usage of technology.

Technology in the banks is presently catching up with a high level of development around the world. The gaps between the Indian banks and their counterparts in the technologically advanced countries are gradually narrowing down. The world has witnessed an information and technological revolution of late. This revolution has touched every aspect of public life including banking sector (Siam, 2006). Over the past two decades in particular, the banking industry has invested substantial resources in bringing technology to customers. It has revolutionised every industry including banking in the world by rendering faster and cost effective delivery of products and services to the customers. According to Chakrabarty, (2007) core banking solution enables banks to extend the full benefits of ATM, tele-banking, mobile banking, internet banking, card banking and other multiple delivery channels to all customers allowing banks to offer a multitude of customer-centric services on a 24x7 basis from a single location, supporting retail as well as corporate banking activities. Today public sector and private sector banks are offering online banking services. Various alternative channels to provide easy and anywhere banking are properly thought of. The banks in India are using technology not only to improve their own internal processes but also to increase facilities and services for their customers' satisfaction. Actual manifestation of the state of satisfaction will vary from person to person depending on their value perception. There may be some possibilities of gaps between customer's expectations and actual service perception in technology based banking service, which may lead to customer dissatisfaction. Hence, there is a need to assess the impact of technological revolution on behavioral intention of customers in terms of their value perception in Indian context.

2. Literature Review

Avasthi & Sharma (2000-01) have analyzed in their study that advances in technology are set tochange the face of banking business. Technology has transformed the delivery channels by banks in retail banking.Hua G. (2009) investigates the online banking acceptance in China by conducting an experiment to investigate how users' perception about online banking is affected by the perceived ease of use. The study finds that both perceivedease of use and privacy policy have a significant impact on user's adoption

of online banking. Jalan, B. (2003), IT revolution has brought about a fundamental transformation in banking industry. Perhaps no other sector has been affected by advances in technology as much as banking & finance.

Kotler and Keller (2006) define customer perceived value as "the difference between the prospective customer's evaluation of all the benefits and all the cost of an offering and the perceived alternatives".

Woodruff's (1997) definition is best suited for the present study. He defines customer value as a customer's perceived preference for and evaluation of those attributes, attributes performances and consequences arising from use that facilitate (or block) achieving the customers goals and purposes in use situations. According to him, the use situation of a product plays critical role in the evaluation of desires, so that when the situation changes, the evaluation of consequences, goals and purposes change as well.

Woodruff's (1997) means-end-based customer value hierarchy model consists of three levels, all of which contribute to customer's perceived value. The first of these is a goal or purpose level and consists of value perceptions relating to achieving subjective goals like ease of mind, increase in self-esteem, enjoyable and problem free use experience, and overall effectiveness. The second is a consequence or benefit level, and concerns more concrete and more articulate benefits that customer strive to attain with their offering, such as no hassle, reliability, ease of use, time saving, desired visual view, independence of time, high cost quality ratio and so on. The third is an attribute or attribute performance level value; this is the most concrete and basic level value constructs that dealing with the direct functions and charecteristics of the offering

3. Objectives

This study has been framed with following objectives:

- To explore the factors affecting the overall value perception of a customer.
- To access the impact of each and every factors on the overall value perception of a customer

4. Methodology

4.1. Data Source

This study is mainly based on the primary data. Secondary data is only used for the development of the research framework. A structured questionnaire is used as the main tool for data collection about the consumer's perception regarding the impact of technological revolution in indian banking sector.

4.2. Sampling Plan

This study includes 182 sample respondents residing in Urban communities of Odisha. Sample respondents are selected using simple random sampling method for this study during May 2013.

4.3. Questionnaire Design

A questionnaire was used to collect the data from the sample respondents. The questionnaires were administered by courier, e-mail, and personal delivery. A five-point Likert scale was used to elicit responses to the questionnaire indicating their level of agreement (1= strongly disagree to 5= strongly agree). The questionnaire also contained questions to solicit demographic information of the respondents. The questionnaire is pretested and revised through back translation process for minor change in wordings.

4.4. Tests Used For Data Analysis

SPSS (Statistical Package for Social Sciences) version 20.0 is used to compute and analyze the data. The statistical tests used in the analysis of data included descriptive statistics, factor analysis, and regression analysis.

4.5. Empirical Findings

4.5.1. Demographic Profile Of The Respondents

Selected demographic characteristics of the sample (n=182) including gender, age, educational qualification and occupation are presented in table-1 as below.

Variable		**Frequency**	**Percentage**
Gender	Male	134	73.7
	Female	48	26.3
Total		182	100
Age	Below 25	38	20.9
	25-35	67	36.8
	36-50	58	31.8
	51-60	19	10.5
Total		**182**	**100**

Variable		Frequency	Percentage
Occupation	Salaried/Pensioner	58	31.8
	Self employed	51	28.1
	Professional	45	24.7
	Student	28	15.4
Total		**182**	**100**
Qualification	HSC	18	9.9
	Intermediate	26	14.3
	Graduate	76	41.7
	Post graduate	62	34.1
Total		**182**	**100**

Table 1: Demographic Profile of the Respondents
Source: Field Work

It can be revealed from the data presented in table-1 that out of total 182 numbers of respondents 134 (73.7%) are male and rest 48 (26.3%) are female. In terms of age group, highest 67 (36.8%) number of respondents belong to the age group of 25-35, followed by 58 (31.8) belong to the age group of 36-50, 38 (20.9%) belong to the age group of below 25 and only 19 (10.5%) belong to the age group of 51-60. Likewise occupation wise classification reveals that highest 58 (31.8%) number of respondents are Salaried/Pensioner, followed by 51 (28.1%) are self employed, 45 (24.7%) are professional and only 28 (15.4%) are student. Finally in terms of educational qualification, out of total 182 numbers of respondents, 76 (41.7%) are graduates, 62 (34.1%) are post graduates, 26 (14.3%) are intermediates and only 18 (9.9%) are qualified up to HSC level.

4.6. Factor Analysis
In the present study factor analysis is used to reduce the number of variable into definite number of factors associated with Customers value perception with technological revolution. The factor analysis is performed using principal component extraction method with Varimax rotation.

4.7. Sampling Adequacy
In order to establish the strength of factor analysis, the sampling adequacy is checked using Kaiser-Meyer-Oklin (KMO) test and the results are presented in the table-2 given as below.

Kaiser-Meyer-Olkin Measure Of Sampling Adequacy		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	223.427
	df	45
	Sig.	.001

Table 2: KMO and Bartlett's Test

From table-2 it is found that the value of KMO statistics is greater than 0.5, indicating that factor analysis can be employed for the given set of data. As the p value as computed is 0.001, it supports the validity of the factor analysis.
For further investigation, three factors having eigen value greater than one are extracted. Table -3 gives the factor loading of the variables under each of the three extracted factors. In order to interpret the results, a cut-off point of 0.5 is decided for each variable to group them into factors by forming a rotated component matrix.

	Component		
	Consequence	**Goal**	**Attribute**
Technological revolution gives me an enjoyable banking experience	-.146	.662	-.056
Technological revolution enables trouble free transaction with banks	.758	-.014	-.048
Technological revolution makes banking independent of time	.203	.700	.058
Technological revolution makes banking operations easier than earlier	.773	-.030	-.073
Technological revolution makes banking independent of location	.070	.822	-.072
Technological revolution makes banking functions smooth and hassle free	.831	.056	.232
Technological revolution brings a good functional lay out for banking transaction	.741	.062	.024
Technological revolution makes banking transactions economically sound	.393	.046	.618
Technological revolution enhances the service quality of the banking transaction	-.236	-.134	.807
Technological revolution makes banking transaction highly reliable than earlier	-.424	.435	.594

Table 3: Rotated Component Matrixa
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization
Rotation Converged In 4 Iterations

The first factor F_1 having four significant factor loadings can be named as customers' "Consequence level Value" as it includes, 'Technological revolution enables trouble free transaction with banks (0.758)', 'Technological revolution makes banking operations easier than earlier (0.773)', 'Technological revolution makes banking functions smooth and hassle free (0.831)' and 'Technological revolution brings a good functional lay out for banking transaction (0.741)'. The second factor F_2 having three significant factor loadings can be named as "Goal level value"as it includes, 'Technological revolution gives an enjoyable banking experience (0.662)', 'Technological revolution makes banking independent of time (0.700)' and 'Technological revolution makes banking independent of location (0.822)'. The third factor F_3 having three significant factor loadings stands for "Attribute level value" as it includes 'Technological revolution makes banking transactions economically sound (0.618)','Technological revolution enhances the service quality of the banking transaction (0.807)' and 'Technological revolution makes banking transaction highly reliable than earlier (0.594)'.
After identifying the factors associated with perceived value of customers, multiple regression analysis is used to assess the impact of each factor on the overall value perception of the customer. Here overall valueperception of customer with technological revolution is the dependent variable and customer's consequence, goal and attribute level value are the independent variables.

5. Result Of Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error
1	.928[a]	.860	.849	.69921

Table 4: Model Summary
A. Predictors: (Constant), Consequence Level Value, Attribute Level Value, Goal Level Value.

The overall predictability of the model is shown in table-4 where the adjusted R^2 value of 0.849 indicates that 85% of the factors are affecting the customer's overall value perception with respect to Technological revolution with commercial banks in India.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.375	3	36.125	73.891	.000[b]
	Residual	17.600	36	.489		
	Total	125.975	39			

Table 5: Anova[a]

A. Dependent Variable: Overall Value Perception

B. Predictors: (Constant), Consequence Level Value, Attribute Level Value, Goal Level Value

From the ANOVA test it can be predicted that the table Sig. value of 0.05 is greater than the calculated Sig. value of 0.000. it means that there is a significant correlation between the dependent and independent variables i.e., customer's overall value perception with respect to Consequence level Value, Attribute level Value and Goal level Value of a customer.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.733	.301		2.436	.020
	Consequence level Value	.295	.103	.284	2.865	.007
	Goal level Value	.170	.103	.198	1.655	.107
	Attribute level Value	.548	.118	.522	4.660	.000

Table 6: Coefficients[a]

A. Dependent Variable: Overall Value Perception

Coefficient analysis presented in Table-6 shows the relationship between dependent and independent variables. According to calculated Sig. value, all the factors namely Consequence level Value and Attribute level Value except Goal level Value have significant relationship with customer's overall value perception towards technological revolution with commercial banks in India as the table sig. value of 0.05 is greater than the calculated sig values.

6. Conclusion

From the statistical analysis it is observed that there is a relation between overall value perception of customer and Consequence level Value and Attribute level Value, except Goal level Value associated with technological revolution in commercial banks in India. Further it is also revealed that 100% change in Attribute level value will lead to 54.8% change in customer's overall value perception and 100% change in Consequence level Value will lead to 29.5% change in customer's overall value perception with technological revolution in commercial banks in In India.

7. Limitation

There are some limitations for conducting this research are given below:

- This study is restricted to the view of 182 respondents residing in urban areas of Orissa.
- Customers' value perception towards any particular bank has not been dictated.

8. References

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