DETERMINANTS OF DEBIT CARD SERVICES ADOPTION BY BANKING CUSTOMERS OF RURAL AREAS IN VELLORE DISTRICT

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ABSTRACT

The growth in the banking sector of India can be realized with the high usage of banks and its services by the rural customers. Advent of technology such as ATMs, debit cards and credit cards has contributed to the growth of banks in urban areas unlike rural areas. Many factors attribute to the adoption by the rural customers. This paper aims at understanding the attitude of the rural customer towards the adoption of debit card services and predicts the long term usage of debit cards. A questionnaire has been circulated targeting 170 rural customers of banks in the nearby rural districts of Vellore. Discriminant analysis has been drawn to identify the validation of the research study.

Key words : D**ebit cards, Discriminant Analysis, Rural consumers**

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INTRODUCTION

The Banking in India, originated in the last decades of the 18th century. The first bank in India was started in 1789, "The General Bank of India" and Bank of Hindustan, which started in 1790. The oldest bank in existence in India is the State Bank of India, which originated in the Bank of Calcutta in June 1806, established under British East India Company. Post independence the bank was merged as "The state bank of India". The growth in the Global Trade and Business, and high demand on imports and exports of Indian commodities has gained large flow of money in the Indian markets. Consequently the competition in the market amplified the increase of money transaction.

IT revolution had a great impact in the Indian banking system. The use of computers had led to introduction of online banking in India. The use of the modern innovation and computerisation of the banking sector of India has increased many folds after the economic liberalisation of 1991 as the country's banking sector has been exposed to the world's market. The Indian banks were finding it difficult to compete with the international banks in terms of the customer service without the use of the information technology and computers. The use of internet through the telephone cable wires has made the transactions very easy. In order to increase the purchasing power of the customers the banks first initiated the credit cards for the customers in 1985. The Credit cards have been very useful to the customers in purchasing a product on credit in any retail outlet. Customers can buy the product at any time and they should pay the cost of the product within 6 months of the date of the purchase. This card though was very useful to the customers; it failed in the later part of its success. This has made the customers to increase their debt in huge amounts. After which the banks imposed a credit limit of Rs 25000 for each credit card holder. The saturation level of credit cards was reached by 1999. After which the banks have initiated a new technology of withdrawing money in an ATM outlet. Hence the concept of debit cards was introduced by the banks. The main aim of debit cards was to withdraw money for every 24 hours in 365 days. This has made the customer groups to feel very much comfortable with the money withdrawal terms.

Debit cards can be used only in ATM machines so far. The main use of debit cards was money withdrawal and it cannot be used as a credit card. Debit cards have a direct access to our bank account which helps in money withdrawal from our savings. Any customer will have to

withdraw money with respect to his savings in the bank account. The excess of money cannot be withdrawn above the amount in his account. Initially, the idea of debit cards was failure due to the lack of availability of ATM machines. Using ATM cards have also reduced the customers' visits to the bank; this was welcomed by the bank authorities since the human efforts can be reduced. So many banks started to install their branch ATM machines in the nearest locality of the customer. Location of ATMs enabled the comfort ability of the customers and increased the frequency of using debit cards and ATMs. The use of debit cards was limited to Rs 25000 per day and also levied with a bank service charge of Rs 20 per transaction, in case of non bank branch ATM debit cards.

LITERATURE REVIEW

Technology is immense and every day we are comforted with new technology. The factor of change in the mind set of any individual to adopt a technology is the greatest challenge for the invention. Most of the people can control their behavioral intention and present a rational behavior. Fishbein and Ajzen (1975) indicate that intention is an immediate determinant factor influencing people to adopt a certain action and can be used to investigate consumers' adoption of certain products and services. The technology acceptance model (TAM) considers consumers' motivation towards the acceptance of new technology productions. It proposes that beliefs about usefulness and ease-of-use of a new system are essential factors in determining a user's attitude to the acceptance of technology.

Previous studies have been empirically verified by TAM, and some of them recognize the need to adjust the model for different contexts (Karahanna). There are some significant factors added to TAM such as system quality, social influence, etc. An unstable system could not convince consumers to accept definitely. Thus, some studies adopt system quality as a factor that influences the acceptance of new technological productions (Venkatesh and Davis, 2000). In addition, social influence is executed by relevant others in a consumer's environment. Previous studies about electronic commerce and e-mail reveal that social influence has a direct and positive effect on behavioral intention (Karahanna).

The perceived risk often is another significant factor for consumers to use

payment services. When prevalently adopted, electronic cash stored-value cards might be threatened by fraud risk, operational risk, technology risk, etc. These risks en- danger the operating system and could lead to bank runs and even make the whole payment system to break down (McAndrew, 1997).Consumers' first priority is the security of a payment system.

Several prior studies of rural consumers have investigated demographic patterns in the adoption of payment methods. Using various versions of the Survey of Consumer Finances (SCF), Kennickell and Kwast , Stavins (1998) and Zinman (2005) find similar results: Newer technologies such as electronic banking and bill payment or debit cards are used most frequently by younger, businessmen, better-educated individuals. Income appears to be non-linearly related to debit card use in these studies, with the probability of use rising with income at first and then declining among the wealthiest households.

The studies of Pippow and Schoder (2001) and Shy and Tarkka (2002) compare a variety of costs such as fees, time cost, interest cost among different payment instruments, and reach a common conclusion that electronic cash stored-value cards can partly substitute for cash in small retail transactions. M'Chirgui (2006) indicates that the acceptance of electronic cash depends on the value of the transaction, and if the cost per transaction is high, merchants possess less incentive to accept electronic cash as a payment instrument.

Working from the empirical results in Kennickell and Kwast (1997),. Using the 2001 SCF, he considers whether consumers use debit cards as a method of behavioural restraint, and finds evidence that the majority of debit card users appear to have pecuniary rather than behavioral motives for their choice of payment; using different methods, our findings corroborate his. Evidence on consumer response to deferential pricing of payment methods is extremely scarce.

"Technology refers to new and better ways of achieving economic ends that contribute to economic development" (Stewart and Nihei, 1987, p.1). Most contemporary discussions of technology transfer assume that technology and its advance contribute to change and that this change fuels economic growth through productivity increases (Gee, 1981). Recent studies on technology diffusion and adoption have provided the theoretical basis for a viable behavioral

framework of international technology adoption by integrating concepts and findings from the studies on innovation diffusion and international technology transfer.

NEED FOR THE STUDY

This study is done to understand the attitude of the rural consumer towards the acceptance of ATM technology and predicts the long term usage of debit cards and to know the scope of debit cards in the future which will help the banks for their growth and development

OBJECTIVES

1. To study the factors that influences the adoption of debit cards among banking customer in the rural area.
2. To assess the potential usage of debit cards among banking customers in Vellore district.

RESEARCH METHODOLOGY

Research design

Quantitative research methodology have been used for this study. This study is totally based on the quantitative information. It is more focused on the collection and analysis of numerical and statistical data.

LIMITATIONS:

The small sample size of the current study did not allow deeper statistical analyses. A larger sample could allow testing the model separately in different rural areas. Also, the current study focused only on the use of debit cards in the rural areas around Vellore district.

Sample

Sampling technique used here is strata sampling where the population is first segmented into mutually exclusive sub-groups, just as in stratified sampling. Then judgment is used to select the subjects or units from each segment based on a specified proportion

Sample size: 150

Data collection

1. Primary sources

   Questionnaires – Interview Schedule Method
2. Secondary sources
   - Published Journals
   - Research articles
   - Websites

Hypothesis:

Ho :There is a significant relationship between the usage of debit cards and factors like age, income, occupation, education, years of association with bank.

H1: There is no significant relationship between the usage of debit cards and factors like age, income, occupation, education, years of association with bank.

DISCRIMINANT ANALYSIS

Group statistics

Discriminant analysis is useful to predict a group membership, so firstly we examine using group means whether there are any significant differences between groups on each of the independent variables tables provide the information. It is not worthwhile to proceed further analysis if there are no significant group differences. In Table 1, mean difference of Highest education level suggest that this may be better discriminator. Table 2 provides statistical evidence of significant difference in means of usage of debit cards of Yes and No groups for all independent variables with Highest education level with very high value of F.

Table I Group Statistics

usage of debit cards		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
yes	Age of the respondent	2.36	1.061	122	122.000

	Occupation	3.99	2.187	122	122.000
	Years of association with the bank	2.70	.599	122	122.000
	Monthly household income	4.20	1.530	122	122.000
	Highest education level	1.36	.590	122	122.000
no	Age of the respondent	2.71	1.117	28	28.000
	Occupation	3.79	1.853	28	28.000
	Years of association with the bank	2.79	.499	28	28.000
	Monthly household income	3.96	1.527	28	28.000
	Highest education level	2.43	1.425	28	28.000
Total	Age of the respondent	2.43	1.077	150	150.000
	Occupation	3.95	2.125	150	150.000
	Years of association with the bank	2.72	.581	150	150.000
	Monthly household income	4.15	1.527	150	150.000
	Highest education level	1.56	.908	150	150.000

Table 2:Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Age of the respondent	.984	2.482	1	148	.117
Occupation	.999	.213	1	148	.645
Years of association with the bank	.997	.439	1	148	.509
Monthly household income	.996	.526	1	148	.469
Highest education level	.789	39.632	1	148	.000

Log determinant table and Box's M table

The assumption of Discriminant analysis is the variance and co-variance should be equivalent. The hypothesis in Box's M test is that the covariance matrix is same between groups formed by dependent variable. We want this test is insignificant. To hold this assumption, the log

determinant must be equal. By Box's M, we will expect for a insignificant M to show lack of significant differences. Using Table 3, the log determinants appear similarity and Box's M value is 51.994 with F= 3.223 which is a significant result is important.

Table 3:Log Determinants

usage of debit cards	Rank	Log Determinant
Yes	5	.155
No	5	1.409
Pooled within-groups	5	.735

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Table 4:Box's M Test Table

Box's M		51.994
F	Approx.	3.223
	df1	15
	df2	9.384E3
	Sig.	.000

Tests null hypothesis of equal population covariance matrices.

Wilk's Lamda Table

Wilks' lambda shows the significance of Discriminant function. Table 5 shows highly significant function (p-value less than 0.000) that provides the proportion of total variability which was not explained that it is the converse of squared canonical correlation which 36.1% unexplained.

Table 5: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.361	39.736	5	.000

Canonical discriminant function co-efficinent tables

The unstanardized co-efficients is used to create the Discriminant function (eq) just like regression equation. Using table 6.

D = (.344*age) + (0.031*Occupation) + (0.169*Years of association with the bank)+ (-0.136*Monthly household income) + (1.187*Highest education level) -2.703.----equation 1

The Discriminant coefficients of standardized form beta shows the partial contributions of variable to Discriminant function controlling for other variables in the above equation. The equation 1 is used to asses all Independent variables contribution to Discriminant function to provide information of each variable.

Table 6: Canonical Discriminant Function Coefficients

	Function
	1
Age of the respondent	.344
Occupation	.031
Years of association with the bank	.169
Monthly household income	-.136
Highest education level	1.187
(Constant)	-2.703

Unstandardized coefficients

Group centroid table

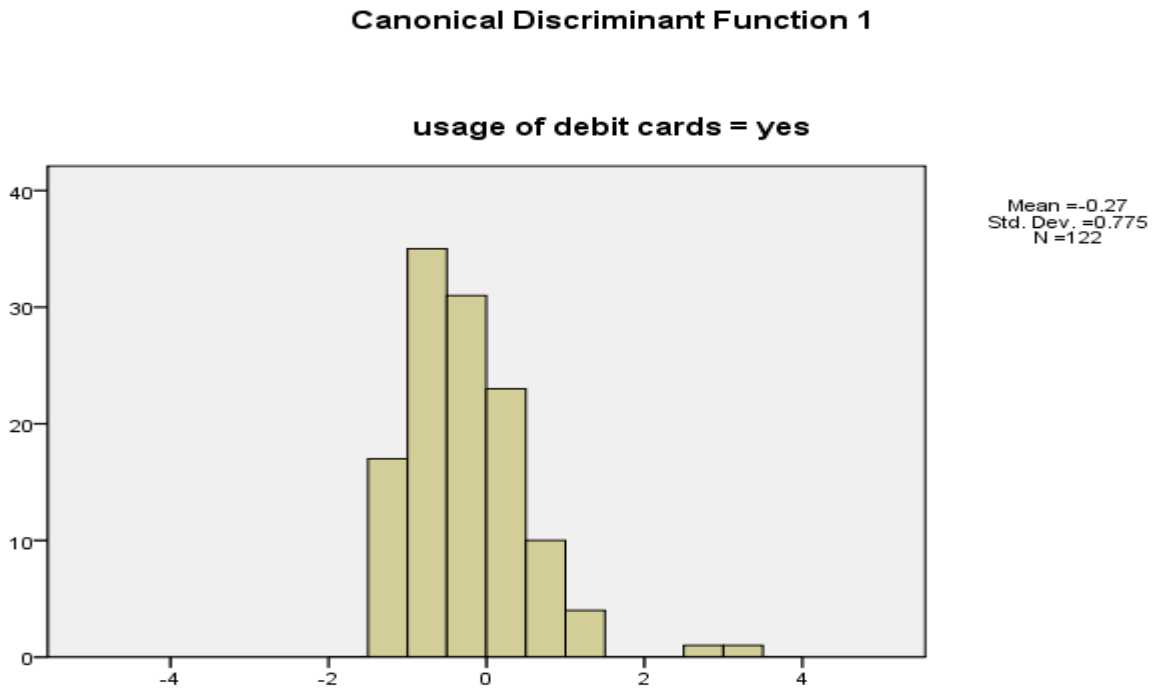
Using Group centroid of the predictor variables, It indicates the usage of debit cards whose says Yes have a mean of -0.267 while No have a mean of 1.162. Cases with scores close to centroid are forecasted as belonging to that group.

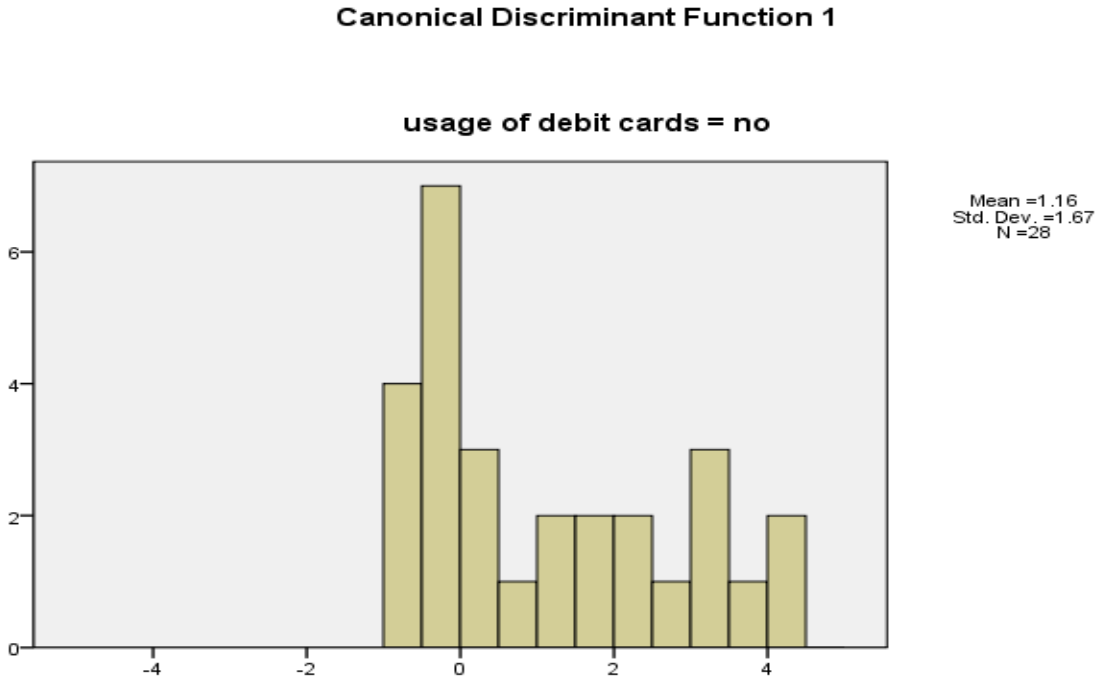
Table 7:Functions at Group Centroids

usage of debit cards	Function 1
yes	-.267
no	1.162

Unstandardized canonical discriminant functions evaluated at the group means.

Separate-Groups Graphs


Canonical Discriminant Function 1
usage of debit cards = yes
Mean =-0.27
Std. Dev. =0.775
N =122
40
30
20
10
0
-4
-2
0
2
4


Canonical Discriminant Function 1
usage of debit cards = no
Mean =1.16
Std. Dev. =1.67
N =28
6
4
2
0
-4
-2
0
2
4

Classification table:

The classification table 8 indicates that 75.3% of respondents were classified correctly into 'Yes" or 'No' groups.

Table 8: Classification result table

		usage of debit cards	Predicted Group Membership		Total
			yes	no	
Original	Count	yes	103	19	122
		no	13	15	28
	%	yes	84.4	15.6	100.0
		no	46.4	53.6	100.0
Cross-validated[a]	Count	yes	99	23	122
		no	14	14	28
	%	yes	81.1	18.9	100.0
		no	50.0	50.0	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 78.7% of original grouped cases correctly classified.

c. 75.3% of cross-validated grouped cases correctly classified.

RESULTS & DISCUSSIONS:

This research shows the usage of Debit cards in rural areas is also influenced by some of the factors like age, income, occupation, educational level, years of association with the bank. These factors are said to be influencial in the usage of debit cards among the rural consumers. The results allow banks' decision makers to develop strategies that can increase the usage of Debit Cards by Rural customers. Here it is found.

IMPLICATIONS:

The concepts discussed here could help bankers to become more aware of the factors that drive the usage of debit cards in rural areas by the rural customers. Academics could advance the paper's discussion of debit card usage to other business sectors in rural areas.

CONCLUSION:

Debit cards are widely used everywhere; fortunately our rural India has started the eve of adopting the new technology of ATMs and debit cards. The major customers of rural areas consists of students, business people, vendors and farmers, this amply indicates the growth of the nation and raise in the standards of people. Literacy was one of the factor affecting the adoption and long term usage of ATMs and debit cards, but now a days the trends are even changing in the rural areas. The secured transactions are ensured by the technology, the continuous need for withdrawal of money and change in the customer's attitude towards debit scards has influenced the long term usage of debit cards in rural areas.

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