



VARIANCE ANALYSIS OF SATISFACTION LEVEL IN USAGE PATTERNS OF DEBIT CARDS

O.N. Srivastava, Assistant General Manager and Faculty, State Bank Staff College, Begum

Abstract: *A Debit Card is a plastic payment Card that provides the Cardholder electronic access to his or her bank account at a Bank/Financial institution. Some Cards have stored value which could be used for payments. Most cards relay a message to the Cardholder's bank to transfer funds from a payer's designated bank account. The Card can be used in lieu of cash while paying for purchases. Consumers are increasingly adopting the electronic technology for making payment and use of Debit Cards is higher for younger generation and is highest for single people. A very small fraction of respondents are using Debit Card for making online payment for purchase of goods and services. However, a sizeable number are using Debit Cards from multiple banks. ANOVA study on Mean Level of satisfaction in Usages of Debit Cards has revealed that there is no significant difference in satisfaction level on Usage of Debit across various methods.*

Keywords-*Debit Card, ATM Card, On-line shopping, Pre-paid Debit cards, Money Transfer, Money withdrawal, Smart Card*

INTRODUCTION

A Debit Card is a plastic payment Card that provides the Cardholder electronic access to his or her bank account at a financial institution. Debit Cards are machine readable, magnetically encoded plastic cards which are similar to ATM cards. These can be used to make retail payments and can be used at ATM machines (Caskey, John P., Sellon Jr, Gordon H, 1994). Debit, Credit and Prepaid cards are three forms of payment cards. Debit cards allow consumers to access funds at their banks to pay merchants and are sometimes referred as "pay now" cards because funds are generally debited from cardholder's account within a day or two of purchase (Wilko B & S. Chakaravarty, 2008). Generally debit cards are of three types : Online debit cards, off-line debit cards, and prepaid debit cards. Most debit cards are online debit cards wherein funds are immediately transferred from the cardholder's deposit account. The immediate debiting of the cardholder's account distinguishes the online debit card from credit cards wherein payment is to be made after certain days depending upon the credit period allowed. As the online card allows direct



access to customer's bank account, the customer must personally authorize each transaction. This necessitates the use of a specialized card reader which can identify the personal identification number (PIN). Off-line debit cards are characterized by delayed settlement. When a customer uses an off-line card to make purchases, though the customer's account is immediately debited, but the merchants's account is credited after a delay of two to three days from the date of purchase. Thus use of an off-line debit card is similar to use credit card. The third type of debit card, the prepaid card, is of two types. A special purpose card and another known as "Smart card". These cards are not linked to a card holder's deposit account. When a customer uses pre-paid cards to make a purchase, the card reader deducts the amount of transaction from the prepaid electronic balance shown in the card. Thus in case of pre-paid cards, the balance in the card account is debited instead of the deposit account of the customer. Debit cards replace checkbooks as the transactions are directly paid from the user's bank account. No balance is carried forward and interest does not accrue as with charge cards (Mills, Kathy J, 1996). Consumers are increasingly adopting electronic technology as a means of making payments and managing their personal finances (Catherine J Bell and Jeanne M. Hogarth, 2009). In a study conducted in USA, debit cards were most intensively used payment method accounting for 35% of transactions. A regression study concluded that cash and debit card use was higher for younger, lower income, less educated and poorer respondents and was highest for single people (Scott Shub and Joanna Stevens, 2012). In a study conducted on use of debit cards by cardholders it was found that there is very high correlation (0.910) between the number of cards issued and number of transactions (Srivastava O N, 2015). However, the same study pointed a very low correlation (0.257) between the number of cards and transactions per card per month at Point of Sales. With the current Demonetization of High value notes the correlation between number of cards and transactions at Point of Sales is likely to increase dramatically. Further research in this area can be carried out after three to six months. Debit cards which function for a combination of utilities are called Combo cards. Some banks have issued Combo Cards for a number of purposes in association with various agencies, and these have been found to be very good retention tool for existing customers (Srivastava O N, 2014). Debit cards are mostly used for the Withdrawal of money from ATM (87%), and other usages like Purchase of Goods Online, Purchase of Goods From Shops and Transfer of



Money to Other Accounts has been found to be insignificant (Srivastava O N, 2016). In the same study it was found that there is no association between Duration of Usage of Debit Card the level of satisfaction (Srivastava O N, 2016).

OBJECTIVE OF THE STUDY

- i. To gauge the mean satisfaction level of Debit Card Users on the basis of a sample survey and analysis of the Primary data.
- ii. To determine the variance in the mean level of satisfaction in Usage of Debit Card at the various Usage Points.

HYPOTHESIS

Null Hypothesis: Mean Level of satisfaction in usage of Debit Card is Equal at the all Usage Points.

$$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$$

μ_1 = Mean satisfaction level –Money Withdrawal from ATM

μ_2 = Mean satisfaction level –Purchase of Goods from Shops

μ_3 = Mean satisfaction level –Purchase of Goods On-Line

μ_4 = Mean satisfaction level –Transfer of Money to Other Accounts

μ_5 = Mean satisfaction level –On-Line Transactions

Alternate Hypothesis: At least one of the Mean Level of satisfaction in usage of Debit Card is different from others.

H₁: Out of $\mu_1, \mu_2, \mu_3, \mu_4, \mu_5$ at least one is different from others.

METHODOLOGY

1. Obtention of primary data in regard to use and satisfaction level of users of Debit Card through online Questionnaire.
2. Analysis of data to determine the level of satisfaction on various parameters and determine the difference between the level of satisfaction through calculation of Mean satisfaction Level at various Usage Points and Testing of Hypothesis through Analysis of Variance Study (ANOVA).

PROCESS

Obtain firsthand information by interacting online with existing Debit Card users and analysis of data through coding and use of SPSS and Microsoft Excel.



SAMPLING DESIGN

Convenience sampling has been used in the study. Data has been collected from the users who are using Debit Cards

QUESTIONNAIRE DESIGN

A structured questionnaire has been designed (Annexure I). Likert scale has been used in the questionnaire to record respondents' level of agreement to the statements that suit the purpose of the objective.

DATA COLLECTION

The process of data collection involved following steps:

- Hosting the questionnaire online
- Recording the responses from the respondents
- Coding the data using SPSS and Microsoft Excel
- Interpretation

The questionnaire was mailed to some educational institutions-respondents of Manipal University and BITS Pilani, (Goa) and responses were collected online through Google Drive form. It was self-administered. A total of 82 respondents have been chosen and responses collected from them. Response sheets have been then imported into MS-Excel and coded accordingly as pre-determined during Questionnaire design. The coded data has been entered into SPSS and prepared for performing analysis. As technology is advancing, the methods of doing survey are also changing. The process of hosting the questionnaire online through Google Drive Form and collecting the sample responses is one of the best methods in doing a survey. It reduces the time and cost of doing survey and it also gives the respondent full freedom in giving the responses and the influence of interviewer on respondent is nil.

LIMITATIONS OF THE STUDY

The sample is restricted to limited number because of limited availability of respondents.

DISCUSSION

Debit Cards are now used for carrying out a variety of transactions like :

- i. Withdrawal of money from ATM
- ii. Purchase of Goods from Shops



- iii. Purchase of Goods On-Line
- iv. Transfer of Money to Other Accounts
- v. On-Line Transactions

While the technology for transactions at ATM is fairly simple and standardised, the other usage points require interaction with a host of factors, like Shopkeepers, internet connectivity, payment gateway, security issues etc. It in this scenario that present study has been conducted to find out the level of satisfaction at user level regarding various modes of usage of Debit Cards. Details of weighted average ranking of satisfaction level on various modes of usage are given below:

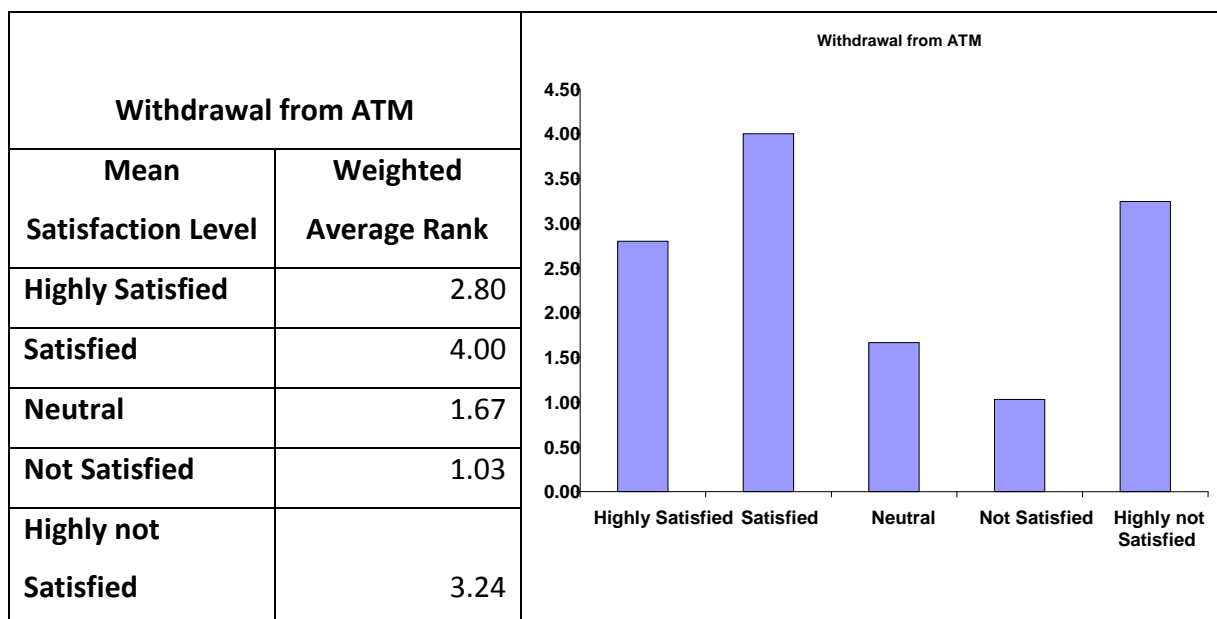


Figure1-Satisfaction Level-withdrawal from ATM

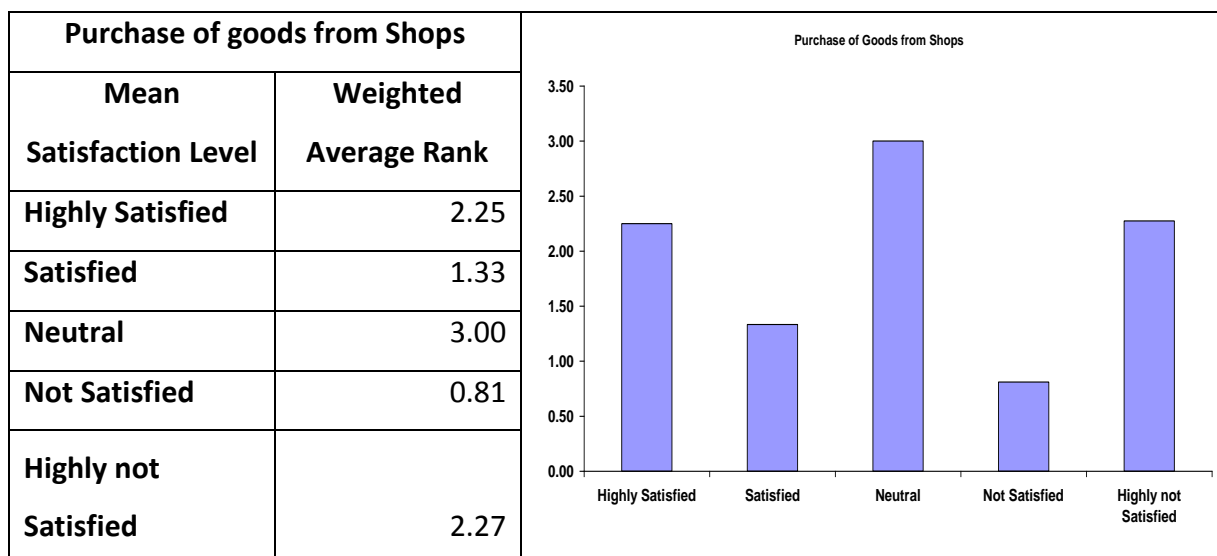


Figure2-Satisfaction Level-Purchase of Goods from Shops

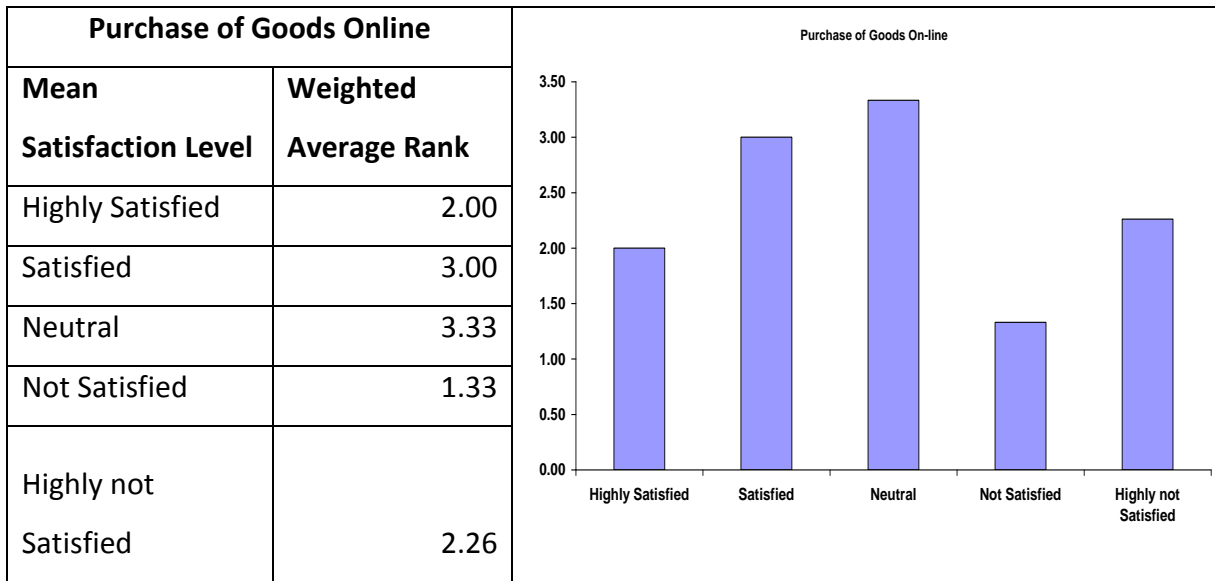


Figure3-Satisfaction Level-Purchase of Goods Online

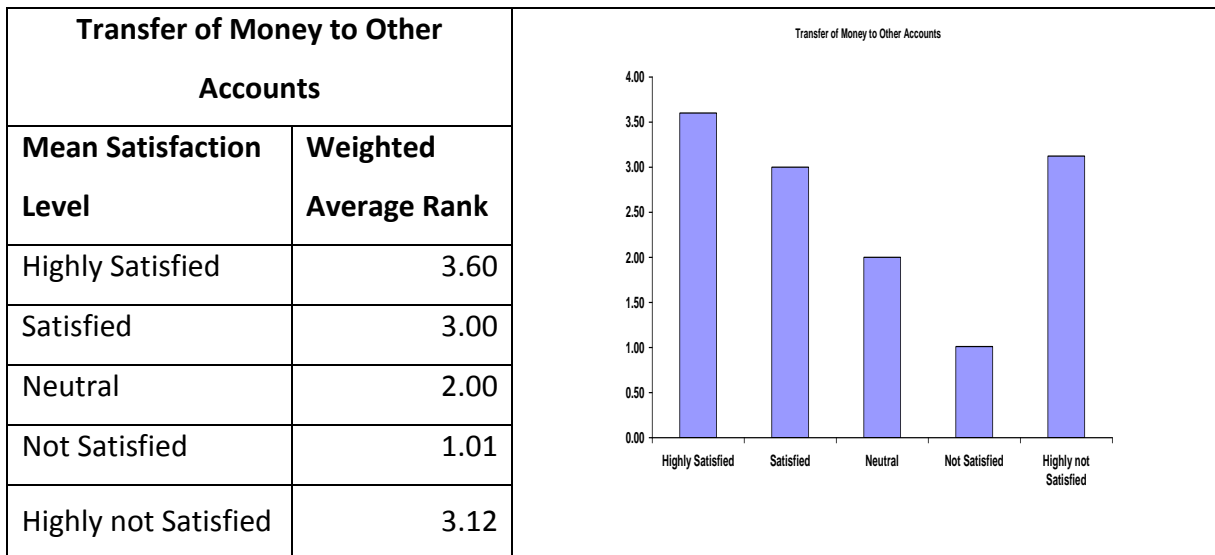


Figure4-Satisfaction Level-Transfer of Money to Other Accounts

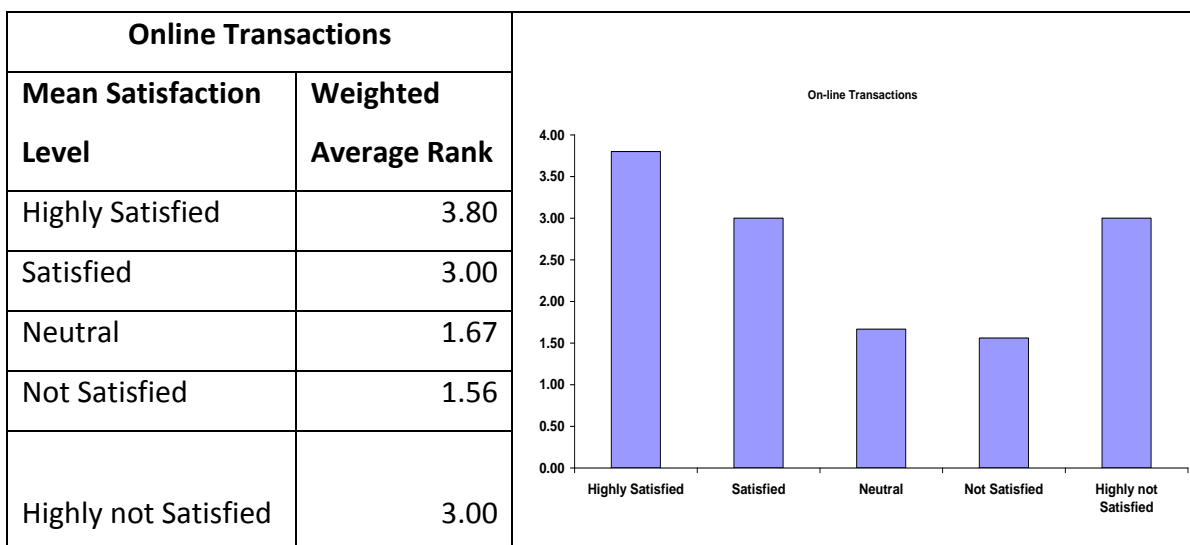


Figure5-Satisfaction Level-Online Transactions



ANALYSIS OF VARIANCE

Descriptives								
Satisfaction level								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Withdrawal from ATM	5	2.5480	1.19644	.53506	1.0624	4.0336	1.03	4.00
Purchase of goods from Shops	5	1.9320	.86274	.38583	.8608	3.0032	.81	3.00
Purchase of Goods Online	5	2.3840	.79814	.35694	1.3930	3.3750	1.33	3.33
Transfer of Money to Other Accounts	5	2.5460	1.03729	.46389	1.2580	3.8340	1.01	3.60
Online Transactions	5	2.6060	.96259	.43048	1.4108	3.8012	1.56	3.80
Total	25	2.4032	.93063	.18613	2.0191	2.7873	.81	4.00

In this Descriptive Statistics box, the mean for the **Withdrawal from ATM** is 2.50. The mean for **Purchase of goods from Shops** is 1.93; the mean for the **Purchase of Goods Online** is 2.38, the mean for the **Transfer of Money to Other Accounts** is **2.54** and the mean for the **Online Transactions** is **2.60**.

ANOVA TABLE					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.524	4	.381	.396	.809
Within Groups	19.262	20	.963		
Total	20.786	24			

INFERENCE

Calculated F Value as per ANOVA Calculation is 0.396 and Table Value for F (df 4, 20) is 2.87. Calculated F Value is well within the Critical F Value. Our conclusion is that the Debit Card transaction Usage satisfaction level did not differ significantly among the 5 groups.



TUKEY'S HSD POST HOC TEST

Multiple Comparisons						
Tukey HSD						
(I) VARO 0003	(J) VARO 0003	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.61600	.62067	.856	-1.2413	2.4733
	3	.16400	.62067	.999	-1.6933	2.0213
	4	.00200	.62067	1.000	-1.8553	1.8593
	5	-.05800	.62067	1.000	-1.9153	1.7993
2	1	-.61600	.62067	.856	-2.4733	1.2413
	3	-.45200	.62067	.947	-2.3093	1.4053
	4	-.61400	.62067	.857	-2.4713	1.2433
	5	-.67400	.62067	.812	-2.5313	1.1833
3	1	-.16400	.62067	.999	-2.0213	1.6933
	2	.45200	.62067	.947	-1.4053	2.3093
	4	-.16200	.62067	.999	-2.0193	1.6953
	5	-.22200	.62067	.996	-2.0793	1.6353
4	1	-.00200	.62067	1.000	-1.8593	1.8553
	2	.61400	.62067	.857	-1.2433	2.4713
	3	.16200	.62067	.999	-1.6953	2.0193
	5	-.06000	.62067	1.000	-1.9173	1.7973
5	1	.05800	.62067	1.000	-1.7993	1.9153
	2	.67400	.62067	.812	-1.1833	2.5313
	3	.22200	.62067	.996	-1.6353	2.0793
	4	.06000	.62067	1.000	-1.7973	1.9173

INFERENCE

Critical Value of Q at 0.05 level of significance is 5.67 (number of samples is 5 and number of observations in each sample is 5). The calculated value of Q in none of the cases is greater than the Table value (critical value), leading us to conclude that there is no significant difference across the Mean Satisfaction level in Usage of Debit Cards at various Usage points. This validates our findings of ANOVA analysis of Mean Satisfaction level.

CONCLUSION

The Variance Analysis of Mean Satisfaction Level across various Usage Points of Debit Cards is not significantly different though the interaction of user is with different touch points.



However, as the technological interface in all cases is more or less similar and the respondents in the present study are Homogenous, the results of study are on the expected lines. An area of further research in this case would be the selection of respondents from different demographics and then testing of the Hypothesis of the present study.

REFERENCES

1. Aaker David A, Kumar V and Day George S, " Marketing Research" , John Wiley & Sons (Asia) Pte Ltd.
2. Caskey, John P., Sellon Jr, Gordon H, "Is the debit card revolution finally here," Economic Review 1994, Vol.79, Issue 4.
3. Catherine J Bell and Jeanne M. Hogarth and Eric Robbins "U.S. Households' Access to and use of Electronic banking 1989-2007," Federal Reserve Bulletin July, 2009.
4. Mills, Kathy J, "Smart Money" International Business: Strategies for Global marketplace 1996, Vol. 9 Issue 7.
5. Scott schub and Joanna Stavins, "How Consumers Pay: Adoption and Use of Payments" Research Review January 2012- June 2012 Issue No.17.
6. Srivastava O N, Analysis of Usage Patterns of Debit Cards issued by Public Sector, Private Sector and Foreign Banks operating in India, International Journal of Advanced Research in Management and Social Sciences, Volume 4, No.3 March, 2015.
7. Srivastava O N, Study of Combo Cards issued in India and survey of usage patterns and satisfaction level of Combo Cards users at Manipal University, International Journal of Advanced Research in Management and Social Sciences, Volume 3, No.11, November, 2014.
8. Srivastava O N , Analysis of Usage Pattern and Measurement of Satisfaction Level of Debit Cards, International Journal of Advanced Research in Management and Social Sciences, Volume 5, No.9 September, 2016.
9. Wilko Bolt and Sujit Chakravarty, "Economics of payment Cards: A status report", Economic Perspective 2008, 4th Quarter, Vol. 32, Issue 4.
10. www.rbi.org.in/scripts/ATMView.aspx. wikipedia.org/wiki/Debitcard.



QUESTIONNAIRE ON

DEBIT CARD

1. Since when you are using SBI Debit (ATM) Card? *

- 0-1 Year
- 1-2 Years
- 2-3 Years
- More than 3 Years

2. What facility in the SBI Debit (ATM) Card is most used by you?

- Withdrawal of Money from ATM
- Purchase of Goods from Shops
- Purchase of Goods Online
- Transfer of Money to Other Accounts
- On-line Transactions

3. Please specify the level of satisfaction from existing features of SBI Debit (ATM) Card

	Highly Satisfied	Satisfied	Neutral	Not satisfied	Highly Not Satisfied
Money Withdrawal from ATM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchase of Goods from Shops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchase of Goods On-line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transfer of Money to Other Accounts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-line Transactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



4. Have You faced any problem in use of SBI Debit (ATM) Card

Yes

No

5. If Yes, what is the Nature of Problem? Please specify below

6. Was the Problem solved by the branch?

Yes

No

7. Are you using Debit (ATM) Card of Other Banks also?

Yes

No

8. Which feature in the Debit (ATM) Card of Other Bank is better than SBI Debit Card.

Please Specify

9. Can You Suggest any additional Feature to be ADDED in the existing SBI Debit (ATM)

Card