# A Study on Awareness and Utilization of Debit Cards in India

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### Abstract

Banking sector plays a virtual role for the development of Indian economy. The main function of a banker is to collect deposits and to make advances. In addition to this main function they are providing number of other services also. These services not only enhance the goodwill of a bank but also provide additional revenue to the bankers. Profitability of a bank can be increased by reducing cost of operation and at the same time increasing volume of business. Debit cards are issued by the bankers so as to reduce the cost of operation. If people use debit card quit free quaintly then work load of the banking staff will reduce considerably. Further cash management can be carried out effectively. Debit card can be used for number of activities such as withdrawal of money at ATM center, payment of electricity bill, telephone bill, booking railway ticket etc. Bankers in India are marking hectic efforts to popularize debit card among its customers Just like Visa card and Master card India has launched RuPay card in March 2012. In this article critical evaluation is made with the help of statistical tools such as ANOVA and Factor analysis about the awareness and utilization of debit cards in India


**Keywords:** Debit card, awareness, utilization. Factor analysis

## Introduction

A debit card (also known as a bank card or check card) is an electronic card issued by a bank which allows bank clients access to their account to withdraw cash or pay goods and services. A debit card is either linked to a bank account or is a prepaid card. Functionally, it can be called an electronic check as the funds are withdrawn directly from either the bank account or from the remaining balance on the card. This type of card as a form of payment also removes the need for checks as the debit card immediately transfers money from the clients account to the business account.

A credit card is a financial instrument, which can be used more than once to borrow money or buy products and services on credit. Though debit card & credit card are issued by the bank to facilitate

customers still they are not highly popular. People still prefer to visit branches to carry out banking transactions rather than using debit card & credit card. Some people prefer to use debit card only for with drawl of money and they are either ignorant or reluctant to use debit card for other purposes. Some customers prefer to have personal contact with the bank employees by visiting branches rather than using debit cards for making all payment.

After years of preparation and soft launch, National payment corporation of India commercially launched Rupay card on 26th march 2012 with major banks such as State Bank of India, Bharath overseas Bank, United bank of India, Bank of India, Corporation Bank and Axis Bank This makes the country second after China to have an indigenous electronic payment card, Rupay will be accepted at all the 91000 ATMs and over 6 lakh points of sale terminals in the country and in due course, it will be accepted on the internet and also at ATMs / Pos terminals abroad.

Currently Indian banks pay 200-300 crore to Visa and Master card for processing debit and credit cards. This cost is expected to come down after the launch of RuPay card system which is likely to charge a lower processing fee. At present banks pay around 1.8% of the transaction value in interchange charges.

This is shared between the payment gateway operators like visa and master card, the issuing bank and the merchant For RuPay there will be no one –time joining fee and the RuPay system will also lower the cost of transactions for shops that are reluctant to use the electronic mode of payment on which they currently they lose 1.5% of their margin.

Reserve bank of India is taking necessary steps to reduce the cost of operation so that it will be beneficial to users of debit card. As per the recent statistics published by Reserve bank of India both debit card and credit card is picking up and slowly people are moving towards plastic money.

From table no 1 it is very much clear that in terms of number, more number of debit card is in circulation compared to credit cards, but in terms of volume of transactions usage of credit card is far higher compared to Debit card. Though usage is picking up but still it has not reached majority of the banking customers.

In the light of the above background the study mainly focuses on the awareness, utilization and also critical factors perceived by the users of debit card.

**Table 1:**    Retail Electronic Payment Systems

| Retail Electronic Payment Systems | | | | | | |
|---|---|---|---|---|---|---|
| (Number in Million and Amount in ` Billion) | | | | | | |
| | Card Payments# | | | | | |
| | Credit | | | Debit* | | |
| | 1 | | | 2 | | |
| Year/ Period | Number of Outstanding Cards** | Number | Amount | Number of Outstanding Cards** | Number | Amount |
| 2003-04 | – | 100.18 | 176.63 | – | 37.76 | 48.74 |
| 2004-05 | – | 129.47 | 256.86 | – | 41.53 | 53.61 |
| 2005-06 | 17.33 | 156.09 | 338.86 | 49.76 | 45.69 | 58.97 |
| 2006-07 | 23.12 | 169.54 | 413.61 | 74.98 | 60.18 | 81.72 |
| 2007-08 | 27.55 | 228.20 | 579.85 | 102.44 | 88.31 | 125.21 |
| 2008-09 | 24.70 | 259.56 | 653.56 | 137.43 | 127.65 | 185.47 |
| 2009-10 | 18.33 | 234.24 | 618.24 | 181.97 | 170.17 | 264.18 |
| 2010-11 | 18.04 | 265.14 | 755.16 | 227.84 | 237.06 | 386.91 |
| **Total (up to January 2012)** | **15.57** | **261.12** | **788.60** | **268.00** | **268.80** | **443.89** |

# Card Payments figures pertain only to Point of Sale (POS) transactions.
* Debit Cards figures for 2003-04 and 2004-05 are estimated based on 2005-06 figures.
** Cards issued by banks (excluding those withdrawn/blocked).
**Source**: Reserve Bank of India

On the basis of the above observations following objectives were framed.

## Objectives
- To find out awareness of debit card.
- To find out utilization of debit card for different purpose.
- The ascertain the relationship between demographic character and utilization debit card
- To Identify critical factor perceived by the banking customers about debit card
- To offer suitable suggestion for popularizing debit card

## Review of Literature
Though number of research articles is available on credit cards, and utilization of ATM, but exclusive research in the field of debit card is limited especially in a developing economy like India. Steve Worthington, Anne Harbisher (1990) in their article on" retailers and their relationships with their financial services suppliers: the case of debit card charges in the united kingdom" focused the retailer attitudes towards card payment system Young Sik Kim, Manjong Lee (2010) in their article on "A model of Debit card as a means of payment" provides an explanation for both the rapid growth in the use of a debit card over time and the cross-sectional difference in the use of a debit card using a search-theoretic model.

Jonathan Zinman in their article on "Debit or Credit?" (2009) concludes that Debit use also increases with credit limit constraints and decreases with credit card possession. Additional results suggest that debit is becoming a stronger substitute for credit over time In their research article on "Debit card usage; an examination of its impact on house hold debt" Jinkook Lee, Fahzy, Abdul rahman, M.S and HYungsoo Kim, (2007) concludes that debit card usage discourages the accumulation of house hold debt rather than those with revolving debt tendencies (i.e carrying outstanding balances on credit cards) are more likely to use debit cards than those without a revolving debt tendency. Kennickell and Kwast (1997)using the 1995 survey of consumer finances SCF found that the use of debit cards is positively associated with the financial assets and education are negatively associated with age. They also found that income had no significant relationship to the use of debit cards.

In their research article on "Debit, credit, or cash: survey evidence on gasoline purchases" Kenneth A Carow and Michael E Staten (1999) analysed the consumers payment option to use debit, general purpose credit cards, or cash. Based on the results from a nested multinomial logic model they found that consumers more likely to use cash when they have less education, lower income , are middle aged and own fewer credit cards and people who use their debit card are less likely to use their gasoline credit card Dr Vani laturkar and Rupa Jajoo in their research paper (2011) on "Debit card usage in India- A perspective" observes that though there has been a steady increase in the number of card transactions, the average number of annual transactions per debit and credit card is merely one and eleven respectively and the primary reasons for under utilization are (1) merchants prefer cash to cards (2) debit cards are unreasonably priced(3) card holders prefer credit cards over debit cards

Using the 1998 SCF, King and King (2005) found the debit card usage is positively associated with a negative opinion of credit card use, higher educational achievement, credit card ownership and higher amount of credit card balances In their research articles on "cashless payment system in India (2010) A road map", Ashish Das and Rakhi Agarwal analysed the existing system has recommended number of measures to popularize debit card in India

## Research Methodology
The research is carried out with the help of secondary and primary data Secondary data was collected from the websites of Reserve bank of India and RuPay For the purpose of analysis primary data was

collected from 200 respondents by using a five point Likert scale ( 5 indicating strongly agree 1 indicating strongly disagree) with the help of a questionnaire. Out of 200 respondents 15 respondents were not using Debit card, hence the entire analysis is based only on 185 respondents The respondents includes customers from old private sector, new private sector nationalized bank and co-operative banks. After making pilot study questionnaires were re-drafted to accommodate omissions and commissions.

## Tools used for Analysis
For the purpose of analysis the following statistical tools are used
1. Tabular representation
2. Factor analysis
3. One-way ANOVA

## Hypotheses of the Study
- Debit card users mostly use the debit card only for withdrawal of money
- Age has got a significant relationship with safety aspects, spending habit and remembering Pin number of debit card
- Education and occupation has got a significant relationship with cash withdrawal facility, obtaining duplicate debit card and remembering pin number of debit card
- Debit card users are of the opinion that debit card increases the spending habit and payments through debit card is safe and secure

## Limitation of the Study
The study is based on the sample data collected at random from the banking customers of Thanjavur which is a part of Tamilnadu state,India which in turn occupies an important state in the Indian federal system. Though the sample size is very limited the researcher is able to collect the required information and the sample represents banking customers of all types of banks. Since the sample size is limited findings of the study may not be applicable to the universe.

## Results and Discussion

**Table 2:** Demographic character

| Particular | | Total user | | Debit card |
|---|---|---|---|---|
| Valid | | Frequency | Percentage | user |
| SEX | Male | 128 | 69.2 | 128 |
| | Female | 57 | 30.8 | 57 |
| | **Total** | **185** | **100.0** | **185** |
| AGE | 18 to 35 | 62 | 33.5 | 62 |
| | 35 to 50 | 75 | 40.5 | 75 |
| | 50 to 60 | 36 | 19.5 | 36 |
| | above 60 | 12 | 6.5 | 12 |
| | **Total** | **185** | **100.0** | **185** |
| Occupation | Govt. employed | 41 | 22.2 | 41 |
| | Private | 59 | 31.9 | 59 |
| Occupation | Self employed | 61 | 33.0 | 61 |
| | Student | 12 | 6.5 | 12 |
| | Professional | 12 | 6.5 | 12 |
| | **Total** | **185** | **100.0** | **185** |

**Table 2:** Demographic character - continued

| | | | | |
|---|---|---|---|---|
| Approximate annul income | Less than 1,00,000 | 77 | 41.6 | 77 |
| | 1,00,000 to 5,00,000 | 70 | 37.8 | 70 |
| | 5,00,000 to 10,00,000 | 20 | 10.8 | 20 |
| | above 10,00,000 | 18 | 9.7 | 18 |
| | **Total** | **185** | **100.0** | **185** |
| Education qualification | Below 12$^{th}$ standard | 16 | 8.6 | 16 |
| | UG | 113 | 61.1 | 113 |
| | PG | 44 | 23.8 | 44 |
| | Professional | 12 | 6.5 | 12 |
| | **Total** | **185** | **100.0** | **185** |

**Sources**: Primary Data

The sample population consists of 128 male and 57 female .It means that nearly 70% of the sample population represents male and 30% female. As regard age 40% of the sample population represents the age group 35-50, 34% comes from 18-35 and 20% represent from 50-60 age groups. As regards occupation self employed person contribute 30%, private sector 25%, govt. employee 30%, student 6.5%, and professional 6.5%. As regards income levels 41.6% are having income of less than 100000, 37.8%. having income level of 100000-500000,10.8% are having income level between Rs 500000 to 1000000 and rest are having income above Rs 1000000. With regard to educational qualification people with 62% are having UG degree, 20% having PG degree and 9% below 12$^{th}$ standard.

In India Banks are broadly classified into Nationalized bank, New private sector banks, old private sector banks and co operative banks. Sample is drawn from different banking customers. In table No 3 Debit card held by the sample respondents in different banks are presented

**Table 3:** Debit card held in banks by respondents

| Name of the bank | Number of respondents |
|---|---|
| Public sector bank's | 75 |
| Old private sector | 42 |
| New private sector | 60 |
| Co-operative sector | 8 |
| **Total** | **185** |

**Sources:** Primary Data

Out of 185 sample population 75 members are holding debit card in public sector, 42 old private sectors, 60 new private sector and 8 in Co operative sectors. Since Thanjavur happen to be an agricultural based area Co-operative sectors are also playing a vital role. Out of 185 respondents eight respondents are having account in Co-operative sectors also.

## Purpose of Utilizing Debit Cards

Generally people utilize debit cards only for withdrawal of money and some customers are either not aware or reluctant to use the card for other purposes In table No 4, number of customers using debit card for various purposes is presented.

Debit card can be used not only for withdrawal of money but also for various purpose such as purchases of railway ticket, payment of electricity bill, telephone bill, paying school & college fees, and for purchases of goods. Out of 185 sample population only 106 respondents alone are using debit card for various purposes other than withdrawal of money. For purchase of railway ticket majority of the respondents are using debit card followed by electricity bill, purchases of goods, remittance of fees for schools & colleges, and for paying telephone bills. The above analysis clearly reveals that nearly 40% of sample population are utilizing debit card only for withdrawal of money and rest of the people

utilize it for withdrawal of money and for various other purposes. Hence we reject the hypothesis that majority of the people use debit card only for withdrawal of money.

## Relationship Between Demographic Characteristic and Debit Card

For the purpose of understanding relationship if any between age, occupation and education with certain selected factors of debit card ANOVA table is prepared

**Table 4:**   Purposes of utilizing of debit card

| Usage of debit card | | | | | |
|---|---|---|---|---|---|
| **Number of person using debit card for various purposes** | **Rail way ticket** | **Electricity bill** | **Telephone bill** | **Paying fees for school & college** | **Purchases of goods** |
| 58 | 20 | 15 | 9 | 6 | 8 |
| 15 | 5 | 8 | 2 | | |
| 15 | 5 | 4 | | | 6 |
| 18 | | | | 6 | 12 |

**Source**s: Primary Data

**Table 5:**   Relationship between demographic characteristic and debit card (ANOVA)

| Characteristics | Age | | Education | | Occupation | |
|---|---|---|---|---|---|---|
| | **F value** | **Sig.** | **F value** | **Sig.** | **F value** | **Sig.** |
| Debit cards is useful only for withdrawal of money | 3.041 | .030 | 3.494 | .017 | .452 | .771 |
| Debit cards can be used for making other payment | 3.378 | .020 | 1.158 | .327 | 6.125 | .000 |
| shop keepers are discouraging use of debit cards | .563 | .640 | .249 | .862 | 1.425 | .227 |
| Debit cards force me to spend more than what is required | .630 | .596 | 1.064 | .366 | 1.532 | .195 |
| Payment through debit cards in safe and secure | .042 | .988 | 2.108 | .101 | 3.351 | .011 |
| Debit cards reduce the need for holding cash | 1.344 | .262 | .266 | .850 | 1.157 | .332 |
| Withdrawal of money through debit card is convenient | 1.648 | .180 | .556 | .645 | 1.643 | .165 |
| Sufficient ATM centers are available | .116 | .951 | 1.423 | .237 | 2.450 | .048 |
| Charges collected for using debit cards in other ATM is reasonable | .871 | .457 | .826 | .481 | 2.174 | .074 |
| Remembering " PIN " number of debit cards is highly inconvenient | .783 | .505 | .779 | .507 | .313 | .869 |
| Loss of debit card can be solved without much problem | 4.993 | .002 | .348 | .790 | 2.743 | .030 |
| Duplicate debit card can be obtained quickly | 1.009 | .390 | .708 | .549 | .428 | .788 |
| Charges collected for duplicate debit card is reasonable | 3.264 | .023 | 1.614 | .188 | 1.337 | .258 |

**Sources**: Primary Data

It is observed that Age has got significant relationship with following characteristic at 5% level of significance.

- Payment through debit cards is safe and secure
- Sufficient ATM centers are available
- Shop keepers are discouraging use of debit cards
- Debit cards force me to spend more than what is required
- Remembering " PIN " number of debit cards is highly inconvenient
- Charges collected for using debit cards in other ATM is reasonable

Rests of the factor are not having significant relationship with age.
Education got significant relationship with the following factors.
- Shop keepers are discouraging use of debit cards
- Debit cards reduce the need for holding cash
- Loss of debit card can be solved without much problem
- Withdrawal of money through debit card is convenient
- Duplicate debit card can be obtained quickly
- Remembering " PIN " number of debit cards is highly inconvenient

Rests of the factors are not having significant relationship with education.
With regard to occupation following factors are having significant relationship
- Remembering " PIN " number of debit cards is highly inconvenient
- Duplicate debit card can be obtained quickly
- Debit cards are useful only for withdrawal of money

Rests of factor are not having significant relationship.
The above analysis clearly shows that there is an agreement in one important factor - remembering Pin number is very difficult

## Factor Analysis

Since debit card is slowly gaining popularity among the banking customers in India it will be proper to identify the factors which are facilitating the usage and the factors to be addressed For the purpose of this analysis 13 factors are identified and respondents were asked to rank them in a five point scale ranging from agree to disagree

**Table 6:**    KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .558 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 168.918 |
| | Df | 78 |
| | Sig. | .000 |

**Sources:** Primary Data

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. (0.558) has been calculated in the above table for the key factors perceived by the users of Debit card. This helps to measure the appropriateness of using factor analysis. Since the calculated value is between .5 and .1 the factor analysis is appropriate. Further Bartlett's Test of Sphericity was significant ($x^2$ =168.918,P<0.000) indicating that correlation existed among 13 variables and correlation matrix was not unit matrix.

**Table 7:**    Total Variance Explained

| Compo nent | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loading | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumula tive % |
| 1 | 1.979 | 15.224 | 15.224 | 1.979 | 15.224 | 15.224 | 1.616 | 12.432 | 12.432 |
| 2 | 1.401 | 10.780 | 26.004 | 1.401 | 10.780 | 26.004 | 1.328 | 10.217 | 22.650 |
| 3 | 1.366 | 10.511 | 36.515 | 1.366 | 10.511 | 36.515 | 1.309 | 10.072 | 32.722 |
| 4 | 1.224 | 9.417 | 45.932 | 1.224 | 9.417 | 45.932 | 1.307 | 10.057 | 42.779 |
| 5 | 1.085 | 8.347 | 54.278 | 1.085 | 8.347 | 54.278 | 1.252 | 9.628 | 52.407 |
| 6 | 1.004 | 7.723 | 62.002 | 1.004 | 7.723 | 62.002 | 1.247 | 9.595 | 62.002 |
| 7 | .867 | 6.669 | 68.671 | | | | | | |

**Table 7:** Total Variance Explained - continued

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8 | .845 | 6.499 | 75.169 | | | | | |
| 9 | .789 | 6.066 | 81.235 | | | | | |
| 10 | .723 | 5.560 | 86.796 | | | | | |
| 11 | .657 | 5.051 | 91.847 | | | | | |
| 12 | .545 | 4.195 | 96.042 | | | | | |
| 13 | .515 | 3.958 | 100.000 | | | | | |

**Sources**: Primary Data

Extraction Method: Principal Component Analysis

Total Variance Explained shows that six factors are extracted. This component are extracted based on the initial Eigen values higher than 1.00 .The total variance explained by extract component is approximately 62.002% of the total variance.

Table 8 shows the Rotated component matrix. Six factors have been extracted. First factor contains 4 items, second factor contains one item, and factor 3, factor 4, factor 5, and factor 6 contain each 2 items respectively.

**Table 8:** Rotated Component Matrix:

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** |
| Loss of debit card can be solved without much problem | .675 | | | | | |
| Charges collected for duplicate debit card is reasonable | .608 | | | | | |
| Remembering " PIN " number of debit cards is highly inconvenient | -.589 | | | | | |
| Payment through debit cards in safe and secure | -.516 | | | | | |
| Debit cards reduce the need for holding cash | | .811 | | | | |
| Charges collected for using debit cards in other ATM is reasonable | | | .792 | | | |
| Debit cards is useful only for withdrawal of money | | | .529 | | | |
| Withdrawal of money through debit card is convenient | | | | .725 | | |
| Sufficient ATM centers are available | | | | -.655 | | |
| Debit cards force me to spend more than what is required | | | | | .828 | |
| shop keepers are discouraging use of debit cards | | | | | -.670 | |
| Debit cards can be used for making other payment | | | | | | .761 |
| Duplicate debit card can be obtained quickly | | | | | | .653 |

**Sources:** Primary Data

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 13 iterations.

## Findings of the Study

The research clearly reveals the fact that people are aware of various purposes for which debit card can be used, but still they prefer it for withdrawal of money and for remitting certain expenses such as purchasing railway ticket. When age is related with certain important factors connected with Debit card it is observed that debit card will force people to spend more and there is a feeling that shop keepers are discouraging use of debit card. If education is related with selected factors it is observed that shop keepers are discouraging use of debit card. Similarly if occupation is related with selected factors it is observed that Debit card is useful only for withdrawal of cash. With the help of factor analysis we have identified that banking customers are fully aware that loss of debit can be solved without any difficulty, debit card reduces the need for holding cash, charges collected for using debit card in other ATMs is

reasonable , debit card can be used for making other payments debit card force me to spend more than what is required and payment through debit card is safe and secure .Among the six factors one factor need to be addressed ie, People are having an apprehension that debit card will force people to spend more.

## Recommendations

Periodical customers meet may be arranged by bankers to create awareness and to explain the benefits customers may derive in using debit card. The bankers can focus on three important points such as (1) payments are easily accounted (2) it can be shown as evidence in the court of law(3) Savings in time People must be educated about the importance of pin number from the safety and security point of view Just like private shop keepers government organization must also provide facilities and encourage people to make use of debit card at their cash counters. Regional transport organizations etc are computerizing their operations and they are encouraging people to remit payments through internet either through debit card or credit card. Private vendors are also coming up to help those customers who are not having internet facilities, but prefer to make payments through debit card .After full-fledged introduction RuPay card operating cost will certainly come down which in turn may help the shopkeepers to accept debit card. Further tax benefits may be extended to businessman if more than 50% of their receipts are channelized through debit card and internet banking If the measures mentioned above are implemented there is a fair chance of increase in the utilization of debit card in India.

## Acknowledgement

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