# A Study on Consumer Technical Awareness with Regard to Security and Privacy in Automated Teller Machine / Cards (Debit / Credit) Services in Udaipur City

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## Abstract

The Indian Banking sector is undergoing significant changes and growth. But in later time there have been a multiplication of ATM fakes within the nation indeed and over the globe. Overseeing the hazard related with ATM extortion as well as reducing its affect is an vital issue that confront money related teach as extortion methods ended up more progressed with expanded events. The ATM is as it were one of numerous Electronic Reserves Exchange (EFT) gadgets that are helpless to extortion assaults. Numerous time clients have confronted issues in utilizing ATM. A common issue confronted by users is that money not being scattered and account still debited with comparable sum. It gets to be a really repetitive handle of getting this settled. This study assesses the technical awareness among the consumers regarding security and privacy while using ATM/Cards (Debit/Credit) in Udaipur City. Primary data was collected from 550 consumers who are using ATM/Cards (Debit/Credit) service by using convenient sampling method and by means of structured questionnaire. The data were analyzed using Kruskal Wallis and chi square test. The study revealed that demographic factor i.e. gender, age, education and occupation play an important role for measuring the level of technical awareness among the consumers with regard to security and privacy in ATM/Cards (Debit/Credit). It was also observed that except gender and age groups other demographic factors such as education and occupation directly affect the level of technical awareness among the consumers of Udaipur city.

**Keywords :** Automated Teller Machine, Banking, Technical Awareness, Security and Privacy

## Introduction

The present-day modern period has supplanted these conventional money related disobedient from a paper and metal based cash to 'plastic money' within the shape of credit cards, debit cards etc. This has brought about within the expanding utilize of Automated Teller machine all over the world.

Nowadays ATMs are playing a vital role in banking sector, for easy accessing the account from anywhere in the world. One should possess good knowledge on this working and technologies used in ATMs. Within the current situation utilize of ATMs has ended up an imperative portion of human routine. This machine may be a telecommunicated and computerized gadget that gives administrations related to monetary exchanges to customers. In this exchange prepare, the client does not require the assistance of cashier, receptionist or bank teller.As the technology evolves, it also brings some sort of technical issues like customers didn't receive cash when their accounts are debited, customers didn't receive the slip of account balance. These are the problems which consumers should aware of to protect their security and privacy while using ATM/Debit /Credit cards.

## Various Technical Issues

a. **Cash not Received:** Sometimes customers are facing problem with ATM when their account is debited. They didn't receive cash while the account is debited.

b. **Not Aware About the Insertion Process:** The most common problem known to all when one is new and do not know how to insert the ATM card. Thy wrongly insert the ATM card and this problem is more common with new ATM users who are not familiar with ATM machine.

c. **Didn't Receive Receipt :** Sometimes ATM machine does really badly with the customers. The bad thing is when one didn't able to receive slip of account balance. It happens when ATM machine get older or get some serious technical problem.

d. **Browser Issues :** A few anti -virus or firewall computer program can influence your card installment. With snit virus program, please include Transfer wise to the list of "secure dealers". It would be ideal if you too make sure that any anti-virus or firewall program simply have introduced will permit pop ups.

e. **Inadequate Balance :** A common reason for a card being declined is a balance that is too low to support the requested transaction. You may have less money in your account than you thought, or a previously-made transaction, like a deposit, may not have cleared. Take into consideration both your request and the associated ATM fee.

f. **Account Changes :** If your account is frozen for any reason, your ATM card will likely be declined. For example, if you recently experienced a number of overdrafts, reported a card missing or stolen, or had a fraud alert put on your card, a machine will likely decline it and, in some cases, even retain the card and not give it back to you. If your card has expired, this, too can trigger a decline notice. Many financial institutions also limit how much money you can take from an ATM in a 24-hour period. If you've surpassed this number, your card may be declined.

g. **Wrong PIN :** If you enter the wrong PIN, or personal identification number, your card may be declined. In most instances, the machine will prompt you to retry the PIN, but if you enter it wrong repeatedly, the ATM may hold your card in an effort to ensure that it is not being used illegally by someone else

h. **Glitches :** Sometimes ATMs are undergoing service or experiencing a computer malfunction that results in declined cards. ATMs can also be emptied of cash, especially on busy weekends. While most low or empty machines automatically post an "unavailable" icon of some sort to alert potential users to the problem, you may also experience a straight decline instead.

i. **Problems of SMS alert of ATM :** If server gets down. This kind of problem occurs in ATM system. You will be very disappointed when you didn't get any SMSregarding whether your money debited or credited.

Inspite of the fact that e-banking offerings are advertised with the help of all the banks, it may be need to discover out approximately whether or not

all the banking clients are aware of the technical issues with regard to security and privacy of e-banking offerings. Hence, the importance of this study is to analyze "Consumertechnical awareness with regard to the security and privacy in Automated teller machine in Udaipur City".

## Literature Review

(Omari & Bamfo, 2012)Concluded that majority of ATM endorsers have a great information on the administrations advertised by the department ATM. The persuading variables for utilizing the department ATM administrations are security in carrying out banking exchanges, time sparing component and the adaptability in utilize. The demotivating variables that avoided respondents from utilizing the department ATM are high charges, specialized disappointments and unfavorable every day withdrawal limit.

(Curran & King, Investigating the human computer intearction problems with automated teller machine navigation menus)Concluded thatATMs have ended up portion of the present-day world's foundation. We anticipate ATMs for comfort as much as we anticipate a great transport benefit. In any case, as the administrations advertised develop, the ATM menu plans will be ended up more complicated. This may lead to the frameworks getting to be indeed more confounding for clients and harder to select. It is suggested that ATM creators counsel broadly with ATM clients to assist them plan and make easy- to use and proficient ATM frameworks.

(Dhungel, Acharya, & Dhungel, 2012)Identified that most of the respondents have faced technical problems and have reported several technical problems like trapping of card, out of service machines, machines not properly functioning, no back up during load- shedding, system problems and software problems. Besides short expiry date, regular renewal and charges for renewal, blocking not done through SMS/phone when ATM card is lost, withheld of minimum balance, some banks have no network with other banks are also some issues of concern. These are the area where bankers should take care of to satisfy their customers.

(Adesuyi, Solomon, & Robert, 2013)Found that existing security foundation on ATMs isn't satisfactory sufficient to combat the advancing nature of ATM extortion, subsequently thisrequire improved innovation on security. Moreover, the security measures embraced by a few banks are out of date, hence making the measures less noteworthy and permitting extortion at ATM. Measures and Rules on Electronic banking need satisfactory follow-up as these Benchmarks and Rules are excessive breached by some financial institutions. The current security execution does not proffer the satisfactory security fundamental to secure electronic exchanges, customers' data and reserves.

## Objectives of Study

1. To analyze the distinction in consumer technical awareness regarding security and privacy while using ATM/Cards (Debit/Credit) throughout demographic factors (gender, age, education and occupation)
2. To measure the level of technical awareness among the consumers regarding use of ATM/Cards (Debit and Credit) with respect to its security and privacy features.

## Research Methodology

**Research purpose**

Assessing the technical awareness among the consumers regarding security and privacy in Automated Teller Machine/Cards (Debit/Credit) in Udaipur City

**Tools and Techniques**

The key literature on security and privacy aspect in ATM/Cards (Debit/Credit) is reviewed on. Primary data was collected using questionnaire survey. Descriptive and inferential analysis was done and statistical tools such Kruskal Wallis and Chi-Square test employed SPSS version 23 to analyze the data

**Research Questions**

- Is there any difference among the demographic factors i.e. age, gender, education, and occupation with regard to their technical awareness towards security and privacy while using Automated Teller Machine/Cards (Debit/Credit)?
- What is the level of technical awareness among consumers categorized with the high, moderate and low related to their safety and privacy

feature while using Automated Teller Machine/Cards (Debit/Credit)?

**Hypothesis Development**

$H_{01}$ There is no significant difference among the consumers with technical awareness towards security and privacy for ATM/Cards (Debit/Credit).

$H_{02}$ There is no significant association among consumers with the level of technical awareness with regards to security and privacy for ATM/Cards (Debit/Credit).

**Population**

For this research estimated population is 1500 consumers who are using service of ATM/Card/Debit/Credit) in Udaipur City.

**Sampling Technique**

Convenience sampling techniques has been adopted to collect the response. Out of 1500 population, sample size of 550 were taken into for the collection of data from the respondents.

**Table 1 : Frequency Distribution**

| | | Frequency | Percentage |
|---|---|---|---|
| **Gender** | Male | 366 | 66.5 |
| | Female | 184 | 33.5 |
| **Age** | Below 30 | 141 | 25.6 |
| | 31-45 | 169 | 30.7 |
| | 46-62 | 134 | 24.4 |
| | Above 63 | 106 | 19.3 |
| **Education** | Primary | 80 | 14.5 |
| | Secondary | 122 | 22.2 |
| | Graduate | 137 | 24.9 |
| | Post Graduate | 211 | 38.4 |
| **Occupation** | Professional | 160 | 29.1 |
| | Service | 160 | 29.1 |
| | Business | 160 | 29.1 |
| | Labor | 70 | 12.7 |
| **Sub Occupation** | Business | 160 | 29.1 |
| | Labor | 70 | 12.7 |
| **Professional** | CA / CS | 40 | 7.3 |
| | Engineer | 40 | 7.3 |
| | Lawyer | 40 | 7.3 |
| | Doctor | 40 | 7.3 |
| **Service** | Govt. Ser | 80 | 14.5 |
| | Pvt. Ser | 80 | 14.5 |

**Source : Primary Data**

**Table 2 : Scale Item Dimensions**

| DIMENSIONS | SCALE ITEM | VARIABLE NAME |
|---|---|---|
| Technical Awareness | I will not get my card back if stuck in ATM | V 1 |
| | I am not completely aware about the process how to insert ATM card | V 2 |
| ATM/ Cards (Debit & Credit) | Sometimes the machine does not accept the card as the balance is too low for the requested transaction | V 3 |
| ATM/ Cards (Debit & Credit) | Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data | V 4 |

**Source : Primary Data**

**Limitation of the study**

- Limited Geographical scope.
- Sometimes respondents would not show proper interest while answering the questions

**Reliability**

The calculated value of Cronbach's Alpha is .800, which is more than the required standard reliability of .60 that means the instrument of this research is quite reliable.

## Data Analysis and Interpretation

Analysis of Kruskal Wallis test on demographic factors for level of Technical awareness towards security and privacy for Electronic banking services

**(a.) Gender**

Based on Gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{01.1}$ | There is no significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services |
| $H_{a1.1}$ | There is a significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services |

There is no significant difference among the consumer gender groups related to test variable that "I will not get my card back if stuck in ATM" for variable gender (Chi square= .396, df=1, p = 0.529), with a mean rank of test variable of 272.56 for male and 281.36 for female. There is significant difference among the consumer gender groups to test variable that "I am not completely aware about the process how to insert ATM card" for variable gender (Chi square= 9.277, df=1, p = .002), with a mean rank of test variable of 289.45 for male and 247.74 for female. There is no significant difference among the consumer gender groups to test variable that "Sometimes the machine does not accept the card as the balance is too low for the requested transaction" for variable gender (Chi square= 0.627, df=1, p = 0.429), with a mean rank of test variable of 271.78 for male and 282.90 for female. There is no significant difference among the consumer gender groups to test variable that "Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data" for gender (Chi square= 1.402, df=1, p = 0.236), with a mean rank of test variable of 269.99 for male and 286.46 for female.

**Inference Drawn**

The null hypothesis is accepted, there is no significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. Finally, it concludes that males and females have similar thinking about technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services except for one test variable i.e. "I am not completely aware about the process how to insert ATM card".

**(B.) Age**

Based on agefollowing sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{01.2}$ | There is no significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards(Debit/Credit) services |
| $H_{a1.2}$ | There is a significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards(Debit/Credit) services |

There is not a statistically significant difference between the different age groups related to test variable that "I will not get my card back if stuck in ATM" for variable age group (Chi square= 1.240, df=3, p = .744), with a mean rank of test variable of 283.44 for age group below 30, 267.66 for Age group 31-45, 270.54 for age group 46-62, and 283.71 for age group above 63. There is no significant difference among consumer age groups related to test variable that "I am not completely aware about the process how to insert ATM card "for variable age group (Chi square= 4.653, df=3, p = .199), with a mean rank of test variable of 285.30 for age group below30, 287.83 for Age group 31-45, 268.66 for age group 46-62, and 251.44 for age group above63.There is no significant difference among consumer age groups related to test variable that "Sometimes the machine does not accept the card as the balance is too low for the requested transaction" for variable age group (Chi square= 4.214, df=3, p = .239), with a mean rank of test variable of 286.16 for age group below 30, 287.40 for Age group 31-45, 254.99 for age group 46-62, and 268.28 for age group above 63.There is no significant difference among consumer age

groups related to test variable that "Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data "for variable age group (Chi square= 7.207, df=3, p = .066), with a mean rank of test variable of 295.55 for age group below 30, 267.47 for Age group 31-45, 251.76 for age group 46-62, and 291.65for age group above 63.

**Inference Drawn**

The null hypothesis is accepted, there is no significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards (debit/credit) services. It means consumers of all age groups have similar thinking about above important factors of technical awareness towards security and privacy while using ATM/cards (debit/credit) services. Finally, it concludes that a respondent who has young age have a similar influence about technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has higher group of age.

**(C) Education**

Based on education following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{01.3}$ | There is no significant difference among consumers at different education level with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |
| $H_{a1.3}$ | There is a significant difference among consumersat different education level with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |

There is a significant difference among consumersat different education level related to test variable that I will not get my card back if stuck in ATM for variable education level (Chi square= 19.297, df=3, p = 0.000), with a mean rank of test variable of 310.79 for primary level of education, 308.14 for secondary level of education, 276.96 graduate level of education, and 242.30 for post graduate level of education. There is a significant difference among consumersat different education level related to test variable that I am not completely aware about the process how to insert ATM card for variable education level (Chi square=29.300, df=3, p = 0.000), with a mean rank of test variable of 328.77 for primary level of education, 315.22 for secondary level of education, 241.17 for graduate level of education, and 254.63 for post graduate level of education. There is a significant difference among consumersat different education level related to test variable that Sometimes the machine does not accept the card as the balance is too low for the requested transaction for variable education level (Chi square= 20.850, df=3, p = 0.000), with a mean rank of test variable of 207.29 for primary level of education, 268.68for secondary level of education, 286.14 graduate level of education, and 298.39 for post graduate level of education. There is a significant difference among consumersat different education level related to test variable that Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data for variable education level (Chi square= 11.858 df=3, p = 0.008), with a mean rank of test variable of 227.47 for primary level, 290.97 for secondary level of education, 296.88 graduate level of education, and 270.89 for post graduate level of education.

**Inference Drawn**

The null hypothesis is rejected, there is a significant difference among consumers at different education level with technical awareness towards security and privacy while using ATM/Cards (debit/credit) services. It means consumers at different education level have a difference in thinking about the above important factors of technical awareness towards security and privacy while using ATM/cards (Debit/Credit). Finally, it concludes that a respondent who has a primary level of education have a different influence about technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has a post-graduate level of education

**(D) Occupation**

Based on occupationfollowing sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{01.4}$ | There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |
| $H_{a1.4}$ | There is a significant difference among consumers from different occupation with technical awareness towards security and privacy while usingATM/Cards (Debit/Credit) services. |

There is a significant difference among consumers from different occupation related to test variable that "I will not get my card back if stuck in ATM" for variable occupation (Chi square= 97.184, df=3, p = 0.000), with a mean rank of test variable of 180.44 for Professional class, 311.73 for service class, 339.85 for business class, and 262.88 for Labor class. There is a significant difference among consumers from different occupation related to test variable that "I am not completely aware about the process how to insert ATM card" for variable occupation (Chi square= 65.314, df=3, p = 0.000), with a mean rank of test variable of 251.47 for Professional class, 255.57 for service class, 259.75 for business class, and 412.00 for Labor class. There is a significant difference among consumers from different occupation related to test variable that "Sometimes the machine does not accept the card as the balance is too low for the requested transaction" for variable occupation (Chi square= 46.059, df=3, p = 0.000), with a mean rank of test variable of 331.37 for Professional class, 290.32 for service class, 219.79 for business class, and 241.26 for Labor class. There is a significant difference among consumers from different occupation related to test variable that "Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data" for variable occupation (Chi square= 20.309, df=3, p = 0.000), with a mean rank of test variable of 273.07 for Professional class, 302.21 for service class, 282.51 for business class, and 203.98 for Labor class.

**Inference Drawn**

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. It means consumers from different occupation have a difference in thinking about the above important factors of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. Finally, it concludes that there is a different influence about technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services among the consumers from different occupations such as Professional class, Service class, Business class, and Labor class.

**(E.) Sub-Occupation**

Based on sub-occupationfollowing sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{01.5}$ | There is no significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |
| $H_{a1.5}$ | There is a significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |

There is a significant difference among consumers from different sub-occupation related to test variable that "My confidential information may be accessed by others through Bluetooth" for variable sub-occupation (Chi square= 141.485, df=6, p = 0.000), with a mean rank of test variable of 322.40 for CA/CS, 370.65 for engineers, 134.03 for lawyers, and 153.61for doctors, 319.01 for government employees, and 393.76 for private employees. There is a significant difference among

consumers from different sub-occupation related to test variable that "I will not get my card back if stuck in ATM." for variable sub-occupation (Chi square= 97.441, df=6, p = 0.000), with a mean rank of test variable of 217.44 for CA/CS, 163.70 for engineers, 197.38 for lawyers, and 143.26 for doctors, 343.54 for government employees, and 279.91 for private employees. There is a significant difference among consumers from different sub-occupation related to test variable that "I am not completely aware about the process how to insert ATM card" for variable sub- occupation (Chi square=76.751, df=6, p = 0.000), with a mean rank of test variable of 199.69 for CA/CS, 262.16 for engineers, 248.90 for lawyers, and 295.11 for doctors, 342.28 for government employees, and 168.85 for private employees. There is a significant difference among consumers from different sub-occupation related to test variable that "Sometimes the machine does not accept the card as the balance is too low for the requested transaction" for variable sub- occupation (Chi square=70.155 df=6, p = 0.000), with a mean rank of test variable of 432.56 for CA/CS, 285.50 for engineers, 291.66 for lawyers, and 315.76 for doctors, 274.86 for government employees, and 305.78 for private employees. There is a significant difference among consumers from different sub-occupation related to test variable that "Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data" for variable sub- occupation (Chi square=60.560 df=6, p = 0.000), with a mean rank of test variable of 339.66 for CA/CS, 282.14 for engineers, 340.4 for lawyers, and 130.08 for doctors, 280.75 for government employees, and 323.67 for private employees.

**Inference Drawn**

The null hypothesis is rejected, there is a significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. It means consumers from different sub-occupation have difference in thinking about the above important factors of technical awareness towards security and privacy while using ATM/cards (debit/credit) services. Finally, it concludes that a there is different influence about technical awareness towards security and privacy while using ATM/cards(debit/credit) services among the consumers from different sub-occupation such as CA/CS, Engineers, lawyers, doctors, government employees and private employees.

Analysis of Chi square test on demographic factors for level of Technical awareness towards security and privacy for Electronic banking services.

**(A.) Gender**

Based on gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{02.1}$ | There is no significant association among the consumers' gender groups with the level of technical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services. |
| $H_{a2.1}$ | There is a significant association among the consumers' gender groups with the level of technical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services. |

From above cross tabulation & chi Square analysis have been made between level of technical awareness & male & female to evaluate the significant association between them. In this study overall four factors were considered for the dimension of technical awareness towards security and privacy while usingATM/Cards (Debit and Credit)services which are optimized into three levels known as low, moderate & high level. From the above cross table shows that consumers belong to high level of awareness i.e. 99(65.13%) and 53(34.21%) males & females respectively,consumers belong to low level of awareness i.e. 116(67.05%) and 57(32.94%) males & females respectively and consumers belong to moderate level of awareness i.e. 151 (67.11%) and 74(32.88%) males and females. Chi square analysis shows chi square value as .189 & its p-value is .910 which is greater than level of significance .05 thus the null hypothesis is accepted, which showsthere is no significant association among the consumers gender groups with the level of technical awareness towards security and privacy while

using ATM/Cards (debit /Credit) services. The phi value of the above analysis is .019 which shows that there is no significant association among the consumers' gender groups with the level of technical awareness towards security and privacy while using ATM/Cards (debit /Credit) services.

**(B.) Age**

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

| | |
|---|---|
| $H_{02.2}$ | There is no significant association among the consumers' age groups with the level of technical awareness towards security and privacy while using ATM/Cards (debit /Credit) services. |
| $H_{a2.2}$ | There is a significant association among the consumers age groups with the level of technical awareness towards security and privacy while using ATM/Cards (debit /Credit) services |

From above cross tabulation & chi Square analysis have been made between level of technical awareness &age to evaluate the significant association between them. In this study overall four factors were considered for the dimension of technical awareness towards security and privacy while usingATM/ Cards (Debit and credit) services which are optimized into three levels known as low, moderate & high level.From the above cross table, consumers belong to age group below 30 from which 48 (31.57%) are highly aware, 58(25.77%) are moderately aware and 35(20.23%) are low aware. Consumers belong to age group 31-45 from which 48(31.57%) are highly aware, 67(29.77%) are moderately aware and 54 (31.21%) are low aware. Consumers belong to age group 46-62 from which 28(18.42%) are highly aware, 55(24.44%) are moderately aware and 21(29.47%) are low aware. Consumers belong to age group above 63 from which28(18.42%) are highly aware, 45(20%) are moderately aware and 33(19.07%) are low aware. Chi square analysis shows chi square value as 8.367& its p-value is .212 which is greater than level of significance .05 thus the null hypothesis is accepted, which showsthere is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using ATM/Cards (debit /Credit) services. The phi value of the above analysis is .123 which shows that there is no significant association among the consumers' age groups with the level of technical awareness towards security and privacy while using ATM/Cards (debit /Credit) services.

**(C.) Education**

Based on educationfollowing sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{02.3}$ | There is no significant association among the consumers at different level of education with the level of technical awareness towards security and privacy while using ATM/ cards (Debit /Credit) services. |
| $H_{a2.3}$ | There is a significant association among the consumers at different level of education with the level of technical awareness towards security and privacy while using ATM/ Cards (Debit /Credit) services. |

From above cross tabulation & chi Square analysis have been made between level of technicalawareness &education to evaluate the significant association between them. In this study overall four factors were considered for the dimension of technical awareness towards security and privacy whileusing ATM/Cards (Debit /Credit) services which are optimized into three levels known as low, moderate & high level. From the above cross table, consumers belong to primary level of education from which 18 (11.84%) are highly aware, 37(16.44%) are moderately aware and 25(14.45%) are low aware. Consumers belong to secondary level of education from which 46(30.26%) are highly aware, 52(23.11%) are moderately aware and 24(13.87%) are low aware. Consumers belong to graduate level of education

from which 40 (26.31%) are highly aware, 54(24%) are moderately aware and 43 (24.85%) are low aware. Consumers belong to Post Graduate level of education from which48(31.57%) are highly aware, 82 (36.44%) are moderately aware and 81(46.82%) are low aware. Chi square analysis shows chi square value as 16.731& its p-value is .010 which is lessthan level of significance .05 thus the null hypothesis is rejected and alternate is accepted, which showsthere is a significant association among the consumers at different level of education with the level of technical awareness towards security and privacy while using ATM/ Cards (Debit/Credit) services. The phi value of the above analysis is .174 which shows that there is a significant association among the consumers at different level of education with the level of technical awareness towards security and privacy while using ATM/ cards (Debit/Credit) services

**(D.) Occupation**

Based on occupationfollowing sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/credit) services:

| | |
|---|---|
| $H_{02.4}$ | There is no significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |
| $H_{a2.4}$ | There is a significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |

From above cross tabulation & chi Square analysis have been made between level of technical awareness &occupation to evaluate the significant association between them. In this study overall four factors were considered for the dimension of technical awareness towards security and privacy while using ATM/ Cards(Debit /Credit) serviceswhich are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 33 (21.71%) are highly aware, 64(28.44%) are moderately aware and 63(36.41%) are low aware. Consumers belong to service group from which 53(34.21%) are highly aware, 58(25.77%) are moderately aware and 49(28.32%) are low aware. Consumers belong to business group from which 44(28.94%) are highly aware, 69(30.66%) are moderately aware and 47 (27.16%) are low aware. Consumers belong to Labor group from which22(14.47%) are highly aware, 34(15.11%) are moderately aware and 14(8.09%) are low aware. Chi square analysis shows chi square value as 13.399 & its p-value is .037 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which showsthere is a significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .156 which shows that there is a significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using mobile banking services.

**(E.) Sub Occupation**

Based on sub-occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services:

| | |
|---|---|
| $H_{02.5}$ | There is no significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |
| $H_{a2.5}$ | There is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. |

From above cross tabulation & chi Square analysis have been made between level of technical awareness &sub occupation to evaluate the significant association between them. In this study overall four factors were considered for the dimension of technical awareness towards security and privacy while using ATM/ Cards (Debit/Credit) services which are optimized into three levels known as low, moderate & high level. From the above cross table based on sub occupation professionals are categorized into CA/CS, Engineers, Lawyers and Doctors. The awareness level of each category as follows: consumers belong to CA/CS from which 11(7.23%) are highly aware, 20(8.88%) are moderately aware and 9 (5.20%) are low aware. Consumers belong to Engineers from which 8(5.26%) are highly aware, 15(6.66%) are moderately aware and 17(9.82%) are low aware. Consumers belong to lawyers from which 11(7.23%) are highly aware, 17(7.55%) are moderately aware and 12 (6.93%) are low aware.Consumers belong to Doctors from which3(1.97%) are highly aware, 12 (5.33%) are moderately aware and 25(14.45%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 31(20.39%) are highly aware, 32(14.22%) are moderately aware and 17(9.82%) are low aware and the awareness level of Private employees is as follows: 22 (14.47%) are highly aware, 26(11.55%) are moderately aware and 32(18.49%) are low aware. Chi square analysis shows chi square value as 38.875& its p-value is .000 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which showsthere is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/credit) services.The phi value of the above analysis is .255 which shows that there is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

## Findings of the study

1. The level of technical awareness among the gender group is similar towards security and privacy while using ATM/Cards (Debit/Credit) services which shows that the opinion of male group is much like whatever a respondent from female group. Statistical analysis also supports these findings.
2. The level of technical awareness among all the age groups is comparative which means that the opinion of younger and middle age group is much like whatever a respondent from elder and older age groups. Statistical analysis also supports these findings.
3. Education wise analysis gives the information that the opinion of all the consumers varies regardless of their level of education which clearly shows that their level of technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) goes on declining from high level of education to low level of education. Statistical analysis also support that highly educated groups have high awareness as compare to their counterparts.
4. Occupation wise analysis gives the information that the opinion of all the consumers varieson the idea of their occupation. The study also found that the extent of technical awareness among the service class consumers is higher as compare to professionals, business class and Labor class. Further we analyzed that among professionals the level of awareness of CA/CS and lawyers is high as compare to engineers and doctors and among service class consumers government employees are more aware than private employees.

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