

BUYING BEHAVIOURAL MODEL OF DEBIT CARD CONSUMERS - A NEW CHALLENGES FOR INDIAN BANKERS

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Abstract

There has been an exponential growth in the debit cards issuance and usage among the people. Today the debit card segment is highly competitive with almost all the banks offering debit cards in association with international or master card. Every bank is trying to gain a market share with aggressive promotional activities and additional value-added services. Keeping in view, the present study investigates the factors that are essential in influencing the decision-making styles of mid-age family of eastern India This study gives an insight to lure customers towards them

Keywords: Behavioral model, debit card, mid age family.

INTRODUCTION

Rising competition is forcing the banks to find innovation ways to reduce the cost of transactions and maintain profitability. There has been an exponential growth in the debit cards issuance and wage among the people. Today the debit card segment is highly competitive with almost all the banks offering debit cards in association with international or master card. As of September 2005, there were more active debit cards than credit cards.

Table 1: The Growing Prominence
of Plastic Money

Year	No. Of Debit Cards	No. Of Credit Cards
1998-99	50,000	30,00,000
1999-00	80,000	40,00,000
2000-01	5,00,000	50,00,000
2001-02	35,00,000	60,00,000
2002-03	85,00,000	90,00,000
2003-04	95,00,000	95,00,000
2004-05	99,00,000	95,00,000

Source: Different Bank websites, *Economic Times*

The popularity of debit card is mainly due to the fact that unlike the western world, where the culture is to live on loan, Indians are credit shy people. It is often said now that "credit shy Indians are going by debit card". The growth of debit card and credit card is presented in Table 1. So it is clear that debit card is gaining more popularity than the credit card.

OBJECTIVE OF STUDY

Keeping in the view the above, the present study has made an attempt to study the key features and service attributes that are essential for customer satisfaction. Secondly to examined the various factors that influence the purchase decision of debit cards. Thirdly to suggest some measures to increase the level of customer preference to enhance the debit card market shares.

HYPOTHESIS OF THE STUDY

1. High use of debit card is highly associated with compulsive buying behaviors and is cause for highly expenditure intensive.

2. The use of debit card is mostly associated with compulsive buying behavior.

METHODOLOGY

A uniform distribution of all categories of people had taken to know the exact impact of debit cards. A survey was conducted to collect the needed information in the Eastern part of India. A sample of 250 mid-age couples was selected. The sample consists of senior status with mean age of about 40 years. They were likely to belong to middle class families and 90 percent of their income level more than Rs.15, 000 per month.

The data collected for the study have been clarified, tabulated and processed for factor analysis, which is the most appropriate multi-variete technique to identify the groups of determinants. Factor analysis identifies common dimensions of factors from the observed variables that link together the seemingly unrelated variables and provides insight into the underlying structure of the data. In this study Principal Component Analysis has been used since the objective is to summarize most of the original information in a minimum number of factors for prediction purposes. A Principal Component Analysis is a factor model in which the factors are based upon the total variance.

Another concept in factor analysis is the rotation of factors. Varimax rotations are one of the most popular methods used in the study to simplify the factor structure by maximizing the variance of a column of the pattern matrix. Another technique called latent root criteria is used, under this, only the factors having latent roots (Eigen value) greater than ‘one’ are considered. An Eigen value is the column sum of squares for a factor. It represents the amount of variance in data. After determination of the common factors, factor scores are estimated for each

factor. The common factors themselves are expressed as linear combinations of the observed variables.

Factor Model:

$$F_i = W_{i1}X_1 + W_{i2}X_2 + \dots + W_{ik}X_k \dots\dots\dots (1)$$

Where:

- F_i = estimate of the ith factor
- W_i = weight or factor score coefficient
- X_k = number of variables

The next step is the naming of factors. Further the different variables have taken in multiple choice questions to know the degree of impact on debit card expenses.

The multiple regression model being taken as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n \dots\dots\dots (2)$$

Where:

- Y = Dependent variable
- a = Constants
- $X_1, X_2, X_3, \dots, X_n$ = Independent Variables
- $b_1, b_2, b_3, \dots, b_n$ = Coefficient of independent variables

RESULTS AND DISCUSSION

The study has been made to know the preference and perception of customers towards the debit cards offered by the different banks It is also found from the study that customers are preferring to the debit card of a bank whose number of facilities are more i.e. more functionalities and mostly acceptable in any retail outlet of India. So from the informal discussion with customers, all the relevant variables are included in the study. Seven statements are generated for measuring respondents’ opinion on a 5-point Likert scale for preferring debit card. Factor matrix and their corresponding factor loading after the varimax rotation are presented in the Table 2.

Table 2: Eigenvalues and Cumulative percentage

Statement No.	Attributes	Initial Eigen Values	% Of Variance	Cumulative %
S1	Convenience of debit card	2.846	20.332	20.332
S2	Availing No of Facilities	2.470	17.646	37.978
S3	Limitation on withdraw of Cash	1.942	13.872	51.850
S4	Least Interest Payable	1.402	10.015	61.865
S5	Service Behavior	1.193	8.521	70.387
S6	Acceptability	1.032	7.372	77.759
S7	Insurance Coverage	.830	5.931	83.689
S8	Theft Coverage	.522	3.725	87.414
S9	Availing Discount in Air travel	.466	3.329	90.743
S10	Hassles free	.369	2.634	93.377
S11	Innovative Features	.333	2.377	95.753
S12	Brand Image	.271	1.937	97.691
S13	Reliability of Customer/ High Market Share	.229	1.635	99.325
S14	Friend/Relative Suggestion	.221	.675	100.000

Table 3: Loadings of Selected Variables on Key Factors (Loading Criteria >0.5)

Statement No.	Attributes	Factor Loadings					
		F1	F2	F3	F4	F5	F6
S1	Convenience of debit card	.902					
S2	Availing No of Facilities	.871					
S3	Limitation on withdraw of Cash		.559				
S4	Least Interest Payable				.646		
S5	Service Behavior		.812				
S6	Acceptability					.802	
S7	Insurance Coverage			.831			
S8	Theft Coverage			.872			
S9	Availing Discount in Air-Travel					.787	
S10	Hassles free				.854		
S11	Innovative Features		.701				
S12	Brand Image	.636					
S13	Reliability of Customer/ High Market Share		.782				
S14	Friend/Relative Suggestion						.947
Eigen Values		2.846	2.470	1.942	1.402	1.193	1.032
%Age of Variance		20.332	17.646	13.872	10.015	8.521	7.372
Cumulative Variance		20.332	37.978	51.850	61.865	70.387	77.759

The grouping of variance with a factor coefficient more than 0.5 is shown in the table-3. Factor 1 has an eigen value of 2.846 and explains 20.332% of the total variance. The eigen value of Factor 2 is 2.470 and explains 17.646% of the total variance.

Factor 3 has an eigen value of 1.942 and explains 13.872% of the total variance. Factor 4 has an eigen value 1.402 and explains 10.015% of the total variance. Factor 5 has an eigen value 1.193 and explains 8.521% of the total variance. Factor 6 has an eigen val-

ue 1.032 and explains 7.372% of the total variance. The total variance accounted for by all the six factors is 77%, which is quite high, and it establishes the validity of the study.

The factors are named after grouping the key variables and looking at the

communality of the variables in explaining at typical attribute of credit card. The table-4 represents the grouping of factors. The grouping of factors takes into consideration of the high factor loadings of statements under each factor.

Table 4: Grouping of Factor Loadings for Identifying Key Factors

State-ment.No.	Attributes	Factor Loadings					
		F1	F2	F3	F4	F5	F6
S1	Convenience of debit card	.902					
S2	Availing No of Facilities	.871					
S12	Brand Image	.636					
S5	Service Behavior		.812				
S11	Innovative Features		.701				
S13	Reliability of Customer/ High Market Share		.782				
S3	Limitation on withdraw of Cash		.559				
S7	Insurance Coverage			.831			
S8	Theft Coverage			.872			
S10	Hassles free				.854		
S4	Least Interest Payable				.646		
S6	Acceptability					.802	
S9	Availing Discount in Air-Travel					.787	
S14	Friend/Relative Suggestion						.947
Total factor Loadings		2.409	2.854	1.703	1.50	1.589	0.947

Table 5: Factors of Customers Preference for Debit Cards

Statements	F1 (Brand Association)	F2 (Service)	F3 (Security)	F4 (Risk free)	F5 (Accessibility)	F6 (Biasness)
1	Convenience of debit card (Statement-1-1)	Service Behavior (Statement-5)	Insurance Coverage (Statement-7)	Hassles free (Statement-10)	Acceptability (Statement-6)	Friend/Relative Sug- gestion (Statement-14)
2	Availing No of Facilities (Statement-2)	Reliability of Customer/ High Market Share (Statement-1-3)	Theft Coverage (Statement-8)	Least Interest Payable (Statement-4)	Availing Discount in Air-Travel (Statement-9)	
3	Brand Image (Statement-12)	Innovative Features (Statement-11)				
4		Limitation on Withdraw of Cash (Statement-3)				

The table-5 depicts the variables under each of the six desired factors. The first factor identified with the convenience of debit card, the number of facilities associated with and the brand image has been grouped under F1 and termed as “Brand Association” factor. The second factor explains the number of offers, extra facilities and the extent of cash withdrawal. These are the core part of the debit card, which is the common expectation of any customer while purchasing the debit card in any bank. The second factor F2 is termed as “Service” factor. The third factor F3 explains the insurance coverage and theft coverage, which is associated with the safety part of the customer. The factor F3 is termed as “Security” factor. The fourth factor F4 explains the least interest payment and extended credit period associated with the credit card. The factor F4 is termed as “Risk” factor. The fifth factor F5 explains the acceptability in different services and discount in air travel. So the factor F5 is termed as “Accessibility” factor. The sixth factor F6 explains the influence of friends and family members. So it is a motivation factor associated with the factor 6, which is termed as “biasness” factor.

According to the ranking the most prioritized factors can be known from the customers’ response. In the table-6 customers have given highest priority to the factor like “service” followed by brand association, security, accessibility, risk free and biasness respectively.

Table 6: Ranking of Factors on Satisfaction Level

Factors	Factor Loadings	Rank
F1 (Brand Association)	2.409	2
F2 (Service)	2.854	1
F3 (Security)	1.703	3
F4 (Risk free)	1.50	5
F5 (Accessibility)	1.589	4
F6 (Biasness)	0.947	6

The correlation table is shown in table-7. The values in correlation table is standardised and range from zero to one, positive and negative. Looking at the third column it can be said that all the variables are highly correlated to compensation ranging from 0.784 to 0.901 except the “age” whose correlation is very low of 0.310. There is the highest correlation of 0.901 which is between the average monthly income and expenditure. This means that the independent variables have been chosen in a fairly good manner. This table-7 is a one to one correlation of each variable with the other, so it will still have to multiple regression with an independent variable showing low correlation with a dependent variable because in the presence of other variables this independent variable may become a good predictor of the dependent variable. This correlation is significant at both the 1% and 5% level. So it is evident that the buying behaviour of consumers is highly correlated with debit card.

Table-7: Correlation Between the Buying Behaviour of Consumers and Debit Card

Variables	Exp.Cred	Exp.Incr	Age	Income	Expendit
EXP.CRED	1.000				
EXP.INCR	.784	1.000			
AGE	.312	.310	1.000		
INCOME	.799	.853	.393	1.000	
EXPENDIT	.841	.883	.414	.901	1.000

Table 8: Summary of Regression Analysis of Debit Card

Predictors variable	Unstandarised B	Unstandarised S.E.B	Standarised β	t	Multiple R	R2	Adj R2	F
EXP.INCR	.107	.193	.131	.553	.721	.677	1098.3875	16.163*
AGE	-7.487	22.779	-.039	-.329				
INCOME	2.564E-02	.035	.186	.730				
EXPENDIT	.127	.064	.573	1.984				
CONSTANT	-236.597	915.930						

*Significant at 1%level

The measure of strength of association in the regression analysis is given by the coefficient of determination denoted by R^2 . This coefficient varies between 0 and 1 and represents the proportion of total variation in the dependent variable that is accounted for by the variation in the factors. From the *table8*, the R^2 value is 0.721 which shows that 72% of the variation in expenditure through credit card can be explained by four independent factors. *Adjusted R²* is 0.677 which is the difference of one and the ratio of residual variance and sample variance. For a optimistic picture of fit of the regression R^2 is taken rather than the adjusted R^2 .

From the *table-8* it is evident that the significance of F is less than 0.001. This indicates that the model is statistically significant at the confidence level 99.99%. The value of F at this confidence level is 16.163, which is quite significant to indicate that the regression model is a good predictor. So the use of debit card is highly related to the buying behaviour of consumers.

Looking at the individual variable *t-tests* in *table-8*, it is seen that the coefficient of the independent variable “age” is not significant (significance level 0.745). Therefore it is not to be used when interpreting regression, as it may lead to wrong conclusion. It is being seen that *t-Tests* for significance of individual dependent variables indicates that at the significance level of 0.10(confidence level of 90%), only in average monthly “expenditure” is statistically

significant in the model. The other three independent variables are individually not significant at 90% confidence level.

Regression Equation

Here the value of the dependent variable “Y” can be calculated by taking the value of the constant “a” is -236.597 and the coefficient of independent variables “b1, b2, b3 and b4 are 0.107, -7.487, 0.0025, and 0.127 respectively.

Expenditure through debit card = -236.597 + 0.107 (Average monthly increase in Expenditure) + (-7.487) (Age) + 0.0025 (Income per month) + 0.127 (Expenditure per month)

The correlations among the all the variables give the result about the prediction of each variable. The highest positive correlated variables like the average monthly income and expenditure portrays that the expenditure pattern of the consumer increases with the increase in income. There is also a good correlation between the income and the percentage increase in the expenditure per month, which implies the percentage increase in the total expenditure, is also drastically changing with income. The least correlation of “age” with all the variables suggests that the importance of that variable in the regression analysis is very negligible. From the study it can be predicted that the total expenditure through debit card (dependent variable) is highly dependent on the explainable variables like average monthly

expenditure per month and the average increase in the expenditure. It is least dependent on the variables like “age”.

CONCLUDING OBSERVATIONS

This exploratory study signifies several identifiable consumer decision-making styles which are consistent across different income groups. Moreover, some differences are also identified related to income, age and facilities provided by the banks to the customers.

There is a high inclination of customers towards debit card and less troublesome in financial transaction. Next priority they are giving to the amount of discount. So in the near future there will be a great demand for the debit card in order to avoid the transaction through cash. Besides that they are willing to get the advantage of discount on purchase. Therefore customers are very much interested to get the advantage of the debit facilities with little expenditure and less effort.

The customers perception about the debit card is different due to the different banks as so many features are related to it. Their preferences are strongly based on certain key features. They are giving priorities on the basis of amount of debit and number of facilities provided by each bank. Even if

their importance rely on the service standard, innovative features present. These features are also being associated with the market share of that brand of debit card. Recently they are also giving the importance towards the theft coverage and insurance coverage which is a new dimension for the branding of debit card. Accessibility to the different services is the core factor to choose a particular debit card but it is user dependent. Very rare importance of family and friends influence is there. So banks strategy should be focused towards the popularity of debit cards and the exclusive features which is more essential in customers point of view.

It is also found from the analysis that it can be predicted that the total expenditure through debit card (dependent variable) is highly dependent on the explainable variables like average monthly expenditure per month and the average increase in the expenditure. It is least dependent on the variables like “age”. The Indian sample was not representative of all consumers in India. It is a convenience sample that share some characteristics such as age and education with the samples. A study with a larger sample from different parts of India and representative of their diverse population is recommended for further research.

REFERENCES

- Kotler, Philip (2004), *Marketing Management*. Pearson Education Inc. Delhi, India.
- Kim, J. & Charles W. M. (1989), *Introduction to factor analysis: What it is and how to do it*. Newbury Park, CA: Sage Publications Series Number 07-013
- Schiffman. Leon.G & Kanuk Leslie Lazar (1995), *Consumer Behavior*. Prentice-Hall of India Private Limited, New Delhi, India.
- Sharma, D.D.(2004), *Marketing research: principle & applications and casses*. Sultan & Sons. Educational Publishers, New Delhi, India.
- Blaxter,L., Hughes, C.& Tight, M. (2002), *How to Research*. Viva Books Private Limited New delhi, India.

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