

**A Study on Consumer Awareness with
Regard to Security and Privacy in
Electronic Banking Services in Udaipur
City**

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Chapter – 1

Introduction of Electronic Banking

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Chapter 1 Introduction of Electronic Banking

Electronic banking originated in India, in the early 1990s, it's started with non-branch banking services. Opening up of an economic system in 1991 marked the entry of overseas banks. They brought new technological know-how with them. Banking products became greater and extra competitive. The credit for launching electronic banking in India goes to ICICI Bank.

Background of The Study

In modern technology, science is affecting the lives of every human being in both the way that is quantitatively and qualitatively. The rapid extension of data science has imbibed the lives of millions of humans and brought fundamental modifications in the financial and commercial enterprise environment around the world. The banking industry in India is considerable totally distinctive from that of other Asian countries sense of the country's distinctive geographical, social, and financial characteristics. The last decade has witnessed a drastic modification within the banking sector all over the world. After the introduction of economic and financial sector reforms within the country since the early 1990s, the banking industry in our country has experienced the transformation from being a conduit of resources for the economic development of the country to the role of leading the economy in the worldwide monetary space with more prominent certainty. Deregulation has opened up new vistas for banks to amplify their income by differentiating into universal banking, bank assurance, mortgage financing, personal banking & depository services, etc. Liberalization has opened the turf to modern players and brought more noteworthy competition among banks at the indistinguishable time. To survive amid this competition, the information and communication technology impressively contributed to the profit of monetary establishments and exponential development around the world.

Technology has resulted in the computerization of the financial institution branches and has given an upward shove to electronic banking channels like computerized teller machine, internet banking, cell banking, and phone banking. The emergence of Electronic banking has created a big transformation towards the services provided by the banks. Electronic banking provides alternatives for quicker delivery of banking services to an extensive scope of consumers. Customers are now feeling at ease and at the same time convenient whilst banking through the internet. As electronic banking is becoming popular throughout the world due to its convenience and low cost, at the same time the security and privacy issues encompassing electronic banking services are always the focus of both the banks and customers.

In India comparatively, fewer studies have been conducted which measure the level of awareness towards electronic banking. Thus, there is a lot of scope for the research to evaluate the current level of awareness among the consumers regarding security and privacy in electronic banking services which may also be useful to the Indian Banking industry.

Impact of Information Technology in Indian Banking Sector

(Paritosh, 2018) The information technology revolution had a great influence on the Indian Banking system. The use of computers in the banking industry in India has increased many folds after the economic liberalization of 1991. Without IT and communication, we cannot think approximately the victory of financial institutions, it has extended the part of banking division in the Indian economy. For making an effective banking system, which can meet the wants of developing an economy, innovation encompasses a key part to play. In the past 10 years, banks in India have contributed intensely to the innovation such as Tele maintaining cash, versatile retaining money, net keeping money, ATMs, credit and debit cards, digital instalment system and information warehousing and information mining arrangements, to

bring advancements in quality of client administrations and the speedy dealing with of keeping money operation.

It has made a change in keeping money segment: managing an account structure, commerce prepares, work culture and human asset improvement. It influenced the efficiency, benefit, and productivity of the banks to an expansive degree. Indian banking industry has experienced an add up to change over the final decade. Moving consistently from a manual, scale-constrained environment to an innovative driving position, it has been a marvel. Such a change take place such a brief span of time with such a low cost.

Electronic Banking

In the banking industry, the electronic offerings are revolutionizing the way of the commercial enterprise is being conducted. Electronic-based habits are replacing the traditional banking gadget and banks are rethinking business manner designs and customer relationship administrative strategies. The Physical, Geographical and Product boundaries are no greater the constraints for the increase of banking business. There are more recent merchandise and channels of transport. Electronic banking is now a mass-market product that is demanded as an integral carrier by using an increasing quantity of financial institution customer.

The definition of electronic banking varies amongst researches partially because digital banking refers to a number of services through which financial institution clients can request records and lift out most retail banking offerings by means of a computer, television or cell phone (**Daniel, Mols, & Sathye, 1999; 1998 ; 1999**).

(**Turban, 2000**) describes that “Electronic banking provides such electronic services that permits consumers to test the balances in their accounts, switch money among accounts, pay payments electronically as apply for loans, download facts about bills into their personal computers, change shares or mutual funds, seem at photos of their Cheques and credit slips.

(**Hertzum, Jorgensen, & Norgaard, 2004**) defined E-Banking as web-based Banking, in other words, E-Banking refers to the banking operations, which is done over the World Wide Web. However, a more comprehensive and well-established definition is given by the United Nations Conference on Trade and Development (UNCTAD). This definition covers almost all area of E-Banking.

E-Banking services first emerged in the decade of 1990 and technological advancements have added about a variety of adjustments in the way in which various merchandise and services are delivered to the clients with the aid of the banks. Banks have been at the forefront of harnessing technology. Technology has resulted in the computerization of the financial institution branches and has given an upward shove to electronic banking channels like computerized teller machine, internet banking, cell banking, and phone banking.

Numerous studies have been conducted on each of these aspects namely, electronic banking adoption, perception towards electronic banking, security and privacy of electronic banking etc. but studies to find awareness towards security and privacy in electronic banking are rare to find. The awareness of security and privacy features of Electronic banking influences the consumer towards the adoption of electronic banking offerings. (**Kotler & Armstrong, 2004**) cited that the idea of awareness tries to discover how the customers establish the expertise of the merchandise or services and to what extent they are missing data about it. The literature on electronic banking also supports individual factors like knowledge have an impact on customer adoption of e-banking. Here the knowledge refers to awareness about security and privacy features of electronic banking and benefits associated with it. As claimed via (Sharon, 1999), we need to increase the recognition level of banking customers as the industry is providing an extensive variety of client merchandise beside a number of choices that are made handy with the aid of banking institutions in securing their competitiveness.

(**Sathye, 1999**) stated that whilst the use of net banking services is a pretty new journey to many people, the lack of awareness about net banking is a primary issue in causing people not

to undertake web banking. He carried out an empirical study to find out about in Australia and located that clients have been unaware of the possibilities, advantages/disadvantages involved with web banking. On the different hand, (Polatoglu & Ekin, 2001) conducted a study about Turkish customers and demonstrated that the more information and competencies a client possessed about electronic banking, the less complicated it used to be for the client to utilize digital banking.

Despite the various benefits of Electronic banking, it has several issues also. (Hutchinson & Warren, 2003) security of information is frequently noted as being the single most important issue for consumers in e-banking and its associated things to do. (Ally, Mustafa, & Mark, 2005), say that safety issues and worries are raised by clients extra frequently than usability, performance or other elements when dealing with digital services. Thus, customers with a higher degree of consciousness of security and privacy facets of e-banking are in greater probability to identify e-banking as greatly useful, effortless to use, extra impenetrable and reduce the perceived risk are the considerations that influence their mindset towards e-banking. In e-banking, security and privacy issues have been resolved with the aid of the industry and the academicians. It is essential that the banks providing e-banking offerings ought to make the customers aware of the availability of number offerings and their advantages and instruct them about safety, privacy, and threat involved in e-banking transaction. But due to the widespread nature of these troubles in online banking and other e-commerce applications, there is still a requirement for research and development in these areas Hence, the influence created by E-Banking on the banking customers has inspired the researcher to undertake a study about on the “A Study on Consumer Awareness with Regard to Security and Privacy in Electronic Banking Services in Udaipur City”.

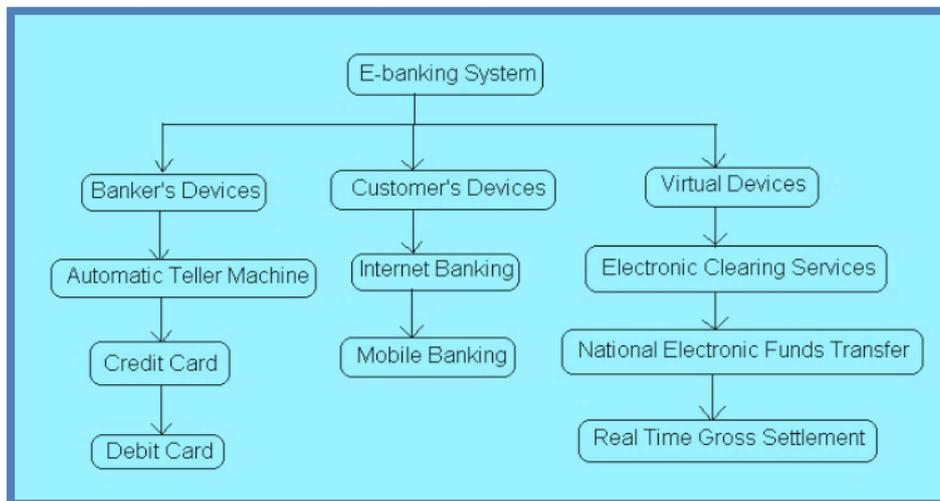


Figure 1.1: E-banking System

Present Scenario of E banking services in India

Nowadays banking is recognized as progressive banking. Use of information science has given rise to innovations in the product and carrier designing and their delivery in the banking sector and finance industries, purchaser offerings delight is their principle. Present banking state of affairs has come up with a lot of new initiatives which are oriented to provide a higher customer provider and facilities with the help of statistics technology. The modern-day developments in the international markets provide too many possibilities for the banking sector. In a cutting-edge environment banking phrase enchantment, day by day in customer services is the most considerable device for their growth and development. E-banking consists of the systems that enable financial organization customers, persons or businesses, to access accounts, transact business or

acquire records on monetary products and services through a public or private network, including the internet. Customers get the approach to e-banking offerings with the usage of a clever electronic device, such as a personal computer (PC), private digital assistant (PDA), automatic teller machine (ATM), kiosk, or Touch-tone telephone.

Table 1.1: Benefits of Electronic Banking

Benefits of E-Banking	
To the Customer	To the Bank
❖ Customers can do banking such as balance enquiry, request for services etc. from anywhere in the world.	❖ Reduces clients visits to the branch and thereby human intervention.
❖ Anytime Banking-Managing cash in real time and most importantly, 24 hours a day, 7days a week.	❖ Inter-branch reconciliation is on the spot thereby reducing possibilities of fraud and misappropriation.
❖ Convenience acts as an awesome psychological gain all the time.	❖ High-quality medium of advertising of quite wide variety schemes of the bank, an advertising, and marketing device indeed.
❖ Brings down “Cost of Banking” to the client over the duration of time.	❖ Integrated customer facts pave way for individualized and customized services.
❖ Cash withdrawal from any department / ATM.	

There are quite a number of indicators of electronic banking services which are used in India. In this study, we focus only on the following products of e-banking such as:

- Automated Teller Machines (ATMs)
- Internet Banking
- Mobile Banking
- Non-Cash Retail Payments: Debit Cards, Credit Cards, NEFT, RTGS

The brief description of these channels has been included in the subsequent sections: **Automated Teller Machine:** The Primary Computerized Teller Machine (ATM) was presented within the year 1967 by Barclays Bank in Enfield Town in North London. Hong Kong and Shanghai banking organization introduced the primary ATM within the year 1987 at Kolkata in India. The framework is known as “Any Time Money” or “Anywhere Cash”. Dispensing money to clients barring the deployment of the teller or cashier used to be a service engineering of unique nature. Since then, banks all over the world have been installing ATMs to complement brick-and-mortar branches.

Table 1.2: Number of Offsite and On-Site ATMs installed

Year	Public sector Banks				Private Sector banks		Foreign Banks		Total
	Nationalized Banks		SBI Group		On Site	Off Site	On Site	Off Site	
	On site	Off Site	On Site	Off site					
2015-16	53629	30142	26770	31918	21290	34291	261	798	199099
2016-17	56960	32332	29585	29678	22382	35788	219	747	208354
2017-18	56154	30273	26579	32962	23045	36316	214	725	206628
Mean Growth Rate	2.4	.45	0.7	2.295	4.04	2.91	-6.90	-1.72	1.91

It is observed that from the above table in respect of SBI group and nationalized banks, the growth rate of onsite ATM accounts is 0.7 and 2.4 respectively, while it is 2.295 and .45 in

respect of offsite banks. In the case of private-sector banks, the growth rate of onsite ATM accounts is 4.04 and 2.91 for offsite ATM accounts.

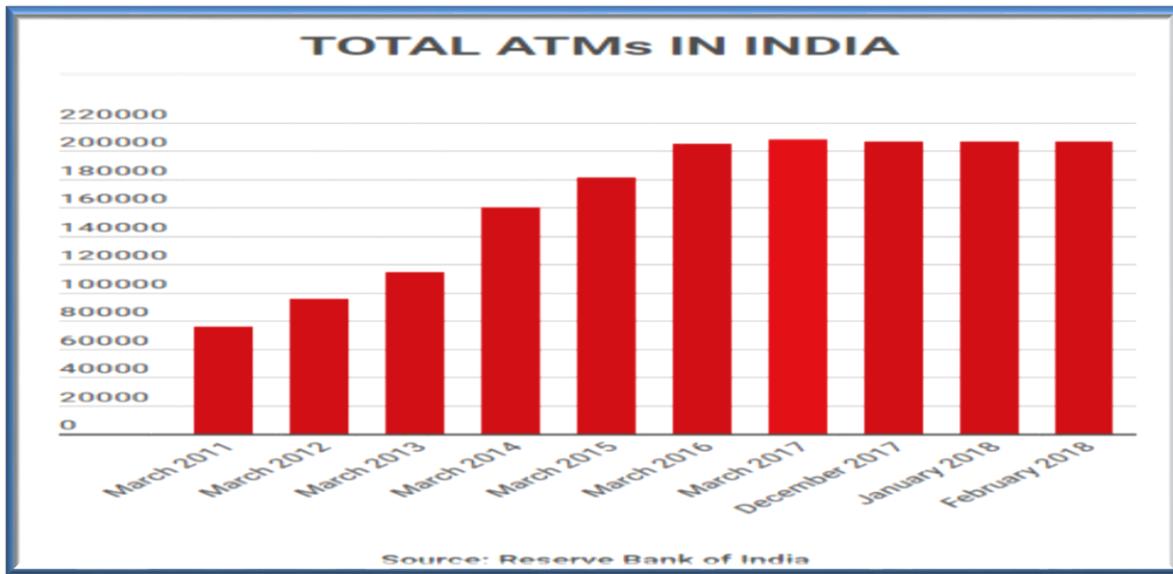


Figure 1.2: Total ATM's in India till February 2018

The number of ATM installed in India has grown almost by 4.64% from 199099 in March 2016, to 208354 by March 2017. But it has been reduced to 1726 ATM accounts with the negative growth rate of 0.82% in March 2018. One of the main reasons behind the major shut down is that banks are trying to cut down on various costs. Majority of banks closed both onsite and offsite ATMs. Cost-cutting measures by banks, which have led to the rationalization of branches have been one of the key reasons for the reduction in the number of ATMs.

Internet Banking: Banking sector have historically been at the forefront of harnessing science to enhance their products, choices, and efficiency. With the use of PCs, the Internet facility is increasingly extra used by way of using banking institution as a channel for receiving instructions and handing over their merchandise and choices to their consumers. This shape of banking industry is generally referred to as Internet Banking. although the variety of merchandise and services introduced via the skill of unique banks range commonly each in their content and sophistication. Broadly, the degrees of banking services provided through the Internet can be categorized into three types:

- a. The Basic Level Service is the banks' internet websites which disseminate data on different products and services presented to purchasers and folks of the public in general. It can also additionally accumulate and reply to customers' queries through e-mail.
- b. In the subsequent degree are Simple Transactional Websites which enable clients to put up their instructions, functions for specific services, queries on their account balances, etc., however, do now no longer permit any fund-based transactions on their accounts.
- c. The 1/3 stage of Internet banking offerings are presented through Fully Transactional Websites which enable the clients to function on their money owed for transfer of funds, the charge of unique bills, subscribing to other merchandise of the financial institution and to transact purchase and sale of securities, etc.



Figure 1.3: Framework of Internet banking

Internet Banking provides various online services like inquiry about the balance in the account, requests for issuing Cheques books, recording stop-payment instructions, balance transfer instructions, account opening and different varieties of regular banking services. Mostly, these are standard offerings offered through the Internet as a new shipping channel. Banks are additionally supplying charge offerings on behalf of their customers who save in exceptional e-shops, e-mails and so on.

With the ongoing digitalization in India, the number of consumers opting for electronic banking services is expected to double to attain one hundred fifty million mark via 2020, from the contemporary forty-five million energetic city online banking clients in India, in accordance to a document drafted by means of Facebook and The Boston Consulting Group (BCG). In a report, titled “ENCASHING ON DIGITAL: Financial Services in 2020”, the two corporations have highlighted the rising effect of digital in monetary offerings and the changes required to make the most of this revolution. “India need to be additionally prepared for a digital revolution in financial services – with government interventions on one hand and creating client awareness on the other”.

India is within the middle of a digital revolution, with Internet clients going past essentially search and social networking and exchanging to more prominent develop things to do like online buying and banking. As of now 70 percent share urban web clients are carefully affected all through monetary item purchase, that’s, they use at slightest one digital channel within the course of the acquiring experience of a financial product.

According to the report, along with the new Indian consumer, the digital ecosystem of India has additionally developed all at once over the final few years. India is set to leapfrog many superior economies in this space. From growing ‘Digital India’, to setting up open structure layers such as Aadhar, India Stack, Bharat Bill Payment System, and GST, the Indian government is actively developing the complete digital ecosystem. The file highlights that in spite of a growing digital adoption via the patron and increased authorities focus on digital infrastructure, financial establishments are yet to absolutely harness the possibility.

Mobile Banking: Mobile banking is a service supplied by using a financial institution or other financial institution that approves its clients to habits monetary transactions remotely the usage of a cellular gadget such as a smartphone or tablet. RBI defines mobile banking ‘as Undertaking banking transactions with the usage of mobile phones by means of bank clients that contain credit/debit to their accounts. Transactions through cellular banking may additionally include obtaining account balances and lists of current transactions, digital bill

payments, and revenue transfers between customers or another account. Unlike the related net banking, it uses software, generally known as an app, provided by using the financial organization for the purpose. Mobile banking is normally on hand on a 24-hour basis. Some economic institutions have restrictions on which accounts may additionally be accessed through cellular banking, as properly as a limit on the quantity that can be transacted. Mobile-wallet transactions are set to shoot past the two 1-trillion mark mid-2018, even as companies grapple with securing their customers' Know Your Customer (KYC) requirements as per the Reserve Bank of India's guidelines.



Figure 1.4: Mobile Banking Usage

According to information and analytics company Global Data, the mobile-wallet market in India is poised for full-size growth as Indian consumers are an increasing number of turning away from money and card.

According to the Consumer Payments Insight Survey by way of the company, India is one of the apex markets universally in phrases of mobile-wallet adoption, with 55.4 percent respondents demonstrating that they have and utilize a cellular wallet.

The survey showed the adoption level in India has been a whole lot higher than many of the developed markets such as the US and the UK because it is a place where customers predominantly use cards. Mobile-wallet transactions have grown manifold over the past 5 years, the survey showed, rising from 2,400 crores in 2013 to 95,500 crores in 2017, and will surpass the 1 lakh crore mark in early 2018.

The total price of mobile-wallet transactions grew two-and-half instances between 2016 and 2017. The government's demonetization pass in November 2016 was once a sports changer, compelling people to change to an electronic mode of payment, he pointed out.

Mobile wallet has already emerged as a mainstream fee instrument in India. Global Data's survey showed that the share of cash, Cheques or cash-on-delivery choices in whole e-commerce transaction cost declined from 31 percent in 2013 to 16 percent in 2017, whereas the mobile-wallet share jumped from 7 percent to 29 percent.

Non-cash Retail payments: Plastic Cards (Debit / Credit cards, NEFT, RTGS): In India, the savings card was once added by the City Bank's Diner's Club Card in the 12 months 1969. The savings card is a small plastic card that lets in its holder to buy items and offerings on credit score and to pay at fixed intervals via the card issuing agency. Debit cards can be used as a savings card for buying merchandise and also for drawing cash from the ATMs. As soon as the debit card is swiped for purchasing, cash is debited from the individual's account. In the Present state of affairs, it can be used for tour bookings. It's like as security blanket that will cover you for e.g. Airline insurance, existence insurance. There was once an unexpected and sharp decline in the variety of debit cards in June 2017: debit cards had been down by way of

86.2 million to 793.83 million from 880.03 million in May, down 9.8%, shaving off most of the enlarge that demonetization added in. Even though January 2017 saw the easiest addition in Debit Cards in a single month in current memory, simply as June saw the perfect ever decline in debit cards, in latest memory. The number of credits is step by step increasing: In June, a complete of 31.48 million deposit cards had been in operation. Between June 2016 and June 2017, India added some 0.62 million credit cards.

RTGS machine is a funds switch mechanism where the transfer of cash takes the region from one bank to some other on a real-time and on a gross basis. This is the quickest viable cash transfer device via the banking channel. On the other hand, National Electronic Funds Transfer (NEFT) gadget is a nationwide funds transfer gadget to facilitate switch of cash from any bank department to any different financial institution branch. From amongst digital modes of payments, Real Time Gross Settlement (RTGS) dealt with 108 million transactions, valued at around `982 trillion in 2016-17, up from 98 million transactions valued at `825 trillion in the previous year. At End-March 2017, the RTGS facility used to be accessible thru 198 banks. During 2016-17, National Electronic Funds Transfer (NEFT) dealt with 1.6 billion transactions valued at `120 trillion, up from around 1.3 billion transactions for `83 trillion in the preceding year. At End-March 2017, the NEFT facility was handy through 130,013 branches of 172 banks, in addition to enterprise correspondent (BC) outlets.

Operational Definitions of the concept

- ❖ **Electronic Banking:** E-banking is a product which is designed for the purposes of online banking that enables you to have effortless and protected access to your financial institution account. E-banking is a safe, fast, convenient and efficient digital service that permits you to get the right of entry to financial institution account and to raise our online banking services, 24 hours a day, and 7 days a week.
- ❖ **Automated Teller Machine:** A banking terminal that accepts deposits and dispenses cash. ATMs are activated with the aid of inserting a debit/credit score card that carries the user's account number and PIN on a magnetic stripe. The ATM calls up the bank's computer systems to affirm the balance, dispenses the cash and then transmits a finished transaction notice.
- ❖ **Debit Card:** A debit card is a payment card that deducts money immediately from a consumer's account to pay for a purchase.
- ❖ **Credit Card:** A credit card is a small plastic card that can be used as a method of payment, the money being taken from you at a later time.
- ❖ **Internet Banking:** Internet banking permits clients of a monetary institution to conduct their budgetary exchanges on a secure site managed by the institution which can be a retail or virtual bank, credit union or building society. It may incorporate any exchanges related to online usage.
- ❖ **Mobile Banking:** Mobile banking is the act of making financial transactions on a cell machine (cell phone, tablet, etc.) through the internet.
- ❖ **One Time Password:** A one-time password (OTP) is an automatically generated numeric or alphanumeric string of characters that authenticates the user for a single transaction or session. This is sent to the customer's registered cellular wide variety or email at the time of making fund transfers and additionally at the time of adding beneficiaries to the Net Bank account.
- ❖ **Personal Identification Number (PIN):** A personal identification range (PIN, reported "pin"; frequently redundantly PIN number) is a secure numeric password used to authenticate a person to a system.
- ❖ **Security:** Security, in data technological know-how (IT), is defending digital data and its belongings towards internal and external, malicious and unintentional threats. This

consists of protection detection, prevention, and response to threats through the use of security policies, software program equipment, and IT offerings.

- ❖ **Privacy:** Privacy is described as an assurance that consumer information is now not in hand to unauthorized customers and is no longer abused. From a purchaser perspective, security and privateness can't be discrete concepts, and in most circumstances, privacy is a part of security.
- ❖ **Consumer:** The consumer is an individual who hires or leverages any service to pay an idea which has been paid or promised or somewhat beneath any framework of conceded installments.
- ❖ **Consumer Awareness:** Those rights in consumer awareness refers to the understanding by a consumer being the product or service being marketed or sold, which enables buyers to achieve the most satisfaction from what they buy. Consumer awareness is a broad concept. It includes the following:
 - Awareness about their rights and duties.
 - Awareness about price, quality of the product.
 - Awareness of safety, choice, and information.

Relevance of Electronic Banking

Now a day the consumer needs the services of banks 24 hours where he resides indeed, he is within the airplane. Presently in this recent age development, the whole banking system has been modified due to sizable net technology. Now all the commercial enterprise like commerce, trade, import, export, buy and sale of goods is relying upon digital banking. By using the strengthen electronic science the banking offerings are quick and economical and consumers saved their valuable time. If any country wishes to work in the world market, it will have to enhance the banking offerings at global degree because historic common banking is not perfect in the changing international economy. The electronic banking facility has been supplied by a huge number of commercial banks. On the other hand, the credit card facility is also accessible within the different commercial banks. Presently each bank desire to allure the clients and for this reason, they have to afford the modern facilities so I seem that no any bank will live in the cutting-edge competition if he fails to supply update amenities.

Significance of the study

Thus, by means of going through this way of statistic as well as studying variety research papers, I come to the fact there must be awareness amongst customers to handle the security level with electronic banking offerings and additionally provide the important factors where consumers privacy can get be exposed. As per enlarge in the rising of new traits and technology, electronic banking has to turn out to be an efficient phase of our life but the security and privateness may also cause a predominant drawback towards it.

There is an array of services supplied to the clients beneath the platform of Electronic Banking of the banks. This consists of Mobile Banking, Internet Banking, Electronic Clearing Service (both debit and credit), Phone Banking, Cheques Transaction System Cheques, Automated Teller Machine (ATM) Cards, Credit Cards and so on. Although the e-banking offerings are offered with the aid of all the banks, it is a necessity to find out about whether or not all the banking customers are conscious of the safety and privacy problems of e-banking offerings. To get the highest offerings on the e-banking channels, a client must have whole expertise and attention on a number of products and offerings and its safety and privacy aspects presented by way of the financial institution and bankers have the capability to distinguish out the kind of services required by a customer and render the same to his fulfillment. Hence, the importance of this study is to analyze **“consumer awareness with regard to the security and privacy issues in e-banking offerings furnished with the resource of the banking sectors in Udaipur City”**.

Research Objectives

It is anticipated that the findings of this research will harvest benefits as follow:

1. To illuminate a clear image in the connection between the consumer's awareness with regards to e-banking on the foundation of security and privacy.
2. To understand the level of awareness among consumers while transacting through electronic banking.
3. To understand the impact of awareness based on the social, ethical, technical and legal on consumers using e-banking offerings
4. To Develop the awareness concerning security and privacy for the use of e-banking services.
5. To analyze the utility of electronic banking offerings with respect to security and privacy issues.
6. Get data and evaluation in the most inexpensive and flexible way and draw on critical facts besides being overwhelmed through unnecessary detail.
7. To boost the model for awareness and literate consumers for their security and privacy while doing the transaction through e-banking.

Need of the Study:

During the previous decade, a noteworthy exchange has been observed in the way that how banking enterprise conducts their transactions & provide merchandise and services to their customers. But there are numerous issues which pose a danger to the online or electronic banking. The most important one pertains to keep effective protection and privacy for the digital banking offerings of India. In the absence of stringent laws in this regard, online banking risks in India are increasing. Hence Electronic banking offerings are really insecure.

As increasingly individuals are exposed to information to the statistics superhighway, the privacy of data and the protection that is significant to the development of the digital transactions. Although Electronic banking offers flexibility in performing economic transaction quick and easy, however, individuals are still reluctant to adopt the system because of numerous problems while adopting Electronic banking services.

Earlier research suggests that nonetheless, people are unaware of the truth that directly or indirectly their information is in hand of the third party or can be lost. This is all due to lack of awareness as well as there are more than a few other factors that want to be discussed. Hence the researcher in this study attempted to make individuals aware of four issues related to the security and privacy of electronic banking services that is a Social issue, Ethical issue, Technical Issue and legal issue.

Conclusion

New Technologies forced the banking institution to adopt new channels to gain competitive advantage, reduce cost and improve financial services. Developing consumer awareness regarding security and privacy in electronic banking services is a critical issue that is extensively studied by the industry and academicians. It is essential that the banks providing e-banking offerings ought to make the customers aware of the availability of number offerings and their advantages and instruct them about safety, privacy, and threat involved in e-banking transaction. But due to the widespread nature of these troubles in online banking and other e-commerce applications, there is still a requirement for research and development in these areas.

Chapter-2

Security and Privacy in Electronic Banking Services

- 2.1 Security & Privacy in Electronic Banking Services**
 - 2.1.1 Security & Privacy for Electronic Banking Services in relation to Social Perspective**
 - 2.1.2 Security & Privacy for Electronic Banking Services in relation to Ethical Perspective**
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- 2.2 Types of Frauds & Attack involve in E-Banking**
- 2.3 Do's and Don'ts for Electronic Banking Services**
- 2.4 Conclusion**

Chapter 2 Security and Privacy in Electronic Banking Services

This chapter précises the important dimensions that directly or indirectly measure the awareness among consumers towards security and privacy in electronic banking services. These dimensions are Social, Ethical, Legal and Technical.

Security & Privacy in Electronic Banking Services

With the availability of distinctive applications, users are increasingly more demanding regarding electronic banking services. Thus, the search for a satisfactory client experience is becoming extra important. One of the most noteworthy hurdles to better client experience is they want to furnish and preserve an excessive degree of safety and privateness in electronic banking services. Internet and mobile banking applications offer a particularly fascinating target for a range of abuses and intrusions. Therefore, banks need to pay extraordinary attention to the protection of these applications. In most cases, the provision of protection influences the ease of use of an application, which is one of the most standards criteria of client satisfaction (Cheung, et al., 2008;2014).

The presentation of e-banking has come with its challenges, extending from e-banking appropriation to financial obstructions of the modern framework. Security and privacy are the components that are always highlighted as a basic victory component (CSF) for the victory of e-banking. The insufficiency of security will likely lead to financial misfortunes, reformatory measures through controllers and negative media exposure. Security and protection were appraised in some research as the foremost basic issue of online banking offerings.

This chapter covers a number of types of threats primarily based on social, ethical, technical and legal which customers are dealing with whilst doing transactions through digital banking, sorts of attack on e-banking services and precautionary measure adopting whilst using e-banking services. Therefore, the consumers must be aware socially, ethically, technically and legally to make their digital banking more viable and secure. While taking into consideration the above facts we can understand that social, ethical, legal and technical factor are interwoven in this situation which relates to the digital banking framework. This does not or cannot be targeted on to one country but this is a world issue. As we can see technological know-how is creating in each and every nations due to which consumers can pay their all sort of bills, send or transfer cash to a various kind of multiple accounts, make deposits, withdrawals or fee with online checks, view records of transaction on their ongoing accounts, trade links and securities and all these activities can be done without difficulty with just the click on of the mouse and in the somewhere all over the world So the clients should be protected, from the misusers by using becoming aware from social, ethical, technical and legal point of view.

Security and privacy for Electronic Banking Services in relation to Social Perspective

It includes the simple recognition which is associated with private information of the consumers. According to the authors, (Noorjahan & Nadim, 2007) “Privacy is the important issue when we study social awareness” . Numerous social issues building day by day means of privacy and security problems in this online banking sector. In Present day society clients who are using electronic banking services think how their individual records would be utilized when they are enrolling for an online banking.

There are various questions which threaten the consumers socially, therefore, they should be conscious on the ground of social perspective. For example:

- ❖ What happens to the account details after giving out personal information?
- ❖ What variety of data they have to provide for themselves?
- ❖ What type of important points can the users be in a position to keep to themselves?

- ❖ What happens if I lost my login password?
- ❖ Is there sufficient privacy while using Electronic banking services?
- ❖ Therefore, to minimize threats among the consumers and in order to provide secure banking transactions, there are three social issues needed to be resolved within the zone of commitment, flexibility, presence and understanding:
- ❖ **Commitment:** The commitment is not only for the customer. The banking institution or electronic card supplier are required to be dedicated to all the transactions' and the operation wise.
- ❖ **Flexibility:** Banking institutions or electronic card suppliers need to create flexibilities. Example: in case the card is misused by somebody else and the cardholder intimated it to the bank, banking institution ought to take actions instantly.
- ❖ **Presence:** It is essential in the online banking system for the customers. Because some customers are non-technical and, in that time, the financial institution has to be keeping in an aid as their adjustments sensible to customers.
- ❖ **Understanding:** This can be required within the online money related institution webpage as well as within the ATM machines interface since all the clients interfacing should be made in a user-friendly way. Otherwise, clients had an issue with the utilization of it.

Security & Privacy in E-Banking in relation to Ethical Perspective

Before going into the ethical viewpoint, it is important to outline the term ethics. Thus, we can take the definition used by the Greeks, "What is good to the man or woman and thereupon how the society can benefit". The morals of e-Business center on areas related to the delicacy of data accumulated and held electronically and exchanged by way of computer-mediated communication. These incorporate protection of data about clients, the precision of data, possession of data and availability of data held. Thus, we understand the cyber or the net is used by using tens of millions of users, and each person ought to and must utilize in an accountable manner and doesn't obstructs any other person's flexibility.

Cybernetics' is recognized as internet ethics. The ethical problems that spring up from a data frame is a terrible part and are different and they got to be managed with much consideration and safety. Moral issues frequently relate to the vulnerability in collecting data about the clients that are kept electronically and are regularly exchanged through computer-based systems (Harris & Spence, 2002). Various questions threaten the clients while dealing with ethical cognizance:

- ❖ What will happen if the fraudster sends a fake email pretending to characterize your bank?
- ❖ What will happen if any individual theft accounts information?
- ❖ What will happen if the fraudster makes the fake website of your financial institution?
- ❖ What will happen if bank operators will use my account details for unethical purpose?

There are following measures which provide the solutions to minimize the above threats regarding the security and privacy in electronic banking services:

- ❖ **Privacy:** It is based on the consumer account details which are recorded in the database by the banking operators. It is the responsibility of the bank that the details should be carefully set up from the ethical perspective and proper privacy should be maintained.
- ❖ **Accuracy:** Accuracy is important for both the banking institution and consumers, as electronic banking services are becoming more popular so the institutions should consider what consumers are allowed to do on these sites and also provide a process to make sure that consumers provide accurate information. Without exact information, the bank may harm the client experience that they are attempting to upgrade with self-service options.

- ❖ **Security:** It is fundamental for the online system operators in the bank that they need to ethically handle server information.
- ❖ **Confidentiality:** The online banking customers need proper confidentiality due to the fact clients constantly assume as protection of their account information as well as their transactions. Ex: at the time of registration, the consumer has to sign a disclosure agreement with the bank. This is necessary to keep the relationship between the consumer and the bank.

Security & privacy in E-banking in relation to Legal Perspective

The improvement in technological know-how has brought the political and social relationships collectively, as a consequence which makes the necessary be centered on the issue of how ethical perspective gives the security in the records systems. As we are conscious of so many human beings use the networks which are misused by way of so many. So due to this problem, we can understand the necessity of the legal framework added in to shield the privileges of the rightful users, which will there to balance the needs and rights of all.

When considering the lawful awareness in electronic banking, bankers should have the major responsibility to handle them not only to set up the individuality also they have to make inquiries involving honesty and recognition of future customers. Therefore, in case the consumer makes a request for opening an account by means of a way of the internet, and moreover, these types of online obligations can be opened totally after getting desirable facts and substantial confirmation of the distinguishing proof of the client. That used to be the toughest step in this approach and if there are no issues with the information which are given through the client, we can restrain legal problems which are going through in the future. From a legal viewpoint, the privacy process authorized banking agency for confirming clients' needs to be recognized through the law as a replacement for signature. Several questions arise in the idea of customers whilst dealing with legal awareness.

- I. Whether there is a provision to get a refund of cash from the bank if there is online fraud?
- II. If money is now not transferred to the payee account, then the reverse entry will be made through bank or not?
- III. Whether the customer has a right to file a complaint at IT adjudicator if he finds any miss-happening their financial records?
- IV. Whether the customers have a right to take receipt at the time of doing the transaction in ATM machine?

As we can see with the enchantment and development of technology, banking transactions also have ended up computerized and an extraordinary deal simpler with the aid of the online banking gadget and the digital cards such as visa cards and debit cards. Thus, today we can see this now not only has extended in the course of the online or electronic media but at present your bank account can be accessed by the mobile phone. But one ought to be certain that the transactions are secured. Hence, we see numerous laws have been introduced to secure these services and to minimize the threats which consumers are dealing with while the usage of digital banking offerings:

- ❖ **Entering into agreements:** When the client comes to open an account, the financial institution has to provide the consumer with an agreement to be signed to create a mutual understanding between the client and the financial institution. The agreement made between both the parties should be in simple terms and discuss the liabilities towards the agreement.
- ❖ **Giving suited evidence:** When the customer opens an account they ought to provide appropriate proof such as pay slips, bills which have proof of address, driving license or passports which consists of the client identity and telephone bill which has contact numbers. Evidence such as these will allow the financial institution to become aware of

the customer and to keep a document of their personal information. In case of any urgent situation, they can contact the client with the facts he/she has given to the bank. Additionally, it will additionally be helpful to the financial institution to find out whether or not the customer's information is actual or fraudulent.

- ❖ **Bearing the risk:** Banking institution have to bear liabilities arising from fraudulent transaction achieved by way of people across the globe and the danger of being open to many worldwide hackers. E-banking must consequently have many checks to verify and distinguish between their bank customers and human beings attempting to commit fraudulent activities.
- ❖ **Ensuring Security:** This can be among the foremost critical viewpoint for any banks to be able to supply an e-banking service. The bank client must continuously feel secure about their transactions. This will be given by empowering strict confirmation strategies such as secret word changers, PINS passage plan and another online security program which are empowered by the websites. It is fundamental that banks enforce extraordinary teams to oversee any challenges that are being confronted by the clients who are utilizing the e-banking benefit and to deal with any issues which happen to their official web location.
- ❖ **Maintaining Protection:** Banks must keep up their customers' data confidential. The data of their clients ought to as it were being given to the person government of the nation where the bank is set up for fundamental examinations encompassing false exercises. This factor of being able to preserve privacy is regularly recorded within the settlement whereas opening an account with the bank. The amount of privateness that can be kept up with the help of the banks ought to be specific in this preliminary settlement with the expressions and conditions of the agreement.
- ❖ **Secrecy of the bank:** Bank secrecy generally comprises of maintaining security almost their clients. Beneath this lawful issue, the banks agree with the client that they will make beyond any doubt that the greatest level of protection will be kept up and thus they will not allow any client data to the outside specialists, which incorporates the public. This information can exclusively be uncovered in case it is asked in extraordinary conditions by way of distinctive specialists in control, such as the court, the police, and the government. For illustration, requests are as often as possible made at a few points in any fraudulent cases.

Security & Privacy in Electronic Banking in relation to Technical Perspective

Since online banks depend so intensely on their online platforms, this implies that they can produce significant misfortunes if their frameworks crash, or if there are bugs in their code. A single technical issue that causes a bank to be down for a day could value the bank losses in millions. It can additionally make disturbance for the bank clients who may not be able to make payments or conduct exchanges amid the time when the site is down. There are different questions which threaten the customers while dealing with technical perspective:

- ❖ What happens when my Card get blocked in the ATM machine?
- ❖ What happens when I unable to use online banking or even get accurate bank statements over a period of several weeks?
- ❖ What happens if I do not get the printing statement after withdrawing cash from the ATM?

Therefore, to minimize threats among the consumers and in order to provide secure banking transactions, there are three technical issues needed to be resolved within the zone of security, privacy, and authentication:

- ❖ **Security:** Security of the exchanges is the essential concern of the Internet-based businesses. If there is a lack of security, it may result in serious damages. The examples of potential powerlessness of the e-banking framework are during on-line exchanges, exchanging stores, etc.

- ❖ **Privacy**-Privacy can be maintained by assuring the secrecy of sender private information and by enlarging the transactional security. Here personal information of the consumers related to banking institution is the amount of transaction, the name of the merchant where the transaction is taking place and the date and time of the transaction.
- ❖ **Authentication**-Any data which is transferred online is subject to the chance of being encrypted and misused so it should be sent in encrypted form to prevent access from unauthorized users. It would be helpful in protecting the privacy of consumers.

Types of Frauds & Attack involve in E-Banking

- 1) **Card Skimming:** Criminals introduce gadgets on ATMs to obtain/skim the card account information and record the PIN number entered by a client. This data is at that point utilized to create illegal cash withdrawals with a fake card. For e.g. A shop assistant takes your card out of your vision in order to process your transaction.
- 2) **Shoulder surfing:** When fraudsters pretending to help the innocent users at the ATM, but in reality, are memorizing the PIN number.
- 3) **Identity theft:** This theft is a misconduct in which a fraudster receives the main element of personal information, such as financial institution data, date of birth or driver's permit numbers, in order to impersonate somebody. The person facts uncovered and then utilized unethically to apply for credit, buying products and services, or gain the right of entry to bank accounts.
- 4) **Operational Cash' Departments:** At tourist places where there are few banks and ATMs criminals approach tourists and provide their services in directing them to nearby retailers who will utilize their point of sale machine to issue cash ('operational cash' departments). The merchant then skims the card account details and makes use of a fake PIN entry device to acquire the cardholder's PIN. This statistic is then used to make unlawful cash withdrawals with counterfeit cards.
- 5) **Card Trapping:** It is the unauthorized physical manipulation of an ATM, preventing the card from being returned to the client.
- 6) **Transaction Reversal Fraud-** It may be an extortion strategy of getting cash from the ATM without the account used to process the transaction from being charged. The account is re-credited the sum 'withdrawn' but the criminals pockets the money. It may well be a physical (similar to money trapping) or a debasement of the transaction message.
- 7) **Phishing:** It could be a trick where the fraudsters trying to gather private information of clients such as PIN number, credit/debit card information by using deceptive e-mails and websites.
- 8) **Malware:** It is malicious software that is harmful for a computer user. It includes spyware, Trojan horses and computer viruses. These programs can perform a variety of functions such as modifying or capturing core computing functions, scrambling or erasing delicate information, checking user's computer activity without their authorization.
- 9) **Pharming:** In Pharming attack fraudster make the wrong site so that individuals will visit them by mistake. This assault takes place when the client mistypes an online site or a fraudster can divert activity from a genuine website to a fake one. The main purpose pharmer is to get individual personal information for further frauds.
- 10) **Trojan Horse:** Trojan horse is the riskiest type of assault in which an attacker can acquire unauthorized access to victim's systems. This virus enters into a sufferer machine with the assist of extraordinary legit software. An updated antivirus and firewall can protect any user from this type of assaults.

- 11) **Site cloning:** The Site cloning is where fraudsters clone a whole site. The users suspect nothing, while the fraudsters have all the information they ought to commit deposit card extortion.
- 12) **Web Scams:** Web Scams are designs that deceive the client in a few ways in an endeavor to require a good thing about them These assaults are made to create the extortion with private resources of client specifically instead of individual information through untrue endeavors, confirmation traps and more.
- 13) **Social Engineering:** One of the most frequent assaults does not consist of records of any kind of computer framework. It is the type of attack where the fraudsters psychologically manipulate the users, so they reveal their confidential information to them.
- 14) **Keystroke capturing/logging:** This type of attacks is taking place with the assistant of the computer program or hardware key logger. It is the activity where users using the keyboard are unaware of the fact their activities are being observed. It is also referred to as keyboard capturing. These assaults on a very basic level take put at web cafes. An updated antivirus and an incredible firewall can secure any computer system from this type of assaults.
- 15) **Denial of Service Attack:** A denial of Service attack (called a Dos assault) is a type of attack in which hacker crash or block the server or website to prevent a user from accessing the service.

Do's & Don'ts for Electronic Banking Services

Table 2.1: Do's & Don'ts for ATM, Internet Banking & Mobile Banking

Automated Teller Machine	
Do's	Don'ts
<ul style="list-style-type: none"> • Please acquire your money without delay from the slot when money is dispensed. As per RBI mandate, there is no money retraction facility at this ATM • In case of cash discrepancy or failed transaction, straight away contact your bank • Inform your issuing financial institution immediately if you lose your card • Shield the keypad while typing your PIN number 	<ul style="list-style-type: none"> • Do not depart your ATM transaction unattended. Step out only when the transactions are complete • Do no longer hold your card and PIN together. Also, do no longer share your card or PIN important points with anyone. • Do no longer write your PIN on the reverse facet of the card • Never take of help from strangers at the ATM.
Internet Banking	
<ul style="list-style-type: none"> • Always go to Indian Bank Internet Banking Site through the URL through Indian Bank homepage http://www.indianbank.in • Give your consumer identification and password solely at the authenticated login page. • Before imparting your consumer identification and password please make 	<ul style="list-style-type: none"> • Do not click on any link which has come through e-mail from a surprising source. It may also contain malicious code or ought to be an attempt to 'Phish'. If you get an e-mail that you agree with is a phishing attempt, you do no longer reply to it, click on the links or

sure that the page displayed is an https:// web page and no longer an HTTP:// page. Please also appear for the lock sign at the proper backside of the browser and the certificates from the verification authorities.

- **Verify the domain identify displayed on the website to avoid spoof websites.**
- **Please bear in mind that bank would in no way ask you to affirm your account data via an e-mail.**

provide your non-public information.

- Do not supply any information on a web page which may have come up as a pop-up window.
- Never grant your password over the cellphone or in response to an unsolicited request over e-mail.

Mobile Banking

- **Password shield the cellphone. It is recommended to set the maximum number of wrong password submissions no greater than three**
- **Review your account statements regularly for any unauthorized transactions**
- **Report a misplaced or stolen smartphone to your service provider and law enforcement authorities**
- **Choose a strong password to maintain your account and information securee**
- **Change your IPIN regularly**

- Never furnish your PIN or personal information over the smartphone or internet. Never share these data with anyone
- Don't exchange information besides due validation of the recipient, as funds once transferred cannot be reversed
- Don't click on hyperlinks embedded in emails/social networking websites claiming to be from the financial institution or representing the bank.

Conclusion

This chapter covers a number of types of threats primarily based on social, ethical, technical and legal which customers are dealing with whilst doing transactions through digital banking, sorts of attack on e-banking services and precautionary measure adopting whilst using e-banking services. Therefore, the consumers must be aware socially, ethically, technically and legally to make their online banking more viable and secure. As we can see technological know-how is creating in each and every nation due to which consumers can pay their all sort of bills, make deposits, view records of transaction on their ongoing accounts and all these activities can be done without difficulty with just the click on of the mouse and in the somewhere all over the world so the clients should be protected, from the misusers by using becoming aware from social, ethical, technical and legal point of view.

Chapter – 3

REVIEW OF RELATED LITERATURE

- 3.1 Indian Banking Industry**
- 3.2 Electronic Banking- Role and Development**
- 3.3 Security and Privacy in Electronic Banking**
- 3.4 Consumer Awareness towards Electronic Banking**
- 3.5 Frauds and Threat Issues in Electronic Banking**
- 3.6 Tools and Techniques to Prevent Frauds and Increase Awareness**
- 3.7 Cases of Frauds in Electronic Banking in India**

Chapter 3 REVIEW OF RELATED LITERATURE

Review of literature is spine of each research study. It is important to review the existing literature to have an overview of what sorts of studies have been conducted and what are the gaps in literature. In this manner, different studied in the domain of e-banking which were conducted in India and abroad have been reviewed.

Indian Banking Industry

(Patnaik, Satpathy, & Pani, 2016) found that the operational insufficiency and need of administration ability was major issue within the beginning organize. Amid the second phase, the banking industry was witnessed lot of changes beside strong administrative control from government. In the third stage, the unused age banks rightly understood the changing request of the customers and begun actualizing the administrations with the assistance of cutting-edge advances. This has too able to make raise the operational proficiency of the banks.

(Bhosale, 2015) found that the part of banks isn't as it were straightforwardly critical, but too it is enormously needful within the exact conduct of the programs anticipated by the government. So that it may revolutionize within the arrangement of credits from time to time along with their sees and conduct moreover to the individuals of weaker areas of the society. In arrange to change the social and financial structure of the country, the bank shall need to receive the progressed advances with innovative administrations to extend the clients of the bank.

Table 3.1: Banking on Innovation: Viewpoints on Indian Banking Industry

Payment System			
Paper Based		Paper Less	
<ul style="list-style-type: none"> • Demand Draft • Cheque 	Electronic <ul style="list-style-type: none"> • NEFT (IMPS System) • Electronic Clearing Device (through POS/payment gateway, ATM) 	Card Based <ul style="list-style-type: none"> • ATM/Debit Card • Credit Cards • Prepaid/smart cards/wallet 	Large Value payment <ul style="list-style-type: none"> • Real-time gross Settlement • Cheque transaction system

(Antil, Antil, & Aggarwal, 2017) found that the world economy witnessed that a huge number of banks have been fizzled. In this government of India play an imperative part through implementation of the proposals made by various committees. The part of banks isn't as it were specifically important, but moreover it is very needful within the exact conduct of the programs projected by government. After investigating banking sector analyst found that diverse issues are expanding to keeping money segment since of the money showcase has always down.

(Krishna, Goyal, & Joshi, 2012) the greatest challenge for banking institution is to serve the mass mechanized of India. Companies have moved their target from item to client. The way better we get it our clients, the more fruitful we are going be in assembly their needs. In arrange to relieve over said challenges Indian banks must cut their fetched of their administrations. Separated from conventional banking administrations, Indian banks must receive a few item advancements so that they can compete in extent of competition. The level of customer awareness is essentially higher as compared to last a long time. Now-a-days they require web banking, mobile banking and ATM administrations. Expansion of department estimate in

arrange to extend market share is another instrument to combat competitors. In this manner, Indian nationalized and private division banks must spread their wings towards worldwide markets as a few of them have done it.

(Tanksale, Diwanji, & Makhija, 2014) uncovers that within the final decade, India has seen a pass from normal instalment methodologies, i.e., cash/ paper-based instalments to display day digital instalment frameworks. Be that due to the fact it may, 97% of instalments trades for open division banks are paper-based as in contrast to 60% for personal division banks. Within the in a while past, the RBI has taken a range of steps to growth electrification of instalment defiant such as:

- ❖ Framing the Instalment & Settlements Frameworks Act to provide for the control and supervision of instalment frameworks in India.
- ❖ Providing sturdy RTGS/NEFT stage, setting up National Instalment’s Organization of India (NPCI) to act as an umbrella institution for all the retail instalment systems.
- ❖ Regulation and advancement of acknowledgment channels counting ATMs, POS and instalment portal policy.
- ❖ Issuance policies and security measures for all card transactions. Debit playing cards (43%), deposit cards (28%), internet banking (29%) all contain a good-sized share of the overall quantity of digital transactions for non-public quarter banks.

(Digital revolution in the Indian banking, 2017) reveals that Banks in India have seen a radical alter from “Conventional managing an account to comfort banking”. Nowadays, they are balanced for 'digital banking' at a fast pace transaction. Commerce Analytics and Counterfeit Insights (AI) includes a potential to bring a major alter. Robotics, enabled by AI, is expected to be the end of the amusement changer within the banks. Numerous private banks are arranging to deploy Robots for client benefit, venture advisory, and credit-approval handle to move forward the administrations and be fetched compelling within the long run. Advanced Keeping money will be the foremost favoured shape of keeping money within the coming years.

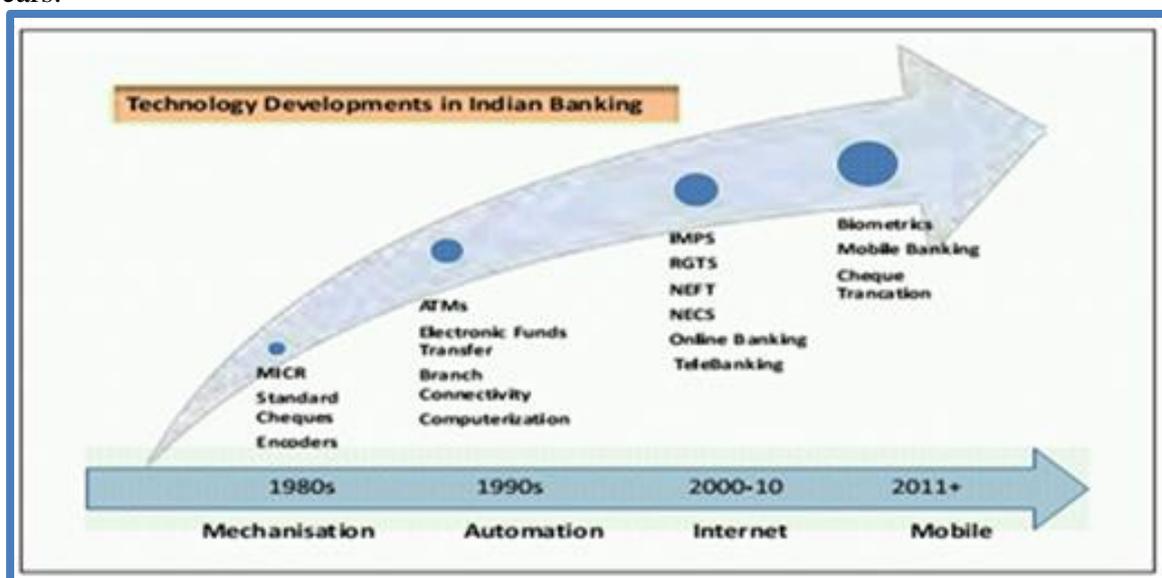


Figure 3.1: Preview of Innovation advancement in Indian Managing an account Segment
(Source :forbesindia.com)

(Kumar & Pavithra, 2017) concluded that the banking segment in India is advancing with the increased growth in client base, due to the recently progressed and cutting-edge competition provided by banks. The Indian economy is anticipated to grow at a rate of 5-6 per cent and the country’s banking industry is anticipated to reflect this development. With the support of government and a cautious re-evaluation of existing business strategies can set the

organize for Indian banks to become bigger and more grounded, in this manner setting the organize for expansions into a worldwide customer base.

(T.Vijayaragavan, 2014) found that banks have changed in their operations and moved towards universal banking in conjunction with the expanded utilization of technology. Larger part of banks is insisting on cashless and paperless instalment modes. Today banking is known as indigenous banking. A wide extend of administrations are being offered by banks utilizing the electronic media. Banking through web has risen as a strategic asset for accomplishing higher efficiency, control of operations and reduction of fetched by supplanting paper based and work seriously strategies with automated banking forms hence driving to higher productivity and profitability. Internet banking is exceedingly consolation in our schedule life, in fact this made our life basic and convenient and over all we are ready to enjoy quality benefit shrewdly. These technologies created productivity and time sparing methods of conducting trade for individuals.

(G.Anbalagan, 2017) found that the banking sector in India has emerged as tougher in term of improvement and monetary increase the number of clients in the monetary sector. The revolutionary banking technological know-how altering reforms have changed the face of Indian banking and economic sector. The banking framework has improved the manifolds in phrases of product and services, technology, the banking system, buying and selling the facility and so forth.

(Tiwari & Kumar, 2012) analyses that many international locations deem privateness to be a hassle of human perfection and think about it to be the obligation of those who involved with computer records processing for ensuring that the pc use does no longer revolve to the stage the area extraordinary statistics about human beings can be collected, built-in and retrieved quickly. The banking these days is redefined and re-engineered with the use of IT and it is sure that the future of banking will supply higher latest offerings to customers with the continuous product and manner innovations. So, banks also exchange their approach from **“Conventional Banking to Convenience Banking”** and **“Mass banking to Class Banking”**. So, banks are now extra concentrate on presenting cost brought offerings to customers.

Electronic Banking - Role and Development

(Vikram, 2013) analyses the effect of e-banking on conventional banking administrations and hazard related with it and found that the presentation of e banking has changed the keeping money environment. The manual managing an account was a long and time expending method, there was manual keeping up of the accounts and exchanges for which the precision was harmed due to human blunders, labour expenditure was significant.

(Bapat & Bihari, 2015) found that National Payments Corporation of India has given a fillip to advancement of electronic managing an account. After the arrangement of NPCI, there's a noteworthy development in electronic keeping money such as electronic clearing items such as National Electronic Reserves Exchange, ECS (Charge), and Card Products. The analyst too found that banks got to make higher mindfulness by more prominent inclusion of bank workers. Working out cost-effective ways of conveying the e-services will matter an incredible bargain within the current keeping money situation. Banks have to be work on the security issues in arrange to win the believe of the clients and overcome them mentally. It has been made required by the Reserve Bank of India to create inner cells security issues and hazard administration but appropriate execution of the same is required.

(Salamah, 2017) assess the noteworthiness of electronic framework coordinates within the managing an account segment for giving comfort administrations to their clients and the in general affect caused by electronic administrations on bank transaction. The investigation uncovered that electronic services have contributed to extend both the monetary movement of the bank as well as number of its clients. Within the managing an account division, proficient preparing can be given to banking authorities, so that they can successfully work on the

electronic framework. The fulfilment has covertly affected a client slant towards electronic managing an account and electronic banking has emphatically impacted the banking exchange. **(Reeta & Asht, 2016)** reveals that Indian banks are making sincere endeavours for the selection of progressed innovation and for establishment of e-delivery channels but still masses are watchful of the concept and still there are many challenges cognate to the security and security of the cash and data so some extraordinary courses of action ought to be made by banks to guarantee full security of customers' reserves. Seminars and workshops ought to be composed by the banking experts on the salubrious utilization of e-banking administrations particularly for those who are ATMs or computer illiterate. Banks are making sincere endeavours to popularize the e-banking administrations and products. In a long time to come, e-banking will not as it was the standard mode of managing an account but will be chosen the mode of managing an account.

(Maitlo, Kazi, Khaskheley, & Shaikh, 2014) identified that nowadays in a period of Data innovation each business wants to convey their items and benefit by means of different electronic channels. This investigation is conducted to discover out the impact of Channel Comfort, Data on online managing an account, Seen Risk, Prior web Information, Security Discernment (Free variables) upon Online Keeping Money Benefit Selection (Dependent Variable). On the basis of the result, they concluded that data around the online managing an account has the positive impact as well positive correlation with the appropriation of online managing an account in Hyderabad.

(Firdous & Farooqi, 2017) uncovered that effectiveness, security and site design are the major fundamentally determinants of web keeping money administrations quality. The experimental comes about appear that there's a coordinate relationship between web banking benefit quality measurements and customer satisfaction within the banking sector. An understanding of the variables, uncovered within the consider, permits bank directors and policy makers to undeviating endeavours and resources most viably and proficiently to extend the bank commerce within the long run and empower unused clients to embrace web banking and to hold the existing ones.

(Musiiime & Ramadhan, 2011) identified that there was a noteworthy relationship between Internet banking and client fulfilment, whereby they were committed to utilizing the benefit, as well as there was an appearance that the bank was able to hold the larger part of its Web managing an account benefit client. At long last, assist studies to need to be carried out knowing that the Web banking service is still modern in most of the creating countries **(Wungwanitchakorn, 2002)** hence, modern issues, needs, and demands may emerge as the banks proceed to implement the technique. Thus, it is to investigate that those issues, needs, and requests can be found.

(Nidhi & Neena, 2016) attempted to decide the effect of statistic variable on customer's see approximately versatile keeping the money. From the examination, they found that there's an effect of the customer's age on the utilize of versatile managing an account service. In this paper, they also found clients of higher age gather are more concerned almost the security issues of versatile managing an account which is in tune with the think about done by Singh and Singh (2009) and occupation of clients moreover influences client discernment. It implies clients lean toward attainable managing an account framework in their work. In the event that framework is compelling and can be utilized anywhere, it leads to higher utilization of keeping money in their work plan.

(Adepoju & Enagi, 2010) observed that the innovation of ATM keeps creating, the fraudsters maintain making strides methods of wrongdoing, however, the banks are now not inserting ample measures of manage to stay away from extortion at ATM. The protection measures obtained by means of a few banks are out of date making the measures much less essential and enabling extortion at ATM. Various shapes of extortion are propagated, extending from; ATM

card robbery, Skimming, stick robbery, Card peruses procedures, stick cushion strategies, constrain withdrawal and parcel more. Despite this danger, the banks are inserting up small exertion which is not corresponding to charge the fraudsters are working to dupe consumer people make use of it for their benefit.

(Jitin, 2016) reveals that in this present scenario a variety of services provided by using the banks beneath the e-banking portfolio for extraordinary benefits. This study indicates the most of the human beings aware of the e-banking service and suggests that most of the human beings using the e-banking offerings at the time of buying and entertainment-banking services keep the precious time of the human beings in this busy scenario. Majority of the human's feels convenient with the services of the e-banking supplied by using the banks. It is clear from study that e-banking increase the pace of transaction and makes life easy and stunning.

(Jindal, 2015) reveals that spite of the fact that there are parts of obstacles within the way of smooth implementation of E-banking in India but at the same time E-banking has shining future in India. It is brilliant way for banking segment in India to maximize its benefits conjointly the customer base. That's why E-banking can never be neglected. Thus, only those banks will survive within the future which is able oversee the changes as per innovative advancements and customer requirements since future of the banks eventually remains in the hands of clients. They ought to be fulfilled at any cost.

(T.Selvakumar, 2017) found that the development of electronic retaining money begun with utilize of programmed teller machines and telephone keeping the money, coordinate charge instalment, electronic finance change and online managing an account. This study suggests that e-banking can assist banks by minimizing working costs and grant a better and rapid carrier to their customer. It gives recognition into a change of viewpoint of Electronic Banking.

Security & Privacy in Electronic Banking

(Syeda & Prasad, 2012) examines the need of security for online banking. It uncovers that in arrange for online banking to proceed to grow, the privacy and the protection viewpoints ought to be improved. With the security and privacy issues resolved, the future of electronic banking can be exceptionally affluent. Long run of digital banking will be a framework where clients are able to connected with their banking institution worry-free and banks are worked beneath one common standard. The security models for online managing an account framework as of now in utilize are strongly based on Web banking client recognizable proof and confirmation strategies, which are moreover the components where most Internet banking framework vulnerabilities are found.

(Elbek & Muhammed, 2015) found that security of bank web server environment isn't totally secure and indeed tech South Korea banks were frequently hacked by worldwide cyber wrongdoing bunches, in any case there was no case in Korea like with Oman. There are two conceivable arrangements for Omani banks to conceivably anticipate breach of web servers. Firstly, all banks ought to carry out free review of their data frameworks by arrange security investigators or hackers. Secondly, utilize of centralized store of population of Oman in one place with the assistance of e-pins for the reason that inter-institution systems are more ensured and secured and it is simpler to secure one framework successfully, than attempting to secure numerous places at once.

(Abhipsa, Sai, & Rahul, 2017) identified that the potential for privacy breaches was an issue watched for all the versatile instalment strategies. This hazard is most elevated in the event that the client loses or loses her/his versatile phone, and higher still in the event that the phone is opened or unprotected. Unauthorized get to the phone can uncover all points of interest approximately exchanges made for PayTM, Free charge, immobile and BHIM. They also show that the security vulnerability is conversely corresponding to the users' mindfulness of security threats, innovation and highlights of the phone. Whereas educating clients is certainly an approach, it is recommended that the OS sellers and app sellers uphold essential security

cleanliness (such as implementing phone password, login watchword, logout and such) as portion of their plan.

(Zhang, 2008) examine and analyse two basic security issues related to the security approach, plan and execution which point by point by Crevice et al, centring on client confirmation and related attacks. In this paper, both Lampson's work and Claassen's work will be utilized as a framework and a security examination "language". This paper is shown because it was the beginning of the basic long and energetic ask around in Online Managing an account security. **(Ruilin, 2015)** examine the revelations from an initial study conducted to evaluate current levels of client mindfulness of web overseeing an account security and to outline the linkage between mindfulness and conduct. Some of the disclosures raise proposals which call for progress examination. In any case, the investigation demonstrates that, in spite of broad extortion, the common level of client mindfulness in respect to web keeping money security remains moo. There's a pressing requirement for improvement here. In the expansion, indeed a tall mindfulness alone does not fundamentally guarantee a tall plausibility of secure conduct, as the last mentioned may not be specifically emphatically influenced by the former.

(Pranjal, 2015) focuses on the analysis and evaluation security issues in e-banking system and found that E-Banking security issues have ended up one of the foremost vital concerns of the banks. Banking frauds are the primary reason for the individuals or potential clients tend to avoid online managing an account, as they see it as being as well helpless for extortion. A basic solution that buyers can search for to assure them that they are not being taken advantage of is to always explore for distinguishing proof that distinguishes the site that they are on could be a secure and secure instalment arrangements program and there is still a need to set up more prominent harmonization and coordination at the worldwide level. Moreover, the ease with which capital can possibly be moved between banks and over borders in an electronic environment makes a more prominent affectability to financial approach administration. To get it the effect of e-banking on the conduct of financial approach, policymakers require a strong explanatory foundation.

(Lallmahamood, 2007) measure the effect of perceived protection and privacy on the intention to use Internet banking. He found that perceived usefulness may additionally be a primary figure in clarifying users deliberate to make use of Internet Banking. It is imperative to pay consideration to the security and safety of users of net Banking. An extended Technology Acceptance Model (TAM) is used to discover the relationship of perceived security and privacy, and TAM two beliefs: perceived usefulness, perceived ease of use toward the intention to use Internet banking. Other variables such as password security level and the financial institution as an e-payment gateway for e-commerce alternate will resource elevate the degree of customers' certainty and benefit inside the industry.

(Lukic, 2015) found the most perfect way for secure against these attacks in e-banking are: education, individual firewalls, secure attachment layer and sever firewalls. A multi-layered security design comparing firewalls, sifting switches, encryption and digital certification can guarantee that client account data is ensured from unauthorized get to. At minimum, a two-factor confirmation ought to be actualized in arrange to confirm the realness of the information relating to Internet keeping money administrations. The primary verification calculate can be the utilize of passwords and the moment confirmation calculate can be the use of tokens such as a smartcard. However, for much better security, a three-figure confirmation handle ought to be considered. The third authentication factor is the utilize of biometric.

(Sailaja & Thamodaran, 2016) revealed that Mobile, SMS, and Phone keeping money is one of the client neighbourly keeping money innovations for bank and clients. Numerous imaginative Managing an account highlights and keeping money administrations are being included and joined within the versatile managing an account. But on the opposite, there's a rise of cyber-crimes/frauds/threats and on the off chance that banks and client follow entirely

the prudent steps and security measures at that point doubtlessly indeed more major development/innovation will be taking put for progressed client neighbourly digitized electronic instalment exchanges at merchant/vendor outlet.

(Moscato & Altschuller, 2012) highlights the importance of client recognition of security by looking at the substance of the security approaches of banks all through the world. The security approach is outlined as a device for banks to utilize to oversee their users' recognition. The investigation reveals a few eminent contrasts among the anticipated security concerns inside distinctive regions. In the event that banks understand their target audiences' e-commerce foundations, they can more successfully oversee their potential users' recognitions of security. **(Twum & Ahenkora, 2012)** found that client recognition of web banking security is essentially related to utilization and is essentially influenced by trust of the framework and believe of the supplier. The study also found that client recognition of web banking security is influenced by consumer believe of the bank and the web system and this subsequently impacts utilization intentions.

(Hayikader, Hadi, & Ibrahim, 2016) examined a few safety troubles that related to versatile retaining cash apps, look at issues on the engineering as nicely as a few security measures to a good deal with the associated safety challenges. They observed that portable managing account apps ought to have an establishment to enhance app safety and again future advances. This guarantees that versatile apps and their protection machine stays future-proof and requires much fewer assets to oversee long-term.

(Sidi, et al., 2013) majority of the clients have great awareness particularly on the essential Internet security steps taken whereas respondents with lower academic background need specialized awareness on Web shopping and banking.

(Adesuyi, Solomon, & Robert, 2013) found that existing security foundation on ATMs isn't satisfactory sufficient to combat the advancing nature of ATM extortion, subsequently the require for 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.

(A report on Online And Mobile Banking Threats, 2013) reveals that money-related malware is getting more focused on modern security measures presented by banks are rapidly cracked/bypassed focused on assaults are getting broad and nearly getting to be a schedule there's a parcel of space for powerlessness misuse.

(Kaur & Kumar, 2013) found that most of the bank sites has design imperfections that cause security breaches. Beside this the security polices of the banks have no standard organize and approaches are insufficient that leads to numerous security dangers. The Security pose of a bank does not depend exclusively on the shields and practices executed by the bank, it is similarly subordinate on the awareness of the clients utilizing the keeping money channel and the quality of end-user terminals since the programmers always choose the most straightforward way to attack.

(Bakar, Aziz, Muhammad, & Muda, 2017) conducted a study to identify and create a higher perception about the factors that have an effect on mobile banking adoption. Mobile banking is nonetheless fantastically new in Malaysia, a grasp of the elements affecting customer adoption to using mobile banking can also essential for the researcher and marketer. Therefore, in order to obtain the implementation of mobile banking offerings the financial institution ought to do a lot of promotions and incentives to make bigger the level of attention among the customers. The end result of the evaluation suggests only security and privacy has a significant relationship with the cellular banking adoption.

(**Abu-Shanab & Matalqa, 2015**) indicated that many elements affect the adoption of e-banking, like usefulness, ease of use, trust, and social have an effect on were principal influencers to the intention of using e-banking. Different strategies for fraud detection and prevention have been introduced and proposed by using many types of research, of which some had been fantastic in enhancing the accuracy of fraud detection and prevention. However, there is no any single approach or approach that covers all unique risks or assaults threatening e-Banking platforms. Researchers proposed various strategies for authentication also, the place multi method is encouraged when using biometric methods in protection.

(**Aghaeirad, Fathi-Vajargah, & Afzali, 2012**) proposed a strategy in this article was exceptionally simple for bank clients, and they don't have to be keep in mind passwords for their various accounts or isolated passwords for Web managing an account. Too, clients don't get to carry ATM cards and tokens of different banks. In the event that they know their account numbers, they will require as it were a one-time secret word token, to get to their accounts at distinctive banks from the nearest port.

(**Vrancianu & Popa, 2010**) tries to analyse the potential threats undermining the security of e-Banking administrations through a comprehensive examination of the significant writing; to distinguish the devices and strategies that can guarantee the consumers' security in E-Banking, to display the comes about of a pilot study with respect to the Romanian shopper discernment on the security and security related to E-Banking service. It can be concluded that there's not any single methodology that covers all the diverse perils undermining the e-banking stage, a multi-layer protection approach being the finest elective for security processes. There are distinctive arrangements on the advertise accessible with the same objective: present an unused layer of security on the customer's side so that the client needs to physically affirm particularly distinguished transactions. The volume of assaults against e-Banking stages ceaselessly increments in all markets with well-established e-Banking solutions.

Consumer Awareness towards Electronic Banking

(**Krupa & Rajasekaran, 2015**) has attempted to analyse the customer's awareness in the direction of the e-banking offerings offered by means of the banking sectors in Coimbatore City. The researcher found that to get the perfect delight on the e-banking channels, a consumer ought to have whole information and awareness on more than a few merchandise and offerings presented by means of the banks and bankers need to have the potential to discover the type of services wanted via a purchaser and render the identical to his satisfaction.

(**Kumar & T.Revathi, 2015**) identified that e-banking choices help the clients to get entry to their banking needs from their desk and moreover help the clients to update their account as soon as the transaction takes region i.e., the money owed showcase the archives up to date to the remaining second. The evaluation uncovered that there is a tremendous share of consciousness prevailing amongst the customers about the offerings of e-banking. The customization of choices is wanted by way of the banks to enhance the pride degree of all classification customers. The twin pillars of clients are having belief and ease of use which propelled e-banking to acceptance.

(**Ahmad & Bansal, 2013**) measures the degree of awareness and its impact on customers' demeanor with respect to e-banking. The comes about to appear that mindfulness has a noteworthy impact on customers' demeanor towards the seen convenience, seen the ease of utilizing, seen security & security and seen the hazard in utilizing e-banking. By utilizing Pearson's Relationship, it was found that degree of awareness has noteworthy relationship towards subordinate factors when related separately.

(**Bhatnagar, 2015**) awareness among the consumers of Udaipur City is highest within the case of ATMs and slightest in case of mobile banking. Also, demographic factors like Age, Education Level, Profession and Income influences the awareness level. As it were gender has no implication on the awareness level of the clients of the banks.

(T.panlaneeswari & Sumathi, 2015) found that the majority of female respondents are not mindful compared to male respondents approximately credit items and services. The larger part of respondents falling beneath the pay gather of underneath Rs. 10,000 are exceedingly mindful approximately stores products. The larger part of respondents falling beneath the gather of proficient exceedingly mindful around e-services. Gender orientation and mindfulness around advance items and administrations are not related. It was concluded that the respondents have broken even with fulfilment towards showcasing blend independent of their sexual orientation, age, capability, occupation and month to month pay.

(Neha & Dhiraj, 2017) study highlights the diverse causes capable for fraud event in banks and these reasons are work pressure on staff, inadequate trainings, industry competitiveness, family pressure and low degree of compliance taken after as issued by RBI time to time. The study appears that the different internal control measures received by Indian banks are not adequate additionally not assembly the requirements of RBI. The study too shows the preferences of worker on work preparing in the prevention of banking fakes. The Indian banks should take an awfully serious note of the rising trend of bank fakes conjointly there's a got to make it beyond any doubt that there's no laxity on the portion of bank representatives in inside control measures.

(Tandon, Goel, & Bishnoi, 2016) found that the level of consumer awareness is higher in case of private and foreign division banks in comparison to public segment banks. Public segment banks require to focus on their working in arrange to fight with the private and remote division banks.

(Chaudhari, Patil, & Sonawane, 2014) found that college students of Bhusawal City are utilizing distinctive e-banking offices; ATM is most well known in students. More number of students uses net banking. It is Demonstrate that there's awareness about e-banking within the college students. There is no awareness about secure exchange since most extreme students don't have idea about changing the pin number.

(Zaabi & Tubaishat, 2015) attempted to teach clients about the dangers of online managing an account, and how to secure themselves from these risks. This investigate opens the entryway to investigating questions approximately the adequacy of law authorization reactions to casualties of online banking. The primary accentuation of this work is to caution and direct online managing an account client to the common security concerns for managing the Internet. Despite being the foremost helpful way of shopping, online managing an account causes noteworthy dangers for customers. Although online banks give their online clients by online security prerequisites (Terms & Conditions), not all clients comply with these prerequisites.

(Mishra, Awal, Elijah, & Rabi, 2017) has examined the level of data security mindfulness of online managing an account client in Nigeria utilizing surveys and interviews. The reactions of the respondents helped the study to propose unused strategies of moving forward data security mindfulness. This inquiry about work focused on the way or strategy in which data security mindfulness can move forward, and to decrease or eradicate the cases of a budgetary data breach, utilizing the modern proposed strategies of spreading information security.

(Makarevic & Hikmet, 2013) examine clients' perceptions in Bosnia and Herzegovina towards IT security of e-banking, to analyze issues and attempt to provide appropriate arrangements and found that when it comes to IT security of online keeping money, security, control and intangible features are profoundly vital variables for clients of Bosnia and Herzegovina. On the other hand, clients don't see unmistakable highlights as critical as they really are. It is recommended for future investigations of the comparable sort to center on the bigger test as specified already, and to incorporate non-users of online keeping money in inquiring about as well.

(Upamannyu, Gulati, Sharma, & Jain, 2017) found the strong relationship between the Ease of Use and Attitude, Privacy and Attitude, Perceived Usefulness and Customer Adaptation,

Ease of Use and Customer Adaptation, Privacy and Customer Adaptation and Security and Customer Adaptation.

(Elavarasi & S.T.Surulivel, 2014) found from this consider that more energetic period was utilizing electronic overseeing account organizations are more as compared to more prepared time since of unused improvement in information innovation and their apportionment level is tall in e-banking. Over 60 age accumulate category were utilizing E-banking administrations are less than others. The respondents favored ATM, online keeping cash, Versatile keeping cash, SMS overseeing an account for their monetary exchanges. The risk is one of the calculate clients were considering whereas opening a web bank account. They didn't feel secure inside the net overseeing an account.

(Rajanna, 2017) found that in rural area consumers confronting an exclusive issue when they utilized online managing an account, such as need of awareness, no fantastic direction, fear related with the man or woman information can also get uncovered and risk cyber-crimes etc. The researcher suggests the therapeutic diploma to unravel these issues, such as enchantment of excellent foundation office, the popularization of preserving cash items, progressing the safety and security, basis of client care middle etc. Online managing an account has an extraordinary office for clients, but numerous individuals are wanting mindful who are residing in provincial areas.

Frauds and Threat Issues in Electronic Banking

(Sravanthi, 2016) found that the specialized issues are by and large misdirecting the buyers from the trap of programmers and consequently legitimate caring and accomplishing the mindfulness will advantage the customers and as well as the keeping money faculty to overcome the issues of e-banking. The consider on hazard in e-banking is uncovering that the benefits of e-banking moreover gives the issues for clients and as well as to the keeping money faculty in numerous ways. The compliance, operational and security dangers are making the banking personnel see at the instrument for fixing the issue with legitimate hazard administration system. E-banking empowers a higher level of support for shoppers in performing their needs.

(Yazdanifard, Yusoff, Behora, & Sade, 2011) uncovers the major exercises of online managing an account, how people's states of mind can cause an increment or diminish within the managing an account division. The exercises such as offenders trap client to submitting their bank individual subtle elements by the utilize of Trojan program angling, sending fake e-mails which they afterward utilize to take the clients cash etc. has negatively affected client trust within the capacity of banks to protect customer's cash and resource that's why nowadays there's an extraordinary decrease within the online keeping money operation. But with the increment in this false exercise the online banking sectors are working so difficult to decrease this exercise by executing special security assurance just like the KeCrpt which give 100 per cent security against fraudsters, as well the presentation of spyware that ensure one's computer against computer programmers. Consequently, the battle for assurance, progressing security and upgrade clients believe proceeds in online keeping money sector.

(Abreu, David, & Legčević, 2015) show the significance of morals utilized to each day ethical issues swaying up from the utilize of e-banking administrations. These offerings have benefits in budgetary exchanges, but security dangers and vulnerabilities have to be always diminished. The results of the paper appear different dangers, vulnerabilities, episodes, impacts, and response that confront e-banking administrations. To relieve these dangers, the foremost important undertaking is the open discourse that will advance avoidance and disclosure evidence-based occurrences, not as it were to advocate an adequate behaviour but, too, to extend arrangement on sensible confirmation on morals and constrain extortion.

(Liaqat, Faisal, Surendran, & Thomas, 2016) found that when managing with online banking and other administrations, it is basic that clients must be mindful around existing

dangers coming from computer fraudsters and hoodlums. Computer fraudsters utilize distinctive strategies and strategies such as computer hacking, phishing, vishing, recognize burglary, refusal of administrations, social building and numerous more to steal the monetary information of conclusion clients. The comes about of the study appears that as it were 31% of the consumers are aware almost all the dangers specified within the survey. This proves that nearly 70% online clients got restricted or no awareness around the dangers accessible to individual and banking industry. It is subsequently vital that online banking clients must be aware about these procedures and strategies utilized by computer fraudsters.

(Fernandes, 2013) discover out almost shows extortion location methodologies endeavoured to maximize exactness rate and constrain fakes at a moo taken a toll level. This paper, to begin with, has provided an outline of instalment fakes in e-business which commenced with the definition of extortion and e-fraud. As the budgetary and other realities are conclusion up digitized, the openings for e-instalment fakes moreover proceeds to rise. At last, concluded with exchange on avoidance and location measures for instalment fakes in e-commerce which secured the devices of identifying of fakes, bringing down taken a toll back, securing of e instalment framework and need of awareness and instruction.

(Garko, Abdulkarim, Gambo, H.B/Kudu, & Salisu, 2015) explored the developing trend within the different sort of extortion related with the ATM cards utilization as a result of revelation of the four-digit pin by a few ATM card clients in a few four randomly chosen huge cities in Nigeria. The paper then proposed a system to minimize the extortion by changing the mode of operation of the current ATM frameworks to improve client security in this manner blocking a few chances of false activities.

(Singh, 2007) reveals that there's a sharp rise in phishing measurements because it appears from the values in different tables. May it be a number of facilitating of phishing locales, or sends gotten almost phishing, monetary misfortune either of the clients or of organizations. The most reason for losses/ success of fakes is numbness on a portion of the client as well as benefit suppliers (financiers, Admirable ISPs, retailers etc.). It requires rigid strategies of teaching clients and regular review of security-related data of person clients.

(Lokhande & Meshram, 2015) found that cyber violations are exceptionally common and offenders are utilizing very sophisticated devices to commit the wrongdoing such as Portable SIM morphing, Anonymizers, Phishing mail, Nigerian Fund Transfer extortion etc. Different hacking websites advertising number of hijackings program apparatuses. Cyber offenders are taking advantage of people groups having less mindfulness almost the Spam messages, Phishing sends from where they can take the required data. There's an ought to track such activities by joining the SPAM channel, Phishing channel in web browser itself. Too managing an account organization ought to take the step forward to teach the client, make them mindful approximately the probable dangers to his cash through net keeping money.

(Ebem, Yeagba, & Ugwuonah, 2017) examine the concept of character theft, the winning procedures utilized by cyber criminals and ways of recognizing social engineering-based scams. The analyst found measures for anticipating and combating these cyber-crimes by proposing that the person, banks and the government all have a part to play in combating identity burglary, but it all begins with the person web keeping money client.

Tools and Techniques to Prevent Frauds

(Usman & Shah, 2013) found that the inconvenience of discussion was once found to play a basic work in e-banking security in expansion to organizational adaptability, accessibility of assets, e-banking extend arrangement, back from beat administration, insights straightforwardness and security information and awareness **(Koskosas, 2011)**. The researcher concluded that to prevent frauds by understanding the commercial venture objectives, targets and crucial victory components when arranging the security technique, as legitimately as the effect on the venture in the event that they are not achieved (International Trade Machines

(IBM, 2001). There has been negligible investigate related to organizations encounter on extortion avoidance and the elemental victory variables for e-banking extortion avoidance measures. Hence the components that have been recognized require advance examination to recognize their criticality.

(Alsayed & Bilgrami, 2017) inspect how phishing hackers attempt to steal users' statistics and habits economic fraud. In turn, it explains how bank users can invulnerable their online transactions with security solutions. Therefore, they found several measures to prevent a phishing attack:

- Banks must utilize a few kinds of upgraded counter measure, such as two-factor confirmation, at the side other security software programs.
- Banks will additionally benefit immensely from educating their customers about phishing attack risks and about the methods in which unauthorized get entry to the users, financial facts ought to happen while presenting the steps they can take to defend their economic information.
- Also, bank customers should check the source of data from incoming emails so that they could make sure whether or not it is a phishing attack. Since phishing hackers use countless state-of-the-art methods, ranging from misleading attacks to DNS attacks, banks should replace the safety measures regularly.
- In addition, clients ought to not react directly to any blessing or an ask of losing an existing bank account which may take off your information at chance. Moreover, bank clients must check the source of data from approaching sends so that they might make beyond any doubt whether it may be a phishing assault.

(Fighting Online Fraud:An Industry Perspective, 2017) found that educating the client on how to assist anticipate online banking extortion is fair one component of a bank's fraud defences. Sending progressed innovation that can quickly adapt to the changes within the cybercriminal's modus operandi is basic to securing the online channel. Clients must have confidence in the security of a bank's online stage. There's no conclusion in sight, but banks must remain committed to winning each battle they battle to avoid online extortion.

(Shweta & Dhirendra, 2016) distinguished a more conspicuous request for quick and correct person recognizable confirmation, confirmation and authorization are considered. In this way, an immune layer of Electronic Trade component is proposed to created cardholder recognizable verification, affirmation, authorization and security clearances. This asks around paper suggested security controls, which join ATM/EDC Progressed Swapping Keypad and ATM/ EDC Censored Keypad Shield Cover. Subsequently, there will be a delicate level of having certainty and self-affirmation on electronic trade.

(Karovaliya, Karedia, Oza, & .D.R.Kalbande, 2015) set a modern concept that upgrades the by and large involvement, convenience and comfort of the exchange at the ATM. Highlights like confront acknowledgment and One-Time Watchword (OTP) are utilized for the improvement of security of accounts and security of clients. Face acknowledgment innovation makes a difference the machine to distinguish each and each client interestingly in this way making confront as a key. This totally dispenses with the chances of extortion due to robbery and deception of the ATM cards. Besides, the haphazardly created OTP liberates the client from recalling PINs because it itself acts as a Pin.

(Elkhodr, Shahrestani, & Kourouche, 2013) analyses that in spite of the fact that the portable contraption emulator utilized for checking out the proposed computer program mirrors all the equipment and computer program focuses of a real cellular gadget; a few conceivable issues may emerge when a real cell is used. This work proposed to supply money related institutions' clients with a cellular computer program which will want to be utilized to urge affirmation to their individual or commerce accounts some place and at each time in a firmly closed way.

Therefore, it offers clients the plausibility of enlisting their cell contraptions conjointly offers the financial educate a way to affirm the gadget to utilize.

(Gyamfi, Mohammed, Nuamah-Gyambra, Katsriku, & Abdulah, 2016) distinguishes a model for the alteration of existing ATM frameworks to financially consolidate fingerprint checking Additionally blood group; and, traces the focal points of utilizing such framework. It ought to be noted that the customers 'perception cannot be generalized because it was profoundly influenced by the convention or culture of the clients involves.

Cases of Frauds in Electronic Banking in India

Following highlights by (Srinivasan, 2016) :

- According to RBI information, 8,765 cases were detailed by banks in 2012-13 and the comparing figures for consequent three years were 9,500 (2013-14), 13,083 (2014-15) and 11,997 (within the to begin with nine months of 2015-16) individually. India positioned third after Japan and the US as nations most influenced by online banking malware in 2014.
- The Indian Computer Crisis Reaction Group (CERT-In), the nodal company to see into the surveys including phishing occurrences influencing customers of online keeping money, has followed 534 phishing episodes within the, to begin with, 9 months of 2015.
- The rate of ATM, credit, debit card and net banking-related extortion has gone up by more than 35 percent between 2012-13 and 2015-16 in India, agreeing to country's government bank Reserve Bank of India (RBI).
- Among a range of steps taken with the asset of the government to provide up cybercrimes and tricks covered putting up cybercrime cells over the nation, and opening cyber legal coaching and examination labs in Kerala, Assam, Mizoram, Nagaland, Arunachal Pradesh, Tripura, Meghalaya, Manipur, and Jammu & Kashmir, the minister added.

(Dhillon, 2018) reveals following highlights in the article “India has the highest rate of online banking frauds in the world report”

- A survey by FIS, a financial services technology provider, showed that 18% of Indians suffered from an online banking fraud in the past year.
- This was a higher percentage than any other country's respondents.
- In December, Ravi Shankar Prasad, the minister for information technology, said that there were over 25,800 cases of digital fraud in India in 2017.

(Prasad, 2017) uncovers that over Twenty five thousand eight hundred on-line managing an account extortion instances distinct in 2017: Government as per the information outfitted by using Reserve Bank of India (RBI) on fakes associated to ATM/Credit/Debit cards and net managing an account as articulated with the aid of utilizing the banks, Ten thousand two hundred twenty instances of extortion had been stated within the December 2017 quarter (up to December 21),” IT serve Ravi Shankar Prasad communicated in composed reply to the Rajya Sabha. The total covered utilized to be Rs. Eleven hundred Eleven crore internal the communicated quarter, he included. Prasad well-known 7,372 activities have been communicated in September quarter, 5,148 cases in June quarter and Three thousand and Seventy-seven occurrences in Walk quarter of 2017, with the diploma protected tallying to Rs Sixty-seven crore in 2016, 3,156 cases and 4,147 instances have been enlisted interior the September and December quarters, exclusively. The diploma involved—in these two quarter was—Rs Forty-Five crore, the serve said. As per the state-wise fundamental factors of fakes counting sum of over Rs1 lakh, Maharashtra topped the posting of credit/debit card and internet banking-related fakes inside the budgetary year 2016-17 with 380 circumstances counting Rs. Twelve Crore.

(Tripathi, 2017) uncovers following highlights:

- 187 cases of false exercises, with misfortunes touching Rs 33.73 crore, were detailed in December 2017 alone. The minister clarified that in spite of the truth that misfortune appears to be very critical, it breaks even with to simple 0.009% of the whole esteem of exchanges. The number of exchanges that took put at ATM and POS terminal measured to approx. Rs 3469.97 billion (Rs 3,46,997 crore).
- Among all the states Maharashtra topped the list of credit/debit card and net-banking related fakes for FY 2016-17 with 380 cases measuring Rs 12.10 Cr.

(PNB ‘stray case’, lack of ethics to blame: FM, 2018) reveals that the digital push by means of the Union authorities may additionally have made a distinction in making transactions more traceable and humans more accountable. But cyber fraudsters throughout the use of a are also making the most of it. Statistics expose that Rs 2 lakh was once siphoned off each and every hour with the aid of fraudsters through credit/debit cards and web banking in 2017. Despite attempts to curb deposit card/debit card and internet banking frauds, a total of Rs 178 crore used to be stolen throughout the use of an ultimate year. This is the easiest quantity cheated in the banking device to date. An average sum of Rs Forty-eight lakh is misplaced to fraudsters each day in accordance to the state-of-the-art information from the Ministry of Information Technology, based totally on extortion misappropriation audits acknowledged by banks till December 21, 2017.

Table 3.2: Figures Tell the Tale-Online Frauds

FIGURES TELL THE TALE			
The Union Ministry of Home Affairs has admitted that there is lack of awareness about the modus operandi cyber criminals adopt to cheat people			
GONE IN A FLASH			
QUARTERS	CASES	AMOUNT (In LAKH RUPEES)	Rs 251 crore lost since 2014 according to Ministry of Finance, RBI has said that between April 2014 and June 2017, Rs251 crore was lost to cybercrimes. This includes credit card frauds totalling Rs130.57 crore, ATM/debit card frauds of Rs 91.97 crore and internet banking frauds to tune of Rs30.01 crore
TILL MARCH 2017	3077	1330.1	
TILL JUNE 2017	5148	1962.71	
TILL SEPT 2017	7372	3420.86	
UPTO DEC 2017	10220	11185.73	
TOTAL	25817	17899.4	

	<p>Some ways of cheating by scamsters</p> <ul style="list-style-type: none"> Skimming with superior equipment constant in ATM kiosks Phishing Vishing Cloning of playing cards via a range of sources Hacking banking systems Hacking account details over internet
---	--

As per the news published in NDTV newspaper on 17July 2018 two guys were arrested for allegedly carrying out a collection of debit card frauds in specific components of the city, some police legitimate said. With the arrest of the accused persons, the police claimed to have solved

a total of eight cases of cheating at one of a kind police Stations in Delhi, the legitimate said. The accused have been identified as Sumit Chaudhary and Narender Singh alias Monu, residents of Ambedkar Colony in Bijwasan. During interrogation, the duo instructed the police that there had been complete three contributors in their gang. Based on the grievance lodged through the woman, the police registered a case. A total of 15 ATM cards of distinct banks have been recovered from their possession, he said.

Following highlights by (Sanjay, 2017) :

- The number of frauds associated with Internet banking and credit and debit playing cards in India has increased 4-fold in the one year, according to data said by using the banks to the Reserve Bank of India.
- Banks have already said 10,220 incidents under the RBI’s Fraud Monitoring System involving an amount of Rs. 111.86 cr. in the ultimate three months (fourth quarter) of 2017 so far.
- During the identical length final year, banks had mentioned a total of 4,147 incidents involving solely 30.04 cr., one-fourth of this year’s number.
- A comparable increase can be seen in the preceding (third) quarter as well. For the 0.33 quarter (July-September) of 2017, the complete number of incidents was once at 7,372 and the complete quantity was once Rs. 34.20 Cr.
- In comparison, for the same, 0.33 quarter of 2016, the whole wide variety of incidents used to be 3,156 and the whole quantity worried was once solely 15.46 cr. (see graph)
- The highest quantity of fraud instances involving savings cards, debit playing cards, and net banking is from Maharashtra.
- The state pronounced 380 instances of such fraud really worth Rs.12.10 crore in the final fiscal year, counting only instances the place the loss used to be over Rs. 1 lakh.
- The common amount concerned is Rs. 1.09 lakhs.

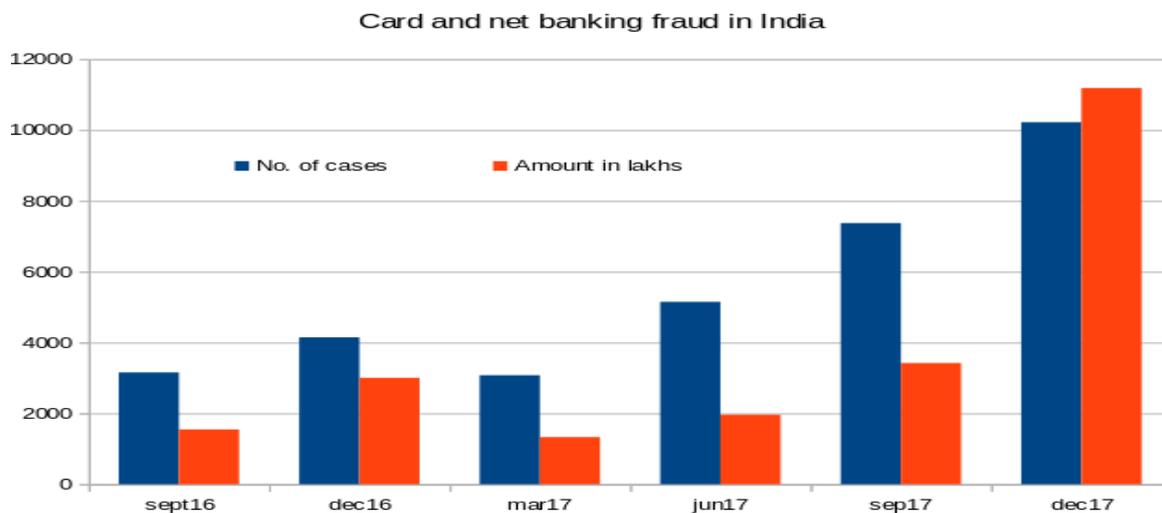


Figure 3.2: Card & net banking fraud in India (Source: Ultra.news)

The key findings as per the reports of The Cyber Blog India on “Electronic banking fraud in India: on December 2017 are:

Table 3.3: Electronic Banking Fraud in India -2017

ATM Withdrawal	Online Transactions
<ul style="list-style-type: none"> • Card Skimmed and cloned • Used at ATM to withdraw cash 	<ul style="list-style-type: none"> • Online purchases • Recharge/Other Payments • Loading digital wallets • Bank transfers

Total Amount Lost	
Rs. 3038182.80	Rs.2237225
Average amount of Money lost per Person Rs.42549.26	

AMOUNT OF FRAUD REPORTED PER STATE (TOP FIVE STATES)

ATM WITHDRAWL	AMOUNT(Rs)	ONLINE TRANSACTIONS	AMOUNT(Rs)
Maharashtra	583547	Maharashtra	144085
Uttar Pradesh	576000	Uttar Pradesh	171000
Delhi	343873	Delhi	385719
Tamil Nadu	298376	Gujarat	141356
Andhra Pradesh	208000	West Bengal	190688

Rs. 5276107.80 total amount pf Electronic Banking frauds in 6 months from June 2017 to Uttar Pradesh recorded the maximum amount of frauds worth Rs. 747000.

AMOUNT OF FRAUD REPORTED PER STATE (TOP FIVE STATES)

ATM WITHDRAWL	AMOUNT(Rs.)	ONLINE TRANSACTIONS	AMOUNT(Rs)
SBI	1591736	SBI	1454025
HDFC	258000	UCO	50000
AXIS	161800	AXIS	69839
ICICI	134847	ICICI	73688
OBC	128500	CANARA	60000

SBI recorded the maximum amount of frauds worth Rs. 3045761.8.

Cases related to Rajasthan

(Monika, ATM fraud of 9k at Pratapnagar, 2018) reported following highlights: A man in Pratap nagar got to be a casualty of ATM extortion. Kashan Lal Mali of Saunders went to SBI ATM to pull back a few sums. It was 7:30 p.m. on Friday when Kishan was at the SBI ATM. He embedded the card within the space but his exchange did not get prepared. There was a man standing behind him within the ATM cabin who advertised to assist him with the exchange. He at that point embedded another card within the machine and inquired Kishan to sort the watchword. Whereas Kishan was writing the secret word, this man made a note of it. The stranger gave him his card back and likely told him that it was not working. Kishan did not figure it out as to how and when the stranger changed the ATM cards. When Kishan cleared out the ATM cabin, the stranger who had cheated him by changing cards, took out 9 thousand rupees from his account. Kishan learned of this ATM extortion when he got a message of withdrawal on his mobile.

(Udaipur CA and Businessmen amongst accused in Rs 1000 Cr scam, 2016) CBI, on Tuesday, recorded a case against 5 Syndicate Bank specialists tallying Avdhesh Tiwari, AGM, Syndicate Bank, Udaipur; Bharat Bamb (Udaipur CA), two businessmen from Udaipur and one from Jaipur on charges of causing an incident of Rs 1,000 Cr to Syndicate Bank by lessening fake bills and cheques, and organizing Overdraft against fake Letters of Credits and non-existent LIC Arrangements. CBI agent Devpreet Singh taught that the charged individuals in conjunction with Bank specialists committed a blackmail of Rs 1,000 Cr by lessening of fake bills and cheques and coordinating over-draft limit against non-existent LIC Courses of action and Letters of Credit. The trick that purportedly ran through 2011-16 continued unabated by getting absent the Surveys and hurling to the wind all the traditions of KYC benchmarks as 386 bank accounts of distinctive natures were opened in three branches, viz. MI Street and Malviya Nagar in Jaipur and a department in Udaipur. This trick, utilizing the three accounts

as a stage, that supposedly took put between 2011-2016, proceeded unabated through this period.

At Fatehnagar: The financial institution account of the man or woman dwelling in Ward 10 of the city was removed a lakh 6 thousand rupees. Online swindle published that the amount of the account came out of the cell message. The net banking records used to be printed to have extracted Rs 4 times in New Delhi's Gonda Chowk atm. Police reported that Ward has extracted the quantity from the financial institution account of 10 resident Lokesh Lahar. It was once surprising that Lokesh had now not spoken to anybody in relation to the financial institution account. The quantity used to be eliminated from his account, notwithstanding. SBI ATMs can solely be eliminated from Rs. 40 thousand rupees a day, while Lokesh's account has fired 80 thousand rupees in a single day.

Article on **(Retired cop's son arrested in Rajasthan for ATM fraud learnt hacking on YouTube, 2018)** reveals that

- The fundamental charged Manish Meena, 20, was captured on Sunday evening from Sardarshahar in Sriganganagar area whereas his partners Mahendra Meena, 30, and Chajuram Gurjar, 19, were captured in Naurana town on Monday.
- They stole cash from four ATMs in Hanumangarh area, two ATMs in Ganganagar, Jhunjhunun and Sikar, four ATMs in Jaipur, two in Alwar, three in Punjab and two in Haryana.
- In March, three Romanian nationals were captured for cheating individuals by cloning their ATM cards.
- ASP Rajendra Kumar Meena said that the trio had voyage to 24 cities in three states and carried out 21 cases of extortion in seven months.
- The blamed had a bunch of ATM cards of diverse banks which they utilized to deceive the elderly and uneducated individuals at ATMs.
- The police suspect the false exchanges have been made with the assistance of a skimmer, a little electronic gadget stuck over a card-swiping terminal that takes card information.

Chapter-4

RESEARCH METHODOLOGY

- 4.1 Introduction**
- 4.2 Research Approach**
- 4.3 Statement of the Problem**
- 4.4 Relevance of the proposed Study**
- 4.5 Rationale of the Study**
- 4.6 Scope of the Study**
- 4.7 Objectives of the Study**
- 4.8 Hypothesis Development**
- 4.9 Research Design**
- 4.10 Data collection Methods**
- 4.11 Scale Development**
- 4.12 Period of Survey**
- 4.13 Population, Sampling and Sample Size**
- 4.14 Data Analysis Technique**
- 4.15 Reliability and Validity**
- 4.16 Limitation of Study**

Chapter 4 Research Methodology

Introduction

With the impact of Information Technology traditional services are transforming into electronic services. The several electronic channels like ATM, Cards (Debit/Credit/Smart), Mobile Banking, and Internet banking are changing the face of Indian Banking industry. These electronic channels had changed the method of delivering the services to the customers. To survive in this competition, the Indian Banking industry should be ready to accept the changes and have to deliver quality services to their customers because it is only a customer who can evaluate the quality of services. For this customer must be fully aware about pros and cons of electronic banking services as every customer want to be satisfied from the security and privacy point of view while using these services. Therefore, there is a need to measure the awareness among the consumers with regard to security and privacy issues electronic banking services. With a view to develop a sound theoretical framework for investigation, review of literature based on several studies related to security and privacy issues has been carried out in the previous chapter. Hence the present chapter discusses the research methodology that has been used in the study.

Research Approach

Research methodology is a term that basically means the science of how research is done scientifically. It is a way to systematically and logically solve a problem, help us understand the process, not just the product of research and analyzes methods in addition to the information obtained by them. In Research, we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them.

Steps of Research Methodology

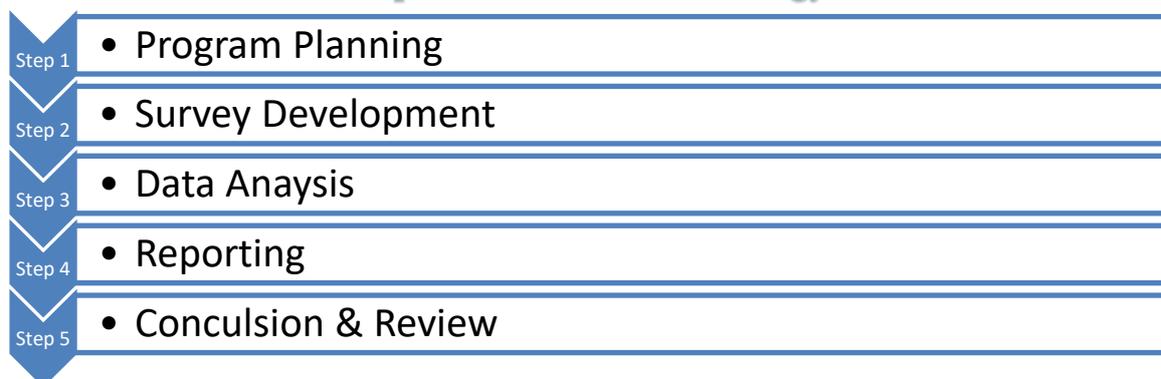


Figure 4.1: Steps of Research Methodology

The following research questions are designed to cumulatively answer the larger question: What is Consumer Awareness with Regard to Security and Privacy in Electronic Banking Services in Udaipur City. Further research questions are as follows:

- What is the level of education, age and occupation of e-banking consumers?
- Are consumers aware about that they are doing safe transactions through electronic banking services?
- Is there any difference among the demographic factors i.e. age, gender, education, and occupation with regard to their awareness (wiz Social, Ethical, Technical and Legal) towards security and privacy in electronic banking services?
- What is the level of awareness among consumers categorized with the high, moderate and low related to their safety and privacy feature in electronic banking services?
- Is there any relation among the demographic factors with regard to their awareness towards security and privacy in electronic banking services?

- f. What are the factors that influenced e-banking consumers to be aware of their security and Privacy?

Statement of the Problem

The internet had changed the communication system of the world. Almost all the sectors are at the forefront of this internet. The banking industry too joined this network like others. Security awareness for consumers is relatively critical. The increased usage of electronic banking services nowadays makes security and privacy a major issue for everyone. The aim of this study is to enhance the security and privacy awareness among e-banking users. With this approach it makes the benefit to both the user, and service provider to decide what are the key issues and how to rectify them so that they can build effective system so that personal information of the consumers can remain safe where ever it has been placed

The review of literature suggests that most of the studies have examined the factors that influence the customers towards adoption of electronic banking services, identify the security and privacy issues in electronic banking services, awareness towards electronic banking services among the consumers but there is lack of studies that are based on primary data or consumer survey to measure the level of awareness among the consumers regarding security and privacy issues while using electronic banking services. From the available sources, research could not find a single study which has been conducted in India with reference to geographical distribution and demographic profile which measure the level of awareness among the consumers with regard to security and privacy in electronic banking services. Researcher has found the gap in available literature for the study and hence decided to conduct research project in Udaipur to fill these gaps.

Importance of the Proposed Study

Today all the banking sectors are providing lot of services to their customers. Although the e-banking services are offered by all the banks, it is a necessity to study whether all the banking customers are aware of the security and privacy issues of e-banking services .To get the highest satisfaction on the e-banking channels, a customer should have complete knowledge and awareness on various products and services and its security and privacy features offered by the bank and bankers should have the ability to identify the type of services needed by a customer and render the same to his satisfaction. The researcher has attempted to analyse the Consumer awareness towards the security and privacy problems in e-banking offerings supplied with the aid of the banking sectors in Udaipur City. This research will be a remarkable contribution for banking industry to recognize the issues regarding security and privacy which are more considerable and found significant by consumers while adopting electronic banking services. And will also help to identify the difference in level of awareness among the consumers regarding security and privacy in electronic banking services. This research also delivers a powerful model to identify the major factors which influence the consumers while considering about security and privacy issues in electronic banking services.

Rationale of the Study

Electronic banking started in India in 1990.Still there are many internet users who refuse to do their banking online. Or rather we say people still believe in physical transactions like going to bank branches for withdraw or depositing money etc. This is happening because of concern about security and privacy while using electronic banking services.

How to increase the clients towards electronic banking services? For this researcher conducted a pilot survey and identified that security and privacy is the major factor which influence the customer adoption towards electronic banking services. Earlier reviews proven that there was fewer research carried out which examines the customer's awareness towards Electronic banking. Hence the researcher attempted to conduct this study to measure the awareness among the consumers with regard to security and privacy in Electronic Banking.

Scope of the Study

Every research has to be confined in its theoretical and geographical scope. The study is based on the data collected from Udaipur City in Rajasthan. The purpose of this research is not to construct a fresh theory, but to investigate the research questions and fulfil research objectives based on empirical research and secondary data. Furthermore, in this thesis, we will generate hypotheses from theories and then, we will use empirical research data to test the hypotheses. The area of research is the analysis the Consumer Awareness with regard to Security and Privacy in Electronic Banking Services in Udaipur City.

Objective of the Study

The study would help to analysis Consumer Awareness (Social, Ethical, Legal & Technical) with regard to Security and Privacy in Electronic Banking Services in Udaipur City.

The main objectives are as follow:

- To study the current state of E banking services in India.
- To analyse the distinction in customer recognition stage regarding security and privacy in E banking offerings throughout demographic variables (age, gender, educational qualification occupation).
- To measure the level of awareness among the consumers regarding use of ATM/Cards (Debit and Credit) with respect to its security and privacy features.
- To measure the level of awareness among the consumers regarding use of Internet Banking with respect to its security and privacy features.
- To measure the level of awareness among the consumers regarding use of Mobile Banking with respect to its security and privacy features.
- To develop a model considering important factor which influence the consumer awareness while using electronic banking services with regard to security and privacy.

Hypothesis Development

Hypothesis testing is Main feature is to advocate new experiments and observations. Ordinarily its capability assumption or some supposition to be disproved. The present study Consumer Awareness with Regard to Security and Privacy in Electronic Banking Services in Udaipur City. The following major hypotheses have been formulated to fulfill above mentioned objectives.

- There is no significant difference among the consumers with social awareness towards security and privacy for electronic banking services.
- There is no significant difference among the consumers with ethical awareness towards security and privacy for electronic banking services.
- There is no significant difference among the consumers with technical awareness towards security and privacy for electronic banking services.
- There is no significant difference among the consumers with legal awareness towards security and privacy for electronic banking services.

- There is no significant association among consumers with the level of social awareness with regards to security and privacy for electronic banking services.
- There is no significant association among consumers with the level of ethical awareness with regards to security and privacy for electronic banking services.
- There is no significant association among consumers with the level of technical awareness with regards to security and privacy for electronic banking services.
- There is no significant association among consumers with the level of legal awareness with regards to security and privacy for electronic banking services.
- The model fitted among consumer awareness with regard to privacy in electronic banking services in Udaipur city is good.
- The model fitted among consumer awareness with regard to security in electronic banking services in Udaipur city is good.

Research Design

To the best of researcher knowledge, there is no study in the context of the India, which attempt to major Consumer Awareness with regard to Security and Privacy in Electronic Banking Services. The present study followed both exploratory and descriptive research approach. Exploratory research is carried out via review of existing literatures in formation of Hypothesis. Further descriptive research approach is used to test the hypotheses and present conclusions from data analysis. The present study uses quantitative approach of problem solving. This includes a quantitative, descriptive, and comparative research with cross-sectional survey of data from consumers of electronic banking services. Survey data is employed to estimate population characteristics and to explore the significance of predictor variables. The research that will be carried on Consumer awareness towards electronic banking services is Descriptive in Nature. It is a fact-finding investigation with adequate interpretation.

Quantitative data analysis used SPSS 23 and consisted of two primary stages. First, descriptive statistics were calculated on all variables. Means and standard deviations were calculated for variables on a ratio or interval scale. Frequencies and percentages were provided for nominal or ordinal scaled variables. The second stage of the quantitative analyses presented inferential statistics used to test the research hypotheses.

Data Collection methods

In this study both primary and secondary sources relevant for gathering requisite information pertaining to the research problem have been used. Primary data collected through survey method with the help of questionnaire. These questions confined by analyst with the assistance of administrator and subject specialists. Questions in light of the subject of research, which incorporates destinations and theory of the exploration work. Respondents were personally interviewed.

The secondary data have been gathered from books and journals viz. Journal of Internet Banking and Commerce, Journal of Banking and Finance, International Journal of Bank Marketing, E- service Journal, etc. Further to know the current status of Electronic banking in India various annual reports of bank and statistical tables issued by RBI have been studied for acquiring the relevant information. `

Scale Development

A structured questionnaire was prepared to collect the data from bank customers. The questionnaire was prepared in consultation with banking experts especially in the field of e-banking. In the first section, respondents were asked about their demographic profile, which included gender, age, occupation & profession information. The second part of the questionnaire consist of 4 dimensions which were used to measure the level of awareness regarding security and privacy of electronic banking services. Respondents were asked to indicate their opinion on Five-Point Likert Scale ranging from strongly agree to strongly disagree. The description of each construct has been shown in:

Table 4.1: Description of Dimension

S.no	Name of Dimension	Purpose	No .of Items
1	Security and Privacy awareness: Social	To measure the level of security and privacy awareness regarding ATM/Cards(Debit/Credit)	7
		To measure the level of security and privacy awareness regarding Internet Banking	5
		To measure the level of security and privacy awareness regarding Mobile Banking	4
2	Security and Privacy	To measure the level of security and privacy awareness regarding ATM /Cards(Debit/Credit)	9
		To measure the level of security and privacy awareness regarding Internet Banking	8

	awareness: Ethical	To measure the level of security and privacy awareness regarding Mobile Banking	9
3	Security and Privacy awareness:	To measure the level of security and privacy awareness regarding ATM/Cards(Debit/Credit)	4
		To measure the level of security and privacy awareness regarding Internet Banking	5
	Legal	To measure the level of security and privacy awareness regarding Mobile Banking	4
4	Security and Privacy awareness:	To measure the level of security and privacy awareness regarding ATM/Cards(Debit/Credit)	3
		To measure the level of security and privacy awareness regarding Internet Banking	3
	Technical	To measure the level of security and privacy awareness regarding Mobile Banking	3

Period of Survey-

Survey were carried out during the period of April 2017 to January 2018.

Population, sampling and Sample size

The population for the study comprised of banking consumers of Udaipur City. More specifically the target population for the study was defined as —Bank customers. The prime objective of the study was to measure the awareness among the bank customers regarding security and privacy in electronic banking services. The total number of respondents contacted was 1500, but due to non-utilization of electronic banking services and other faults the final responses subjected to data analysis are 550. In order to reduce the number of un-returned completed questionnaires, on the spot completion of questionnaires was demanded.

In present research, the respondents were selected using convenience sampling (using a cross-sectional design) from different demographics profiles. The sample of the present study, represented the population with respect to demographic dimensions i.e. gender, age, occupation and education. Care was taken to make the sample representative of the actual population.

❖ **Sampling Unit**

Individual electronic banking consumers of Udaipur City.

❖ **Sample size**

In the present research work, the sample size will be of 1500 respondents and will be chosen by utilizing Convenience Sampling.

❖ **Sampling Technique:**

In present research, the respondents were selected using convenience sampling (using a cross-sectional design) from different demographics profiles. The sample of the present study, represented the population with respect to demographic dimensions i.e. gender, age, occupation and income. Care was taken to make the sample representative of the actual population.

Data Analysis Technique

Statistical Analysis

Data collected through survey method was entered in data sheet of SPSS23. In the process of analysis, hypothesis testing will result in either accepting the hypothesis or in rejecting it. In present study, the hypotheses were tested through the use of one or more of such tests, depending upon the nature and object of research inquiry. The criterion that is used for accepting or rejecting a null hypothesis is called significance of p-value. Various techniques are used in the study:

1. **Scaling Technique**

The schedule used in this study is constructed on a five-point scale. The 5-point scale is constructed as follows:

Strongly agree	Agree	Neither agree or Disagree	Disagree	Strongly Disagree
5	4	3	2	1

Based on these scores, the respondents are classified into three categories as those having high level, moderate level and low level of awareness. The scaling technique is used to study the awareness level of the respondents with regard to security and privacy in electronic banking services.

2. Kruskal Wallis Test

The Kruskal Wallis test is a rank based non-parametric test is used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. The Kruskal Wallis test is used in this study for analysing the significant difference between the demographic factor such as age, gender, occupation, education with regard to awareness towards security and privacy in electronic banking services.

3. Chi Square

The **Chi Square** statistic is commonly used for testing relationships between categorical variables or to evaluate test of independence when using a cross tabulation. The test of independence assesses whether an association exists between the two variables by comparing the observed pattern of responses in the cells to the pattern that would be expected if the variables were truly independent of each other. The chi- square test is used in this study to analyse the significant association between the demographic factors such as gender, age, education, occupation with the level of awareness with regard to security and privacy in electronic banking services.

4. Phi

The measure of association, phi, is a measure which adjusts the chi square statistic by the sample size.

5. P-value

Used in hypothesis tests to help one to decide whether to reject or fail to reject a null hypothesis. The p-value is the probability of obtaining a test statistic that is at least as extreme as the actual calculated value, if the null hypothesis is true. A commonly used cut-off value for the p-value is 0.05. For example, if the calculated p-value of a test statistic is less than 0.05, you reject the null hypothesis.

6. Factor Analysis

Factor analysis is a statistical method that is used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors. Factor analysis searches for such joint variations in response to unobserved latent variables. The observed variables are modelled as linear combinations of the potential factors, plus "error" terms. The information gained about the interdependencies between observed variables can be used later to reduce the set of variables in a dataset. In this study, the Factor Analysis is used to identify the factors which largely influence the awareness level of the respondents towards security and privacy in electronic banking services. To further refine all measures for factor analysis, measurement models were estimated using maximum likelihood estimation (AMOS). It is a way of testing how well measured variables represent a smaller number of constructs.

Reliability and Validity

In general, reliability is the ability of an apparatus, machine, or system to consistently perform its intended or required function or mission, on demand and without degradation or failure.

Reliability of the scale was tested with the help of SPSS software and the value of Cronbach's Alpha was 0.800 which indicates the data is reliable enough to go for further analysis.

Validity is concerned with the integrity of the conclusions that are generated from piece of research. In general, validity is an indication of how sound your research. More specifically, Validity applies to both the design and the methods of your research. Validity in data collection means that your findings truly represent the phenomenon you are claiming to measure. Valid claims are solid claims.

For the present study, the content validity of the instrument was ensured as different dimensions of awareness towards security and privacy in electronic banking were identified from intense review of literature and were discussed thoroughly with professionals and academicians.

Limitation of Study

The researcher has taken all possible care and efforts to avoid the statistical discrepancy and ensure the reliability of the data supplied both at the time of collection of data and secondary review collection. However, the present study is subject to the under mentioned limitations:

1. The study has not included other E- Banking services like Electronic Clearing Services, Cheques truncation system etc.
2. Limited Geographical scope.
3. Sometimes respondents would not show proper interest while answering the questions.

Chapter-5

DATA ANALYSIS

- 5.1 Introduction**
- 5.2 Statistical Test Applied**
- 5.3 Sample Profile**
- 5.4 Analysis of Awareness towards security and privacy in Electronic Banking services (Social, Ethical, Technical and Legal)**
- 5.5 Analysis of Kruskal-Wallis Test on Demographic Factors for Awareness Towards Security and Privacy for Electronic Banking Services**
- 5.6 Analysis of Chi square test on demographic Factors for level of awareness Towards Security and Privacy for Electronic Banking Services**
- 5.7 Factor Analysis**

Chapter 5 DATA ANALYSIS

Introduction

The particular study titled with “A Study on Consumer awareness with regard to Security and Privacy in Electronic Banking Services in Udaipur City” is aimed to measure the awareness among the consumers with regard to security and privacy while using electronic banking services offered to them by their banks.

The present chapter deals with the analysis and interpretation of the data collected based on the frame of reference of this thesis. As discussed in chapter -4, the present study has six objectives and ten hypotheses to measure level of awareness and found out any significant difference among the consumers on the basis of four dimensions i.e. social, ethical, technical and legal with regard to their security and privacy in electronic banking services.

The analysis and interpretation of data was done in two sections; the first section of analysis presents descriptive statistics of the respondents (n=550) in terms of their demographic factors. The second section of the analysis deals with inferential statistics. This section comprises four different sub sections. The chapter concludes establishing the significance of the model developed by the researcher which is tested in the study.

Table 5.1 :Summary of Test Used

Sub-Section	Particulars
I	Analysis of awareness on the basis of Social, Ethical, Technical and Legal for electronic banking services such as ATM/Cards (Debit/Credit), Internet banking and Mobile Banking
II	Results of Kruskal Wallis test done to find out the difference among the gender groups, age groups, education level and occupation category with regard to their awareness (wiz. Social, ethical, technical and legal) towards security and privacy in electronic banking services.
III	Results of Chi-square test done to find out the association among the consumer demographic variables with the level of awareness (wiz. Social, ethical, technical and legal) towards security and privacy while using electronic banking services.
IV	Results of Factor analysis which identify a small number of variables that explain most of the variance observed in a much larger number of manifest variables.

Statistical Test Used

SECTION 1

Descriptive Statistics

As mentioned above, Section 1 deals with descriptive statistics of the 550 employees who participated in the survey. Descriptive statistics is the most basic form of statistics and is used to describe the demographic characteristics of the sample selected for the study.

SECTION 2

Inferential Statistics

Inferential statistics are techniques that allow us to use these samples to generalize about the populations from which the samples were drawn. It is, therefore, important that the sample accurately represents the population. Inferential statistics use a random sample of data taken from a population to describe and make inferences about the population.

In present research, both descriptive and inferential statistics are used for better interpretation of data collected.

Sample Profile

Sample Demographics

Table 5.2: Respondent Demographics - Summary

		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
	Labour	70	12.7
Business		160	29.1
Labour		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

(a.) Gender

To identify the gender wise classification of the respondents, data were tabulated in table and diagram as under.

Table 5.3: Gender Distribution

	Frequency	Percentage
Male	366	66.5
Female	184	33.5
Total	550	100.0

The gender wise analysis revealed that the survey included 550 consumers. Out of the total respondents, about 66.5 percent (366) of respondents are male and 33.5(184) percent were female. This classification was important since the gender-wise difference regarding the opinion of were analysed later.

(b.) Age

To identify the age wise classification of the respondents, data were tabulated in table and diagram as under.

Table 5.4: Age Distribution

	Frequency	Percentage
Below 30	141	25.6
31-45	169	30.7
46-62	134	24.4
Above 63	106	19.3
Total	550	100.0

From the above table it can be concluded that majority of respondent are from 31-45 years of age (169). 25.50 percent of consumers are below 30 years of age (141). 24.40 percent of consumers belong to age bracket of 46-62 year. A small proportion belongs to higher age group of greater than 63 years. Hence from the above table depiction, it is clear that our sample constitute of a wider variety and range of diverse demographic profile of respondents. The average mean of the age wise distribution is 2.37 with an average standard deviation of 1.06.

(c.) Education

To identify the Education wise classification of the respondents, data were tabulated in table and diagram as under.

Table 5.5: Education Distribution

	Frequency	Percentage
Primary	80	14.5
Secondary	122	22.2
Graduate	137	24.9
Post Graduate	211	38.4
Total	550	100.0

From the above table it can be concluded that majority of respondent 38.40percent (211) are Post Graduate. 24.90 percent (137) of consumers are Graduate. 22.00 percent (122) of consumers are from Secondary level of education. A small proportion i.e. 14.50 percent (80) belongs to primary education. Hence from the above table depiction, it is clear that our sample constitute of a wider variety and range of diverse demographic profile of respondents. The average mean of the education wise distribution is 2.87 with an average standard deviation of 1.08.

(d.) Occupation

To identify the Education wise classification of the respondents, data were tabulated in table and diagram as under.

Table 5.6: Occupation Distribution

	Frequency	Percentage
Professional	160	29.1
Service	160	29.1
Business	160	29.1
Labour	70	12.7
Total	550	100.0

The occupational level wise analysis was shown in table revealed the occupational level of the respondents selected for the survey. Out of the total consumers, 87.30 percent (480) are equally distributed among professional, service and Business with 27.10 percent (160) respectively.12.7 percent belong to labour class. It showed that there is a balance in sample

distribution with respect to occupation. This classification was important since the occupational wise difference regarding the consumer 's opinion was analysed. The average mean of occupation wise distribution is 2.25 with an average standard deviation of 1.01. The professional category includes CA/CS, Lawyer, Doctor and Engineers. The service category includes government and private sector employees. The labour class belongs to those persons who works on daily wages.

(e.) Sub-Occupation

To identify the Sub Occupation wise classification of the respondents, data were tabulated in table and diagram as under.

Table 5.7: Sub-Occupation Distribution

Sub –Occupation		Frequency	Percentage
Business		160	29.1
Labour		70	12.7
Professional	CA / CS	40	7.3
	Engineer	40	7.3
	Lawyer	40	7.3
	Doctor	40	7.3
Service	Govt. Service	80	14.5
	Private Service	80	14.5
Total		550	100

The sub occupational wise analysis was shown in table revealed the sub occupational of the respondents selected for the survey. Out of the total consumers based on sub occupation,29.2 percent (160) are equally distributed among the Professional category i.e. CA/CS, Engineer, Lawyer and doctor with 7.3 percent (40) respectively. Out of the total consumers based on service category 29.0 percent (160) are equally distributed among the government employee and private employee It showed that there is a balance in sample distribution with respect to sub-occupation. The average mean of sub occupation wise distribution is 4.65 with standard deviation of 4.17.

Analysis of Awareness Towards Security and Privacy for Electronic Banking Services

A. Analysis of Social Awareness Towards Security and Privacy For Electronic Banking Services

Table 5.8: Analysis of Social Awareness Towards Security and Privacy for Electronic Banking Services

A. Social Awareness	SA		A		NAD		D		SD		Total
	N	%	N	%	N	%	N	%	N	%	
A.1. ATM/Cards (Debit/Credit)											
Only one person is allowed to enter ATM cabin for transaction	235	42.7	174	31.6	98	17.8	25	4.5	18	3.27	550
There is adequate privacy while using ATM	225	40.9	151	27.5	90	16.4	61	11.1	23	4.18	550
I am aware about the process if I forget my login password/login ID	198	36.0	128	23.3	55	10.0	96	17.5	73	13.27	550
My card information may be shared by the bank with 3 rd party	21	3.8	102	18.5	153	27.8	135	24.5	139	25.27	550
Someone can use my name and information and apply for a credit card	25	4.5	115	20.9	137	24.9	120	21.8	153	27.82	550
Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card	60	10.9	119	21.6	118	21.5	112	20.4	141	25.64	550
Password should not be Date of Birth, Mobile no	303	55.1	210	38.2	35	6.4	1	0.2	1	0.18	550
A.2. Internet Banking											
I am aware about the process if I forget my login password/login ID	215	39.1	156	28.4	54	9.8	80	14.5	45	8.18	550
My data will be lost when the bank server crashes	68	12.2	118	21.5	108	19.6	114	20.7	142	25.82	550
My Internet banking details are shared with third party if I use public PC	170	30.9	143	26.0	125	22.7	35	6.4	77	14.00	550
My online banking password may be revealed by fraudsters if I not change at regular intervals	140	25.5	160	29.1	140	25.5	96	17.5	14	2.55	550
Password should not be Date of birth, Mobile no.	266	48.4	216	39.3	40	7.3	24	4.4	4	0.73	550
A.3. Mobile Banking											
I am aware about the process if I forget my login password/login ID.	210	38.2	153	27.8	81	14.7	78	14.2	28	5.09	550
The mobile banking of your bank does not prompt you to change password in specified days.	92	16.7	169	30.7	116	21.1	96	17.5	77	14.00	550
Hackers can hack personal data if my mobile handset is stolen.	163	29.6	230	41.8	113	20.5	28	5.1	16	2.91	550
Password should not be Date of birth, Mobile no.	206	37.5	183	33.3	92	16.7	67	12.2	2	0.36	550

A.1 ATM/Cards (Debit/Credit)

Table 5.9 Social Awareness Towards Security and Privacy for ATM/Cards(Debit/Credit)

Particulars	SA	A	NAD	D	SD	Total
Only one person is allowed to enter ATM cabin for transaction	235	174	98	25	18	550
There is adequate privacy while using ATM	225	151	90	61	23	550
I am aware about the process if I forget my login password / login ID	198	128	55	96	73	550
My card information may be shared by the bank with 3 rd party	21	102	153	135	139	550
Someone can use my name and information and apply for a credit card	25	115	137	120	153	550
Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card	60	119	118	112	141	550
Password should not be Date of Birth, Mobile no	303	210	35	1	1	550

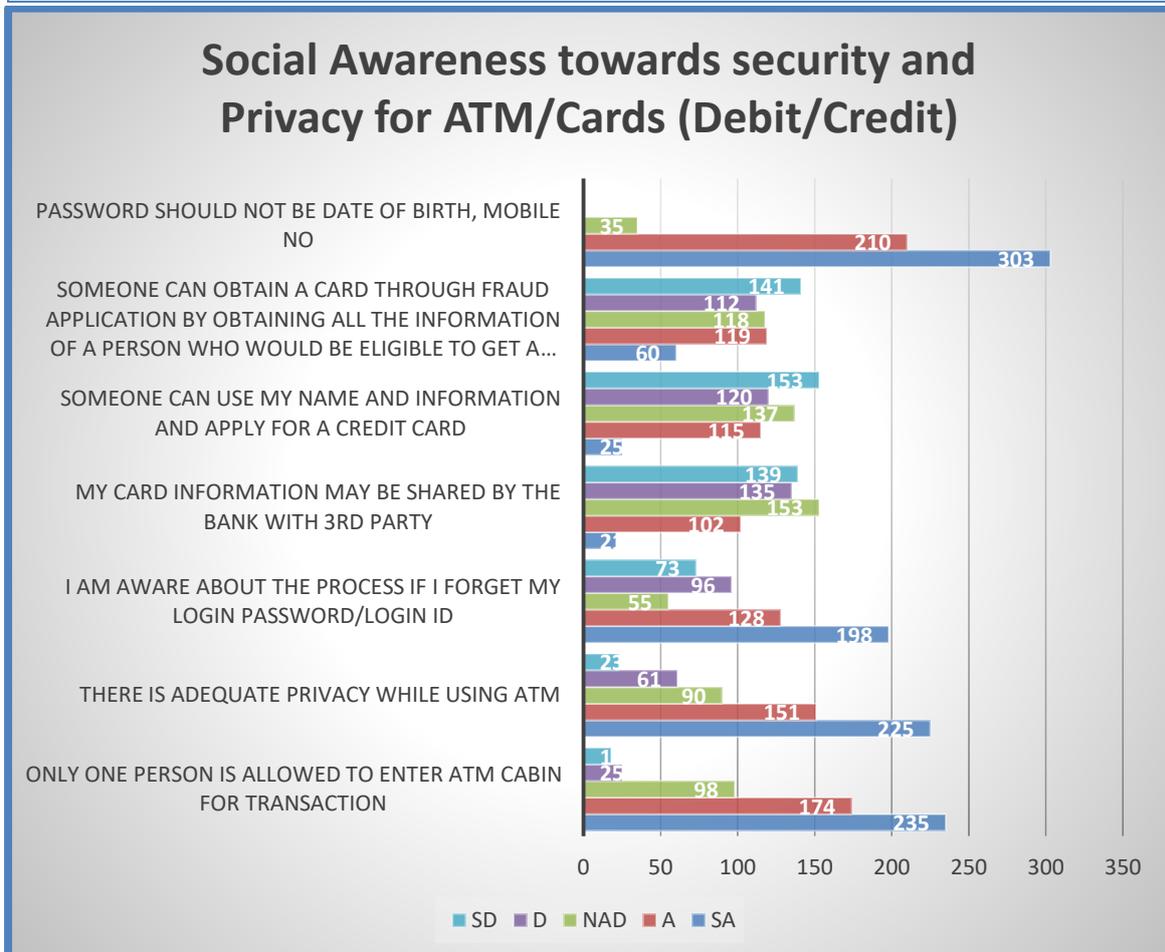


Figure 5.1: Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

As per the above analysis in most of the statements, it was found that majority of the consumers are being socially aware of ATM/Cards (Debit/Credit) safety and privacy, a

moderate percentage of consumers have disagreed and a small proportion of the consumers are neither agree or disagree. Interpretation of the following statements were as follows:

- 1) "Only one person is allowed to enter ATM cabin for transaction" 74.3 percent (409) of consumers are agreed, a moderate percentage of consumers are disagreed i.e. 17.8 percent (98) and a small proportion of consumers are neither agree or disagree i.e. 7.77 % (43)
- 2) "There is adequate privacy while using ATM" 68.4 percent (376) of consumers are strongly agree, a moderate percentage of consumers are neither agree or disagree i.e. 16.4 percent (90) and a small proportion of consumers are disagreed i.e. 15.28 % (84).
- 3) "I am aware about the process if I forget my login password/Login ID" majority of the of consumers are strongly agree i.e.59.3 percent (326), a moderate percentage of consumers are disagreed i.e. 30.77 percent (169) and a small proportion percentage are disagreed i.e. 10.00 percent (55).
- 4) "My card information may be shared by the bank with 3rd party" majority of consumers are disagreed i.e. 49.77 percent (274), a moderate percentage are neither agree or disagree i.e. 27.8 percent (153), a small proportion of the consumers are agreed i.e. 22.3 percent (123).
- 5) "Someone can use my name and information and apply for a credit card" majority of consumers are disagreed i.e. 49.62 percent (273), a moderate percentage of the consumers are agreed i.e. 25.4 percent (140), a small proportion of the consumers are neither agree or disagree i.e. 24.9 percent (137)
- 6) "Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card" majority of consumers are disagreed i.e. 46.04 percent (253), a moderate percentage of the consumers are agreed i.e. 32.50 percent (179), a small proportion of the consumers are neither agree or disagree i.e. 21.50 percent (118).
- 7) "Password should not be Date of Birth, Mobile No." majority of the of consumers are strongly agree i.e. 93.30percent (513),23.3 percent (128) are agree, a moderate percentage of consumers are neither agree or disagree i.e. 6.40 percent (35) and a small proportion percentage are disagreed i.e. 0.38 percent (2).

A.2 Internet Banking

Table 5.10: Social Awareness Towards Security and Privacy for Internet Banking

Particulars	SA	A	NAD	D	SD	Total
I am aware about the process if I forget my login password/login ID	215	156	54	80	45	550
My data will be lost when the bank server crashes	68	118	108	114	142	550
My Internet banking details are shared with third party if I use public PC	170	143	125	35	77	550
My online banking password may be revealed by fraudsters if I not change at regular intervals	140	160	140	96	14	550
Password should not be Date of birth, Mobile no.	266	216	40	24	4	550

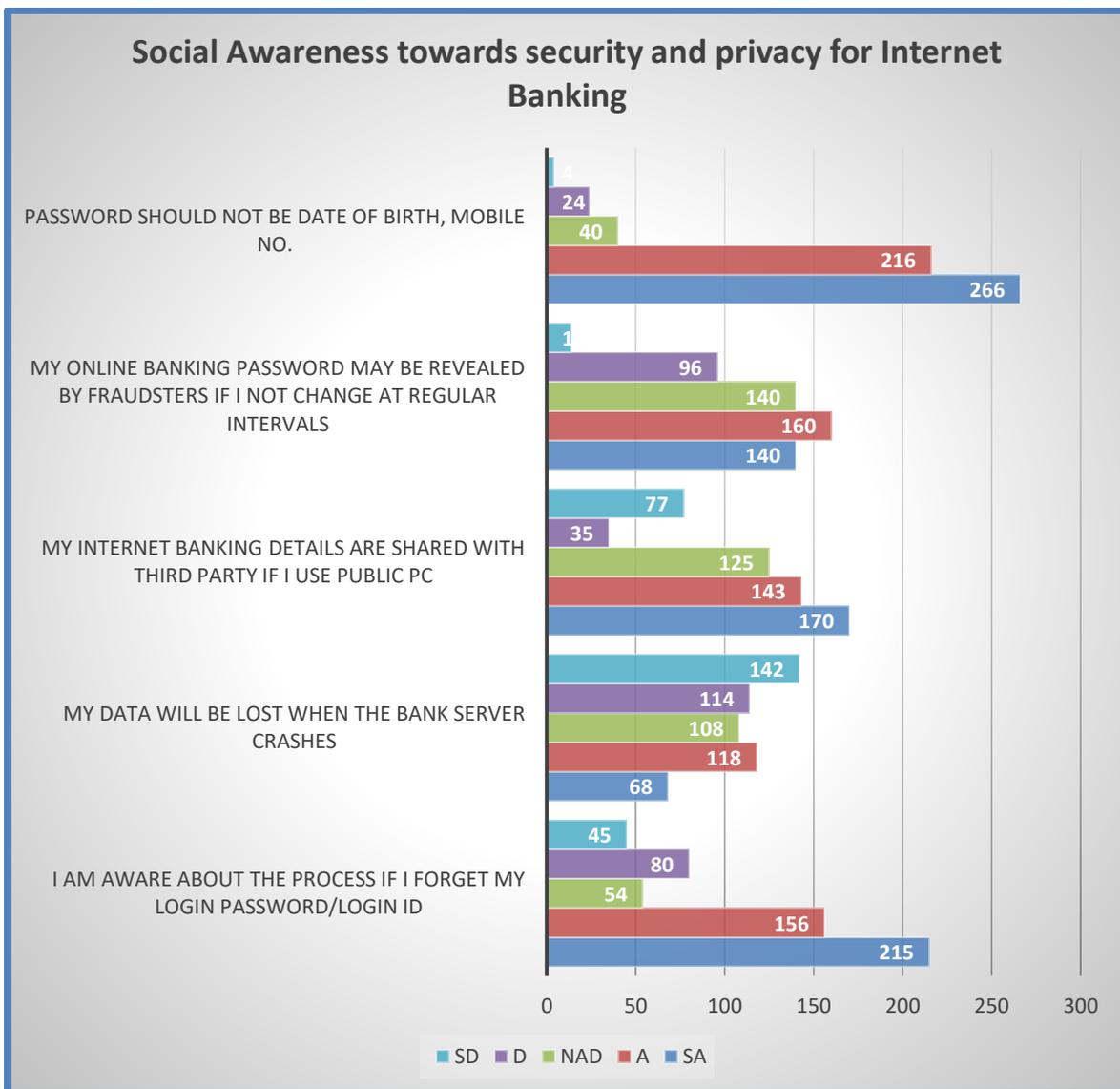


Figure 5.2: Social Awareness Towards Security and Privacy for Internet Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being socially aware of Internet Banking safety and privacy, a moderate percentage have

disagreed and a small proportion of the consumers are neither agree or disagree. Interpretation of the following statements were as follows:

- 1) “I am aware about the process if I forget my login password/login ID” majority of the consumers are agreed i.e. 67.5 percent (371), a moderate percentage of the consumers was disagreed i.e. 22.68 percent (125) and a small proportion of consumers are neither agreed or disagreed i.e. 9.8 percent (54).
- 2) “My data will be lost when the bank server crashes “the majority of the consumers have disagreed i.e. 46.52 percent (256), a moderate percentage of the consumer are agreed i.e. 33.7 percent (186), and a small proportion of the consumers are neither agreeing or disagree i.e. 19.6 percent (108).
- 3) “My Internet banking details are shared with the third party if I use public PC” the majority of the consumers are agreed i.e. 56.9 percent (313), a moderate percentage of the consumes are neither agreed or disagree i.e. 22.7 percent (125) and a small proportion of the consumers are disagreed i.e.20.4 percent (112).
- 4) “My online banking password may be revealed by fraudsters if I not change at regular intervals” majority of the consumers are agreed i.e. 54.6 percent (300), a moderate percent of the consumes are neither agree or disagree i.e. 25.5 percent (140) and a small proportion of the consumers are disagreed i.e.20.05 percent (110).
- 5) “Password should not be Date of birth, Mobile no.” majority of the consumers are agreed i.e.482 percent (482), a moderate percentage of the consumes are neither agree or disagree i.e. 40 percent (7.3) and a small proportion of the consumers are disagreed i.e.5.13 percent (28).

A.3 Mobile Banking

Table 5.11: Social Awareness Toward Security and Privacy for Mobile Banking

Particulars	SA	A	NAD	D	SD	Total
I am aware about the process if I forget my login password/login ID.	210	153	81	78	28	550
The mobile banking of your bank does not prompt you to change password in specified days.	92	169	116	96	77	550
Hackers can hack personal data if my mobile handset is stolen.	163	230	113	28	16	550
Password should not be Date of birth, Mobile no.	206	183	92	67	2	550

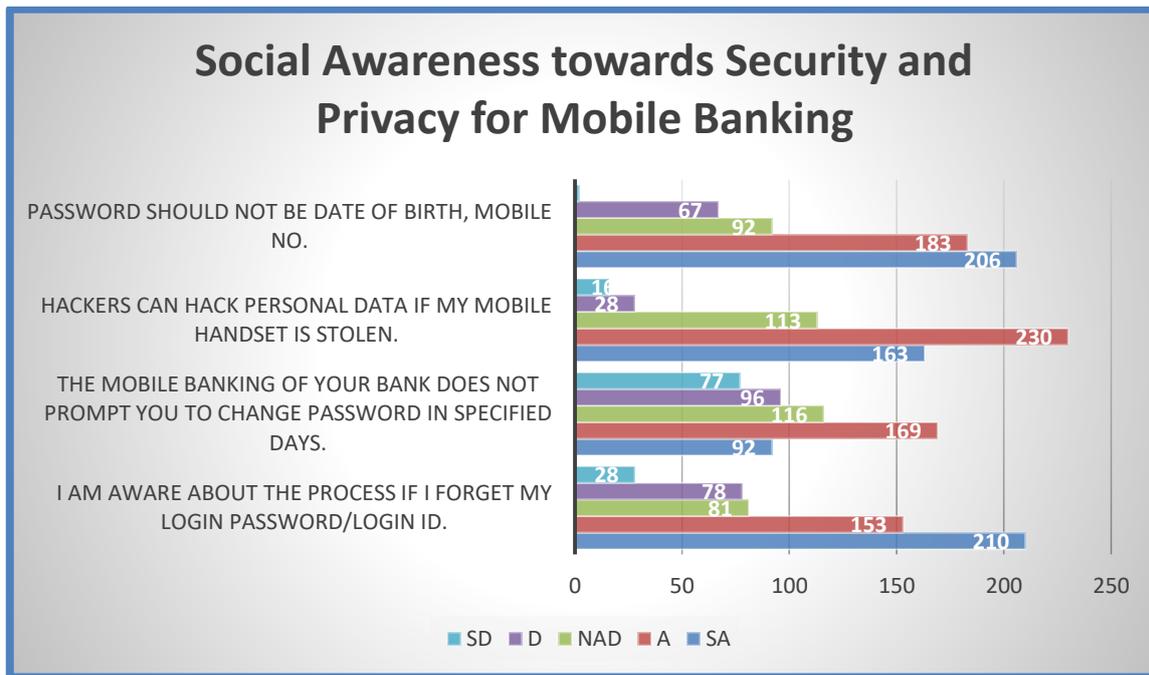


Figure 5.3: Social Awareness Towards Security and Privacy for Mobile Banking

As per the above analysis in most of the statements it was found that majority of the consumers are being socially aware of Mobile Banking safety and privacy, a moderate percentage is neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

- 1) “I am aware about the process if I forget my login password/login ID” majority of the consumers are agreed i.e. 66 percent (363), a moderate percentage of the consumers was disagreed i.e. 19.29 percent (106) and a small proportion of consumers are neither agreed or disagreed i.e. 14.7 percent (81).
- 2) “The mobile banking of your bank does not prompt you to change password in specified days” the majority of the consumers are agreed i.e. 47.4 percent (261), a moderate percentage of the consumers was disagreed i.e. 31.50 percent (173) and a small proportion of consumers are neither agreed or disagreed i.e. 21.1 percent (116).
- 3) “Hackers can hack personal data if my mobile handset is stolen.” the majority of the consumers are agreed i.e. 47.4 percent (261), a moderate percent of the consumers was neither agreed or disagree i.e. 20.5 percent (113) and a small proportion of the consumers have disagreed i.e. 8.01 percent (44).
- 4) “Password should not be Date of birth, Mobile no.” majority of the consumers are agreed i.e. 70.08 percent (389), a moderate percentage of the consumers was neither agreed or disagree i.e. 16.7 percent (92) and a small proportion of the consumers have disagreed i.e. 12.56 percent (69).

B. Analysis of Ethical Awareness Towards Security and Privacy for Electronic Banking Services

Table 5.12: Analysis of Ethical Awareness Towards Security and Privacy for Electronic Banking Services

B. Ethical Awareness	SA		A		NAD		D		SD		Total	
	N	%	N	%	N	%	N	%	N	%		
B.1. ATM/Cards (Debit/Credit)												
Someone can duplicate (Clone) my card through photomechanical process	143	26.0	168	30.5	160	29.1	55	10.0	24	4.36	550	
Someone can transfer cash from my ATM without using card.	82	14.9	137	24.9	161	29.3	154	28.0	16	2.91	550	
Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.	122	22.2	159	28.9	129	23.5	96	17.5	44	8.00	550	
Someone can copy information by card trapping & identify your PIN by getting friendly.	140	25.5	193	35.1	93	16.9	71	12.9	53	9.64	550	
Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping).	58	10.5	132	24.0	171	31.1	135	24.5	54	9.82	550	
My ATM card pin will be revealed through spam mails & unsafe Applications	58	10.5	98	17.8	147	26.7	131	23.8	116	21.09	550	
If I give my personal information to the Fraudster then he can take over my account by contacting the bank, report a lost card and change of address and obtain a new card	191	34.7	191	34.7	106	19.3	37	6.7	25	4.55	550	
Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system	112	20.4	181	32.9	206	37.5	29	5.3	22	4.00	550	
Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization	99	18.0	265	48.2	116	21.0	38	6.9	32	5.82	550	
B.2. Internet Banking												
My online banking details may be stolen by phishing e mails	73	13.3	161	29.3	170	30.9	102	18.5	44	8.00	550	

I may reveal my internet banking password through spam mails	61	11.1	103	18.7	139	25.3	126	22.9	121	22.00	550
Fraudsters commit identity theft to get money out of your account	86	15.6	188	34.2	170	30.9	83	15.1	23	4.18	550
I may reveal internet banking password on a fake website	63	11.5	108	19.6	160	29.1	105	19.1	114	20.73	550
My internet banking details are shared with third party if I use public PC	140	25.5	183	33.3	133	24.2	57	10.4	37	6.73	550
My online banking details will be revealed if use unsecured Wi-Fi systems	135	24.5	177	32.2	127	23.1	70	12.7	41	7.45	550
Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user	65	11.8	141	25.6	164	29.8	83	15.1	97	17.64	550
I may immediately report to the bank if I found irregularities in the last logged panel of the website	184	33.5	195	35.5	110	20.0	33	6.0	28	5.09	550
B.3. Mobile Banking											
My mobile banking password may be stolen.	182	33.1	207	37.6	91	16.5	41	7.5	29	5.27	550
If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility	98	17.8	177	32.2	108	19.6	92	16.7	75	13.64	550
It is very easy for others to Add Payee from my mobile banking account	120	21.8	148	26.9	169	30.7	96	17.5	17	3.09	550
Someone can apply for loans by stealing sensitive information like login- credentials, payment information from my mobile device	141	25.6	139	25.3	158	28.7	53	9.6	59	10.73	550
My mobile banking application being mapped to an incorrect mobile number	35	6.4	153	27.8	157	28.5	128	23.3	77	14.00	550
Mobile service provider may monitor my financial transactions	68	12.4	153	27.8	132	24.0	109	19.8	88	16.00	550
Someone can access my personal information I download malicious apps	80	14.5	157	28.5	187	34.0	105	19.1	21	3.82	550
Someone can steal my confidential information by making fake apps with exactly the same user interface	96	17.5	169	30.7	129	23.5	80	14.5	76	13.82	550
My confidential information may be accessed by others through Bluetooth	85	15.5	129	23.5	157	28.5	91	16.5	88	16.00	550

B.1 ATM/Cards (Debit/Credit)

Table 5.13: Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Particulars	SA	A	NAD	D	SD	Total
Someone can duplicate (Clone) my card through photomechanical process	143	168	160	55	24	550
Someone can transfer cash from my ATM without using card.	82	137	161	154	16	550
Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.	122	159	129	96	44	550
Someone can copy information by card trapping & identify your PIN by getting friendly.	140	193	93	71	53	550
Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping).	58	132	171	135	54	550
My ATM card pin will be revealed through spam mails & unsafe Applications	58	98	147	131	116	550
If I give my personal information to the Fraudster then he can take over my account by contacting the bank, report a lost card and change of address and obtain a new card	191	191	106	37	25	550
Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system	112	181	206	29	22	550
Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization	99	265	116	38	32	550

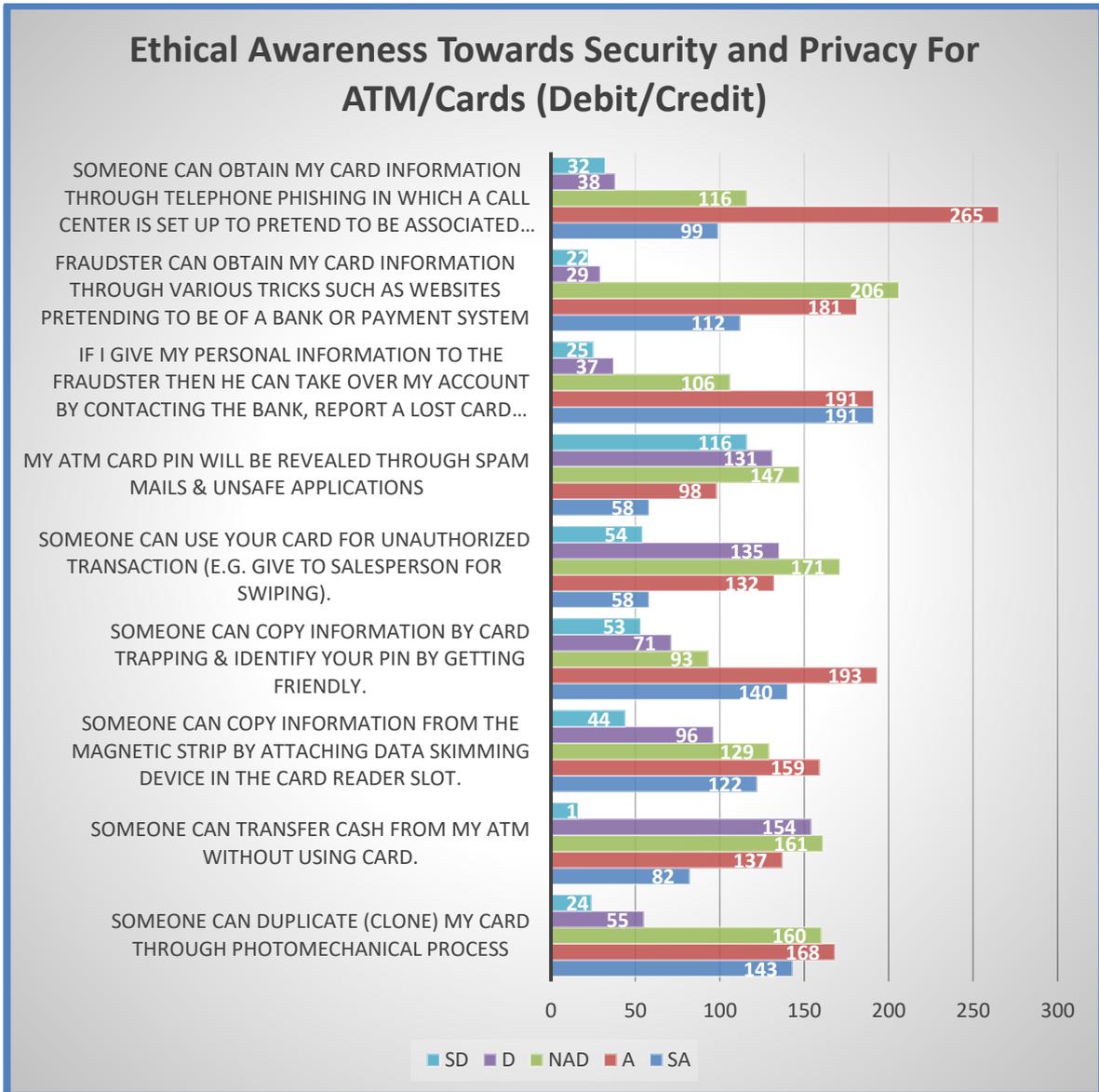


Figure 5.4: Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

As per the above analysis in most of the statements, it was found that majority of the consumers are being ethically aware of ATM/ Debit and Credit cards safety and privacy, a moderate percentage are neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

- 1) “Someone can duplicate (Clone) my card through the photomechanical process” the majority of the consumers are agreed i.e. 56.5 percent (311), a moderate percentage of the consumers was neither agreed or disagree i.e.29.1 percent (160) and a small proportion of the consumers have disagreed i.e. 14.36 percent (79).
- 2) “Someone can transfer cash from my ATM without using card” majority of the consumers are agreed i.e. 39.8 percent (219), a moderate percentage of the consumers was disagreed i.e. 30.91 percent (170) and a small proportion of consumers are neither agreed or disagreed i.e. 29.3 percent (161).
- 3) “Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot” majority of the consumers are agreed i.e. 51.1 percent (281), moderate percentage of the consumers was disagreed i.e. 25.50 percent (140) and a small proportion of consumers are neither agreed or disagreed i.e. 23.5 percent (129).

- 4) "Someone can copy information by card trapping & identify your PIN by getting friendly" majority of the consumers are agreed i.e. 60.6 percent (333), a moderate percentage of the consumers was disagreed i.e. 22.54 percent (124) and a small proportion of consumers are neither agreed or disagreed i.e. 16.9 percent (93).
- 5) "Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping." majority of the consumers are agreed i.e. 34.50 percent (190), a moderate percentage of the consumers disagreed i.e. 34.32 percent (189) and a small proportion of consumers are neither agreed or disagreed i.e. 31.10 percent (171).
- 6) "My ATM card pin will be revealed through spam emails & unsafe Applications" majority of the consumers have disagreed i.e. 44.89 percent (247), a moderate percentage of the consumer are agreed i.e. 28.30 percent (156), and a small proportion of the consumers are neither agreeing or disagree i.e. 26.70 percent (147).
- 7) "If I give my personal information to the Fraudster then he can take over my account by making contact with the bank, report a lost card and change of address and obtain a new card" the majority of the consumers are agreed i.e. 69.40 percent (382), a moderate percentage of the consumers was neither agreed or disagree i.e.19.30 percent (106) and a small proportion of the consumers have disagreed i.e. 11.25 percent (62).
- 8) "Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system" the majority of the consumers are agreed i.e. 53.30 percent (293), a moderate percentage of the consumers was neither agreed or disagree i.e.37.50 percent (206) and a small proportion of the consumers have disagreed i.e. 9.30 percent (51).
- 9) "Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization" the majority of the consumers are agreed i.e. 66.20percent (364), a moderate percentage of the consumers was neither agreed or disagree i.e.21 percent (116) and a small proportion of the consumers have disagreed i.e. 12.72 percent (70).

B.2 Internet Banking

Table 5.14: Ethical Awareness Towards Security and Privacy for Internet Banking

Particulars	SA	A	NAD	D	SD	Total
My online banking details may be stolen by phishing e mails	73	161	170	102	44	550
I may reveal my internet banking password through spam mails	61	103	139	126	121	550
Fraudsters commit identity theft to get money out of your account	86	188	170	83	23	550
I may reveal internet banking password on a fake website	63	108	160	105	114	550
My internet banking details are shared with third party if I use public PC	140	183	133	57	37	550
My online banking details will be revealed if use unsecured Wi-Fi systems	135	177	127	70	41	550
Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user	65	141	164	83	97	550
I may immediately report to the bank if I found irregularities in the last logged panel of the website	184	195	110	33	28	550

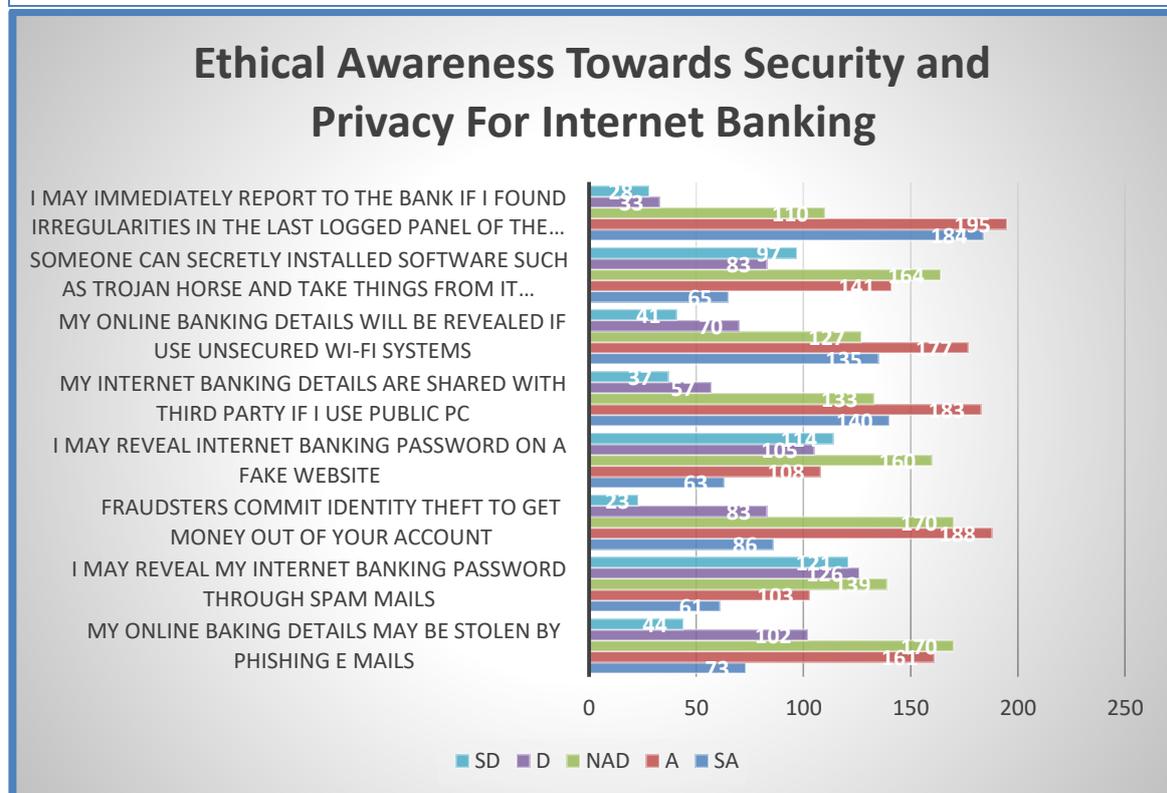


Figure 5.5: Ethical Awareness Towards Security and Privacy for Internet Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being ethically aware of Internet Banking safety and privacy, a moderate percentage has disagreed and a small proportion of the consumers have neither agreed or disagreed. Interpretation of the following statements were as follows:

- 1) “My online banking details may be stolen by phishing emails” majority of the consumers are agreed i.e. 42.60 percent (234), a moderate percentage of the consumers disagreed i.e. 30.90 percent (170) and a small proportion of consumers are neither agreed or disagreed i.e. 26.50 percent (146).
- 2) “I may reveal my internet banking password through spam mails” majority of the consumers have disagreed i.e. 44.90 percent (247), a moderate percentage of the consumer are agreed i.e. 29.80 percent (164), and a small proportion of the consumers are neither agreeing or disagree i.e. 25.30 percent (139).
- 3) “Fraudsters commit identity theft to get money out of your account” the majority of the consumers are agreed i.e. 49.80 percent (274), a moderate percentage of the consumers was neither agreed or disagree i.e.30.90 percent (170) and a small proportion of the consumers have disagreed i.e. 19.28 percent (106).
- 4) “I may reveal internet banking password on a fake website” majority of the consumers have disagreed i.e. 44.90 percent (247), a moderate percentage of the consumer are agreed i.e. 29.80 percent (164), and a small proportion of the consumers are neither agreeing or disagree i.e. 25.30 percent (139).
- 5) “My internet banking details are shared with third party if I use public PC” the majority of the consumers are agreed i.e. 58.80 percent (323), a moderate percentage of the consumers was neither agreed or disagree i.e.24.20 percent (133) and a small proportion of the consumers have disagreed i.e. 17.13 percent (94).
- 6) “My online banking details will be revealed if use unsecured Wi-Fi systems” the majority of the consumers are agreed i.e. 56.70 percent (312), a moderate percentage of the consumers was neither agreed or disagree i.e.23.10percent (127) and a small proportion of the consumers have disagreed i.e. 20.15 percent (111).
- 7) “Someone can secretly have installed software such as Trojan horse and take things from it without the permission of the user” the majority of the consumers are agreed i.e. 37.4 percent (206), a moderate percentage of the consumers was neither agreed or disagree i.e.29.80percent (164) and a small proportion of the consumers have disagreed i.e. 32.74 percent (180).
- 8) “I may immediately report to the bank if I found irregularities in the last logged panel of the website” the majority of the consumers are agreed i.e. 69 percent (379), a moderate percentage of the consumers was neither agreed or disagree i.e.20.00percent (110) and a small proportion of the consumers have disagreed i.e. 11.09 percent (61).

B.3 Mobile Banking

Table 5.15: Ethical Awareness Towards Security and Privacy for Mobile Banking

Particulars	SA	A	NAD	D	SD	Total
My mobile banking password may be stolen.	182	207	91	41	29	550
If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility	98	177	108	92	75	550
It is very easy for others to Add Payee from my mobile banking account	120	148	169	96	17	550

Someone can apply for loans by stealing sensitive information like login- credentials, payment information from my mobile device	141	139	158	53	59	550
My mobile banking application being mapped to an incorrect mobile number	35	153	157	128	77	550
Mobile service provider may monitor my financial transactions	68	153	132	109	88	550
Someone can access my personal information I download malicious apps	80	157	187	105	21	550
Someone can steal my confidential information by making fake apps with exactly the same user interface	96	169	129	80	76	550
My confidential information may be accessed by others through Bluetooth	85	129	157	91	88	550

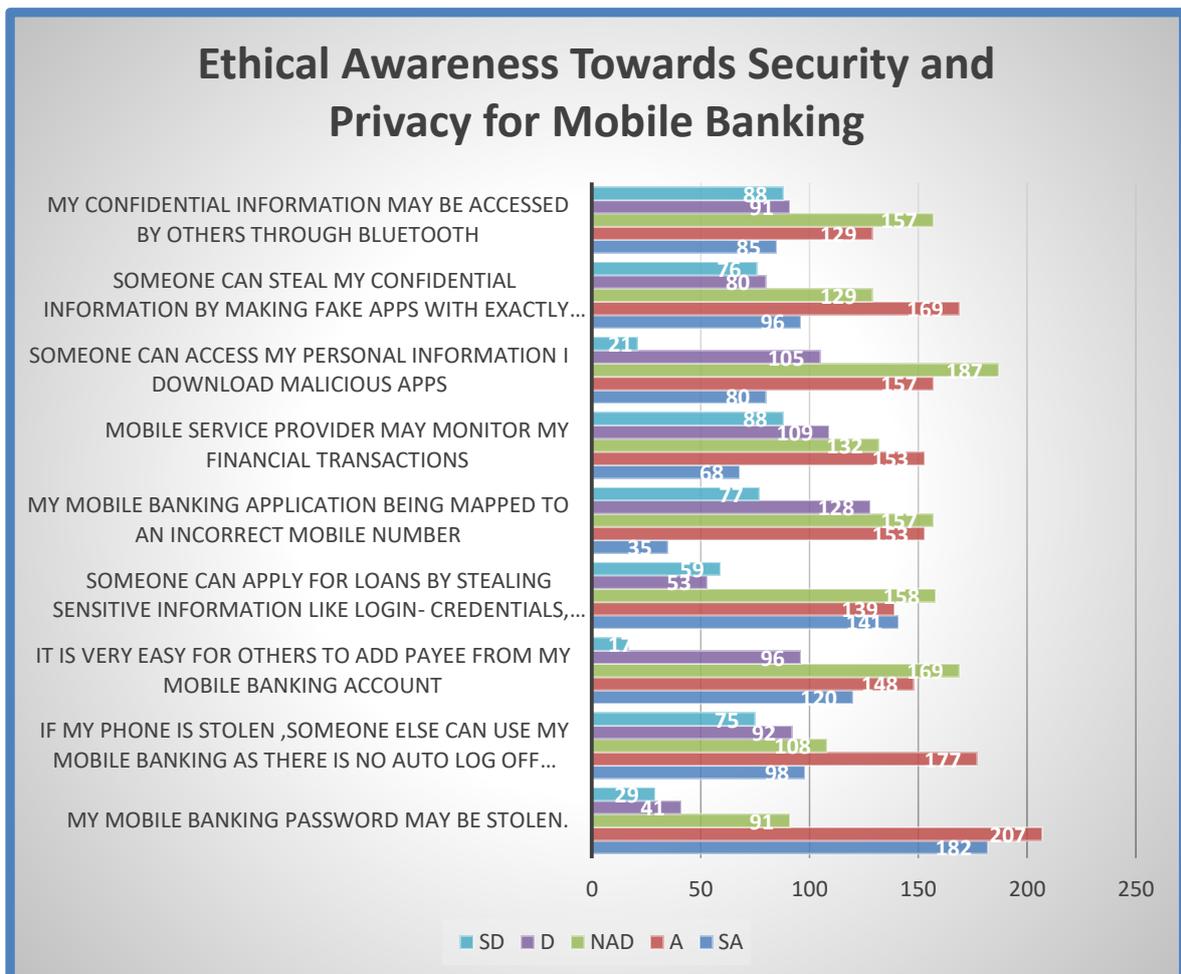


Figure 5.6: Ethical Awareness Towards Security and Privacy for Mobile Banking
 As per the above analysis in most of the statements, it was found that majority of the consumers are being ethically aware of Mobile Banking safety and privacy, a moderate percentage has

disagreed and a small proportion of the consumers have neither agreed or disagreed. Interpretation of the following statements were as follows:

1. "My mobile banking password may be stolen" the majority of the consumers are agreed i.e. 70.70 percent (389), a moderate percentage of the consumers was neither agreed or disagree i.e.16.50percent (91) and a small proportion of the consumers have disagreed i.e. 12.77 percent (70).
2. "If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility" the majority of the consumers are agreed i.e. 50 percent (275), a moderate percentage of the consumers disagreed i.e. 30.34 percent (164) and a small proportion of consumers are neither agreed or disagreed i.e. 19.60 percent (108).
3. "It is very easy for others to Add Payee from my mobile banking account" the majority of the consumers are agreed i.e. 48.10 percent (268), a moderate percentage of the consumers was neither agreed or disagree i.e.30.70 percent (169) and a small proportion of the consumers have disagreed i.e. 20.59 percent (113).
4. "Someone can apply for loans by stealing sensitive information like log in- credentials, payment information from my mobile device" the majority of the consumers are agreed i.e. 50.30percent (280), a moderate percentage of the consumers was neither agreed or disagree i.e.28.70 percent (158) and a small proportion of the consumers have disagreed i.e. 20.33 percent (112).
5. "My mobile banking application being mapped to an incorrect mobile number" the majority of the consumers have disagreed i.e. 37.30 percent (205), a moderate percentage of the consumer are agreed i.e. 34.20 percent (188), and a small proportion of the consumers are neither agreeing or disagree i.e. 28.50 percent (157).
6. "Mobile service provider may monitor my financial transactions" the majority of the consumers are agreed i.e. 25.60 percent (221), a moderate percentage of the consumers disagreed i.e. 35.80 percent (197) and a small proportion of consumers are neither agreed or disagreed i.e. 24.0 percent (132).
7. "Someone can access my personal information I download malicious apps" the majority of the consumers are agreed i.e. 43 percent (237), a moderate percentage of the consumers was neither agreed or disagree i.e.34.00 percent (187) and a small proportion of the consumers have disagreed i.e. 22.92 percent (126).
8. "Someone can steal my confidential information by making fake apps with exactly the same user interface" the majority of the consumers are agreed i.e. 48.20 percent (265), a moderate percentage of the consumers disagreed i.e. 28.32 percent (156) and a small proportion of consumers are neither agreed or disagreed i.e. 23.50 percent (129).
9. "My confidential information may be accessed by others through Bluetooth" majority of the consumers are agreed i.e. 39 percent (214), a moderate percentage of the consumers disagreed i.e. 32.50 percent (179) and a small proportion of consumers are neither agreed or disagreed i.e. 28.50 percent (157).

C. Analysis of Technical Awareness Towards Security and Privacy for Electronic Banking Services

Table 5.16.: Analysis of Technical Awareness Towards Security and Privacy for Electronic Banking Services

Technical Awareness	SA		A		NAD		D		SD		Total
	N	%	N	%	N	%	N	%	N	%	
C.1. ATM/Cards (Debit/Credit)											
I will not get my card back if stuck in ATM	68	12.4	101	18.4	124	22.5	164	29.8	93	16.91	550
I am not completely aware about the process how to insert ATM card	36	6.5	25	4.5	109	19.8	192	34.9	188	34.18	550
Sometimes the machine does not accept the card as the balance is too low for the requested transaction	88	16.0	140	25.5	104	18.9	105	19.1	113	20.55	550
Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data	25	4.5	83	15.1	153	27.8	157	28.5	132	24.00	550
C.2. Internet Banking											
For transferring funds through internet banking there is one-time password given to you to confirm the transfer	217	39.5	200	36.4	106	19.3	11	2.0	16	2.91	550
I always keep my system up to date to avoid any risks from hackers.	196	35.6	227	41.3	103	18.7	23	4.2	1	0.18	550
I may aware of profile password security feature & insist login password transaction have to be changed frequently.	194	35.3	184	33.5	85	15.5	66	12.0	21	3.82	550
Your bank Internet banking is well secured by firewall and gateways.	141	25.6	157	28.5	126	22.9	64	11.6	62	11.27	550
I always use virtual keyboard to keep my password hidden in front of others.	167	30.4	160	29.1	111	20.2	84	15.3	28	5.09	550
C.3. Mobile Banking											
OTP is required while making 3 rd party payments & adding payee account	250	45.5	226	41.1	41	7.5	18	3.3	15	2.73	550
The user ID is not disabled for a considerable number of consecutive unsuccessful attempts	121	22.0	155	28.2	136	24.7	95	17.3	43	7.82	550
For transferring funds through mobile banking there is one-time password given to you to confirm the transfer	239	43.5	255	46.4	15	2.7	25	4.5	16	2.91	550
Your bank mobile banking is well secured by firewalls and gateways	141	25.6	174	31.6	100	18.2	72	13.1	63	11.45	550

C.1 ATM/Cards (Debit/Credit)

Table 5.17: Technical Awareness Towards Security and Privacy for ATM / Cards (Debit/ Credit)

Particulars	SA	A	NAD	D	SD	Total
I will not get my card back if stuck in ATM	68	101	124	164	93	550
I am not completely aware about the process how to insert ATM card	36	25	109	192	188	550
Sometimes the machine does not accept the card as the balance is too low for the requested transaction	88	140	104	105	113	550
Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data	25	83	153	157	132	550

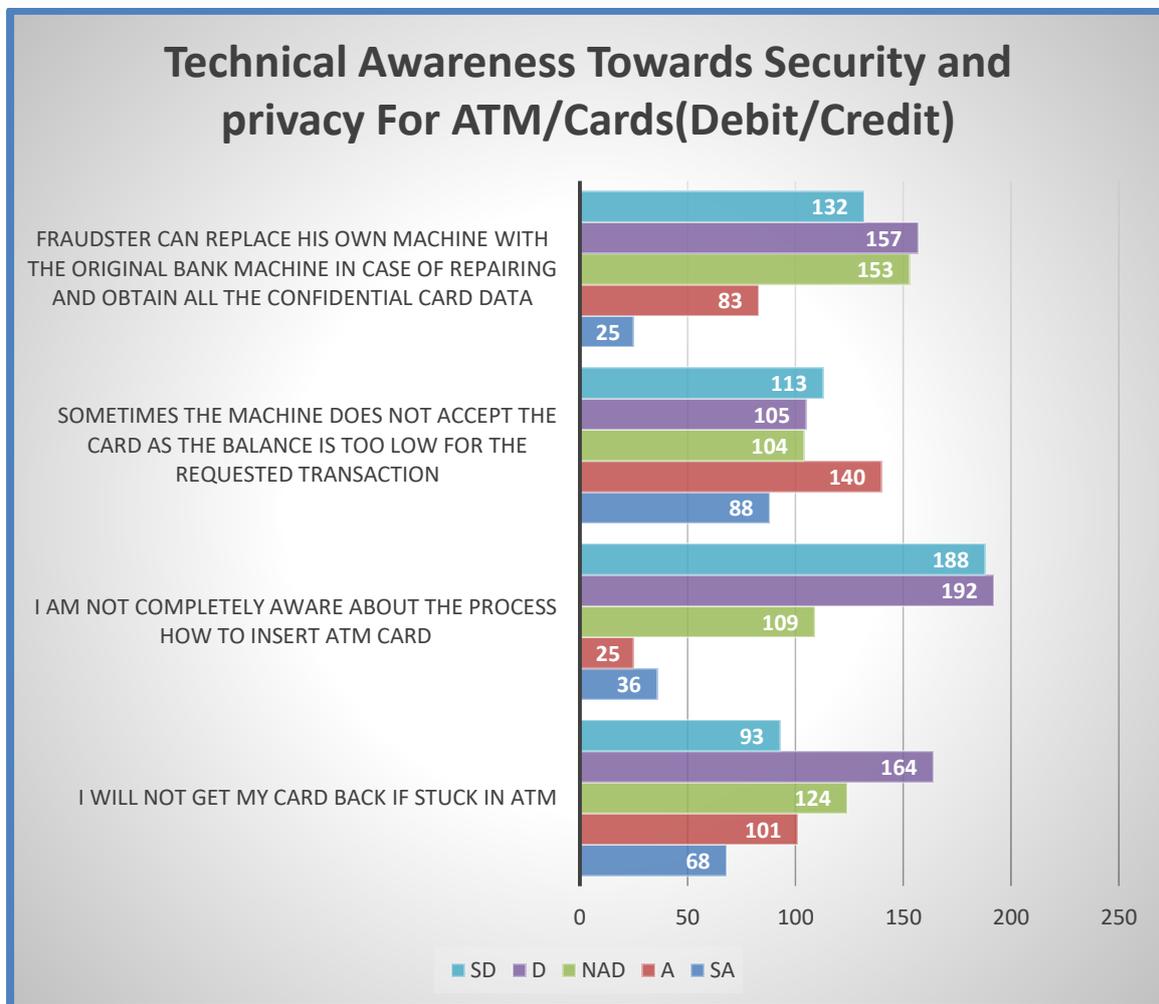


Figure 5.7 : Technical Awareness Towards Security and Privacy for ATM / Cards (Debit/ Credit)

As per the above analysis in most of the statements, it was found that a small proportion of the consumers are being technically aware of ATM/Cards(Debit and Credit) safety and privacy, a moderate percentage have neither agreed or disagreed and the majority of the consumers have disagreed. Interpretation of the following statements were as follows:

- 1) "I will not get my card back if stuck in ATM" the majority of the consumers have disagreed i.e. 46.71 percent (257), a moderate percentage of the consumer are agreed i.e. 30.80 percent (169), and a small proportion of the consumers are neither agreeing or disagree i.e. 22.50 percent (124).
- 2) "I am not completely aware about the process how to insert ATM card" the majority of the consumers have disagreed i.e. 69.08 percent (380), a moderate percentage of the consumer are neither agreed or disagree i.e. 19.80 percent (109), and a small proportion of the consumers are agreed i.e. 11 percent (61).
- 3) "Sometimes the machine does not accept the card as the balance is too low for the requested transaction" the majority of the consumers are agreed i.e. 41.50 percent (228), a moderate percentage of the consumers disagreed i.e. 39.65 percent (218) and a small proportion of consumers are neither agreed or disagreed i.e. 18.90 percent (104).
- 4) "Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data" the majority of the consumers have disagreed i.e. 52.50 percent (289), a moderate percentage of the consumer are neither agreed or disagree i.e. 27.80 percent (153), and a small proportion of the consumers are agreed i.e. 19.60 percent (108).

C.2 Internet Banking

Table 5.18: Technical Awareness Towards Security and Privacy for Internet Banking

Particulars	SA	A	NAD	D	SD	Total
For transferring funds through internet banking there is one-time password given to you to confirm the transfer	217	200	106	11	16	550
I always keep my system up to date to avoid any risks from hackers.	196	227	103	23	1	550
I may aware of profile password security feature & insist login password transaction have to be changed frequently.	194	184	85	66	21	550
Your bank Internet banking is well secured by firewall and gateways.	141	157	126	64	62	550
I always use virtual keyboard to keep my password hidden in front of others.	167	160	111	84	28	550

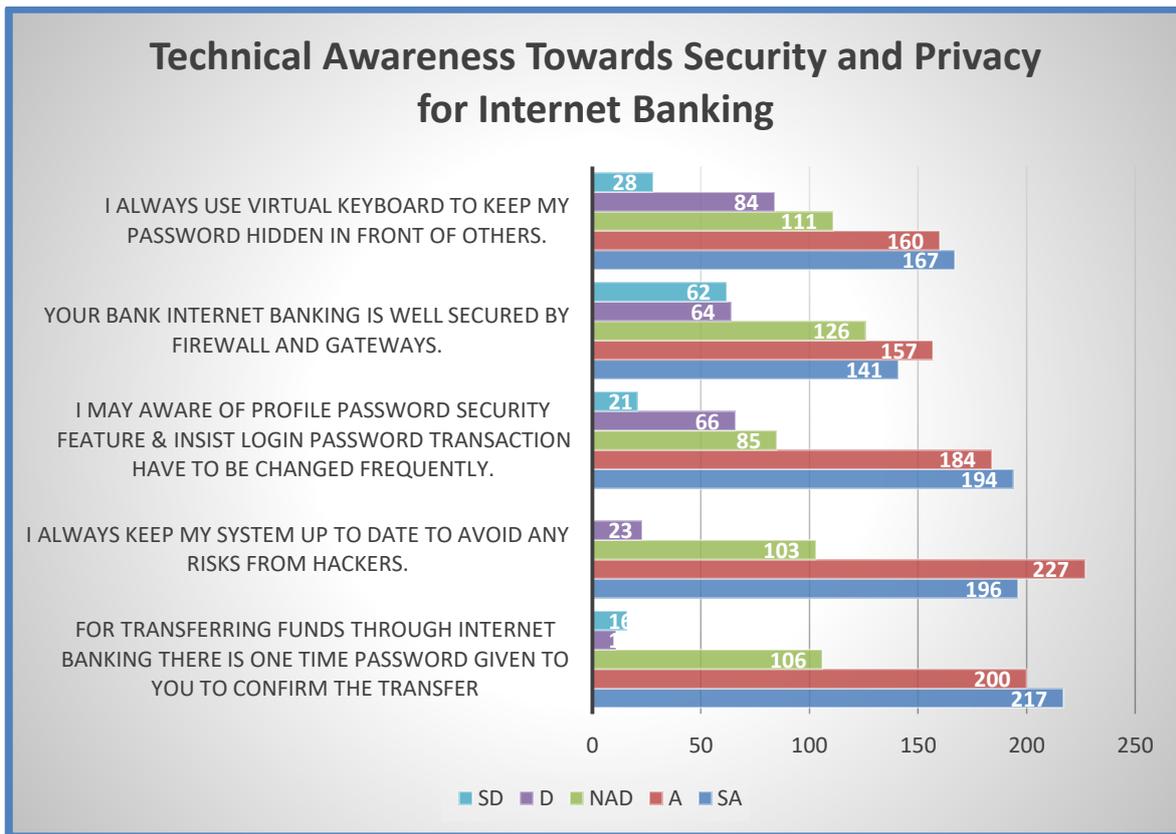


Figure 5.8: Technical Awareness Towards Security and Privacy for Internet Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being technically aware of Internet Banking safety and privacy, a moderate percentage have neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

- 1) “For transferring funds through internet banking there is one-time password given to you to confirm the transfer” the majority of the consumers are agreed i.e. 75.90 percent (417), a moderate percentage of the consumers was neither agreed or disagree i.e.19.30 percent (106) and a small proportion of the consumers have disagreed i.e. 4.91 percent (27).
- 2) “I always keep my system up to date to avoid any risks from hackers” the majority of the consumers are agreed i.e. 76.90 percent (423), a moderate percentage of the consumers was neither agreed or disagree i.e.18.70 percent (103) and a small proportion of the consumers have disagreed i.e. 4.38 percent (24).
- 3) “I may aware of profile password security feature & insist login password transaction have to be changed frequently” majority of the consumers are agreed i.e. 68.80 percent (378), a moderate percentage of the consumers disagreed i.e. 15.82 percent (87) and a small proportion of consumers are neither agreed or disagreed i.e. 15.50 percent (85).
- 4) “Your bank Internet banking is well secured by firewall and gateways” the majority of the consumers are agreed i.e. 54.10 percent (298), a moderate percentage of the consumers was neither agreed or disagree i.e.22.9 percent (126) and a small proportion of the consumers have disagreed i.e. 22.87 percent (126).
- 5) “I always use virtual keyboard to keep my password hidden in front of others” majority of the consumers are agreed i.e. 59.50 percent (327), a moderate percentage of the consumers disagreed i.e. 20.39 percent (112) and a small proportion of consumers are neither agreed or disagreed i.e. 20.20 percent (111).

C.3 Mobile Banking

Table 5.19: Technical Awareness Towards Security and Privacy for Mobile Banking.

Particulars	SA	A	NAD	D	SD	Total
OTP is required while making 3 rd party payments & adding payee account	250	226	41	18	15	550
The user ID is not disabled for a considerable number of consecutive unsuccessful attempts	121	155	136	95	43	550
For transferring funds through mobile banking there is one-time password given to you to confirm the transfer	239	255	15	25	16	550
Your bank mobile banking is well secured by firewalls and gateways	141	174	100	72	63	550

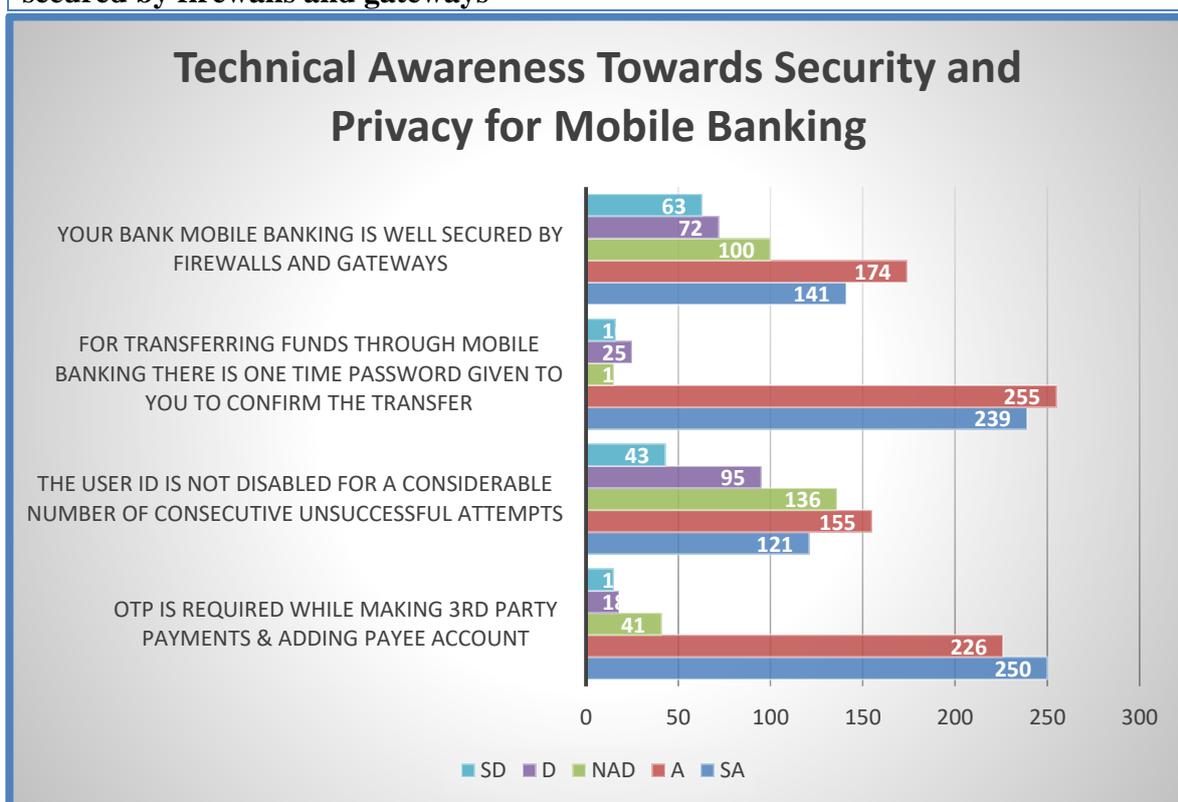


Figure 5.9: Technical Awareness Towards Security and Privacy for Mobile Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being technically aware of Mobile Banking safety and privacy, a moderate percentage has disagreed and a small proportion of the consumers have neither agreed or disagreed. Interpretation of the following statements were as follows:

1. “OTP is required while making 3rd party payments & adding payee account” the majority of the consumers are agreed i.e. 86.6 percent (476), a moderate percentage of the consumers was neither agreed or disagree i.e.7.50 percent (41) and a small proportion of the consumers have disagreed i.e. 6.03 percent (33).
2. “The user ID is not disabled for a considerable number of consecutive unsuccessful attempts” the majority of the consumers are agreed i.e. 50.2 percent (276), a moderate percentage of the consumers disagreed i.e. 25.12 percent (138) and a small proportion of consumers are neither agreed or disagreed i.e. 24.70 percent (136).
3. “For transferring funds through mobile banking there is one-time password given to you to confirm the transfer” the majority of the consumers are agreed i.e. 89.90 percent (494),

a moderate percentage of the consumers disagreed i.e. 7.41 percent (41) and a small proportion of consumers are neither agreed or disagreed i.e. 2.70 percent (15).

4. “Your bank mobile banking is well secured by firewalls and gateways” the majority of the consumers are agreed i.e. 57.20 percent (315), a moderate percentage of the consumers disagreed i.e. 24.55 percent (135) and a small proportion of consumers are neither agreed or disagreed i.e. 18.20 percent (100).

D. Analysis of Legal Awareness Towards Security and Privacy for Electronic Banking Services

Table 5.20: Analysis of Legal Awareness Towards Security and Privacy for Electronic Banking Services

Legal Awareness	SA		A		NAD		D		SD		Total	
	N	%	N	%	N	%	N	%	N	%		
D.1. ATM/Cards (Debit/Credit)												
There is maximum number of incorrect password submission	125	22.7	149	27.1	121	22.0	104	18.9	51	9.27	550	
Always take your receipt at the conclusion of every transaction to assure your financial privacy	166	30.2	163	29.6	114	20.7	64	11.6	43	7.81	550	
I should file a complaint with the IT adjudicator if I found any mis happening in transaction records	195	35.5	165	30.0	84	15.3	55	10.0	51	9.27	550	
D.2. Internet Banking												
If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker	148	26.9	145	26.4	130	23.6	80	14.5	47	8.55	550	
Banks periodically send updates & alerts regarding security features	187	34.0	204	37.1	80	14.5	57	10.4	22	4.00	550	
Banks will no refund my money back if there is online fraud	152	27.6	154	28.0	162	29.5	46	8.4	36	6.55	550	
D.3. Mobile Banking												
Banks will not refund my money back if there is online fraud	177	32.2	159	28.9	115	20.9	58	10.5	41	7.45	550	
If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker	130	23.6	185	33.6	136	24.7	50	9.1	49	8.91	550	
Banks periodically send updates & alerts regarding security features	108	19.6	175	31.8	108	19.6	80	14.5	79	14.36	550	

D.1 ATM/Cards (Debit/Credit)

Table 5.21: Legal Awareness Towards Security and Privacy for ATM/ Cards (Debit/ Credit)

Particulars	SA	A	NAD	D	SD	Total
There is maximum number of incorrect password submission.	125	149	121	104	51	550
Always take your receipt at the conclusion of every transaction to assure your financial privacy.	166	163	114	64	43	550
I should file a complaint with the IT adjudicator if I found any mis happening in transaction records.	195	165	84	55	51	550

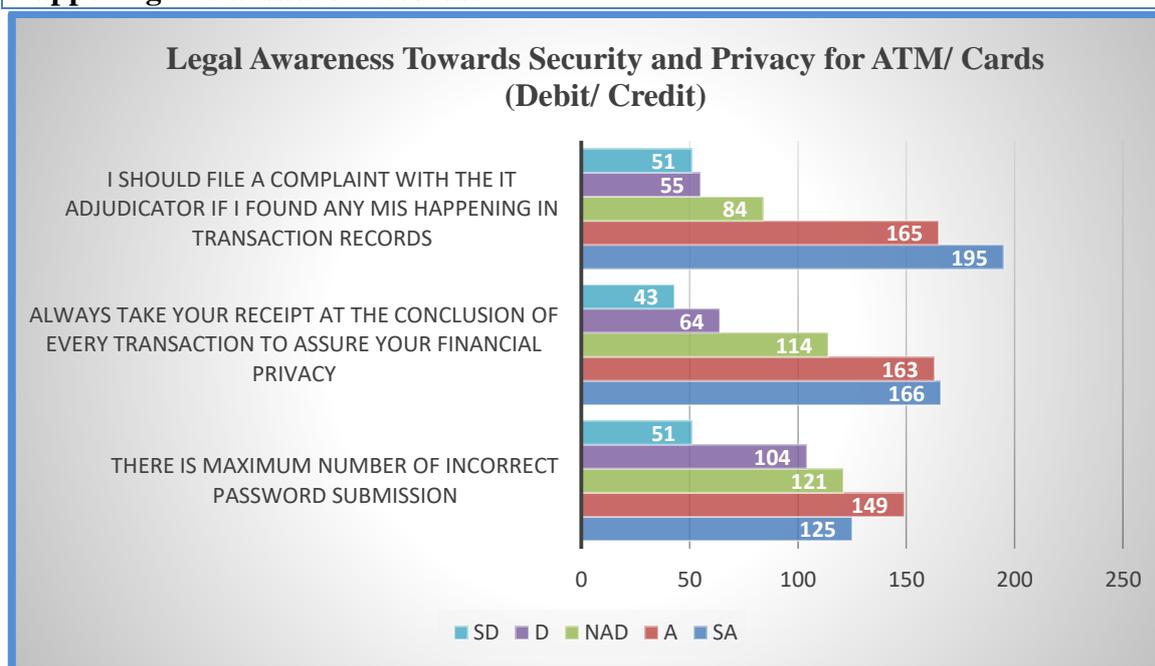


Figure 5.10: Legal Awareness Towards Security and Privacy for ATM/ Cards (Debit/ Credit)

As per the above analysis in most of the statements, it was found that majority of the consumers are being legal aware of ATM/Cards(Debit& Credit) safety and privacy, a moderate percentage is neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

1. “There is a maximum number of incorrect password submission” the majority of the consumers are agreed i.e. 49.8 percent (274), a moderate percentage of the consumers disagreed i.e. 28.17 percent (155) and a small proportion of consumers are neither agreed or disagreed i.e. 22 percent (121).
2. “Always take your receipt at the conclusion of every transaction to assure your financial privacy” the majority of the consumers are agreed i.e. 59.80 percent (329), a moderate percentage of the consumers was neither agreed or disagree i.e.20.70 percent (114) and a small proportion of the consumers have disagreed i.e. 19.49 percent (107).
3. “I should file a complaint with the IT adjudicator if I found any mis happening in transaction records” the majority of the consumers are agreed i.e. 65.5 percent (360), a moderate percentage of the consumers disagreed i.e. 19.27 percent (106) and a small proportion of consumers are neither agreed or disagreed i.e. 15.30 percent (84).

D.2 Internet Banking

Table 5.22: Legal Awareness Towards Security and Privacy for Internet Banking

Particulars	SA	A	NAD	D	SD	Total
If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker.	148	145	130	80	47	550
Banks periodically send updates & alerts regarding security features.	187	204	80	57	22	550
Banks will no refund my money back if there is online fraud.	152	154	162	46	36	550

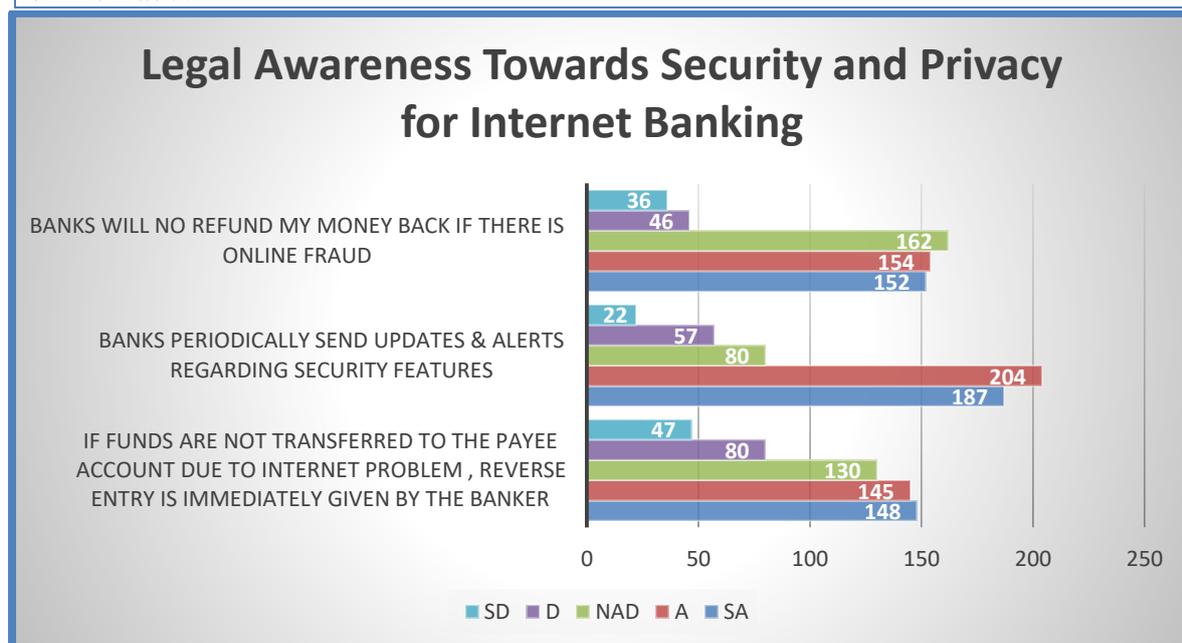


Figure 5.11: Legal Awareness towards Security and Privacy for Internet Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being legal aware of Internet banking safety and privacy, a moderate percentage is neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

1. “If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker” the majority of the consumers are agreed i.e. 53.30percent (293), a moderate percentage of the consumers was neither agreed or disagree i.e.23.60 percent (130) and a small proportion of the consumers have disagreed i.e. 23.05 percent (127).
2. “Banks periodically send updates & alerts regarding security features” the majority of the consumers are agreed i.e. 71.10 percent (391), a moderate percentage of the consumers was neither agreed or disagree i.e.14.50 percent (80) and a small proportion of the consumers have disagreed i.e. 14.40 percent (79).
3. “Banks will no refund my money back if there is online fraud” the majority of the consumers are agreed i.e. 55.60 percent (306), a moderate percentage of the consumers was neither agreed or disagree i.e.29.50 percent (162) and a small proportion of the consumers have disagreed i.e. 14.90 percent (82).

D.3 Mobile Banking

Table 5.23: Legal Awareness Towards Security and Privacy for Mobile Banking

Particulars	SA	A	NAD	D	SD	Total
Banks will not refund my money back if there is online fraud.	177	159	115	58	41	550
If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker.	130	185	136	50	49	550
Banks periodically send updates & alerts regarding security features.	108	175	108	80	79	550

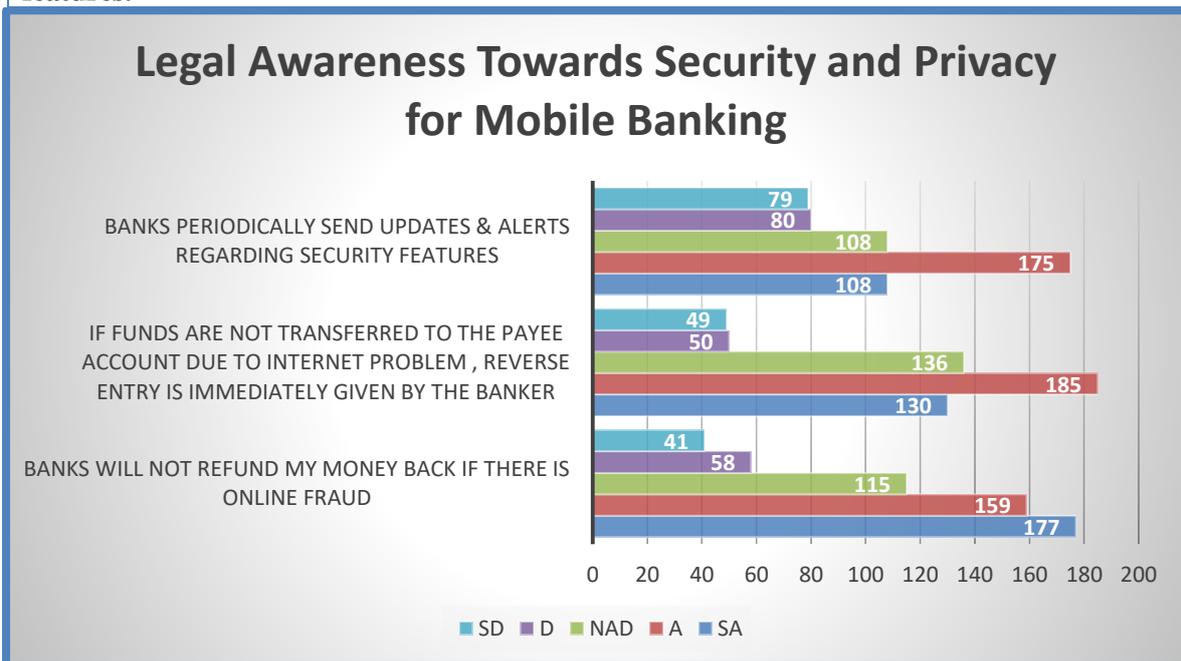


Figure 5.12: Legal Awareness towards Security and Privacy for Mobile Banking

As per the above analysis in most of the statements, it was found that majority of the consumers are being legal aware of Mobile banking safety and privacy, a moderate percentage is neither agreed or disagreed and a small proportion of the consumers have disagreed. Interpretation of the following statements were as follows:

1. “Banks will not refund my money back if there is online fraud” the majority of the consumers are agreed i.e. 61.10 percent (336), a moderate percentage of the consumers was neither agreed or disagree i.e.20.90 percent (115) and a small proportion of the consumers have disagreed i.e. 17.95 percent (99).
2. ‘If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker” the majority of the consumers are agreed i.e. 57.20 percent (315), a moderate percentage of the consumers was neither agreed or disagree i.e.24.70 percent (136) and a small proportion of the consumers have disagreed i.e. 18.01 percent (99).
3. “Banks periodically send updates & alerts regarding security features” the majority of the consumers are agreed i.e. 51.4 percent (283), a moderate percentage of the consumers disagreed i.e. 28.86 percent (159) and a small proportion of consumers are neither agreed or disagreed i.e. 19.60 percent (108).

5.5 Analysis of Kruskal-Wallis Test on Demographic Factors for Awareness Towards Security and Privacy for Electronic Banking Services

Table 5.24 : Scale Item Description

DIMENSIONS	SCALE ITEM	VARIABLE NAME	
Social Awareness	Only one person is allowed to enter ATM cabin for transaction	V 1	
	There is adequate privacy while using ATM	V 2	
	I am aware about the process if I forget my login password/login ID	V 3	
	My card information may be shared by the bank with 3 rd party	V 4	
	ATM/Cards (Debit/Credit)	Someone can use my name and information and apply for a credit card	V 5
	Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card	V 6	
	Password should not be Date of Birth, Mobile no.	V 7	
	Internet Banking	I am aware about the process if I forget my login password/login ID	V 8
	My data will be lost when the bank server crashes	V 9	
	My Internet banking details are shared with third party if I use public PC	V 10	
	My online banking password may be revealed by fraudsters if I not change at regular intervals	V 11	
	Password should not be Date of birth, Mobile no.	V 12	
	Mobile Banking	I am aware about the process if I forget my login password/login ID.	V 13
	The mobile banking of your bank does not prompt you to change password in specified days.	V 14	
	Hackers can hack personal data if my mobile handset is stolen.	V 15	
	Password should not be Date of birth, Mobile no.	V 16	
	Someone can duplicate (Clone) my card through photomechanical process.	V 17	
	Someone can transfer cash from my ATM without using card.	V 18	

Ethical Awareness	ATM/Cards (Debit/Credit)	Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.	V 19
		Someone can copy information by card trapping & identify your PIN by getting friendly.	V 20
		Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping).	V 21
		My ATM card pin will be revealed through spam mails & unsafe Applications	V 22
	If I give my personal information to the Fraudster then he can take over my account by making contact with the bank , report a lost card and change of address and obtain a new card	V 23	
	Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system	V 24	
	Someone can obtain my card information through telephone phishing in which a call center is set up to pretend to be associated with a banking organization	V 25	
	Internet Banking	My online banking details may be stolen by phishing e mails	V 26
		I may reveal my internet banking password through spam mails	V 27
		Fraudsters commit identity theft to get money out of your account	V 28
		I may reveal internet banking password on a fake website	V 29
		My internet banking details are shared with third party if I use public PC	V 30
		My online banking details will be revealed if use unsecured Wi-Fi systems	V 31
		Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user	V 32
		I may immediately report to the bank if I found irregularities in the last logged panel of the website	V 33
		My mobile banking password may be stolen.	V 34
If my phone is stolen ,someone else can use my mobile banking as there is no auto log off facility		V 35	
It is very easy for others to Add Payee from my mobile banking account		V 36	

Mobile Banking	Someone can apply for loans by stealing sensitive information like login-credentials, payment information from my mobile device	V 37
	My mobile banking application being mapped to an incorrect mobile number	V 38
	Mobile service provider may monitor my financial transactions	V 39
	Someone can access my personal information I download malicious apps	V 40
	Someone can steal my confidential information by making fake apps with exactly the same user interface	V 41
	My confidential information may be accessed by others through Bluetooth	V 42
	Technical awareness	
ATM/Cards (Debit/Credit)	I will not get my card back if stuck in ATM	V 43
	I am not completely aware about the process how to insert ATM card	V 44
	Sometimes the machine does not accept the card as the balance is too low for the requested transaction	V 45
	Fraudster can replace his own machine with the original bank machine in case of repairing and obtain all the confidential card data	V 46
Internet Banking	For transferring funds through internet banking there is one time password given to you to confirm the transfer.	V 47
	I always keep my system up to date to avoid any risks from hackers.	V 48
	I may aware of profile password security feature & insist login password transaction have to be changed frequently.	V 49
	Your bank Internet banking is well secured by firewall and gateways.	V 50
	I always use virtual keyboard to keep my password hidden in front of others.	V 51
	Mobile Banking	
Mobile Banking	OTP is required while making 3 rd party payments & adding payee account	V 52
	The user ID is not disabled for a considerable number of consecutive unsuccessful attempts	V 53
	For transferring funds through mobile banking there is one time password given to you to confirm the transfer	V 54
	Your bank mobile banking is well secured by firewalls and gateways	V 55

Legal awareness	ATM/Cards (Debit/Credit)	There is maximum number of incorrect password submission	V 56
		Always take your receipt at the conclusion of every transaction to assure your financial privacy	V 57
		I should file a complaint with the IT adjudicator if I found any mis happening in transaction records	V 58
	Internet Banking	If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker	V 59
		Banks periodically send updates & alerts regarding security features	V 60
		Banks will no refund my money back if there is online fraud	V 61
	Mobile Banking	Banks will not refund my money back if there is online fraud	V 62
		If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker	V 63
		Banks periodically send updates & alerts regarding security features	V 64

1. Social Awareness Towards Security and Privacy for Electronic Banking Services

(a.) Gender

(i.)ATM/Cards (Debit/Credit)

Table 5.25 Kruskal Wallis Test Result on Gender for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 1	550	4.06	1.039	1	5
V 2	550	3.90	1.177	1	5
V 3	550	3.51	1.456	1	5
V4	550	2.51	1.165	1	5
V 5	550	2.53	1.224	1	5
V 6	550	2.72	1.344	1	5
V 7	550	4.48	.641	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER			N	Mean Rank	
V 1	Male		366	261.89	
	Female		184	302.56	
	Total		550		
	Male		366	259.38	

V 2	Female	184	307.56				
	Total	550					
V 3	Male	366	256.69				
	Female	184	312.91				
V 4	Total	550					
	Male	366	291.08				
V 5	Female	184	244.51				
	Total	550					
V 6	Male	366	292.97				
	Female	184	240.76				
V 7	Total	550					
	Male	366	291.27				
V 7	Female	184	244.13				
	Total	550					
V 7	Male	366	270.12				
	Female	184	286.21				
V 7	Total	550					
	Test Statistics^{a,b}						
	V 1	V 2	V 3	V 4	V 5	V 6	V 7
Chi-Square	9.065	12.437	16.442	11.176	14.010	11.303	1.616
Df	1	1	1	1	1	1	1
Asymp. Sig.	.003	.000	.000	.001	.000	.001	.204

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

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among the consumer gender groups related to test variable that “**only one person is allowed to enter ATM cabin for the transaction**” for variable gender (Chi square= 9.065, df=1, p = 0.003), with a mean rank of test variable of 261.89 for male and 302.56 for female.
- There is a significant difference among the consumer gender groups to test variable that “**there is adequate privacy while using ATM**” for variable gender (Chi square= 12.437, df=1, p = 0.000), with a mean rank of test variable of 259.38 for male and 307.56 for female.
- There is a significant difference among the consumer gender groups to test variable that “**I am aware of the process if I forget my login**” for variable gender (Chi square= 16.442, df=1, p = 0.000), with a mean rank of test variable of 256.69 for male and 312.91 for female.

- d) There is a significant difference among the consumer gender groups to test variable that **“my card information may be shared by the bank with 3rd party”** for variable gender (Chi square= 11.176, df=1, p = 0.001), with a mean rank of test variable of 291.08 for male and 244.51 for female.
- e) There is a significant difference among the consumer gender groups to test variable that **“Someone can use my name and information and apply for a credit card”** for variable gender (Chi square= 14.010, df=1, p = 0.000), with a mean rank of test variable of 292.97 for male and 240.76 for female.
- f) There is a significant difference among the consumer gender groups related to test variable that **“Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card”** for variable gender (Chi square= 11.303, df=1, p = 0.001), with a mean rank of test variable of 291.27 for male and 244.13 for female.
- g) There is no significant difference among the consumer gender groups to test variable that **“password should not be the date of birth, mobile no.”** for variable gender (Chi square= 1.616, df=3, p = 0.204), with a mean rank of test variable of 270.12 for male and 286.21 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among the consumer gender groups with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. Finally, it concludes that males and females have different thinking about social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services except for one test variable i.e. password should not be the date of birth, mobile no.

(ii.) **Internet Banking**

Table 5.26: Kruskal Wallis Test Result on Gender for Social Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 8	550	3.76	1.323	1	5
V 9	550	2.73	1.370	1	5
V 10	550	3.53	1.356	1	5
V 11	550	3.57	1.121	1	5
V 12	550	4.30	.841	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER			N	Mean Rank	
V 8	Male		366	258.83	
	Female		184	308.65	
	Total		550		
V 9	Male		366	285.81	
	Female		184	253.56	
	Total		550		
V 10	Male		366	279.44	
	Female		184	267.67	
	Total		550		

V 11	Male	366	270.59		
	Female	184	285.26		
	Total	550			
V 12	Male	366	260.15		
	Female	184	306.03		
	Total	550			
Test Statistics					
	V 8	V9	V 10	V 11	V 12
Chi-Square	13.182	5.299	.716	1.113	12.359
Df	1	1	1	1	1
Asymp. Sig.	.000	.021	.397	.291	.000

Based on gender following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{01.2}	There is no significant difference among consumer gender groups with social awareness towards security and privacy while using Internet Banking Services.
H_{a1.2}	There is a significant difference among consumer gender groups with social awareness towards security and privacy while using Internet Banking Services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumer gender groups related to test variable that **“I am aware of the process if I forget my login password/login ID”** for variable gender (Chi square= 13.182, df=1, p = 0.000), with a mean rank of test variable of 258.83 for male and 302.56 for female.
- There is a significant difference among consumer gender groups to test variable that **“My data will be lost when the bank server crash”** for variable gender (Chi square= 5.299, df=1, p = 0.021), with a mean rank of test variable of 285.81 for male and 253.56 for female.
- There is not a significant difference among consumer gender groups to test variable that **“My Internet banking details are shared with third party if I use public PC”** for variable gender (Chi square= .716, df=1, p = 0.397), with a mean rank of test variable of 279.44 for male and 267.67 for female.
- There is not a significant difference among consumer gender groups to test variable that **“My online banking password may be revealed by fraudsters if I did not change at regular intervals”** for variable gender (Chi square= 1.113, df=1, p = 0.291), with a mean rank of test variable of 270.59 for male and 285.26 for female.
- There is a significant difference among consumer gender groups to test variable that **“Password should not be Date of birth, Mobile no.”** for variable gender (Chi square= 12.359, df=1, p = 0.000), with a mean rank of test variable of 260.15 for male and 306.03 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumer gender groups with social awareness towards security and privacy while using Internet Banking services. Finally, it concludes that a males and females have different thinking about social awareness towards security and privacy while using internet banking services except for two test variables

i.e. “My online banking password may be revealed by fraudsters if I do not change at regular intervals” and “My Internet banking details are shared with the third party if I use public PC”.

(iii.) Mobile Banking

Table 5.27:Kruskal Wallis Test Result on Gender for Social Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 13	550	3.80	1.231	1	5
V 14	550	3.19	1.296	1	5
V 15	550	3.90	.979	1	5
V 16	550	3.95	1.030	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER			N	Mean Rank	
V 13	Male		366	264.00	
	Female		184	298.38	
	Total		550		
V 14	Male		366	262.58	
	Female		184	301.21	
	Total		550		
V 15	Male		366	268.47	
	Female		184	289.49	
	Total		550		
V 16	Male		366	259.02	
	Female		184	308.28	
	Total		550		
Test Statistics					
	V 13	V 14	V 15	V 16	
Chi-Square	6.255	7.627	2.401	13.014	
Df	1	1	1	1	
Asymp. Sig.	.012	.006	.121	.000	

Based on gender following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{01.3}	There is no significant difference among consumer gender groups with social awareness towards security and privacy while using Mobile Banking Services.
H_{a1.3}	There is a significant difference among consumer gender groups with social awareness towards security and privacy while using Mobile Banking Services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumer gender groups related to test variable that “I am aware about the process if I forget my login password/login ID” for

variable gender (Chi square= 6.255, df=1, p = 0.012), with a mean rank of test variable of 264.00 for male and 298.38 for female.

- b) There is a significant difference among consumer gender groups to test variable that “**The mobile banking of your bank does not prompt you to change password in specified days**” for variable gender (Chi square= 7.627, df=1, p = 0.006), with a mean rank of test variable of 262.58 for male and 301.21 for female.
- c) There is no significant difference among consumer gender groups to test variable that “**Hackers can hack personal data if my mobile handset is stolen**” for variable gender (Chi square= 2.401, df=1, p = 0.121), with a mean rank of test variable of 268.47 for male and 289.47 for female.
- d) There is a significant difference among consumer gender groups to test variable that **Password should not be Date of birth, Mobile no** “for gender (Chi square= 13.014, df=1, p = 0.000), with a mean rank of test variable of 259.02 for male and 308.28 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumer gender groups with social awareness towards security and privacy while using mobile banking services. Finally, it concludes that males and females have different thinking about social awareness towards security and privacy while using mobile banking services except for one test variable i.e. “Hackers can hack personal data if my mobile handset is stolen”.

(b.) Age

(i.)ATM/Cards (Debit/Credit)

Table 5.28: Kruskal Wallis Test Result on Age for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 1	550	4.06	1.039	1	5
V 2	550	3.90	1.177	1	5
V 3	550	3.51	1.456	1	5
V4	550	2.51	1.165	1	5
V 5	550	2.53	1.224	1	5
V 6	550	2.72	1.344	1	5
V 7	550	4.48	.641	1	5
AGE	550	2.37	1.065	1	4
Ranks					
		AGE	N	Mean Rank	
V 1	Below30		141	263.48	
	31-45		169	258.63	
	46-62		134	278.92	
	Above63		106	314.07	
	Total		550		
V 2	Below30		141	255.09	
	31-45		169	271.76	
	46-62		134	276.62	
	Above63		106	307.20	
	Total		550		

		Total	550				
V 3		Below30	141	261.42			
		31-45	169	279.99			
		46-62	134	271.40			
		Above63	106	292.25			
		Total	550				
V 4		Below30	141	283.99			
		31-45	169	279.53			
		46-62	134	274.00			
		Above63	106	259.67			
		Total	550				
V5		Below30	141	284.72			
		31-45	169	282.42			
		46-62	134	268.06			
		Above63	106	261.59			
		Total	550				
V 6		Below30	141	295.48			
		31-45	169	268.61			
		46-62	134	272.41			
		Above63	106	263.82			
		Total	550				
V 7		Below30	141	265.70			
		31-45	169	271.15			
		46-62	134	283.49			
		Above 63	106	285.38			
		Total	550				
Test Statistics^{a,b}							
	V 1	V 2	V 3	V 4	V 5	V 6	V 7
Chi-Square	10.195	7.341	2.691	1.673	2.015	3.325	1.817
Df	3	3	3	3	3	3	3
Asymp. Sig.	.017	.062	.442	.643	.569	.344	.611

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

H0_{1.4}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.
Ha_{1.4}	There is a significant difference among consumer age groups with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among the consumer age groups related to test variable that “**only one person is allowed to enter ATM cabin for transaction**” for variable age

group (Chi square= 10.195, df=3, p = 0.017), with a mean rank of test variable of 263.48 for age group below 30, 258.63 for Age group 31-45, 278.92 for age group 46-62, and 314.07 for age group above 63.

- b) There is not a significant difference among the consumer age groups related to test variable that “**there is adequate privacy while using ATM**” for variable age group (Chi square= 7.341, df=3, p = 0.062), with a mean rank of test variable of 255.09 for age group below30, 271.76 for Age group 31-45, 276.62 for age group 46-62, and 307.20 for age group above63.
- c) There is not a significant difference among the consumer age groups related to test variable that “**I am aware about the process if I forget my login**” for variable age group (Chi square= 2.691, df=3, p = 0.442), with a mean rank of test variable of 261.42 for age group below 30, 279.99 for age group 31-45, 271.40 for age group 46-62, and 292.25 for age group above 63.
- d) There is not a significant difference among the consumer age groups related to test variable that “**my card information may be shared by the bank with 3rd party**” for variable age group (Chi square= 1.673, df=3, p = 0.643), with a mean rank of test variable of 283.99 for age group below 30, 279.53 for Age group 31-45, 274.00 for age group 46-62, and 259.67 for age group above 63.
- e) There is not a significant difference among the consumer age groups related to test variable that “**Someone can use my name and information and apply for a credit card**” for variable age group (Chi square= 2.015, df=3, p = 0.569), with a mean rank of test variable of 284.72 for age group below 30, 282.42 for Age group 31-45, 268.06 for age group 46-62, and 261.59 for age group above 63.
- f) There is not a significant difference among the consumer age groups related to test variable that “**Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card**” for variable age group (Chi square= 3.325, df=3, p = 0.344), with a mean rank of test variable of 295.48 for age group below 30, 268.61 for Age group 31-45, 272.41 for age group 46-62, and 263.82 for age group above 63.
- g) There is not a significant difference among the consumer age groups related to test variable that “**password should not be date of birth, mobile no**”. for variable age group (Chi square= 1.817, df=3, p = 0.611), with a mean rank of test variable of 265.70 for age group below 30, 271.15 for Age group 31-45, 283.49 for age group 46-62, and 285.38 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with social 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 social 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 social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has higher group of age except in one test variable i.e. only one person is allowed to enter ATM cabin.

(ii.) Internet Banking

Table 5.29: Kruskal Wallis Test Result on Age for Social Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum

V 8	550	3.76	1.323	1	5
V 9	550	2.73	1.370	1	5
V 10	550	3.53	1.356	1	5
V 11	550	3.57	1.121	1	5
V 12	550	4.30	.841	1	5
AGE	550	2.37	1.065	1	4

Ranks

	AGE	N	Mean Rank
V 8	Below30	141	264.46
	31-45	169	282.60
	46-62	134	266.16
	Above63	106	290.67
	Total	550	
V 9	Below30	141	288.71
	31-45	169	293.17
	46-62	134	260.46
	Above63	106	246.29
	Total	550	
V 10	Below30	141	275.51
	31-45	169	276.71
	46-62	134	284.97
	Above63	106	261.59
	Total	550	
V 11	Below30	141	255.71
	31-45	169	278.83
	46-62	134	277.91
	Above63	106	293.48
	Total	550	
V 12	Below30	141	262.54
	31-45	169	271.88
	46-62	134	287.94
	Above63	106	282.78
	Total	550	

Test Statistics

	V 8	V 9	V 10	V 11	V 12
Chi-Square	2.681	8.237	1.383	3.895	2.506
Df	3	3	3	3	3
Asymp. Sig.	.444	.041	.710	.273	.474

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{01.5}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using Internet Banking services.
H_{a1.5}	There is a significant difference among consumer age groups with social awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is not a significant difference among consumer age groups related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable age group (Chi square= 2.681, df=3, p = 0.444), with a mean rank of test variable of 264.46 for age group below 30, 282.60 for Age group 31-45, 266.16 for age group 46-62, and 290.67 for age group above 63.
- b) There is a significant difference among consumer age groups related to test variable that **“My data will be lost when the bank server crashes”** for variable age group (Chi square= 8.237, df=3, p = 0.041), with a mean rank of test variable of 288.71 for age group below30, 293.17for Age group 31-45, 260.46 for age group 46-62, and 246.29 for age group above63.
- c) There is not a significant difference among consumer age groups related to test variable that **“My Internet banking details are shared with third party if I use public PC”** for variable age group (Chi square= 1.383, df=3, p = 0.710), with a mean rank of test variable of 275.51 for age group below 30, 276.71 for age group 31-45, 284.97 for age group 46-62, and 261.59 for age group above 63.
- d) There is not a significant difference among consumer age groups related to test variable that **“My online banking password may be revealed by fraudsters if I not change at regular intervals”** for variable age group (Chi square= 3.895, df=3, p = 0.273), with a mean rank of test variable of 255.71 for age group below 30, 278.83 for Age group 31-45, 277.91 for age group 46-62, and 293.48 for age group above 63.
- e) There is not a significant difference among consumer age groups related to test variable that **“Password should not be Date of birth, Mobile no.”** for variable age group (Chi square= 2.506, df=3, p = .474), with a mean rank of test variable of 262.54 for age group below 30, 271.88 for Age group 31-45, 287.94 for age group 46-62, and 282.78 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with social awareness towards security and privacy while using Internet Banking services. It means consumers of all age groups have similar thinking about above important factors of social awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has young age have a similar influence about social awareness towards security and privacy while using Internet banking services whatever a respondent has a higher group of age except in one test variable i.e. “My data will be lost when the bank server crashes.”

(iii.) Mobile Banking

Table 5.30: Kruskal Wallis Test Result on Age for Social Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 13	550	3.80	1.231	1	5
V 14	550	3.19	1.296	1	5
V 15	550	3.90	.979	1	5
V 16	550	3.95	1.030	1	5
AGE	550	2.37	1.065	1	4
Ranks					
AGE		N	Mean Rank		
V 13	Below30	141	272.26		
	31-45	169	290.81		
	46-62	134	259.99		
	Above63	106	275.00		
	Total	550			
V 14	Below30	141	259.53		
	31-45	169	283.06		
	46-62	134	276.41		
	Above63	106	283.53		
	Total	550			
V 15	Below30	141	270.70		
	31-45	169	268.03		
	46-62	134	274.23		
	Above63	106	295.39		
	Total	550			
V 16	Below30	141	279.06		
	31-45	169	261.23		
	46-62	134	277.84		
	Above63	106	290.55		
	Total	550			
Test Statistics					
	V 13	V 14	V 15	V 16	
Chi-Square	3.169	2.193	2.434	2.670	
Df	3	3	3	3	
Asymp. Sig.	.366	.533	.487	.445	

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{01.6}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using Mobile Banking services.
H_{a1.6}	There is a significant difference among consumer age groups with social awareness towards security and privacy while using Mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumer age groups related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable age group (Chi square= 3.169, df=3, p = 0.366), with a mean rank of test variable of 272.26 for age group below 30, 290.81 for Age group 31-45, 259.99 for age group 46-62, and 275.00 for age group above 63.
- There is no significant difference among consumer age groups related to test variable that **“the mobile banking of your bank does not prompt you to change password in specified days”** for variable age group (Chi square= 2.193, df=3, p = 0.533), with a mean rank of test variable of 259.53 for age group below30, 283.06for Age group 31-45, 276.41 for age group 46-62, and 283.53 for age group above63.
- There is no significant difference among consumer age groups related to test variable that **“Hackers can hack personal data if my mobile handset is stolen”** for variable age group (Chi square= 2.434, df=3, p = 0.487), with a mean rank of test variable of 270.70 for age group below 30, 268.03 for Age group 31-45, 274.23 for age group 46-62, and 295.39 for age group above 63.
- There is no significant difference among consumer age groups related to test variable that **“Password should not be Date of birth, Mobile no.”** for variable age group (Chi square= 2.670, df=3, p = .445), with a mean rank of test variable of 279.06 for age group below 30, 261.23 for Age group 31-45, 277.84 for age group 46-62, and 290.55 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with social awareness towards security and privacy while using mobile Banking services. It means consumers of all age groups have similar thinking about above important factors of social awareness towards security and privacy while using mobile banking services. Finally, it concludes that a respondent who has a young age have a similar influence about social awareness towards security and privacy while using mobile banking services whatever a respondent has a higher group of age.

(c.) Education

(i.) ATM/Cards (Debit/Credit)

Table 5.31: Kruskal Wallis Test Result on Education for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 1	550	4.06	1.039	1	5
V 2	550	3.90	1.177	1	5
V 3	550	3.51	1.456	1	5
V4	550	2.51	1.165	1	5

V 5	550	2.53	1.224	1	5
V 6	550	2.72	1.344	1	5
V 7	550	4.48	.641	1	5
EDUCATION	550	2.87	1.083	1	4

Ranks

EDUCATION		N	Mean Rank
V 1	Primary	80	166.01
	Secondary	122	240.43
	Graduate	137	318.59
	Postgraduate	211	309.31
	Total	550	
V 2	Primary	80	171.53
	Secondary	122	242.20
	Graduate	137	316.86
	Postgraduate	211	307.32
	Total	550	
V 3	Primary	80	187.49
	Secondary	122	214.55
	Graduate	137	305.35
	Postgraduate	211	324.73
	Total	550	
V 4	Primary	80	332.56
	Secondary	122	314.66
	Graduate	137	234.98
	Postgraduate	211	257.53
	Total	550	
V 5	Primary	80	365.72
	Secondary	122	319.11
	Graduate	137	251.87
	Postgraduate	211	231.42
	Total	550	
V 6	Primary	80	359.51
	Secondary	122	316.62
	Graduate	137	241.80
	Postgraduate	211	241.76
	Total	550	
V 7	Primary	80	236.34
	Secondary	122	258.70
	Graduate	137	284.96
	Postgraduate	211	293.92
	Total	550	

Test Statistics^{a,b}

	V 1	V 2	V 3	V 4	V 5	V 6	V 7
Chi-Square	71.833	63.35	72.48	31.16	57.48	48.45	12.279
Df	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.006

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

H_{01.7}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.
H_{a1.7}	There is a significant difference among consumers at different education level with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers at different education level related to test variable that **“only one person is allowed to enter ATM cabin for transaction”** for variable education level (Chi square= 71.833, df=3, p = 0.000), with a mean rank of test variable of 166.01 for primary level of education, 240.43 for secondary level of education, 318.59 graduate level of education, and 309.31for post graduate level of education.
- b) There is a significant difference among consumers at different education level related to test variable that **“There is adequate privacy while using ATM”** for variable education level (Chi square= 63.352, df=3, p = 0.000), with a mean rank of test variable of 171.53 for primary level of education, 242.20 for secondary level of education, 316.86 graduate level of education, and 307.32 for post graduate level of education.
- c) There is a significant difference among consumers at different education level related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable education level (Chi square= 72.482, df=3, p = 0.000), with a mean rank of test variable of 187.49 for primary level of education, 214.55 for secondary level of education, 305.35 graduate level of education, and 324.73 for post graduate level of education.
- d) There is a significant difference among consumers at different education level related to test variable that **“My card information may be shared by the bank with 3rd party”** for variable education level (Chi square= 31.165, df=3, p = 0.000), with a mean rank of test variable of 332.56 for primary level of education, 314.66 for secondary level of education, 234.98 graduate level of education, and 257.53 for post graduate level of education.
- e) There is a significant difference among consumers at different education level related to test variable that **“Someone can use my name and information and apply for a credit card”** for variable education level (Chi square= 57.484 df=3, p = 0.000), with a mean rank of test variable of 365.72 for primary level of education, 319.11 for secondary level of education, 251.87 graduate level of education, and 231.42 for post graduate level of education.
- f) There is a significant difference among consumers at different education level related to test variable that **“Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card”** for variable education level (Chi square= 48.456, df=3, p = 0.000), with a mean rank of test variable

of 359.51 for primary level of education, 316.62 for secondary level of education, 241.80 graduate level of education, and 241.76 for post graduate level of education.

- g) There is a significant difference among consumers at different education level related to test variable that “**Password should not be Date of Birth, Mobile no**” for variable education level (Chi square= 12.279, df=3, p = 0.000), with a mean rank of test variable of 236.34 for primary level of education, 258.70 for secondary level of education, 284.96 graduate level of education, and 293.92 for post graduate level of education.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers at different education level with social 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 social 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 social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has a post-graduate level of education.

(ii.) Internet Banking

Table 5.32: Kruskal Wallis Test Result on Education for Social Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 8	550	3.76	1.323	1	5
V 9	550	2.73	1.370	1	5
V 10	550	3.53	1.356	1	5
V 11	550	3.57	1.121	1	5
V 12	550	4.30	.841	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
		N	Mean Rank		
EDUCATION					
V 8	Primary	80	144.99		
	Secondary	122	243.90		
	Graduate	137	332.12		
	Postgraduate	211	306.50		
	Total	550			
V 9	Primary	80	316.86		
	Secondary	122	297.66		
	Graduate	137	242.74		
	Postgraduate	211	266.94		
	Total	550			
V 10	Primary	80	338.64		
	Secondary	122	301.77		
	Graduate	137	249.52		
	Postgraduate	211	253.24		

	Total	550			
V 11	Primary	80		242.88	
	Secondary	122		250.71	
	Graduate	137		287.69	
	Postgraduate	211		294.29	
	Total	550			
V 12	Primary	80		209.81	
	Secondary	122		252.20	
	Graduate	137		310.59	
	Postgraduate	211		291.09	
	Total	550			
Test Statistics					
	V 8	V 9	V 10	V 11	V 12
Chi-Square	92.235	14.952	25.332	10.773	30.272
Df	3	3	3	3	3
Asymp. Sig.	.000	.002	.000	.013	.000

Based on education following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using Internet Banking Services:

H_{01.8}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using Internet Banking Services.
H_{a1.8}	There is a significant difference among consumers at different education level with social awareness towards security and privacy while using Internet Banking Services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers at different education level related to test variable that “**I am aware about the process if I forget my login password/login ID**” for variable education level (Chi square= 92.235, df=3, p = 0.000), with a mean rank of test variable of 144.99 for primary level of education, 243.90 for secondary level of education, 332.12 graduate level of education, and 306.50for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**My data will be lost when the bank server crashes**” for variable education level (Chi square=14.952, df=3, p = 0.002), with a mean rank of test variable of 316.86 for primary level of education, 297.66 for secondary level of education, 242.74 graduate level of education, and 266.94 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**My Internet banking details are shared with third party if I use public PC**” for variable education level (Chi square= 25.332, df=3, p = 0.000), with a mean rank of test variable of 338.64 for primary level of education, 301.77 for secondary level of education 1, 249.52 graduate level of education, and 253.24 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**My online banking password may be revealed by fraudsters if I not change at regular intervals**” for variable education level (Chi square=10.773, df=3,

$p = 0.013$), with a mean rank of test variable of 242.88 for primary level of education, 250.71 for secondary level of education, 287.69 graduate level of education, and 294.29 for post graduate level of education.

- e) There is a significant difference among consumers at different education level related to test variable that “**Password should not be Date of birth, Mobile no.**” for variable education level (Chi square= 30.272 df=3, $p = 0.000$), with a mean rank of test variable of 209.81 for primary level of education, 252.20 for secondary level of education, 310.59 graduate level of education, and 291.09 for post graduate level of education.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers at different education level with social awareness towards security and privacy while using Internet Banking services. It means consumers at different education level have a difference in thinking about the above important factors of social awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has a primary level of education have a different influence about social awareness towards security and privacy while using internet banking services whatever a respondent has a post-graduate level of education.

(iii.) Mobile Banking

Table 5.33: Kruskal Wallis Test Result on Education for Social Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 13	550	3.80	1.231	1	5
V 14	550	3.19	1.296	1	5
V 15	550	3.90	.979	1	5
V 16	550	3.95	1.030	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
EDUCATION		N	Mean Rank		
V 13	Primary	80	170.23		
	Secondary	122	256.37		
	Graduate	137	320.58		
	Postgraduate	211	297.20		
	Total	550			
V 14	Primary	80	218.56		
	Secondary	122	263.05		
	Graduate	137	304.76		
	Postgraduate	211	285.29		
	Total	550			
V 15	Primary	80	268.35		
	Secondary	122	257.32		
	Graduate	137	281.79		
	Postgraduate	211	284.64		
	Total	550			
V 16	Primary	80	197.14		

	Secondary	122	244.97
	Graduate	137	295.84
	Postgraduate	211	309.66
	Total	550	
Test Statistics			
	V13	V 14	V 15
Chi-Square	56.546	17.352	2.993
Df	3	3	3
Asymp. Sig.	.000	.001	.393

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using Mobile Banking Services:

H_{01.9}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using mobile Banking services.
H_{a1.9}	There is a significant difference among consumers at different education level with social awareness towards security and privacy while using mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers at different education level related to test variable that “**I am aware about the process if I forget my login password/login ID**” for variable education level (Chi square= 56.546, df=3, p = 0.000), with a mean rank of test variable of 170.23 for primary level of education, 256.37 for secondary level of education, 320.58 graduate level of education, and 297.20 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**the mobile banking of your bank does not prompt you to change password in specified days**” for variable education level (Chi square=17.352, df=3, p = 0.001), with a mean rank of test variable of 218.56 for primary level of education, 263.05 for secondary level of education, 304.76 graduate level of education, and 285.29for post graduate level of education.
- There is no significant difference among consumers at different education level related to test variable that “**Hackers can hack personal data if my mobile handset is stolen**” for variable education level (Chi square= 2.993, df=3, p = 0.393), with a mean rank of test variable of 268.35 for primary level of education, 257.32 for secondary level of education, 281.79 graduate level of education, and 284.64 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**Password should not be Date of birth, Mobile no.**” for variable education level (Chi square= 39.758 df=3, p = 0.000), with a mean rank of test variable of 197.14 for primary level, 244.97 for secondary level of education, 295.84 graduate level of education, and 309.66 for post graduate level of education.

Conclusion

The Null hypothesis is rejected, there is a significant difference among consumers at different education level with social awareness towards security and privacy while using mobile Banking services. It means consumers at different education level have a difference in thinking about the above important factors of social awareness towards security and privacy for mobile

banking. Finally, it concludes that a respondent who has a primary level of education have a different influence about social awareness towards security and privacy while using mobile banking services whatever a respondent has a post-graduate level of education except for one test variable i.e. “hackers can hack personal data if my mobile handset is stolen.”

(d) Occupation

(i.) ATM/Cards (Debit/Credit)

Table 5.34: Kruskal Wallis Test Result on Occupation for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 1	550	4.06	1.039	1	5
V 2	550	3.90	1.177	1	5
V 3	550	3.51	1.456	1	5
V 4	550	2.51	1.165	1	5
V 5	550	2.53	1.224	1	5
V 6	550	2.72	1.344	1	5
V 7	550	4.48	.641	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION				N	Mean Rank
V 1	Professional			160	309.90
	Service			160	355.80
	Business			160	259.29
	Labour			70	50.38
	Total			550	
V 2	Professional			160	324.98
	Service			160	319.70
	Business			160	275.32
	Labour			70	61.77
	Total			550	
V 3	Professional			160	344.75
	Service			160	326.08
	Business			160	233.72
	Labour			70	97.11
	Total			550	
V 4	Professional			160	232.84
	Service			160	235.32
	Business			160	289.67
	Labour			70	432.45
	Total			550	
V 5	Professional			160	219.34
	Service			160	252.00
	Business			160	283.53
	Labour			70	439.20

	Total	550					
V 6	Professional	160	219.03				
	Service	160	233.68				
	Business	160	311.04				
	Labour	70	418.91				
	Total	550					
V 7	Professional	160	274.32				
	Service	160	328.38				
	Business	160	261.13				
	Labour	70	190.19				
	Total	550					
Test Statistics							
	V 1	V 2	V 3	V 4	V 5	V 6	V 7
Chi-Square	215.35	170.722	156.47	97.022	104.054	100.999	50.460
Df	4	8	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000

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

H_{01.10}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using ATM/Cards (Debit/credit) services.
H_{a1.10}	There is a significant difference among consumers from different occupation with social awareness towards security and privacy while using ATM/Cards (Debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that **“Only one person is allowed to enter ATM cabin for transaction”** for variable occupation (Chi square= 215.354, df=3, p = 0.000), with a mean rank of test variable of 309.90for Professional class, 355.80 for service class, 259.29 for business class, and 50.38 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“There is adequate privacy while using ATM”** for variable occupation (Chi square=170.722, df=3, p = 0.000), with a mean rank of test variable of 324.98for Professional class, 319.70 for service class, 275.32for business class, and 61.77 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable occupation (Chi square= 156.478, df=3, p = 0.000), with a mean rank of test variable of 344.75for Professional class, 326.08 for service class, 233.72 for business class, and 97.11 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“My card information may be shared by the bank with 3rd party”** for variable occupation (Chi square= 97.022, df=3, p = 0.000), with a mean rank of test

variable of 232.84 for Professional class, 235.32 for service class, 289.67 for business class, and 432.45 for Labour class.

- e) There is a significant difference among consumers from different occupation related to test variable that **“Someone can use my name and information and apply for a credit card”** for variable occupation (Chi square=104.054, df=3, p = 0.000), with a mean rank of test variable of 219.34 for Professional class, 252.00 for service class, 283.53 for business class, and 439.20 for Labour class.
- f) There is a significant difference among consumers from different occupation related to test variable that **“Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card”** for test variable (Chi square=100.999 df=3, p = 0.000), with a mean rank of test variable of 219.03 for Professional class, 233.68 for service class, 311.04 for business class, and 418.91 for Labour class.
- g) There is a significant difference among consumers with different occupation related to test variable that **“Password should not be Date of Birth, Mobile no”** for variable education level (Chi square= 50.460, df=3, p = 0.000), with a mean rank of test variable of 274.32 for Professional class, 328.38 for service class, 261.13 for business class, and 190.19 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with social 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 social awareness towards security and privacy while using ATM/Cards(debit/credit) services. Finally, it concludes that there is a different influence about social 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 Labour class.

(ii.) Internet Banking

Table 5.35: Kruskal Wallis Test Result on Occupation for Social Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 8	550	3.76	1.323	1	5
V 9	550	2.73	1.370	1	5
V 10	550	3.53	1.356	1	5
V 11	550	3.57	1.121	1	5
V 12	550	4.30	.841	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION	N		Mean Rank		
V 8	Professional	160	309.57		
	Service	160	393.34		
	Business	160	206.32		
	Labour	70	86.41		
	Total	550			
V 9	Professional	160	274.23		

	Service	159	278.14
	Business	160	190.01
	Labour	70	463.88
	Total	550	
V 10	Professional	160	245.00
	Service	160	233.97
	Business	160	319.30
	Labour	70	340.02
	Total	550	
V 11	Professional	160	311.22
	Service	160	289.03
	Business	160	263.02
	Labour	70	191.47
	Total	550	
V 12	Professional	160	273.98
	Service	160	341.93
	Business	160	294.71
	Labour	70	83.24
	Total	550	

Test Statistics^{a,b}

	V 8	V 9	V 10	V 11	V 12
Chi-Square	246.223	152.181	43.188	31.802	160.765
Df	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{01.11}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using internet banking services.
H_{a1.11}	There is a significant difference among consumers from different occupation with social awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that “**I am aware about the process if I forget my login password/login ID**” for variable occupation (Chi square= 246.233, df=3, p = 0.000), with a mean rank of test variable of 309.57for Professional class, 393.34 for service class, 206.32for business class, and 86.41 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that “**My data will be lost when the bank server crashes**” for variable education level (Chi square=152.181, df=3, p = 0.000), with a mean rank of test variable of 272.23for Professional class, 278.14 for service class, 190.01for business class, and 463.88 for Labour class.

- c) There is a significant difference among consumers from different occupation related to test variable that “**My Internet banking details are shared with third party if I use public PC**” for variable education level (Chi square= 43.188, df=3, p = 0.000), with a mean rank of test variable of 245.00 for Professional class, 233.97 for service class, 319.30 for business class, and 340.02 for Labour class.
- d) There is a significant difference among consumers from different occupation related to test variable that “**My online banking password may be revealed by fraudsters if I not change at regular intervals**” for variable education level (Chi square= 31.802, df=3, p = 0.000), with a mean rank of test variable of 311.22 for Professional class, 289.03 for service class, 263.02 for business class, and 191.47 for Labour class.
- e) There is a significant difference among consumers from different occupation related to test variable that “**Password should not be Date of birth, Mobile nod**” for variable education level (Chi square=160.765, df=3, p = 0.000), with a mean rank of test variable of 273.98 for Professional class, 341.93 for service class, 294.71 for business class, and 83.24 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with social awareness towards security and privacy while using internet banking services. It means consumers from different occupation have a difference in thinking about the above important factors of social awareness towards security and privacy while using internet banking services. Finally, it concludes that there is a different influence about social 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 Labour class.

(iii.) Mobile Banking

Table 5.36: Kruskal Wallis Test Result on Occupation for Social Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 13	550	3.80	1.231	1	5
V 14	550	3.19	1.296	1	5
V 15	550	3.90	.979	1	5
V 16	550	3.95	1.030	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N	Mean Rank	
V 13	Professional		160	285.32	
	Service		160	400.10	
	Business		160	195.85	
	Labour		70	150.30	
	Total		550		
V 14	Professional		160	327.87	
	Service		160	308.62	
	Business		160	205.13	
	Labour		70	240.94	
	Total		550		

V 15	Professional	160	272.70	
	Service	160	320.15	
	Business	160	280.16	
	Labour	70	169.19	
	Total	550		
V 16	Professional	160	343.09	
	Service	160	315.83	
	Business	160	230.38	
	Labour	70	131.98	
	Total	550		
Test Statistics				
	V 13	V 14	V 15	V 16
Chi-Square	199.224	62.189	49.486	120.820
Df	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{01.12}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using mobile banking services.
H_{a1.12}	There is a significant difference among consumers from different occupation with social awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable occupation (Chi square= 199.224, df=3, p = 0.000), with a mean rank of test variable of 285.32for Professional class, 400.10 for service class, 195.85 for business class, and 150.30 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“The mobile banking of your bank does not prompt you to change password in specified days.”** for variable education level (Chi square=62.189, df=3, p = 0.000), with a mean rank of test variable of 327.87for Professional class, 308.62 for service class,205.13for business class, and 240.93 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“Hackers can hack personal data if my mobile handset is stolen.”** for variable education level (Chi square= 49.486, df=3, p = 0.000), with a mean rank of test variable of 272.70 for Professional class, 320.15 for service class, 280.16 for business class, and 169.19 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that **“Password should not be Date of birth, Mobile nod”** for variable education level (Chi square=120.820, df=3, p = 0.000), with a mean rank of test variable of 343.09 for Professional class, 315.83for service class, 230.38 for business class, and 131.98 for labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with social awareness towards security and privacy while using mobile banking services. It means consumers from different occupation have a difference in thinking about the above important factors of social awareness towards security and privacy while using mobile banking services. Finally, it concludes that there is a different influence about social awareness towards security and privacy while using mobile banking services among the consumers from different occupations such as Professional class, Service class, Business class, and Labour class.

(e.) Sub-Occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.37: Kruskal Wallis Test Result on Sub-Occupation for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 1	550	4.06	1.039	1	5
V 2	550	3.90	1.177	1	5
V 3	550	3.51	1.456	1	5
V 4	550	2.51	1.165	1	5
V 5	550	2.53	1.224	1	5
V 6	550	2.72	1.344	1	5
V 7	550	4.48	.641	1	5
Sub –occupation	550	4.65	4.165	0	10
Ranks					
Sub –occupation			N	Mean Rank	
V 1	Buss. + Labour		230	195.71	
	CA/CS		40	335.86	
	Engineer		40	320.53	
	Lawyer		40	226.91	
	Doctor		40	356.31	
	Govt. Ser.		80	354.43	
	Pvt. Ser		80	357.17	
	Total		550		
V 2	Buss. + Labour		230	210.33	
	CA/CS		40	359.79	
	Engineer		40	259.85	
	Lawyer		40	344.00	
	Doctor		40	336.29	
	Govt. Ser.		80	413.54	
	Pvt. Ser		80	225.87	
	Total		550		
V 3	Buss. + Labour		230	192.14	
	CA/CS		40	353.70	
	Engineer		40	361.85	
	Lawyer		40	365.93	

	Doctor	40	297.53
	Govt. Ser.	80	200.65
	Pvt. Ser	80	451.50
	Total	550	
V 4	Buss. + Labour	230	333.13
	CA/CS	40	221.38
	Engineer	40	124.80
	Lawyer	40	303.84
	Doctor	40	281.35
	Govt. Ser.	80	221.23
	Pvt. Ser	80	249.41
	Total	550	
V 5	Buss. + Labour	230	330.91
	CA/CS	40	217.06
	Engineer	40	145.25
	Lawyer	40	227.56
	Doctor	40	287.50
	Govt. Ser.	80	239.82
	Pvt. Ser	80	264.19
	Total	550	
V 6	Buss. + Labour	230	343.87
	CA/CS	40	194.45
	Engineer	40	131.09
	Lawyer	40	255.13
	Doctor	40	295.46
	Govt. Ser.	80	229.11
	Pvt. Ser	80	238.26
	Total	550	
V 7	Buss. + Labour	230	239.54
	CA/CS	40	207.78
	Engineer	40	289.99
	Lawyer	40	293.34
	Doctor	40	306.16
	Govt. Ser.	80	272.43
	Pvt. Ser	80	384.33
	Total	550	

Test Statistics

	V 1	V 2	V 3	V 4	V 5	V 6	V 7
Chi-Square	137.829	145.599	229.989	88.901	72.662	103.325	75.832
df	6	6	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000

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

H_{01.13}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a1.13}	There is a significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each sub -occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that **“Only one person is allowed to enter ATM cabin for transaction”** for variable sub-occupation (Chi square= 137.829, df=6, p = 0.000), with a mean rank of test variable of 335.86 for CA/CS, 320.53 for engineers, 226.91 for lawyers, and 356.31 for doctors, 354.43 for government employees, and 357.17 for private employees.
- b) There is a significant difference among consumers from different sub-occupation related to test variable that **“There is adequate privacy while using ATM”** for variable sub-occupation (Chi square= 145.599, df=6, p = 0.000), with a mean rank of test variable of 359.79 for CA/CS, 259.85 for engineers, 344.00 for lawyers, and 336.29 for doctors, 413.54 for government employees, and 225.87 for private employees.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable sub- occupation (Chi square=229.889, df=6, p = 0.000), with a mean rank of test variable of 353.70 for CA/CS, 361.85 for engineers, 365.93 for lawyers, and 297.93 for doctors, 200.65 for government employees, and 451.50 for private employees.
- d) There is a significant difference among consumers from different sub-occupation related to test variable that **“My card information may be shared by the bank with 3rd party”** for variable sub- occupation (Chi square=89.901, df=6, p = 0.000), with a mean rank of test variable of 221.38 for CA/CS, 124.80 for engineers, 303.84 for lawyers, and 281.35 for doctors, 221.23 for government employees, and 249.41 for private employees.
- e) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can use my name and information and apply for a credit card”** for variable sub-occupation (Chi square=72.662, df=6, p = 0.000), with a mean rank of test variable of 217.06 for CA/CS, 145.25 for engineers, 227.56 for lawyers, and 287.50 for doctors, 239.82 for government employees, and 264.19 for private employees.
- f) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card”** for variable sub-occupation (Chi square=103.325, df=6, p = 0.000), with a mean rank of test variable of 194.45 for CA/CS, 131.09 for engineers, 255.13 for lawyers, and 295.46 for doctors, 229.11 for government employees, and 238.26 for private employees.
- g) There is a significant difference among consumers from different sub-occupation related to test variable that **“Password should not be Date of Birth, Mobile no”** for variable sub- occupation (Chi square=75.832, df=6, p = 0.000), with a mean rank of test variable of 207.78 for CA/CS, 289.99 for engineers, 293.34 for lawyers, and 306.16 for doctors, 272.43 for government employees, and 384.33 for private employees.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different sub-occupation with social 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 social awareness towards security and privacy while using ATM/cards(debit/credit) services. Finally, it concludes that there is different influence about social 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.

(ii.) Internet banking

Table 5.38: Kruskal Wallis Test Result on Sub-Occupation for Social Awareness Towards Security and Privacy for Internet Banking.

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 8	550	3.76	1.323	1	5
V 9	550	2.73	1.370	1	5
V 10	550	3.53	1.356	1	5
V 11	550	3.57	1.121	1	5
V 12	550	4.30	.841	1	5
Sub-occupation	550	4.65	4.165	0	10
Ranks					
	sub –occupation	N	Mean Rank		
V 8	Buss. + Labour	230	169.82		
	CA/CS	40	342.99		
	Engineer	40	345.61		
	Lawyer	40	317.79		
	Doctor	40	231.89		
	Govt. Ser.	80	347.32		
	Pvt. Ser	80	439.37		
	Total	550			
V 9	Buss. + Labour	230	273.36		
	CA/CS	40	221.60		
	Engineer	40	181.60		
	Lawyer	40	469.75		
	Doctor	40	223.96		
	Govt. Ser.	80	275.25		
	Pvt. Ser	80	281.08		
	Total	550			
V 10	Buss. + Labour	230	325.61		
	CA/CS	40	73.81		
	Engineer	40	324.70		
	Lawyer	40	395.08		
	Doctor	40	186.43		
	Govt. Ser.	80	233.85		
	Pvt. Ser	80	234.08		
	Total	550			
V 11	Buss. + Labour	230	241.24		

	CA/CS	40	311.18		
	Engineer	40	338.00		
	Lawyer	40	401.75		
	Doctor	40	193.95		
	Govt. Ser.	80	262.83		
	Pvt. Ser	80	315.23		
	Total	550			
V 12	Buss. + Labour	230	230.35		
	CA/CS	40	304.70		
	Engineer	40	284.95		
	Lawyer	40	207.58		
	Doctor	40	298.68		
	Govt. Ser.	80	281.18		
	Pvt. Ser	80	402.69		
	Total	550			
Test Statistics					
	V 8	V 9	V 10	V 11	V 12
Chi-Square	245.333	86.940	146.324	64.220	96.344
Df	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.000

Based on sub-occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{01.14}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using internet banking services.
H_{a1.14}	There is a significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different sub-occupation related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable sub-occupation (Chi square= 245.333, df=6, p = 0.000), with a mean rank of test variable of 342.99 for CA/CS, 345.61 for engineers, 317.79 for lawyers, and 231.89 for doctors, 347.32 for government employees, and 439.37 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“My data will be lost when the bank server crashes”** for variable sub-occupation (Chi square= 86.940, df=6, p = 0.000), with a mean rank of test variable of 221.60 for CA/CS, 181.60 for engineers, 469.75 for lawyers, and 223.96 for doctors, 275.25 for government employees, and 281.08 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“My Internet banking details are shared with third party if I use public PC”** for variable sub- occupation (Chi square=146.324, df=6, p = 0.000), with a mean rank of test variable of 73.81 for CA/CS, 324.70 for engineers, 395.08 for lawyers, and 186.43 for doctors, 233.85 for government employees, and 234.08 for private employees.

- d) There is a significant difference among consumers from different sub-occupation related to test variable that “**My online banking password may be revealed by fraudsters if I not change at regular intervals**” for variable sub- occupation (Chi square=64.220 df=6, $p = 0.000$), with a mean rank of test variable of 311.18 for CA/CS, 338.00 for engineers, 401.75 for lawyers, and 193.95 for doctors, 262.83 for government employees, and 315.23 for private employees.
- e) There is a significant difference among consumers from different sub-occupation related to test variable that “**Password should not be Date of birth, Mobile no.**” for variable sub-occupation (Chi square=96.344, df=6, $p = 0.000$), with a mean rank of test variable of 304.70 for CA/CS, 284.95 for engineers, 207.58 for lawyers, and 298.68 for doctors, 281.18 for government employees, and 402.69 for private employees.

Conclusion

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

(iii.) Mobile Banking

Table 5.39: Kruskal Wallis Test Result on Sub-Occupation for Social Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 13	550	3.80	1.231	1	5
V 14	550	3.19	1.296	1	5
V 15	550	3.90	.979	1	5
V 16	550	3.95	1.030	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
sub -occupation			N	Mean Rank	
V 13	Buss. + labour		230	181.99	
	CA/CS		40	340.13	
	Engineer		40	345.68	
	Lawyer		40	216.64	
	Doctor		40	238.84	
	Govt. Ser.		80	356.98	
	Pvt. Ser		80	443.23	
	Total		550		
V 14	Buss. + labour		230	216.03	
	CA/CS		40	424.05	
	Engineer		40	449.04	
	Lawyer		40	171.85	
	Doctor		40	266.54	
	Govt. Ser.		80	249.02	
	Pvt. Ser		80	368.23	
	Total		550		
V 15	Buss. + labour		230	246.38	
	CA/CS		40	356.64	
	Engineer		40	137.91	
	Lawyer		40	345.03	
	Doctor		40	251.24	
	Govt. Ser.		80	358.47	
	Pvt. Ser		80	281.83	
	Total		550		
V 16	Buss. + labour		230	200.43	
	CA/CS		40	374.00	
	Engineer		40	369.70	
	Lawyer		40	270.10	
	Doctor		40	358.55	
	Govt. Ser.		80	361.69	
	Pvt. Ser		80	269.96	
	Total		550		

	Total	550		
Test Statistics^{a,b}				
	V 13	V 14	V 15	V 16
Chi-Square	231.084	170.166	88.175	127.580
Df	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000

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

H_{01.15}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using mobile banking services.
H_{a1.15}	There is a significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that **“I am aware about the process if I forget my login password/login ID”** for variable sub-occupation (Chi square= 231.084, df=6, p = 0.000), with a mean rank of test variable of 340.13 for CA/CS, 345.68 for engineers, 216.64 for lawyers, and 238.84 for doctors, 356.98 for government employees, and 443.23 for private employees.
- b) There is a significant difference among consumers from different sub-occupation related to test variable that **“The mobile banking of your bank does not prompt you to change password in specified day”** for variable sub-occupation (Chi square= 170.166, df=6, p = 0.000), with a mean rank of test variable of 424.05 for CA/CS, 449.04 for engineers, 171.85 for lawyers, and 266.54 for doctors, 249.02 for government employees, and 368.23 for private employees.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that **“Hackers can hack personal data if my mobile handset is stolen”** for variable sub- occupation (Chi square=88.175, df=6, p = 0.000), with a mean rank of test variable of 356.64 for CA/CS, 137.91 for engineers, 345.03 for lawyers, and 251.24 for doctors, 358.47 for government employees, and 281.83 for private employees.
- d) There is a significant difference among consumers from different sub-occupation related to test variable that **“Password should not be Date of birth, Mobile no”** for variable sub- occupation (Chi square=127.580 df=6, p = 0.000), with a mean rank of test variable of 374.00 for CA/CS, 369.70 for engineers, 270.10 for lawyers, and 358.55 for doctors, 361.69 for government employees, and 269.96 for private employees.

Conclusion

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

2. Ethical Awareness Towards Security and Privacy for Electronic Banking Services

(a.) Gender

(i.) ATM/Cards(Debit/Credit)

Table 5.40: Kruskal Wallis Test Result on Gender for Ethical Awareness Towards Security and Privacy For ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 17	550	3.64	1.102	1	5
V 18	550	3.21	1.096	1	5
V 19	550	3.40	1.231	1	5
V 20	550	3.54	1.264	1	5
V 21	550	3.01	1.141	1	5
V 22	550	2.73	1.269	1	5
V 23	550	3.88	1.099	1	5
V 24	550	3.60	.997	1	5
V 25	550	3.58	1.172	1	5
GENDER	550	1.33	.472	1	2
Ranks					
		N	Mean Rank		
GENDER	V 17	Male	366	270.55	
		Female	184	285.35	
		Total	550		
V 18	Male	366	277.37		
	Female	184	271.78		
	Total	550			
V 19	Male	366	271.70		
	Female	184	283.05		
	Total	550			
V 20	Male	366	270.16		
	Female	184	286.13		
	Total	550			
V 21	Male	366	279.58		
	Female	184	267.38		
	Total	550			
V 22	Male	366	266.08		
	Female	184	294.24		
	Total	550			
V 23	Male	366	285.81		
	Female	184	254.99		
	Total	550			
V 24	Male	366	286.04		
	Female	184	254.54		
	Total	550			

	Total		550						
V 25	Male		281		202.02				
	Female		133		219.07				
	Total		550						
Test Statistics^{a,b}									
	V 17	V 18	V19	V 20	V 21	V 22	V 23	V 24	V 25
Chi-Square	1.145	.162	.660	1.32	.769	4.044	5.069	5.32	1.974
Df	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.285	.687	.417	.250	.381	.044	.024	.021	.160

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

H _{02.1}	There is no significant difference among the consumer gender groups with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H _{a2.1}	There is a significant difference among the consumer gender groups with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among the consumer gender groups related to test variable that **“Someone can duplicate (Clone) my card through photomechanical process”** for variable gender (Chi square= 1.145, df=1, p = 0.285), with a mean rank of test variable of 270.55 for male and 285.35 for female.
- There is no significant difference among the consumer gender groups to test variable that **“Someone can transfer cash from my ATM without using card”** for variable gender (Chi square= .162, df=1, p = .687), with a mean rank of test variable of 277.37 for male and 271.78 for female.
- There is no significant difference among the consumer gender groups to test variable that **“Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot”** for variable gender (Chi square= .660, df=1, p = 0.417), with a mean rank of test variable of 271.70 for male and 283.05 for female.
- There is no significant difference among the consumer gender groups to test variable that **“Someone can copy information by card trapping & identify your PIN by getting friendly”** for gender (Chi square= 1.326, df=1, p = 0.250), with a mean rank of test variable of 270.16 for male and 286.13 for female.
- There is no significant difference among the consumer gender groups to test variable that **“Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping”** for gender (Chi square= .769, df=1, p = 0.381), with a mean rank of test variable of 279.58 for male and 267.38 for female.
- There is a significant difference among the consumer gender groups to test variable that **“My ATM card pin will be revealed through spam mails & unsafe Applications”** for gender (Chi square= 4.044, df=1, p = 0.044, with a mean rank of test variable of 266.08 for male and 294.24 for female.
- There is a significant difference among the consumer gender groups to test variable that **“If I give my personal information to the Fraudster then he can take over my account by making contact with the bank, report a lost card and change of**

address and obtain a new card “for gender (Chi square= 5.069, df=1, p = 0.024), with a mean rank of test variable of 285.81 for male and 254.99 for female.

- h) There is a significant difference among the consumer gender groups to test variable that **“Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system** “for gender (Chi square= 5.235, df=1, p = 0.021), with a mean rank of test variable of 286.04 for male and 254.54 for female.
- i) There is no significant difference among the consumer gender groups to test variable that **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization** “for gender (Chi square= 1.974, df=1, p = 0.160), with a mean rank of test variable of 202.02 for male and 219.07 for female.

Conclusion

The null hypothesis is accepted, there is no significant difference among the consumer gender groups with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. Finally, it concludes that males and females have similar thinking about ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services except for three test variables i.e. “My ATM card pin will be revealed through spam mails; unsafe Applications”, “If I give my personal information to the Fraudster then he can take over my account by contacting the bank, report a lost card and change of address and obtain a new card” and “Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”.

(ii.) Internet Banking

Table 5.41: Kruskal Wallis Test Result on Gender for Ethical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 26	550	3.14	1.266	1	5
V 27	550	2.74	1.294	1	5
V 28	550	3.42	1.054	1	5
V 29	550	2.82	1.283	1	5
V 30	550	3.60	1.167	1	5
V 31	550	3.54	1.202	1	5
V 32	550	2.99	1.260	1	5
V 33	550	3.86	1.103	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER			N	Mean Rank	
V 26	Male		282	198.10	
	Female		133	228.99	
	Total		415		
V 27	Male		366	273.94	
	Female		184	278.60	
	Total		550		
V 28	Male		366	265.89	
	Female		184	294.63	

	Total	550						
V 29	Male	366					281.53	
	Female	184					263.51	
	Total	550						
V 30	Male	366					277.08	
	Female	184					272.36	
	Total	550						
V 31	Male	366					277.46	
	Female	184					271.60	
	Total	550						
V 32	Male	366					259.89	
	Female	184					306.55	
	Total	550						
V 33	Male	366					268.16	
	Female	184					290.11	
	Total	550						
Test Statistics^{a,b}								
	V 26	V 27	V 28	V 29	V 30	V 31	V 32	V 33
Chi-Square	6.297	.111	4.338	1.657	.116	.178	11.155	2.568
Df	1	1	1	1	1	1	1	1
Asymp. Sig.	.012	.739	.037	.198	.733	.673	.001	.109

Based on gender following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services :

H_{02.2}	There is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using Internet Banking services.
H_{a2.2}	There is a significant difference among consumer gender groups with ethical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumer gender groups related to test variable that “**My online banking details may be stolen by phishing e mails**” for variable gender (Chi square= 6.297, df=1, p = .012), with a mean rank of test variable of 198.10 for male and 228.99 for female.
- There is no significant difference among consumer gender groups to test variable that “**I may reveal my internet banking password through spam mails**” for variable gender (Chi square= .111, df=1, p = .739), with a mean rank of test variable of 273.94 for male and 278.60 for female.
- There is a significant difference among consumer gender groups to test variable that “**Fraudsters commit identity theft to get money out of your account**” for variable gender (Chi square= 4.338, df=1, p = 0.037), with a mean rank of test variable of 265.89for male and 294.63 for female.

- d) There is no significant difference among consumer gender groups to test variable that **“I may reveal internet banking password on a fake website** “for gender (Chi square= 1.657, df=1, p = 0.198), with a mean rank of test variable of 281.53 for male and 263.51 for female.
- e) There is no significant difference among consumer gender groups to test variable that **“My internet banking details are shared with third party if I use public PC”** for gender (Chi square= .116, df=1, p = 0.733), with a mean rank of test variable of 277.08 for male and 272.36 for female.
- f) There is no significant difference among consumer gender groups to test variable that **“My online banking details will be revealed if use unsecured Wi-Fi systems** “for gender (Chi square= .178, df=1, p = 0.673) with a mean rank of test variable of 277.46 for male and 271.60 for female.
- g) There is a significant difference among consumer gender groups to test variable that **“Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user** “for gender (Chi square= 11.155, df=1, p = 0.001), with a mean rank of test variable of 259.89 for male and 306.55 for female.
- h) There is no significant difference among consumer gender groups to test variable that **“I may immediately report to the bank if I found irregularities in the last logged panel of the website** “for gender (Chi square= 2.568, df=1, p = 0.109), with a mean rank of test variable of 268.16 for male and 290.11 for female.

Conclusion

Null hypothesis is accepted, there is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using Internet Banking services. Finally, it concludes that a males and females have similar thinking about ethical awareness towards security and privacy while using internet banking services except for three test variables i.e. “My ATM card pin will be revealed through spam mails; unsafe Applications”, “If I give my personal information to the Fraudster then he can take over my account by contacting the bank, report a lost card and change of address and obtain a new card “and “Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”.

(iii.) Mobile Banking

Table 5.42: Kruskal Wallis Test Result on Gender for Ethical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics						
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum	
V 34	550	3.86	1.119	1	5	
V 35	550	3.24	1.301	1	5	
V 36	550	3.47	1.106	1	5	
V 37	550	3.45	1.265	1	5	
V 38	550	2.89	1.147	1	5	
V 39	550	3.01	1.270	1	5	
V 40	550	3.31	1.057	1	5	
V 41	550	3.23	1.285	1	5	
V 42	550	3.06	1.288	1	5	
GENDER	550	1.33	.472	1	2	
Ranks						

	GENDER		N	Mean Rank					
V 34	Male		366	284.24					
	Female		184	258.11					
	Total		550						
V 35	Male		366	275.83					
	Female		184	274.83					
	Total		550						
V 36	Male		366	272.39					
	Female		184	281.68					
	Total		550						
V 37	Male		366	271.78					
	Female		184	282.90					
	Total		550						
V 38	Male		366	276.29					
	Female		184	273.93					
	Total		550						
V 39	Male		366	277.88					
	Female		184	270.77					
	Total		550						
V 40	Male		366	270.33					
	Female		184	285.78					
	Total		550						
V 41	Male		366	252.85					
	Female		184	320.56					
	Total		550						
V 42	Male		366	264.01					
	Female		184	298.36					
	Total		550						
Test Statistics^{a,b}									
	V 34	V 35	V 36	V 37	V 38	V 39	V 40	V 41	V 42
Chi-Square	3.658	.005	.447	.637	.029	.258	1.24 8	23.47 6	6.011
Df	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.056	.943	.504	.425	.866	.612	.264	.000	.014

Based on gender following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{02.3}	There is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using mobile banking services.
H_{a2.3}	There is a significant difference among consumer gender groups with ethical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumer gender groups related to test variable that **“My mobile banking password may be stolen”** for variable gender (Chi square= 3.658, df=1, p = 0.056), with a mean rank of test variable of 284.24 for male and 258.11 for female.
- b) There is no significant difference among consumer gender groups to test variable that **“If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility”** for variable gender (Chi square= .005, df=1, p = .943), with a mean rank of test variable of 275.83 for male and 274.83 for female.
- c) There is no significant difference among consumer gender groups to test variable that **“It is very easy for others to Add Payee from my mobile banking account”** for variable gender (Chi square= 0.447, df=1, p = 0.504), with a mean rank of test variable of 272.39 for male and 281.68 for female.
- d) There is no significant difference among consumer gender groups to test variable that **“Someone can apply for loans by stealing sensitive information like login-credentials, payment information from my mobile device”** for variable gender (Chi square= .637, df=1, p = 0.425), with a mean rank of test variable of 271.78 for male and 282.90 for female.
- e) There is no significant difference among consumer gender groups to test variable that **“My mobile banking application being mapped to an incorrect mobile number”** for variable gender (Chi square= .029, df=1, p = 0.866), with a mean rank of test variable of 276.29 for male and 273.93 for female.
- f) There is no significant difference among consumer gender groups to test variable that **“Mobile service provider may monitor my financial transactions “**for variable gender (Chi square= .258, df=1, p = 0.612) with a mean rank of test variable of 277.88 for male and 270.77 for female.
- g) There is no significant difference among consumer gender groups to test variable that **“Someone can access my personal information I download malicious apps “**for variable gender (Chi square= 1.248, df=1, p = 0.264), with a mean rank of test variable of 270.33 for male and 285.78 for female.
- h) there is a statistically significant difference between the different gender to test variable that **“Someone can steal my confidential information by making fake apps with exactly the same user interface “**for variable gender (Chi square= 23.476, df=1, p = 0.000), with a mean rank of test variable of 252.85 for male and 320.56 for female.
- i) there is a statistically significant difference between the different gender to test variable that **“My confidential information may be accessed by others through Bluetooth “**for variable gender (Chi square= 6.011, df=1, p = 0.014), with a mean rank of test variable of 264.01 for male and 298.36 for female

Conclusion

Null hypothesis is accepted, there is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using mobile banking services. Finally, it concludes that males and females have similar thinking about ethical awareness towards security and privacy while using mobile banking services except for three test variables i.e. “If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility”, “My mobile banking application being mapped to an incorrect mobile number” and “Mobile service provider may monitor my financial transactions”.

(b.) Age

(i.) ATM/Cards (Debit/Credit)

Table 5.43: Kruskal Wallis Test Result on Age for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 17	550	3.64	1.102	1	5
V 18	550	3.21	1.096	1	5
V 19	550	3.40	1.231	1	5
V 20	550	3.54	1.264	1	5
V 21	550	3.01	1.141	1	5
V 22	550	2.73	1.269	1	5
V 23	550	3.88	1.099	1	5
V 24	550	3.60	.997	1	5
V 25	550	3.58	1.172	1	5
AGE	550	2.37	1.065	1	4
Ranks					
AGE			N	Mean Rank	
V 17	Below30		141	282.62	
	31-45		169	258.19	
	46-62		134	283.36	
	Above63		106	283.69	
	Total		550		
V 18	Below30		141	281.08	
	31-45		169	281.45	
	46-62		134	271.33	
	Above63		106	263.86	
	Total		550		
V 19	Below30		141	284.96	
	31-45		169	285.14	
	46-62		134	256.76	
	Above63		106	271.23	
	Total		550		
V 20	Below30		141	284.45	
	31-45		169	275.36	
	46-62		134	277.21	
	Above63		106	261.67	
	Total		550		
V 21	Below30		141	277.13	
	31-45		169	285.54	
	46-62		134	263.31	
	Above63		106	272.74	
	Total		550		
V 22	Below30		141	280.74	
	31-45		169	272.26	
	46-62		134	269.16	

	Above63	106	281.71						
	Total	550							
V 23	Below30	141	292.43						
	31-45	169	285.91						
	46-62	134	271.78						
	Above63	106	241.08						
	Total	550							
V 24	Below30	141	278.73						
	31-45	169	288.04						
	46-62	134	279.79						
	Above63	106	245.79						
	Total	550							
V 25	Below30	141	215.90						
	31-45	169	208.49						
	46-62	134	195.90						
	Above63	106	209.59						
	Total	550							
Test Statistics^{a,b}									
	V 17	V 18	V 19	V 20	V 21	V 22	V 23	V 24	V 25
Chi-Square	3.123	1.147	3.236	1.357	1.606	.630	8.114	5.440	1.617
Df	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.373	.766	.357	.716	.658	.890	.044	.142	.655

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

H_{02.4}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services.
H_{a2.4}	There is a significant difference among consumer age groups with ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumer age groups related to test variable that **“Someone can duplicate (Clone) my card through photomechanical” process** for variable age group (Chi square= 3.123, df=3, p = 0.373), with a mean rank of test variable of 282.63 for age group below 30, 258.19 for Age group 31-45, 283.36 for age group 46-62, and 283.69 for age group above 63.
- There is no significant difference among consumer age groups related to test variable that **“Someone can transfer cash from my ATM without using card”** for variable age group (Chi square= 1.147, df=3, p = .766), with a mean rank of test variable of 281.08 for age group below30, 281.45 for Age group 31-45, 271.33 for age group 46-62, and 263.86 for age group above63.
- There is no significant difference among consumer age groups related to test variable that **“Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot”** for variable age group (Chi square= 3.236, df=3, p = 0.357), with a mean rank of test variable of 284.96 for age group below 30,

285.14 for Age group 31-45, 256.76 for age group 46-62, and 271.23 for age group above 63.

- d) There is no significant difference among consumer age groups related to test variable that **“Someone can copy information by card trapping & identify your PIN by getting friendly”** for variable age group (Chi square= 1.357, df=3, p = .716), with a mean rank of test variable of 284.45 for age group below 30, 275.36 for Age group 31-45, 277.21 for age group 46-62, and 261.67 for age group above 63.
- e) There is no significant difference among consumer age groups related to test variable that **“Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping”** for variable age group (Chi square= 1.606, df=3, p = .658), with a mean rank of test variable of 277.13 for age group below 30, 285.54 for Age group 31-45, 263.31 for age group 46-62, and 272.74 for age group above 63
- f) There is no significant difference among consumer age groups related to test variable that **“My ATM card pin will be revealed through spam mails & unsafe Applications”** for variable age group (Chi square= .630, df=3, p = .890), with a mean rank of test variable of 280.74 for age group below 30, 272.26 for Age group 31-45, 269.16 for age group 46-62, and 281.71 for age group above 63.
- g) There is a significant difference among consumer age groups related to test variable that **“If I give my personal information to the Fraudster then he can take over my account by making contact with the bank , report a lost card and change of address and obtain a new card”** for variable age group (Chi square= 8.114, df=3, p = .004), with a mean rank of test variable of 292.43 for age group below 30, 285.91 for Age group 31-45, 271.78 for age group 46-62, and 241.08 for age group above 63.
- h) There is no significant difference among consumer age groups related to test variable that **“Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”** for variable age group (Chi square= 5.440, df=3, p = .142), with a mean rank of test variable of 278.73 for age group below 30, 288.04 for Age group 31-45, 279.79 for age group 46-62, and 245.79 for age group above 63.
- i) There is no significant difference among consumer age groups related to test variable **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization”** for variable age group (Chi square= 1.617, df=3, p = .655), with a mean rank of test variable of 215.90 for age group below 30, 208.49 for Age group 31-45, 195.90 for age group 46-62, and 205.59 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with ethical 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 ethical 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 ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has higher group of age except in one test variable i.e. “if I give my personal information to the Fraudster then he can take over my account by contacting the bank, report a lost card and change of address and obtain a new card.”

(ii.) Internet Banking

Table 5.44: Kruskal Wallis Test Result on Age for Ethical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics

Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 26	550	3.14	1.266	1	5
V 27	550	2.74	1.294	1	5
V 28	550	3.42	1.054	1	5
V 29	550	2.82	1.283	1	5
V 30	550	3.60	1.167	1	5
V 31	550	3.54	1.202	1	5
V 32	550	2.99	1.260	1	5
V 33	550	3.86	1.103	1	5
AGE	550	2.37	1.065	1	4

Ranks

	AGE	N	Mean Rank
V 26	Below30	141	192.29
	31-45	169	215.55
	46-62	134	193.81
	Above63	106	237.69
	Total	550	
V 27	Below30	141	255.45
	31-45	169	276.88
	46-62	134	271.49
	Above63	106	305.04
	Total	550	
V 28	Below30	141	265.91
	31-45	169	248.53
	46-62	134	300.48
	Above63	106	299.68
	Total	550	
V 29	Below30	141	279.14
	31-45	169	246.95
	46-62	134	296.80
	Above63	106	289.25
	Total	550	
V 30	Below30	141	278.84
	31-45	169	286.34
	46-62	134	260.87
	Above63	106	272.27
	Total	550	
V 31	Below30	141	264.41
	31-45	169	296.35
	46-62	134	265.17
	Above63	106	270.06
	Total	550	

V 32	Below30	141	276.60					
	31-45	169	292.49					
	46-62	134	250.12					
	Above63	106	279.02					
	Total	550						
V 33	Below30	141	264.53					
	31-45	169	278.12					
	46-62	134	279.01					
	Above63	106	281.48					
	Total	550						
Test Statistics^{a,b}								
	V 26	V 27	V 28	V 29	V 30	V 31	V 32	V 33
Chi-Square	8.483	6.299	12.075	9.185	2.177	4.574	5.717	1.026
Df	3	3	3	3	3	3	3	3
Asymp. Sig.	.037	.098	.007	.027	.536	.206	.126	.795

Based on age following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H0_{2.5}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using Internet Banking services.
Ha_{2.5}	There is a significant difference among consumer age groups with ethical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumer age groups related to test variable that “**My online banking details may be stolen by phishing e mails**” for variable age group (Chi square= 8.483, df=3, p = .037), with a mean rank of test variable of 192.29 for age group below 30, 215.55 for Age group 31-45, 193.81 for age group 46-62, and 237.69 for age group above 63.
- There is no significant difference among consumer age groups related to test variable that “**I may reveal my internet banking password through spam mails**” for variable age group (Chi square= 6.299, df=3, p = .098), with a mean rank of test variable of 255.45 for age group below30, 276.88 for Age group 31-45, 271.49 for age group 46-62, and 305.04 for age group above63.
- There is a significant difference among consumer age groups related to test variable that “**Fraudsters commit identity theft to get money out of your account**” for variable age group (Chi square= 12.075, df=3, p = 0.007), with a mean rank of test variable of 265.91 for age group below 30, 248.53 for Age group 31-45, 300.48 for age group 46-62, and 299.68 for age group above 63.
- There is a significant difference among consumer age groups related to test variable that “**I may reveal internet banking password on a fake website**” for variable age group (Chi square= 9.185, df=3, p = .027), with a mean rank of test variable of 279.14 for age group below 30, 246.95 for Age group 31-45, 299.80 for age group 46-62, and 289.25 for age group above 63.

- e) There is no significant difference among consumer age groups related to test variable that” **My internet banking details are shared with third party if I use public PC**” for variable age group (Chi square= 2.177, df=3, p = .536), with a mean rank of test variable of 278.84 for age group below 30, 286.34 for Age group 31-45, 260.87 for age group 46-62, and 272.27 for age group above 63.
- f) There is no significant difference among consumer age groups related to test variable that **“My online banking details will be revealed if use unsecured Wi-Fi systems”** for variable age group (Chi square= 4.574, df=3, p = .206), with a mean rank of test variable of 264.41for age group below 30, 296.35 for Age group 31-45, 265.17 for age group 46-62, and 270.06for age group above 63.
- g) There is no significant difference among consumer age groups related to test variable that **“Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user**” for variable age group (Chi square= 5.717, df=3, p = .126), with a mean rank of test variable of 276.60 for age group below 30, 292.49 for Age group 31-45, 250.12 for age group 46-62, and 279.02 for age group above 63.
- h) There is no significant difference among consumer age groups related to test variable that **“I may immediately report to the bank if I found irregularities in the last logged panel of the website”** for variable age group (Chi square= 1.026, df=3, p = .795), with a mean rank of test variable of 264.53 for age group below 30, 278.12 for Age group 31-45, 279.01for age group 46-62, and 281.48 for age group above 63.

Conclusion

Null hypothesis is accepted, there is no significant difference among consumer age groups with ethical awareness towards security and privacy while using Internet Banking services. It means consumers of all age groups have similar thinking about above important factors of ethical awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has young age have a similar influence about ethical awareness towards security and privacy while using Internet banking services except in two test variables i.e. “Fraudsters commit identity theft to get money out of your account” and “I may reveal internet banking password on a fake website”.

(iii.) Mobile Banking

Table 5.45: Kruskal Wallis Test Result on Age for Ethical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 34	550	3.86	1.119	1	5
V 35	550	3.24	1.301	1	5
V 36	550	3.47	1.106	1	5
V 37	550	3.45	1.265	1	5
V 38	550	2.89	1.147	1	5
V 39	550	3.01	1.270	1	5
V 40	550	3.31	1.057	1	5
V 41	550	3.23	1.285	1	5
V 42	550	3.06	1.288	1	5
AGE	550	2.37	1.065	1	4
Ranks					

AGE		N	Mean Rank
V 34	Below30	141	270.08
	31-45	169	269.28
	46-62	134	288.52
	Above63	106	276.16
	Total	550	
V 35	Below30	141	263.24
	31-45	169	286.64
	46-62	134	266.96
	Above63	106	284.83
	Total	550	
V 36	Below30	141	281.80
	31-45	169	263.37
	46-62	134	267.96
	Above63	106	296.00
	Total	550	
V 37	Below30	141	278.90
	31-45	169	257.57
	46-62	134	286.36
	Above63	106	285.83
	Total	550	
V 38	Below30	141	283.29
	31-45	169	272.35
	46-62	134	273.83
	Above63	106	272.27
	Total	550	
V 39	Below30	141	264.34
	31-45	169	271.22
	46-62	134	292.74
	Above63	106	275.37
	Total	550	
V 40	Below30	141	288.27
	31-45	169	286.56
	46-62	134	252.69
	Above63	106	269.72
	Total	550	
V 41	Below30	141	291.04
	31-45	169	264.27
	46-62	134	271.04
	Above63	106	278.37
	Total	550	
V 42	Below30	141	282.63
	31-45	169	281.14
	46-62	134	261.83

	Above63		106	274.32					
	Total		550						
Test Statistics^{a,b}									
	V 34	V 35	V 36	V 37	V 38	V 39	V 40	V 41	V 42
Chi-Square	1.463	2.559	3.496	3.494	.494	2.520	4.990	2.462	1.570
Df	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.691	.465	.321	.322	.920	.472	.173	.482	.666

Based on age following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services.

H_{02.6}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using mobile Banking services.
H_{a2.6}	There is a significant difference among consumer age groups with ethical awareness towards security and privacy while using mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is no significant difference among consumer age groups related to test variable that **“My mobile banking password may be stolen”** for variable age group (Chi square= 1.463, df=3, p = .691), with a mean rank of test variable of 270.08 for age group below 30, 269.28 for Age group 31-45, 288.52 for age group 46-62, and 276.16 for age group above 63.
- (b.) There is no significant difference among consumer age groups related to test variable that **“If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility”** for variable age group (Chi square= 2.559, df=3, p = .465), with a mean rank of test variable of 263.24 for age group below30, 286.64 for Age group 31-45, 266.96 for age group 46-62, and 284.83 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that **“It is very easy for others to Add Payee from my mobile banking account”** for variable age group (Chi square= 3.496, df=3, p = .321), with a mean rank of test variable of 281.80 for age group below 30, 263.37 for Age group 31-45, 267.96 for age group 46-62, and 296.00 for age group above 63.
- (d.) There is no significant difference among consumer age groups related to test variable that **“Someone can apply for loans by stealing sensitive information like login-credentials, payment information from my mobile device”** for variable age group (Chi square= 3.494, df=3, p = .322), with a mean rank of test variable of 278.90 for age group below 30, 257.5 for Age group 31-45, 286.36 for age group 46-62, and 285.83 for age group above 63.
- (e.) There is no significant difference among consumer age groups related to test variable that **“My mobile banking application being mapped to an incorrect mobile number”** for variable age group (Chi square= .494, df=3, p = .920), with a mean rank of test variable of 283.29 for age group below 30, 272.35 for Age group 31-45, 273.83 for age group 46-62, and 272.27 for age group above 63.
- (f.) There is no significant difference among consumer age groups related to test variable that **“Mobile service provider may monitor my financial transactions”** for variable age group (Chi square= 2.520, df=3, p = .472), with a mean rank of test variable of 264.37 for

age group below 30, 271.22 for Age group 31-45, 292.74 for age group 46-62, and 275.37 for age group above 63.

- (g.) There is no significant difference among consumer age groups related to test variable that “**Someone can access my personal information I download malicious apps**” for variable age group (Chi square= 4.990, df=3, p = .173), with a mean rank of test variable of 288.27 for age group below 30, 286.56 for Age group 31-45, 252.69 for age group 46-62, and 269.72 for age group above 63.
- (h.) There is no significant difference among consumer age groups related to test variable that “**Someone can steal my confidential information by making fake apps with exactly the same user interface**” for variable age group (Chi square= 2.462, df=3, p = .482), with a mean rank of test variable of 291.04 for age group below 30, 264.27 for Age group 31-45, 271.04 for age group 46-62, and 278.37 for age group above 63.
- (i.) There is no significant difference among consumer age groups related to test variable that “**My confidential information may be accessed by others through Bluetooth**” for variable age group (Chi square= 1.570, df=3, p = .666), with a mean rank of test variable of 282.63 for age group below 30, 281.14 for Age group 31-45, 261.83 for age group 46-62, and 274.32 for age group above 63.

Conclusion

Null hypothesis is accepted, there is no significant difference among consumer age groups with ethical awareness towards security and privacy while using mobile Banking Services It means consumers of all age groups have similar thinking about above important factors of ethical awareness towards security and privacy while using mobile banking services. Finally, it concludes that a respondent who has a young age have a similar influence about ethical awareness towards security and privacy while using mobile banking services whatever a respondent has a higher group of age.

(c.) Education

(i) ATM/Cards(Debit/Credit)

Table 5.46: Kruskal Wallis Test Result on Education for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 17	550	3.64	1.102	1	5
V 18	550	3.21	1.096	1	5
V 19	550	3.40	1.231	1	5
V 20	550	3.54	1.264	1	5
V 21	550	3.01	1.141	1	5
V 22	550	2.73	1.269	1	5
V 23	550	3.88	1.099	1	5
V 24	550	3.60	.997	1	5
V 25	550	3.58	1.172	1	5
EDUCATION	550	2.87	1.083	1	4

		Ranks	
EDUCATION		N	Mean Rank
V 17	Primary	80	253.79
	Secondary	122	285.32
	Graduate	137	277.67
	Postgraduate	211	276.64
	Total	550	
V 18	Primary	80	262.31
	Secondary	122	288.06
	Graduate	137	295.39
	Postgraduate	211	260.32
	Total	550	
V 19	Primary	80	242.26
	Secondary	122	242.27
	Graduate	137	317.92
	Postgraduate	211	279.77
	Total	550	
V 20	Primary	80	254.06
	Secondary	122	246.22
	Graduate	137	298.28
	Postgraduate	211	285.77
	Total	550	
V 21	Primary	80	326.14
	Secondary	122	323.93
	Graduate	137	241.64
	Postgraduate	211	250.28
	Total	550	
V 22	Primary	80	204.56
	Secondary	122	268.67
	Graduate	137	299.86
	Postgraduate	211	290.53
	Total	550	
V 23	Primary	80	329.00
	Secondary	122	298.43
	Graduate	137	239.86
	Postgraduate	211	265.10
	Total	550	
V 24	Primary	80	352.44
	Secondary	122	313.42
	Graduate	137	245.36
	Postgraduate	211	243.97
	Total	550	
V 25	Primary	80	196.79
	Secondary	122	189.28

					Graduate	137	206.83		
					Postgraduate	211	218.98		
					Total	550			
Test Statistics^{a,b}									
	V 17	V 18	V 19	V 20	V 21	V 22	V 23	V 24	V 25
Chi-Square	2.150	5.764	19.816	9.966	32.991	22.368	21.349	43.106	4.248
df	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.542	.124	.000	.019	.000	.000	.000	.000	.236

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

H_{02.7}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services.
H_{a2.7}	There is a significant difference among consumers at different education level with ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumers at different education level related to test variable that “**Someone can duplicate (Clone) my card through photomechanical process**” for variable education level (Chi square= 2.150, df=3, p = 0.542), with a mean rank of test variable of 253.79 for primary level of education, 285.32 for secondary level of education, 277.67 graduate level of education, and 276.64 for post graduate level of education.
- There is no significant difference among consumers at different education level related to test variable that “**Someone can transfer cash from my ATM without using card**” for variable education level (Chi square=5.764, df=3, p = 0.124), with a mean rank of test variable of 262.31for primary level of education, 288.06 for secondary level of education, 295.39 for graduate level of education, and 260.32 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot**” for variable education level (Chi square= 19.816, df=3, p = 0.000), with a mean rank of test variable of 242.26 for primary level of education, 242.27 for secondary level of education, 317.92 graduate level of education, and 279.77 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**Someone can copy information by card trapping & identify your PIN by getting friendly**” for variable education level (Chi square= 9.966 df=3, p = 0.000), with a mean rank of test variable of 254.06 for primary level, 246.22 for secondary level of education, 298.28 graduate level of education, and 285.77 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that “**Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping)**” for variable education level (Chi square= 32.991 df=3, p =

0.000), with a mean rank of test variable of 326.14 for primary level, 323.93 for secondary level of education, 241.64 graduate level of education, and 250.28 for post graduate level of education.

- f) There is a significant difference among consumers at different education level related to test variable that **“My ATM card pin will be revealed through spam mails & unsafe Applications”** for variable education level (Chi square= 22.368 df=3, p = 0.000), with a mean rank of test variable of 204.56 for primary level, 268.67 for secondary level of education, 299.86 graduate level of education, and 290.53 for post graduate level of education.
- g) There is a significant difference among consumers at different education level related to test variable that **“If I give my personal information to the Fraudster then he can take over my account by making contact with the bank , report a lost card and change of address and obtain a new card”** for variable education level (Chi square= 21.349 df=3, p = 0.000), with a mean rank of test variable of 329.00 for primary level, 298.43 for secondary level of education, 239.86 graduate level of education, and 265.10 for post graduate level of education.
- h) There is a significant difference among consumers at different education level related to test variable that **“Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”** for variable education level (Chi square= 43.106 df=3, p = 0.000), with a mean rank of test variable of 352.44 for primary level, 313.42 for secondary level of education, 245.36 graduate level of education, and 243.97 for post graduate level of education.
- i) There is no significant difference among consumers at different education level related to test variable that **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization”** for variable education level (Chi square= 4.248 df=3, p = 0.236), with a mean rank of test variable of 196.79 for primary level, 189.28 for secondary level of education, 206.83 graduate level of education, and 218.98 for post graduate level of education.

Conclusion

Null hypothesis is rejected, there is significant difference among consumers at different education level with ethical 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 ethical 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 ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has a post-graduate level of education except for three test variables i.e. “Someone can duplicate (Clone) my card through photomechanical process”, “someone can transfer cash from my ATM without using card “and “someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization.

(ii.) Internet banking

Table 5.47: Kruskal Wallis Test Result on Education for Ethical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 26	550	3.14	1.266	1	5
V 27	550	2.74	1.294	1	5
V 28	550	3.42	1.054	1	5
V 29	550	2.82	1.283	1	5
V 30	550	3.60	1.167	1	5
V 31	550	3.54	1.202	1	5
V 32	550	2.99	1.260	1	5
V 33	550	3.86	1.103	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
			N	Mean Rank	
EDUCATION					
V 26	Primary		80	136.50	
	Secondary		122	187.96	
	Graduate		137	216.32	
	Postgraduate		211	230.17	
	Total		550		
V 27	Primary		80	248.16	
	Secondary		122	241.46	
	Graduate		137	312.99	
	Postgraduate		211	281.21	
	Total		550		
V 28	Primary		80	255.28	
	Secondary		122	264.99	
	Graduate		137	289.86	
	Postgraduate		211	279.92	
	Total		550		
V 29	Primary		80	329.13	
	Secondary		122	271.33	
	Graduate		137	296.29	
	Postgraduate		211	244.08	
	Total		550		
V 30	Primary		80	284.39	
	Secondary		122	272.50	
	Graduate		137	296.92	
	Postgraduate		211	259.95	
	Total		550		

V 31	Primary	80	278.72					
	Secondary	122	281.72					
	Graduate	137	269.54					
	Postgraduate	211	274.56					
	Total	550						
V 32	Primary	80	248.96					
	Secondary	122	279.11					
	Graduate	137	298.31					
	Postgraduate	211	268.67					
	Total	550						
V 33	Primary	80	213.40					
	Secondary	122	274.57					
	Graduate	137	292.19					
	Postgraduate	211	288.75					
	Total	550						
Test Statistics^{a,b}								
	V 26	V 27	V 28	V 29	V 30	V 31	V 32	V 33
Chi-Square	26.23	16.63	3.37	20.82	5.158	.448	5.820	16.707
df	0	8	1	0				
Asymp . Sig.	.000	.001	.338	.000	.161	.930	.121	.001

Based on education following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using Internet Banking services

H_{02.8}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using Internet Banking services.
H_{a2.8}	There is a significant difference among consumers at different education level with ethical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers at different education level related to test variable that **My online banking details may be stolen by phishing e mails** for variable education level (Chi square= 26.230, df=3, p = 0.000), with a mean rank of test variable of 136.50 for primary level of education, 187.96 for secondary level of education, 216.32 graduate level of education, and 230.17 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that **I may reveal my internet banking password through spam mails for** variable education level (Chi square=16.638, df=3, p = 0.001), with a mean rank of test variable of 248.16 for primary level of education, 241.46 for secondary level of education, 312.99 for graduate level of education, and 281.21 for post graduate level of education.
- There is no significant difference among consumers at different education level related to test variable that **Fraudsters commit identity theft to get money out of your account** for variable education level (Chi square= 3.371, df=3, p = 0.338), with a mean rank of test variable of 255.28 for primary level of education, 264.99 for secondary level of

education, 289.86 graduate level of education, and 279.92 for post graduate level of education.

- d) There is a significant difference among consumers at different education level related to test variable that **I may reveal internet banking password on a fake website** for variable education level (Chi square= 20.820 df=3, p = 0.000), with a mean rank of test variable of 329.13 for primary level, 271.33 for secondary level of education, 296.29 graduate level of education, and 244.08 for post graduate level of education.
- e) There is no significant difference among consumers at different education level related to test variable that **My internet banking details are shared with third party if I use public PC** for variable education level (Chi square= 5.158 df=3, p = 0.161), with a mean rank of test variable of 284.39 for primary level, 272.50 for secondary level of education, 296.92 graduate level of education, and 259.95 for post graduate level of education.
- f) There is no significant difference among consumers at different education level related to test variable that **My online banking details will be revealed if use unsecured Wi-Fi systems** for variable education level (Chi square= .448 df=3, p = 0.930), with a mean rank of test variable of 278.72 for primary level, 281.72 for secondary level of education, 269.54 graduate level of education, and 274.56 for post graduate level of education.
- g) There is no significant difference among consumers at different education level related to test variable that **Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user** for variable education level (Chi square= 5.820 df=3, p = 0.121), with a mean rank of test variable of 248.96 for primary level, 279.11 for secondary level of education, 298.31 graduate level of education, and 268.67 for post graduate level of education.
- h) There is a significant difference among consumers at different education level related to test variable that **I may immediately report to the bank if I found irregularities in the last logged panel of the website** for variable education level (Chi square= 16.707 df=3, p = 0.001), with a mean rank of test variable of 213.40 for primary level, 274.57 for secondary level of education, 292.19 graduate level of education, and 288.75 for post graduate level of education.

Conclusion

Null hypothesis is accepted, there is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using Internet Banking services. It means consumers at different education level have a similar in thinking about the above important factors of ethical awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has a primary level of education have a similar influence about ethical awareness towards security and privacy while using internet banking services whatever a respondent has a post-graduate level of education except for four test variables i.e. “Fraudsters commit identity theft to get money out of your account”, “My internet banking details are shared with third party if I use public PC”, “My online banking details will be revealed if use unsecured Wi-Fi systems” and “Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user”.

(iii.) Mobile Banking

Table 5.48: Kruskal Wallis Test Result on Education for Ethical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 34	550	3.86	1.119	1	5

V 35	550	3.24	1.301	1	5
V 36	550	3.47	1.106	1	5
V 37	550	3.45	1.265	1	5
V 38	550	2.89	1.147	1	5
V 39	550	3.01	1.270	1	5
V 40	550	3.31	1.057	1	5
V 41	550	3.23	1.285	1	5
V 42	550	3.06	1.288	1	5
EDUCATION	550	2.87	1.083	1	4

Ranks

EDUCATION		N	Mean Rank
V 34	Primary	80	335.05
	Secondary	122	323.79
	Graduate	137	243.32
	Postgraduate	211	245.90
	Total	550	
V 35	Primary	80	282.49
	Secondary	122	251.32
	Graduate	137	291.20
	Postgraduate	211	276.64
	Total	550	
V 36	Primary	80	256.64
	Secondary	122	249.90
	Graduate	137	290.07
	Postgraduate	211	287.99
	Total	550	
V 37	Primary	80	228.17
	Secondary	122	256.04
	Graduate	137	324.51
	Postgraduate	211	272.87
	Total	550	
V 38	Primary	80	285.75
	Secondary	122	314.39
	Graduate	137	253.19
	Postgraduate	211	263.61
	Total	550	
V 39	Primary	80	281.28

	Secondary	122	299.65
	Graduate	137	281.53
	Postgraduate	211	255.43
	Total	550	
V 40	Primary	80	267.37
	Secondary	122	279.09
	Graduate	137	302.93
	Postgraduate	211	258.70
	Total	550	
V 41	Primary	80	183.98
	Secondary	122	247.75
	Graduate	137	313.09
	Postgraduate	211	301.83
	Total	550	
V 42	Primary	80	218.74
	Secondary	122	275.94
	Graduate	137	303.73
	Postgraduate	211	278.44
	Total	550	

Test Statistics ^{a,b}									
	V 34	V 35	V 36	V 37	V 38	V 39	V 40	V 41	V 42
Chi-Square	39.145	4.574	7.213	23.390	12.260	6.822	7.237	46.160	15.346
Df	3	3	3	3	3	3	3	3	3
Asymp . Sig.	.000	.206	.065	.000	.007	.078	.065	.000	.002

Based on age following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using Mobile Banking services:

H_{02.9}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using mobile Banking services.
H_{a2.9}	There is a significant difference among consumers at different education level with ethical awareness towards security and privacy while using mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers at different education level related to test variable that “**My mobile banking password may be stolen**” for variable education level (Chi square= 39.145, df=3, p = 0.000), with a mean rank of test variable of 335.05 for primary level of education, 323.79 for secondary level of education, 243.32 graduate level of education, and 245.90 for post graduate level of education.
- There is no significant difference among consumers at different education level related to test variable that “**If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility**” for variable education level (Chi square=4.574, df=3, p = 0.206), with a mean rank of test variable of 282.29 for primary level of education,

251.32 for secondary level of education, 291.20 for graduate level of education, and 276.64 for post graduate level of education.

- c) There is no significant difference among consumers at different education level related to test variable that **“It is very easy for others to Add Payee from my mobile banking account”** for variable education level (Chi square= 7.213, df=3, p = 0.065), with a mean rank of test variable of 256.64 for primary level of education, 249.90 for secondary level of education, 290.07 graduate level of education, and 287.99 for post graduate level of education.
- d) There is a significant difference among consumers at different education level related to test variable that **“Someone can apply for loans by stealing sensitive information like login- credentials, payment information from my mobile device”** for variable education level (Chi square= 23.390 df=3, p = 0.000), with a mean rank of test variable of 228.17 for primary level, 256.04 for secondary level of education, 324.51 graduate level of education, and 272.87 for post graduate level of education.
- e) There is a significant difference among consumers at different education level related to test variable that **“My mobile banking application being mapped to an incorrect mobile number”** for variable education level (Chi square= 12.260 df=3, p = 0.007), with a mean rank of test variable of 285.75 for primary level, 314.39 for secondary level of education, 253.19 graduate level of education, and 263.61 for post graduate level of education.
- f) There is a significant difference among consumers at different education level related to test variable that **“Mobile service provider may monitor my financial transactions”** for variable education level (Chi square= 6.822 df=3, p = 0.078), with a mean rank of test variable of 281.28 for primary level, 299.65 for secondary level of education, 281.53 graduate level of education, and 255.43 for post graduate level of education.
- g) There is no significant difference among consumers at different education level related to test variable that **“Someone can access my personal information I download malicious apps”** for variable education level (Chi square= 7.237 df=3, p = 0.065), with a mean rank of test variable of 267.37 for primary level, 279.09 for secondary level of education, 302.93 graduate level of education, and 258.70 for post graduate level of education.
- h) There is a significant difference among consumers at different education level related to test variable that **“Someone can steal my confidential information by making fake apps with exactly the same user interface”** for variable education level (Chi square= 46.160 df=3, p = 0.000), with a mean rank of test variable of 183.98 for primary level, 247.75 for secondary level of education, 313.09 graduate level of education, and 301.83 for post graduate level of education.
- i) There is a significant difference among consumers at different education level related to test variable that **“My confidential information may be accessed by others through Bluetooth”** for variable education level (Chi square= 15.346 df=3, p = 0.002), with a mean rank of test variable of 218.74 for primary level, 275.94 for secondary level of education, 303.73 graduate level of education, and 278.44 for post graduate level of education.

Conclusion

Null hypothesis is rejected, there is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using mobile Banking services. It means consumers at different education level have a difference in thinking about the above important factors of ethical awareness towards security and privacy for mobile banking. Finally, it concludes that a respondent who has a primary level of education have a different influence about ethical awareness towards security and privacy while using mobile

banking services whatever a respondent has a post-graduate level of education except for four test variables i.e. “If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility”, “My internet banking details are shared with third party if I use public PC”, “It is very easy for others to Add Payee from my mobile banking account”, “Mobile service provider may monitor my financial transactions and Someone can access my personal information I download malicious apps”.

(d.) Occupation

(i.) ATM/Cards (Debit/Credit)

Table 5.49: Kruskal Wallis Test Result on Occupation for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 17	550	3.64	1.102	1	5
V 18	550	3.21	1.096	1	5
V 19	550	3.40	1.231	1	5
V 20	550	3.54	1.264	1	5
V 21	550	3.01	1.141	1	5
V 22	550	2.73	1.269	1	5
V 23	550	3.88	1.099	1	5
V 24	550	3.60	.997	1	5
V 25	550	3.58	1.172	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N	Mean Rank	
V 17	Professional		160	232.28	
	Service		160	315.61	
	Business		160	322.26	
	Labour		70	175.72	
	Total		550		
V 18	Professional		160	274.81	
	Service		160	260.29	
	Business		160	300.38	
	Labour		70	254.96	
	Total		550		
V 19	Professional		160	326.44	
	Service		160	296.39	
	Business		160	231.83	
	Labour		70	211.14	
	Total		550		
V 20	Professional		160	325.01	

	Service	160	326.80
	Business	160	150.89
	Labour	70	329.89
	Total	550	
V 21	Professional	160	190.78
	Service	160	310.72
	Business	160	276.42
	Labour	70	386.55
	Total	550	
V 22	Professional	160	299.89
	Service	160	326.91
	Business	160	228.83
	Labour	70	208.93
	Total	550	
V 23	Professional	160	238.64
	Service	160	277.38
	Business	160	274.93
	Labour	70	356.77
	Total	550	
V 24	Professional	160	209.11
	Service	160	306.23
	Business	160	240.99
	Labour	70	435.90
	Total	550	
V 25	Professional	160	215.07
	Service	160	210.40
	Business	160	170.52
	Labour	70	196.25
	Total	550	

Test Statistics^{a,b}

	V 17	V 18	V 19	V 20	V 21	V 22	V 23	V 24	V 25
Chi-Square	68.38	7.023	45.201	148.83	93.177	48.988	29.647	124.863	3.926
Df	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.071	.000	.000	.000	.000	.000	.000	.270

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

H_{02.10}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a2.10}	There is a significant difference among consumers from different occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different occupation related to test variable that **“Someone can duplicate (Clone) my card through photomechanical process”** for variable occupation (Chi square= 68.380, df=3, p = 0.000), with a mean rank of test variable of 232.28 for Professional class, 315.61 for service class, 322.26 for business class, and 175.72 for Labour class.
- b) There is no significant difference among consumers from different occupation related to test variable that **“Someone can transfer cash from my ATM without using card..”** for variable education level (Chi square=7.023, df=3, p = 0.071), with a mean rank of test variable of 274.81 for Professional class, 260.29 for service class, 300.38 for business class, and 254.96 for Labour class.
- c) There is a significant difference among consumers from different occupation related to test variable that **“Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.”** for variable education level (Chi square= 45.201, df=3, p = 0.000), with a mean rank of test variable of 326.44 for Professional class, 296.39 for service class, 231.83 for business class, and 211.14 for Labour class.
- d) There is a significant difference among consumers from different occupation related to test variable that **“Someone can copy information by card trapping & identify your PIN by getting friendly”** for variable education level (Chi square=148.833, df=3, p = 0.000), with a mean rank of test variable of 325.01 for Professional class, 326.80 for service class, 150.89 for business class, and 329.89 for Labour class.
- e) There is a significant difference among consumers from different occupation related to test variable that **“Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping)”** for variable education level (Chi square=93.177, df=3, p = 0.000), with a mean rank of test variable of 190.78 for Professional class, 310.72 for service class, 276.42 for business class, and 386.55 for Labour class.
- f) There is a significant difference among consumers from different occupation related to test variable that **“My ATM card pin will be revealed through spam mails & unsafe Applications”** for variable education level (Chi square=48.988, df=3, p = 0.000), with a mean rank of test variable of 299.89 for Professional class, 326.91 for service class, 228.83 for business class, and 208.93 for Labour class.
- g) There is a significant difference among consumers from different occupation related to test variable that **“If I give my personal information to the Fraudster then he can take over my account by making contact with the bank , report a lost card and change of address and obtain a new card”** for variable education level (Chi square=29.647, df=3, p = 0.000), with a mean rank of test variable of 236.84 for Professional class, 277.38 for service class, 274.943 for business class, and 356.77 for Labour class.
- h) There is a significant difference among consumers from different occupation related to test variable that **“Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”** for variable education level (Chi square=120.820, df=3, p = 0.000), with a mean rank of test variable of 209.11 for Professional class, 306.23 for service class, 240.99 for business class, and 435.90 for Labour class.
- i) There is no significant difference among consumers from different occupation related to test variable that **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization”** for variable education level (Chi square=3.926, df=3, p = 0.270), with a

mean rank of test variable of 215.07 for Professional class, 210.40 for service class, 170.52 for business class, and 196.25 for Labour class.

Conclusion

Null hypothesis is rejected, there is a significant difference among consumers from different occupation with ethical 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 ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services. Finally, it concludes that there is a different influence about ethical 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 Labour class except for two test variable i.e. **“Someone can transfer cash from my ATM without using card”** and **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization”**.

(ii.) Internet Banking

Table 5.50: Kruskal Wallis Test Result on Occupation for Ethical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 26	550	3.14	1.266	1	5
V 27	550	2.74	1.294	1	5
V 28	550	3.42	1.054	1	5
V 29	550	2.82	1.283	1	5
V 30	550	3.60	1.167	1	5
V 31	550	3.54	1.202	1	5
V 32	550	2.99	1.260	1	5
V 33	550	3.86	1.103	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION		N	Mean Rank		
V 26	Professional	160	223.58		
	Service	160	231.19		
	Business	160	214.84		
	Labour	70	116.94		
	Total	550			
V 27	Professional	160	276.13		
	Service	160	283.62		
	Business	160	301.91		
	Labour	70	195.16		
	Total	550			
V 28	Professional	160	265.12		
	Service	160	265.12		
	Business	160	346.64		

				Labour	70	160.35		
				Total	550			
	V 29			Professional	160	224.08		
				Service	160	206.80		
				Business	160	412.71		
				Labour	70	236.42		
				Total	550			
	V 30			Professional	160	256.17		
				Service	160	278.26		
				Business	160	301.27		
				Labour	70	254.49		
				Total	550			
	V 31			Professional	160	244.35		
				Service	160	312.64		
				Business	160	260.91		
				Labour	70	295.17		
				Total	550			
	V 32			Professional	160	226.62		
				Service	160	404.01		
				Business	160	241.45		
				Labour	70	171.31		
				Total	550			
	V 33			Professional	160	278.16		
				Service	160	327.85		
				Business	160	280.84		
				Labour	70	137.57		
				Total	550			
Test Statistics^{a,b}								
	V 26	V 27	V 28	V 29	V 30	V 31	V 32	V 33
Chi-Square	51.57	23.844	76.021	179.03	8.425	18.469	166.167	77.303
df	8			7				
Asymp . Sig.	.000	.000	.000	.000	.038	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{02.11}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using internet banking services.
H_{a2.11}	There is a significant difference among consumers from different occupation with ethical awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different occupation related to test variable that “My online banking details may be stolen by phishing e mails” for

variable occupation (Chi square= 51.578, df=3, p = 0.000), with a mean rank of test variable of 232.28 for Professional class, 231.19 for service class, 214.84 for business class, and 116.94 for Labour class.

- b) There is a significant difference among consumers from different occupation related to test variable that **“I may reveal my internet banking password through spam mails”** for variable occupation (Chi square= 23.844, df=3, p = 0.000), with a mean rank of test variable of 276.13 for Professional class, 238.62 for service class, 301.91 for business class, and 195.16 for Labour class.
- c) There is a significant difference among consumers from different occupation related to test variable that **“Fraudsters commit identity theft to get money out of your account”** for variable occupation (Chi square= 76.021, df=3, p = 0.000), with a mean rank of test variable of 265.12 for Professional class, 265.12 for service class, 346.64 for business class, and 160.35 for Labour class.
- d) There is a significant difference among consumers from different occupation related to test variable that **“I may reveal internet banking password on a fake website”** for variable occupation (Chi square= 179.037, df=3, p = 0.000), with a mean rank of test variable of 224.08 for Professional class, 206.80 for service class, 412.71 for business class, and 236.42 for Labour class.
- e) There is a significant difference among consumers from different occupation related to test variable that **“My internet banking details are shared with third party if I use public PC”** for variable occupation (Chi square= 8.425, df=3, p = 0.038), with a mean rank of test variable of 256.17 for Professional class, 278.26 for service class, 301.27 for business class, and 254.49 for Labour class.
- f) There is a significant difference among consumers from different occupation related to test variable that **“My online banking details will be revealed if use unsecured Wi-Fi systems”** for variable occupation (Chi square= 18.469, df=3, p = 0.000), with a mean rank of test variable of 244.35 for Professional class, 312.64 for service class, 260.91 for business class, and 295.17 for Labour class.
- g) There is a significant difference among consumers from different occupation related to test variable that **“Someone can secretly installed software such as Trojan horse and take things from it without the permission of the user”** for variable occupation (Chi square= 166.167, df=3, p = 0.000), with a mean rank of test variable of 226.62 for Professional class, 404.01 for service class, 241.45 for business class, and 171.31 for Labour class.
- h) There is a significant difference among consumers from different occupation related to test variable that **“I may immediately report to the bank if I found irregularities in the last logged panel of the website”** for variable occupation (Chi square= 77.303, df=3, p = 0.000), with a mean rank of test variable of 278.16 for Professional class, 327.85 for service class, 280.84 for business class, and 137.57 for Labour class.

Conclusion

Null hypothesis is rejected, there is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using internet banking services. It means consumers from different occupation have a difference in thinking about the above important factors of ethical awareness towards security and privacy while using internet banking services. Finally, it concludes that there is a different influence about ethical 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 Labour class.

(iii.) Mobile Banking

Table 5.51: Kruskal Wallis Test Result on Occupation for Ethical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 34	550	3.86	1.119	1	5
V 35	550	3.24	1.301	1	5
V 36	550	3.47	1.106	1	5
V 37	550	3.45	1.265	1	5
V 38	550	2.89	1.147	1	5
V 39	550	3.01	1.270	1	5
V 40	550	3.31	1.057	1	5
V 41	550	3.23	1.285	1	5
V 42	550	3.06	1.288	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N	Mean Rank	
V 34	Professional		160	197.30	
	Service		160	242.14	
	Business		160	347.88	
	Labour		70	365.03	
	Total		550		
V 35	Professional		160	290.17	
	Service		160	295.96	
	Business		160	231.93	
	Labour		70	294.79	
	Total		550		
V 36	Professional		160	309.14	
	Service		160	242.43	
	Business		160	281.10	
	Labour		70	261.40	
	Total		550		
V 37	Professional		160	261.28	
	Service		160	312.31	
	Business		160	325.76	
	Labour		70	109.00	
	Total		550		
V 38	Professional		160	249.19	
	Service		160	307.97	
	Business		160	226.88	
	Labour		70	372.57	

		Total	550						
V 39		Professional	160	275.58					
		Service	160	258.26					
		Business	160	263.17					
		Labour	70	342.89					
		Total	550						
V 40		Professional	160	267.36					
		Service	160	338.05					
		Business	160	219.58					
		Labour	70	278.97					
		Total	550						
V 41		Professional	160	298.46					
		Service	160	345.79					
		Business	160	256.97					
		Labour	70	104.73					
		Total	550						
V 42		Professional	160	245.17					
		Service	160	356.39					
		Business	160	276.55					
		Labour	70	157.54					
		Total	550						
Test Statistics^{a,b}									
	V 34	V 35	V 36	V 37	V 38	V 39	V 40	V 41	V 42
Chi-Square	111.780	18.046	15.867	109.131	55.516	16.232	48.582	124.227	90.232
Df	3	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.001	.000	.000	.001	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{02.12}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using mobile banking services.
H_{a2.12}	There is a significant difference among consumers from different occupation with ethical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that “**My mobile banking password may be stolen**” for variable occupation (Chi square= 111.780, df=3, p = 0.000), with a mean rank of test variable of 197.30 for Professional class, 242.14 for service class, 347.88 for business class, and 365.03 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that “**If my phone is stolen ,someone else can use my mobile banking as**

- there is no auto log off facility”** for variable occupation (Chi square= 18.046, df=3, p = 0.000), with a mean rank of test variable of 290.13 for Professional class, 295.96 for service class, 231.93 for business class, and 294.79 for Labour class.
- c) There is a significant difference among consumers from different occupation related to test variable that **“It is very easy for others to Add Payee from my mobile banking account”** for variable occupation (Chi square= 15.867, df=3, p = 0.000), with a mean rank of test variable of 309.14 for Professional class, 242.43 for service class, 281.10 for business class, and 261.40 for Labour class.
 - d) There is a significant difference among consumers from different occupation related to test variable that **“Someone can apply for loans by stealing sensitive information like login- credentials, payment information from my mobile device”** for variable occupation (Chi square= 109.131, df=3, p = 0.000), with a mean rank of test variable of 261.28 for Professional class, 313.31 for service class, 325.76 for business class, and 109.00 for Labour class.
 - e) There is a significant difference among consumers from different occupation related to test variable that **“My mobile banking application being mapped to an incorrect mobile number”** for variable occupation (Chi square= 55.516, df=3, p = 0.000), with a mean rank of test variable of 249.19 for Professional class, 307.97 for service class, 226.88 for business class, and 327.57 for Labour class.
 - f) There is a significant difference among consumers from different occupation related to test variable that **“Mobile service provider may monitor my financial transactions”** for variable occupation (Chi square= 16.232, df=3, p = 0.000), with a mean rank of test variable of 275.58 for Professional class, 258.26 for service class, 263.17 for business class, and 342.89 for Labour class.
 - g) There is a significant difference among consumers from different occupation related to test variable that **“Someone can access my personal information I download malicious apps”** for variable occupation (Chi square= 48.582, df=3, p = 0.000), with a mean rank of test variable of 267.36 for Professional class, 338.05 for service class, 219.58 for business class, and 278.97 for Labour class.
 - h) There is a significant difference among consumers from different occupation related to test variable that **“Someone can steal my confidential information by making fake apps with exactly the same user interface”** for variable occupation (Chi square= 124.227, df=3, p = 0.000), with a mean rank of test variable of 298.46 for Professional class, 345.79 for service class, 256.97 for business class, and 104.73 for Labour class.
 - i) There is a significant difference among consumers from different occupation related to test variable that **“My confidential information may be accessed by others through Bluetooth”** for variable occupation (Chi square= 90.232, df=3, p = 0.000), with a mean rank of test variable of 245.17 for Professional class, 356.39 for service class, 279.55 for business class, and 157.54 for Labour class.

Conclusion

Null hypothesis is rejected, there is a significant difference among consumers from different occupation with ethical awareness towards security and privacy while using mobile banking services. It means consumers from different occupation have a difference in thinking about the above important factors of ethical awareness towards security and privacy while using mobile banking services. Finally, it concludes that there is a different influence about ethical awareness towards security and privacy while using mobile banking services among the consumers from different occupations such as Professional class, Service class, Business class, and Labour class.

(d.) Sub-occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.52: Kruskal Wallis Test Result on Sub-Occupation for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 17	550	3.64	1.102	1	5
V 18	550	3.21	1.096	1	5
V 19	550	3.40	1.231	1	5
V 20	550	3.54	1.264	1	5
V 21	550	3.01	1.141	1	5
V 22	550	2.73	1.269	1	5
V 23	550	3.88	1.099	1	5
V 24	550	3.60	.997	1	5
V 25	550	3.58	1.172	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
SUB-OCCUPATION			N	Mean Rank	
V 17	Buss. + Labour		230	277.66	
	CA/CS		40	198.94	
	Engineer		40	184.65	
	Lawyer		40	405.14	
	Doctor		40	140.41	
	Govt. Ser.		80	326.57	
	Pvt. Ser		80	304.66	
	Total		550		
V 18	Buss. + Labour		230	286.56	
	CA/CS		40	438.50	
	Engineer		40	240.79	
	Lawyer		40	276.24	
	Doctor		40	143.71	
	Govt. Ser.		80	323.23	
	Pvt. Ser		80	197.36	
	Total		550		
V 19	Buss. + Labour		230	225.53	
	CA/CS		40	355.59	
	Engineer		40	419.25	
	Lawyer		40	333.64	
	Doctor		40	197.29	
	Govt. Ser.		80	314.79	
	Pvt. Ser		80	277.99	
	Total		550		
V 20	Buss. + Labour		230	205.37	
	CA/CS		40	370.81	

	Engineer	40	402.56
	Lawyer	40	397.25
	Doctor	40	129.43
	Govt. Ser.	80	276.29
	Pvt. Ser	80	377.31
	Total	550	
V 21	Buss. + Labour	230	309.93
	CA/CS	40	225.18
	Engineer	40	129.54
	Lawyer	40	194.23
	Doctor	40	214.20
	Govt. Ser.	80	341.23
	Pvt. Ser	80	280.21
	Total	550	
V 22	Buss. + Labour	230	222.77
	CA/CS	40	182.33
	Engineer	40	423.19
	Lawyer	40	305.33
	Doctor	40	288.71
	Govt. Ser.	80	364.14
	Pvt. Ser	80	289.68
	Total	550	
V 23	Buss. + Labour	230	299.84
	CA/CS	40	221.38
	Engineer	40	296.91
	Lawyer	40	158.81
	Doctor	40	277.46
	Govt. Ser.	80	383.01
	Pvt. Ser	80	171.74
	Total	550	
V 24	Buss. + Labour	230	300.31
	CA/CS	40	328.61
	Engineer	40	135.86
	Lawyer	40	161.71
	Doctor	40	210.24
	Govt. Ser.	80	281.57
	Pvt. Ser	80	330.89
	Total	550	
V 25	Buss. + Labour	230	189.68
	CA/CS	40	226.18
	Engineer	40	120.78
	Lawyer	40	322.48
	Doctor	40	190.84
	Govt. Ser.	80	170.00

				Pvt. Ser		80	250.81		
				Total		550			
Test Statistics^{a,b}									
	V 17	V 18	V 19	V 20	V 21	V 22	V 23	V 24	V 25
Chi-Square	95.750	106.159	90.446	187.534	83.819	106.007	113.412	86.416	86.286
df	6	6	6	6	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000

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

H_{02.13}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a2.13}	There is a significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can duplicate (Clone) my card through photomechanical process”** for variable sub-occupation (Chi square= 95.750, df=6, p = 0.000), with a mean rank of test variable of 198.94 for CA/CS, 184.65 for engineers, 405.14 for lawyers, and 140.41 for doctors, 326.57 for government employees, and 304.66 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can transfer cash from my ATM without using card.”** for variable sub-occupation (Chi square= 106.159, df=6, p = 0.000), with a mean rank of test variable of 438.50 for CA/CS, 240.79 for engineers, 276.24 for lawyers, and 143.71 for doctors, 323.23 for government employees, and 197.36 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.”** for variable sub- occupation (Chi square=90.446, df=6, p = 0.000), with a mean rank of test variable of 355.59 for CA/CS, 419.25 for engineers, 333.64 for lawyers, and 197.29 for doctors, 314.79 for government employees, and 277.99 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can copy information by card trapping & identify your PIN by getting friendly”** for variable sub- occupation (Chi square=187.534 df=6, p = 0.000), with a mean rank of test variable of 370.81 for CA/CS, 402.56 for engineers, 397.25 for lawyers, and 129.43 for doctors, 276.29 for government employees, and 377.31 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping)”** for variable sub- occupation (Chi square=83.819 df=6, p = 0.000), with a mean rank of test variable of 225.18 for CA/CS, 129.54 for

engineers,194.23 for lawyers, and 214.20 for doctors,341.23 for government employees, and280.21 for private employees.

- f) There is a significant difference among consumers from different sub-occupation related to test variable that **“My ATM card pin will be revealed through spam mails & unsafe Applications”** for variable sub- occupation (Chi square=106.007 df=6, p = 0.000), with a mean rank of test variable of 182.33 for CA/CS, 423.19 for engineers,305.33for lawyers, and 288.71 for doctors,364.14for government employees, and 289.68 for private employees.
- g) There is a significant difference among consumers from different sub-occupation related to test variable that **“If I give my personal information to the Fraudster then he can take over my account by making contact with the bank , report a lost card and change of address and obtain a new card”** for variable sub- occupation (Chi square=113.412 df=6, p = 0.000), with a mean rank of test variable of 221.38 for CA/CS, 296.91 for engineers,158.81for lawyers, and 277.46 for doctors,381.01 for government employees, and 171.74 for private employees.
- h) There is a significant difference among consumers from different sub-occupation related to test variable that **“Fraudster can obtain my card information through various tricks such as websites pretending to be of a bank or payment system”** for variable sub- occupation (Chi square=86.416 df=6, p = 0.000), with a mean rank of test variable of 328.61for CA/CS, 135.86 for engineers,161.71 for lawyers, and 210.24 for doctors,281.57 for government employees, and 330.89 for private employees.
- i) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization”** for variable sub- occupation (Chi square=86.286 df=6, p = 0.000), with a mean rank of test variable of 226.18 for CA/CS, 120.78 for engineers,322.48 for lawyers, and 190.84 for doctors,170.00 for government employees, and 250.81 for private employees.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different sub-occupation with ethical 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 ethical awareness towards security and privacy while using ATM/cards(debit/credit) services. Finally, it concludes that a there is different influence about ethical 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.

(ii.) Internet Banking

Table 5.53: Kruskal Wallis Test Result on Sub-Occupation for Ethical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 26	550	3.14	1.266	1	5
V 27	550	2.74	1.294	1	5
V 28	550	3.42	1.054	1	5
V 29	550	2.82	1.283	1	5
V 30	550	3.60	1.167	1	5

V 31	550	3.54	1.202	1	5
V 32	550	2.99	1.260	1	5
V 33	550	3.86	1.103	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
SUB-OCCUPATION			N		Mean Rank
V 26	Buss. + Labour		230		142.71
	CA/CS		40		185.66
	Engineer		40		186.15
	Lawyer		40		330.88
	Doctor		40		191.61
	Govt. Ser.		80		213.89
	Private		80		248.50
	Total		550		
V 27	Buss. + Labour		230		269.42
	CA/CS		40		316.53
	Engineer		40		312.86
	Lawyer		40		209.94
	Doctor		40		265.19
	Govt. Ser.		80		262.24
	Pvt. Ser		80		304.99
	Total		550		
V 28	Buss. + Labour		230		289.94
	CA/CS		40		230.40
	Engineer		40		285.48
	Lawyer		40		286.79
	Doctor		40		257.80
	Govt. Ser.		80		228.31
	Pvt. Ser		80		301.93
	Total		550		
V 29	Buss. + Labour		230		359.06
	CA/CS		40		181.75
	Engineer		40		293.45
	Lawyer		40		174.48
	Doctor		40		246.66
	Govt. Ser.		80		174.49
	Pvt. Ser		80		239.11
	Total		550		
V 30	Buss. + Labour		230		287.03
	CA/CS		40		166.48
	Engineer		40		391.68
	Lawyer		40		316.10
	Doctor		40		150.44

	Govt. Ser.	80	388.51
	Pvt. Ser	80	168.00
	Total	550	
V 31	Buss. + Labour	230	271.33
	CA/CS	40	320.55
	Engineer	40	131.85
	Lawyer	40	385.50
	Doctor	40	139.50
	Govt. Ser.	80	392.12
	Pvt. Ser	80	233.16
	Total	550	
V 32	Buss. + Labour	230	220.10
	CA/CS	40	293.38
	Engineer	40	202.69
	Lawyer	40	201.89
	Doctor	40	208.54
	Govt. Ser.	80	398.29
	Pvt. Ser	80	409.73
	Total	550	
V 33	Buss. + Labour	230	237.23
	CA/CS	40	386.58
	Engineer	40	186.96
	Lawyer	40	387.44
	Doctor	40	151.66
	Govt. Ser.	80	368.49
	Pvt. Ser	80	287.21
	Total	550	

Test Statistics^{a,b}

	V 26	V 27	V 28	V 29	V 30	V 31	V 32	V 33
Chi-Square	87.081	16.264	16.512	138.900	156.656	142.226	166.352	128.901
df	6	6	6	6	6	6	6	6
Asymp. Sig.	.000	.012	.011	.000	.000	.000	.000	.000

Based on sub-occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{02.14}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using internet banking services.
H_{a2.14}	There is a significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that **“My online baking details may be stolen by phishing e mails”** for variable sub-occupation (Chi square= 87.081, df=6, p = 0.000), with a mean rank of test variable of 185.66 for CA/CS, 186.15 for engineers, 330.88 for lawyers, and 191.61 for doctors, 213.89 for government employees, and 248.50 for private employees
- b) There is a significant difference among consumers from different sub-occupation related to test variable that **“I may reveal my internet banking password through spam mails.”** for variable sub-occupation (Chi square= 16.264, df=6, p = 0.000), with a mean rank of test variable of 316.53 for CA/CS, 312.86 for engineers, 209.94 for lawyers, and 265.19 for doctors, 262.24 for government employees, and 304.99 for private employees.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that **“Fraudsters commit identity theft to get money out of your account”** for variable sub- occupation (Chi square=16.512, df=6, p = 0.000), with a mean rank of test variable of 230.40 for CA/CS, 285.48 for engineers, 286.79 for lawyers, and 257.80 for doctors, 228.31 for government employees, and 301.93 for private employees.
- d) There is a significant difference among consumers from different sub-occupation related to test variable that **“I may reveal internet banking password on a fake website”** for variable sub- occupation (Chi square=138.900 df=6, p = 0.000), with a mean rank of test variable of 181.75 for CA/CS, 293.45 for engineers, 174.48 for lawyers, and 246.66 for doctors, 174.49 for government employees, and 239.11 for private employees.
- e) There is a significant difference among consumers from different sub-occupation related to test variable that **“My internet banking details are shared with third party if I use public PC”** for variable sub- occupation (Chi square=156.656 df=6, p = 0.000), with a mean rank of test variable of 166.48 for CA/CS, 391.68 for engineers, 316.10 for lawyers, and 150.44 for doctors, 388.51 for government employees, and 168.00 for private employees.
- f) There is a significant difference among consumers from different sub-occupation related to test variable that **“My online banking details will be revealed if use unsecured Wi-Fi systems”** for variable sub- occupation (Chi square=142.226 df=6, p = 0.000), with a mean rank of test variable of 320.55 for CA/CS, 131.85 for engineers, 385.50 for lawyers, and 139.50 for doctors, 392.12 for government employees, and 233.16 for private employees.
- g) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can secretly have installed software such as Trojan horse and take things from it without the permission of the user”** for variable sub-occupation (Chi square=166.352 df=6, p = 0.000), with a mean rank of test variable of 293.38 for CA/CS, 202.69 for engineers, 201.89 for lawyers, and 208.54 for doctors, 398.29 for government employees, and 409.73 for private employees.
- h) There is a significant difference among consumers from different sub-occupation related to test variable that **“I may immediately report to the bank if I found irregularities in the last logged panel of the website”** for variable sub- occupation (Chi square=128.901 df=6, p = 0.000), with a mean rank of test variable of 386.58 for CA/CS, 186.96 for engineers, 387.44 for lawyers, and 151.66 for doctors, 368.49 for government employees, and 287.21 for private employees.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using internet banking services. It means consumers from different sub-occupation have difference in thinking about the above important factors of ethical awareness towards security and privacy

while using internet banking services. Finally, it concludes that there is different influence about ethical awareness towards security and privacy while using internet banking services among the consumers from different sub-occupation such as CA/CS, Engineers, lawyers, doctors, government employees and private employees.

(iii). Mobile Banking

Table 5.54: Kruskal Wallis Test Result on Sub-Occupation for Ethical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 34	550	3.86	1.119	1	5
V 35	550	3.24	1.301	1	5
V 36	550	3.47	1.106	1	5
V 37	550	3.45	1.265	1	5
V 38	550	2.89	1.147	1	5
V 39	550	3.01	1.270	1	5
V 40	550	3.31	1.057	1	5
V 41	550	3.23	1.285	1	5
V 42	550	3.06	1.288	1	5
sub –occupation	550	4.65	4.165	0	10

Ranks			
SUB-OCCUPATION	N	Mean Rank	
V 34	Buss. + Labour	230	353.10
	CA/CS	40	70.29
	Engineer	40	257.75
	Lawyer	40	278.65
	Doctor	40	182.53
	Govt. Ser.	80	242.23
	Pvt. Ser	80	242.06
	Total	550	
V 35	Buss. + Labour	230	251.06
	CA/CS	40	272.64
	Engineer	40	415.56
	Lawyer	40	277.85
	Doctor	40	194.64
	Govt. Ser.	80	275.61
	Pvt. Ser	80	316.31
	Total	550	
V 36	Buss. + Labour	230	275.11
	CA/CS	40	213.93
	Engineer	40	426.85
	Lawyer	40	384.49

	Doctor	40	211.29
	Govt. Ser.	80	148.64
	Pvt. Ser	80	336.22
	Total	550	
V 37	Buss. + Labour	230	259.79
	CA/CS	40	225.18
	Engineer	40	424.00
	Lawyer	40	197.73
	Doctor	40	198.20
	Govt. Ser.	80	340.04
	Pvt. Ser	80	284.58
	Total	550	
V 38	Buss. + Labour	230	271.22
	CA/CS	40	230.40
	Engineer	40	331.38
	Lawyer	40	186.50
	Doctor	40	248.48
	Govt. Ser.	80	279.00
	Pvt. Ser	80	336.94
	Total	550	
V 39	Buss. + Labour	230	287.43
	CA/CS	40	186.59
	Engineer	40	461.25
	Lawyer	40	312.00
	Doctor	40	142.50
	Govt. Ser.	80	259.83
	Pvt. Ser	80	256.69
	Total	550	
V 40	Buss. + Labour	230	237.65
	CA/CS	40	324.48
	Engineer	40	377.58
	Lawyer	40	244.01
	Doctor	40	123.36
	Govt. Ser.	80	303.43
	Pvt. Ser	80	372.67
	Total	550	
V 41	Buss. + Labour	230	210.63
	CA/CS	40	330.14
	Engineer	40	364.64
	Lawyer	40	291.78
	Doctor	40	207.29

	Govt. Ser.	80	301.89						
	Pvt. Ser	80	389.68						
	Total	550							
V 42	Buss. + Labour	230	240.33						
	CA/CS	40	322.40						
	Engineer	40	370.65						
	Lawyer	40	134.03						
	Doctor	40	153.61						
	Govt. Ser.	80	319.01						
	Pvt. Ser	80	393.76						
	Total	550							
	Test Statistics^{a,b}								
	V 34	V 35	V 36	V 37	V 38	V 39	V 40	V 41	V 42
Chi-Square	157.729	55.132	139.238	78.296	36.220	105.684	112.102	112.909	141.485
df	6	6	6	6	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000

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

H_{02.15}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using mobile banking services.
H_{a2.15}	There is a significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different sub-occupation related to test variable that “**My mobile banking password may be stolen**” for variable sub-occupation (Chi square= 157.729, df=6, p = 0.000), with a mean rank of test variable of 70.29 for CA/CS, 257.75 for engineers, 278.65 for lawyers, and 182.53 for doctors, 242.23 for government employees, and 242.06 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that “**If my phone is stolen, someone else can use my mobile banking as there is no auto log off facility.**” for variable sub-occupation (Chi square= 56.132, df=6, p = 0.000), with a mean rank of test variable of 272.64 for CA/CS, 415.56 for engineers, 277.85 for lawyers, and 194.64 for doctors, 275.61 for government employees, and 316.31 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that “**It is very easy for others to Add Payee from my mobile banking account**” for variable sub- occupation (Chi square=139.238, df=6, p = 0.000), with a mean rank of test variable of 213.93 for CA/CS, 426.85 for engineers, 384.49 for lawyers, and 211.29 for doctors, 148.64 for government employees, and 336.22 for private employees.

- d) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can apply for loans by stealing sensitive information like login- credentials, payment information from my mobile device”** for variable sub- occupation (Chi square=78.296df=6, p = 0.000), with a mean rank of test variable of 225.18 for CA/CS, 424.00 for engineers,197.73 for lawyers, and 198.20 for doctors,340.04 for government employees, and 284.58 for private employees
- e) there is statistically significant difference between the different sub- occupations related to test variable that **“My mobile banking application being mapped to an incorrect mobile number”** for variable sub- occupation (Chi square=36.220 df=6, p = 0.000), with a mean rank of test variable of 230.40 for CA/CS, 331.38 for engineers,186.50 for lawyers, and 248.48 for doctors,279.00 for government employees, and 336.94 for private employees.
- f) There is a significant difference among consumers from different sub-occupation related to test variable that **“Mobile service provider may monitor my financial transactions.”** for variable sub-occupation (Chi square= 105.684, df=6, p = 0.000), with a mean rank of test variable of 186.59 for CA/CS, 461.25 for engineers, 312.00 for lawyers, and 142.50 for doctors,259.83 for government employees, and 256.69 for private employees.
- g) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can access my personal information I download malicious apps.”** for variable sub-occupation (Chi square= 112.202, df=6, p = 0.000), with a mean rank of test variable of 324.48 for CA/CS, 377.58 for engineers, 244.01 for lawyers, and 123.36 for doctors,303.43 for government employees, and 372.67 for private employees.
- h) There is a significant difference among consumers from different sub-occupation related to test variable that **“Someone can steal my confidential information by making fake apps with exactly the same user interface.”** for variable sub-occupation (Chi square= 112.909, df=6, p = 0.000), with a mean rank of test variable of 330.14 for CA/CS, 336.64 for engineers, 291.78 for lawyers, and 207.29 for doctors,301.89for government employees, and 389.68 for private employees.
- i) 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 153.61 for doctors,319.01 for government employees, and 393.76 for private employees.

Conclusion

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

3. Technical Awareness Towards Security and Privacy for Electronic Banking Services

(a.) Gender

(i.) ATM/Cards (Credit/Debit)

Table 5.55 Kruskal Wallis Test Result on Gender for Technical Awareness Towards Security and Privacy For ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 43	550	2.79	1.270	1	5
V 44	550	2.14	1.137	1	5
V 45	550	2.97	1.382	1	5
V 46	550	2.48	1.143	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER	N		Mean Rank		
V 43	Male	366	272.56		
	Female	184	281.36		
	Total	550			
V 44	Male	366	289.45		
	Female	184	247.74		
	Total	550			
V 45	Male	366	271.78		
	Female	184	282.90		
	Total	550			
V 46	Male	366	269.99		
	Female	184	286.46		
	Total	550			
Test Statistics ^{a,b}					
	V 43	V 44	V 45	V 46	
Chi-Square	.396	9.277	.627	1.402	
Df	1	1	1	1	
Asymp. Sig.	.529	.002	.429	.236	

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

H0_{3.1}	There is no significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
Ha_{3.1}	There is a significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) 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.

- b) 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.
- c) 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.
- d) 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.

Conclusion

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”**.

(ii.) Internet Banking

Table 5.56: Kruskal Wallis Test Result on Gender for Technical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 47	550	4.07	.962	1	5
V 48	550	4.08	.850	1	5
V 49	550	3.84	1.144	1	5
V 50	550	3.46	1.293	1	5
V 51	550	3.64	1.204	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER				N	Mean Rank
V 47	Male			366	273.86
	Female			184	278.77
	Total			550	
V 48	Male			366	266.99
	Female			184	292.42
	Total			550	
V 49	Male			366	261.96
	Female			184	302.42
	Total			550	
V 50	Male			366	256.00
	Female			184	314.28
	Total			550	

V 51	Male	366	267.95		
	Female	184	290.51		
	Total	550			
Test Statistics^{a,b}					
	V 47	V 48	V 49	V 50	V51
Chi-Square	.132	3.573	8.691	17.429	2.638
Df	1	1	1	1	1
Asymp. Sig.	.716	.059	.003	.000	.104

Based on gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{03.2}	There is no significant difference among consumer gender groups with technical awareness towards security and privacy while using Internet Banking services.
H_{a3.2}	There is a significant difference among consumer gender groups with technical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is no significant difference among consumer gender groups related to test variable that **“For transferring funds through internet banking there is one-time password given to you to confirm the transfer”** for variable gender (Chi square= .132, df=1, p = 0.719), with a mean rank of test variable of 273.86 for male and 278.77 for female.
- b) There is significant difference among consumer gender groups to test variable that **“I always keep my system up to date to avoid any risks from hackers”** for variable gender (Chi square=3.573, df=1, p = .059), with a mean rank of test variable of 266.99 for male and 292.42 for female.
- c) There is a significant difference among consumer gender groups to test variable that **“I may aware of profile password security feature & insist login password transaction have to be changed frequently”** for variable gender (Chi square= 8.691, df=1, p = 0.003), with a mean rank of test variable of 261.96 for male and 302.42 for female.
- d) There is a significant difference among consumer gender groups to test variable that **“Your bank Internet banking is well secured by firewall and gateways”** for gender (Chi square= 17.429, df=1, p = 0.000), with a mean rank of test variable of 256.00 for male and 314.28 for female.
- e) There is no significant difference among consumer gender groups to test variable that **“I always use virtual keyboard to keep my password hidden in front of others”** for gender (Chi square= 2.638, df=1, p = 0.104), with a mean rank of test variable of 267.95 for male and 290.51 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumer gender groups with technical awareness towards security and privacy while using Internet Banking services. Finally, it concludes that a males and females have different thinking about technical awareness towards security and privacy while using internet banking services except for two test variables i.e. **“For transferring funds through internet banking there is one-time password given to you to confirm the transfer”** and **“I always use virtual keyboard to keep my password hidden in front of others”**.

(iii.) Mobile Banking

Table 5.57: Kruskal Wallis Test Result on Gender for Technical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 52	550	4.23	.923	1	5
V 53	550	3.39	1.223	1	5
V 54	550	4.23	.924	1	5
V 55	550	3.47	1.309	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER		N	Mean Rank		
V 52	Male	366	266.40		
	Female	184	293.60		
	Total	550			
V 53	Male	366	281.80		
	Female	184	262.98		
	Total	550			
V 54	Male	366	266.53		
	Female	184	293.34		
	Total	550			
V 55	Male	366	261.69		
	Female	184	302.96		
	Total	550			
Test Statistics ^{a,b}					
	V 52	V 53	V 54	V55	
Chi-Square	4.287	1.814	4.260	8.770	
Df	1	1	1	1	
Asymp. Sig.	.038	.178	.039	.003	

Based on gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H_{03.3}	There is no significant difference among consumer gender groups with technical awareness towards security and privacy while using mobile banking services.
H_{a3.3}	There is a significant difference among consumer gender groups with technical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is a significant difference among consumer gender groups related to test variable that “OTP is required while making 3rd party payments & adding payee

account” for variable gender (Chi square= 4.287, df=1, p = 0.038), with a mean rank of test variable of 266.40 for male and 293.60 for female.

- (b.) There is no significant difference among consumer gender groups to test variable that **“The user ID is not disabled for a considerable number of consecutive unsuccessful attempts”** for variable gender (Chi square=1.814, df=1, p = .178), with a mean rank of test variable of 281.80 for male and 262.98 for female.
- (c.) There is a significant difference among consumer gender groups to test variable that **“For transferring funds through mobile banking there is one-time password given to you to confirm the transfer”** for variable gender (Chi square= 4.260, df=1, p = 0.039), with a mean rank of test variable of 266.53 for male and 293.34 for female.
- (d.) There is a significant difference among consumer gender groups to test variable that **“Your bank mobile banking is well secured by firewalls and gateways”** for gender (Chi square= 8.770, df=1, p = 0.003), with a mean rank of test variable of 261.69 for male and 302.96 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumer gender groups with technical awareness towards security and privacy while using mobile banking services. Finally, it concludes that males and females have different thinking about technical awareness towards security and privacy while using mobile banking services except for one test variable i.e. “The user ID is not disabled for a considerable number of consecutive unsuccessful attempts”.

(b.) Age

(i.) ATM/Cards (Debit/Credit)

Table 5.58: Kruskal Wallis Test Result on Age for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 43	550	2.79	1.270	1	5
V 44	550	2.14	1.137	1	5
V 45	550	2.97	1.382	1	5
V 46	550	2.48	1.143	1	5
AGE	550	2.37	1.065	1	4
Ranks					
AGE			N	Mean Rank	
V 43	Below30		141	283.44	
	31-45		169	267.66	
	46-62		134	270.54	
	Above63		106	283.71	
	Total		550		
V 44	Below30		141	285.30	
	31-45		169	287.83	
	46-62		134	268.66	
	Above63		106	251.44	
	Total		550		
V 45	Below30		141	286.16	
	31-45		169	287.40	

	46-62	134	254.99	
	Above63	106	268.28	
	Total	550		
V 46	Below30	141	295.55	
	31-45	169	267.47	
	46-62	134	251.76	
	Above63	106	291.65	
	Total	550		
Test Statistics^{a,b}				
	V 43	V 44	V 45	V 46
Chi-Square	1.240	4.653	4.214	7.207
Df	3	3	3	3
Asymp. Sig.	.744	.199	.239	.066

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_{03.4}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards(Debit/Credit) services.
H_{a3.4}	There is a significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards(Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) 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.
- (b.) 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.
- (c.) 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.
- (d.) 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.

Conclusion

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.

(ii.) Internet Banking

Table 5.59: Kruskal Wallis Test Result on Age for Technical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 47	550	4.07	.962	1	5
V 48	550	4.08	.850	1	5
V 49	550	3.84	1.144	1	5
V 50	550	3.46	1.293	1	5
V 51	550	3.64	1.204	1	5
AGE	550	2.37	1.065	1	4
Ranks					
		AGE	N	Mean Rank	
V 47	Below30		141	250.22	
	31-45		169	304.46	
	46-62		134	263.96	
	Above63		106	277.54	
	Total		550		
V 48	Below30		141	267.57	
	31-45		169	279.98	
	46-62		134	260.52	
	Above63		106	297.83	
	Total		550		
V 49	Below30		141	263.26	
	31-45		169	278.56	
	46-62		134	277.92	
	Above63		106	283.84	
	Total		550		
V 50	Below30		141	268.82	
	31-45		169	272.09	
	46-62		134	278.09	
	Above63		106	286.55	
	Total		550		
V 51	Below30		141	277.78	
	31-45		169	257.71	
	46-62		134	276.19	

			Above63	106	299.96
			Total	550	
Test Statistics^{a,b}					
	V 47	V 48	V 49	V 50	V 51
Chi-Square	11.213	4.293	1.339	.927	4.983
Df	3	3	3	3	3
Asymp. Sig.	.011	.232	.720	.819	.173

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{03.5}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using Internet Banking services.
H_{a3.5}	There is a significant difference among consumer age groups with technical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is a significant difference among consumer age groups related to test variable that “**For transferring funds through internet banking there is one-time password given to you to confirm the transfer**” for variable age group (Chi square= 11.213, df=3, p = .011), with a mean rank of test variable of 250.22for age group below 30, 304.46 for Age group 31-45, 263.96 for age group 46-62, and 277.54 for age group above 63.
- (b.) There is no significant difference among consumer age groups related to test variable that” **I always keep my system up to date to avoid any risks from hackers**” for variable age group (Chi square= 4.293, df=3, p = .232), with a mean rank of test variable of 267.57 for age group below30, 279.98 for Age group 31-45, 260.52 for age group 46-62, and 297.83 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that “**I may aware of profile password security feature & insist login password transaction have to be changed frequently**” for variable age group (Chi square= 1.339, df=3, p = .720), with a mean rank of test variable of 263.26for age group below 30, 278.56 for Age group 31-45, 277.92 for age group 46-62, and 283.84 for age group above 63.
- (d.) There is no significant difference among consumer age groups related to test variable that “**Your bank Internet banking is well secured by firewall and gateways**” for variable age group (Chi square= .927, df=3, p = .816), with a mean rank of test variable of 268.82 for age group below 30, 272.09 for Age group 31-45, 278.09 for age group 46-62, and 286.55 for age group above 63.
- (e.) There is no significant difference among consumer age groups related to test variable that “**I always use virtual keyboard to keep my password hidden in front of others**” for variable age group (Chi square= 4.983, df=3, p = .173), with a mean rank of test variable of 277.78for age group below 30, 257.71 for Age group 31-45, 276.19for age group 46-62, and 299.96 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with technical awareness towards security and privacy while using Internet Banking services. It means consumers of all age groups have similar thinking about above important factors of technical awareness towards security and privacy while using Internet banking services.

Finally, it concludes that a respondent who has young age have a similar influence about technical awareness towards security and privacy while using Internet banking services whatever a respondent has a higher group of age except one test variable i.e. **For transferring funds through internet banking there is one-time password given to you to confirm the transfer.**

(iii.) Mobile Banking

Table 5.60: Kruskal Wallis Test Result on Age for Technical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 52	550	4.23	.923	1	5
V 53	550	3.39	1.223	1	5
V 54	550	4.23	.924	1	5
V 55	550	3.47	1.309	1	5
AGE	550	2.37	1.065	1	4
Ranks					
	AGE	N	Mean Rank		
V 52	Below30	141	251.76		
	31-45	169	297.97		
	46-62	134	269.58		
	Above63	106	278.73		
	Total	550			
V 53	Below30	141	268.83		
	31-45	169	276.47		
	46-62	134	282.97		
	Above63	106	273.39		
	Total	550			
V 54	Below30	141	274.33		
	31-45	169	270.61		
	46-62	134	272.32		
	Above63	106	288.86		
	Total	550			
V 55	Below30	141	260.28		
	31-45	169	279.06		
	46-62	134	275.50		
	Above63	106	290.08		
	Total	550			
Test Statistics ^{a,b}					
	V 52	V 53	V 54	V 55	
Chi-Square	8.077	.601	1.186	2.412	
Df	3	3	3	3	
Asymp. Sig.	.044	.896	.756	.491	

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H_{03.6}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using mobile banking services.
H_{a3.6}	There is a significant difference among consumer age groups with technical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is a significant difference among consumer age groups related to test variable that **“OTP is required while making 3rd party payments & adding payee account”** for variable age group (Chi square= 8.077, df=3, p = .044), with a mean rank of test variable of 251.76 for age group below 30, 297.97 for Age group 31-45, 269.58 for age group 46-62, and 278.73 for age group above 63.
- (b.) There is no significant difference among consumer age groups related to test variable that **“The user ID is not disabled for a considerable number of consecutive unsuccessful attempts”** for variable age group (Chi square= .601, df=3, p = .896), with a mean rank of test variable of 268.83 for age group below30, 276.47 for Age group 31-45, 282.97 for age group 46-62, and 273.39 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that **“For transferring funds through mobile banking there is one time password given to you to confirm the transfer”** for variable age group (Chi square= 1.186, df=3, p = .756), with a mean rank of test variable of 274.33 for age group below 30, 270.61 for Age group 31-45, 272.32 for age group 46-62, and 288.86 for age group above 63.
- (d.) There is no significant difference among consumer age groups related to test variable that **“Your bank mobile banking is well secured by firewalls and gateways”** for variable age group (Chi square= 2.412, df=3, p = .491), with a mean rank of test variable of 260.28 for age group below 30, 279.06 for Age group 31-45, 275.50 for age group 46-62, and 290.08 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with technical awareness towards security and privacy while using mobile Banking services. It means consumers of all age groups have similar thinking about above important factors of technical awareness towards security and privacy while using mobile banking services. Finally, it concludes that a respondent who has a young age have a similar influence about technical awareness towards security and privacy while using mobile banking services whatever a respondent has a higher group of age except one test variable i.e. “OTP is required while making 3rd party payments & adding payee account”.

(c.) Education

(i.) ATM/Cards (Debit/Credit)

Table 5.61: Kruskal Wallis Test Result on Education for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Variable Name	Descriptive Statistics				
	N	Mean	Std. Deviation	Minimum	Maximum
V 43	550	2.79	1.270	1	5
V 44	550	2.14	1.137	1	5

V 45	550	2.97	1.382	1	5
V 46	550	2.48	1.143	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
	EDUCATION	N	Mean Rank		
V 43	Primary	80	310.79		
	Secondary	122	308.14		
	Graduate	137	276.96		
	Postgraduate	211	242.30		
	Total	550			
V 44	Primary	80	328.77		
	Secondary	122	315.22		
	Graduate	137	241.17		
	Postgraduate	211	254.63		
	Total	550			
V 45	Primary	80	207.29		
	Secondary	122	268.68		
	Graduate	137	286.14		
	Postgraduate	211	298.39		
	Total	550			
V 46	Primary	80	227.47		
	Secondary	122	290.97		
	Graduate	137	296.88		
	Postgraduate	211	270.89		
	Total	550			
Test Statistics^{a,b}					
	V 43	V 44	V 45	V 46	
Chi-Square	19.297	29.300	20.850	11.858	
Df	3	3	3	3	
Asymp. Sig.	.000	.000	.000	.008	

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_{03.7}	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_{a3.7}	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.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is a significant difference among consumers at 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.

- (b.) There is a significant difference among consumers at 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.
- (c.) There is a significant difference among consumers at 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, 268.68 for secondary level of education, 286.14 graduate level of education, and 298.39 for post graduate level of education.
- (d.) There is a significant difference among consumers at 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.

Conclusion

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.

(ii.) Internet Banking

Table 5.62: Kruskal Wallis Test Result on Education for Technical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 47	550	4.07	.962	1	5
V 48	550	4.08	.850	1	5
V 49	550	3.84	1.144	1	5
V 50	550	3.46	1.293	1	5
V 51	550	3.64	1.204	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
EDUCATION				N	Mean Rank
V 47	Primary			80	258.66
	Secondary			122	266.24
	Graduate			137	278.80
	Postgraduate			211	285.10

	Total	550			
V 48	Primary	80	185.69		
	Secondary	122	246.30		
	Graduate	137	320.41		
	Postgraduate	211	297.27		
	Total	550			
V 49	Primary	80	169.64		
	Secondary	122	250.34		
	Graduate	137	305.91		
	Postgraduate	211	310.44		
	Total	550			
V 50	Primary	80	159.64		
	Secondary	122	206.98		
	Graduate	137	332.64		
	Postgraduate	211	321.95		
	Total	550			
V 51	Primary	80	199.61		
	Secondary	122	244.48		
	Graduate	137	319.81		
	Postgraduate	211	293.44		
	Total	550			
Test Statistics^{a,b}					
	V 47	V 48	V 49	V 50	V 51
Chi-Square	2.423	50.781	58.887	106.833	38.733
Df	3	3	3	3	3
Asymp. Sig.	.489	.000	.000	.000	.000

Based on education following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using Internet Banking services:

H_{03.8}	There is no significant difference among consumers at different education level with technical awareness towards security and privacy while using Internet Banking services.
H_{a3.8}	There is a significant difference among consumers at different education level with technical awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumers at different education level related to test variable that “**For transferring funds through internet banking there is one-time password given to you to confirm the transfer**” for variable education level (Chi square= 2.423, df=3, p = 0.489), with a mean rank of test variable of 258.66 for primary level of education, 266.24 for secondary level of education, 278.80 graduate level of education, and 285.10 for post graduate level of education.
- There is significant difference among consumers at different education level related to test variable that “**I always keep my system up to date to avoid any risks from hackers**” for variable education level (Chi square=50.781, df=3, p = 0.000), with a mean

rank of test variable of 185.69 for primary level of education, 246.30 for secondary level of education, 320.41 for graduate level of education, and 297.27 for post graduate level of education.

- c) There is significant difference among consumers at different education level related to test variable that “**I may aware of profile password security feature & insist login password transaction have to be changed frequently**” for variable education level (Chi square= 58.887, df=3, p = 0.000), with a mean rank of test variable of 169.64 for primary level of education, 250.34 for secondary level of education, 305.91 graduate level of education, and 310.44 for post graduate level of education.
- d) There is significant difference among consumers at different education level related to test variable that “**Your bank Internet banking is well secured by firewall and gateways**” for variable education level (Chi square= 106.833, df=3, p = 0.000), with a mean rank of test variable of 159.64 for primary level of education, 206.98 for secondary level of education, 332.64 graduate level of education, and 321.95 for post graduate level of education.
- e) There is significant difference among consumers at different education level related to test variable that “**I always use virtual keyboard to keep my password hidden in front of other**” for variable education level (Chi square= 38.733, df=3, p = 0.000), with a mean rank of test variable of 199.61 for primary level of education, 244.48 for secondary level of education, 319.81 graduate level of education, and 293.44 for post graduate level of education.

Conclusion

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 Internet Banking 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 Internet banking services. 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 internet banking services whatever a respondent has a post-graduate level of education. except for one test variable i.e. “For transferring funds through internet banking there is one-time password given to you to confirm the transfer.”

(iii.) Mobile Banking

Table 5.63: Kruskal Wallis Test Result on Education for Technical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 52	550	4.23	.923	1	5
V 53	550	3.39	1.223	1	5
V 54	550	4.23	.924	1	5
V 55	550	3.47	1.309	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
			N	Mean Rank	
EDUCATION	V 52	Primary	80	199.30	
		Secondary	122	267.11	
		Graduate	137	292.20	

	Postgraduate	211	298.40	
	Total	550		
V 53	Primary	80	253.73	
	Secondary	122	251.23	
	Graduate	137	282.21	
	Postgraduate	211	293.43	
	Total	550		
V 54	Primary	80	181.26	
	Secondary	122	254.23	
	Graduate	137	309.74	
	Postgraduate	211	301.29	
	Total	550		
V 55	Primary	80	172.99	
	Secondary	122	218.70	
	Graduate	137	302.95	
	Postgraduate	211	329.38	
	Total	550		
Test Statistics^{a,b}				
	V 52	V 53	V 54	V 55
Chi-Square	29.451	7.690	51.625	81.998
Df	3	3	3	3
Asymp. Sig.	.000	.050	.000	.000

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using Mobile Banking services:

H_{03.9}	There is no significant difference among consumers at different education level with technical awareness towards security and privacy while using mobile Banking services.
H_{a3.9}	There is a significant difference among consumers at different education level with technical awareness towards security and privacy while using mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers at different education level related to test variable that **“OTP is required while making 3rd party payments & adding payee account”** for variable education level (Chi square= 29.451, df=3, p = 0.000), with a mean rank of test variable of 199.30 for primary level of education, 267.11 for secondary level of education, 292.20 graduate level of education, and 298.40 for post graduate level of education.
- b) There is a significant difference among consumers at different education level related to test variable that **“The user ID is not disabled for a considerable number of consecutive unsuccessful attempts”** for variable education level (Chi square=7.690, df=3, p = 0.05), with a mean rank of test variable of 253.73 for primary level of education, 251.23 for secondary level of education, 282.21 for graduate level of education, and 293.43 for post graduate level of education.

- c) There is a significant difference among consumers at different education level related to test variable that **“For transferring funds through mobile banking there is one time password given to you to confirm the transfer”** for variable education level (Chi square= 51.625, df=3, p = 0.000), with a mean rank of test variable of 181.26 for primary level of education, 254.23 for secondary level of education, 309.74 graduate level of education, and 301.29 for post graduate level of education.
- d) There is a significant difference among consumers at different education level related to test variable that **“Your bank mobile banking is well secured by firewalls and gateways”** for variable education level (Chi square= 81.998, df=3, p = 0.000), with a mean rank of test variable of 172.99 for primary level of education, 218.70 for secondary level of education, 302.95 graduate level of education, and 329.38 for post graduate level of education.

Conclusion

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 mobile Banking 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 for mobile banking. 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 mobile banking services whatever a respondent has a post-graduate level of education.

(d.) Occupation**(i.) ATM/Cards(Debit/Credit)****Table 5.64: Kruskal Wallis Test Result on Occupation for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)**

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 43	550	2.79	1.270	1	5
V 44	550	2.14	1.137	1	5
V 45	550	2.97	1.382	1	5
V 46	550	2.48	1.143	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N	Mean Rank	
V 43	Professional		160	180.44	
	Service		160	311.73	
	Business		160	339.85	
	Labour		70	262.88	
	Total		550		
V 44	Professional		160	251.47	
	Service		160	255.57	
	Business		160	259.75	
	Labour		70	412.00	
	Total		550		
V 45	Professional		160	331.37	
	Service		160	290.32	
	Business		160	219.79	
	Labour		70	241.26	
	Total		550		
V 46	Professional		160	273.07	
	Service		160	302.21	
	Business		160	282.51	
	Labour		70	203.98	
	Total		550		
Test Statistics^{a,b}					
	V 43	V 44	V 45	V 46	
Chi-Square	97.184	65.314	46.059	20.309	
df	3	3	3	3	
Asymp. Sig.	.000	.000	.000	.000	

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

H_{03.10}	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_{a3.10}	There is a significant difference among consumers from different occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- 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 Labour 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 Labour 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 Labour 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 Labour class.

Conclusion

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 Labour class.

(ii.) Internet Banking

Table 5.65: Kruskal Wallis Test Result on Occupation for Technical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 47	550	4.07	.962	1	5
V 48	550	4.08	.850	1	5
V 49	550	3.84	1.144	1	5
V 50	550	3.46	1.293	1	5

V 51	550	3.64	1.204	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N		Mean Rank
V 47	Professional		160		340.93
	Service		160		255.99
	Business		160		241.28
	Labour		70		248.76
	Total		550		
V 48	Professional		160		292.58
	Service		160		345.33
	Business		160		260.43
	Labour		70		111.31
	Total		550		
V 49.	Professional		160		325.25
	Service		160		369.50
	Business		160		219.46
	Labour		70		75.04
	Total		550		
V 50	Professional		160		358.02
	Service		160		365.19
	Business		160		174.12
	Labour		70		113.61
	Total		550		
V 51	Professional		160		292.44
	Service		160		363.85
	Business		160		248.97
	Labour		70		95.49
	Total		550		
Test Statistics^{a,b}					
	V 47	V 48	V 49	V 50	V 51
Chi-Square	44.077	124.057	222.238	245.393	155.597
df	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{03.11}	There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using internet banking services.
H_{a3.11}	There is a significant difference among consumers from different occupation with technical awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different occupation related to test variable that **“For transferring funds through internet banking there is one-time password given to you to confirm the transfer”** for variable occupation (Chi square= 44.077, df=3, p = 0.000), with a mean rank of test variable of 340.93 for Professional class, 255.99 for service class, 241.28 for business class, and 248.76 for Labour class.
- b) There is a significant difference among consumers from different occupation related to test variable that **“I always keep my system up to date to avoid any risks from hackers”** for variable occupation (Chi square= 124.057, df=3, p = 0.000), with a mean rank of test variable of 292.58 for Professional class, 345.33 for service class, 260.43 for business class, and 111.31 for Labour class.
- c) There is a significant difference among consumers from different occupation related to test variable that **“I may aware of profile password security feature & insist login password transaction have to be changed frequently”** for variable occupation (Chi square= 222.238, df=3, p = 0.000), with a mean rank of test variable of 325.25 for Professional class, 369.50 for service class, 219.46 for business class, and 75.04 for Labour class.
- d) There is a significant difference among consumers from different occupation related to test variable that **“Your bank Internet banking is well secured by firewall and gateways”** for variable occupation (Chi square= 245.393, df=3, p = 0.000), with a mean rank of test variable of 358.02 for Professional class, 365.19 for service class, 174.12 for business class, and 113.61 for Labour class.
- e) There is a significant difference among consumers from different occupation related to test variable that **“I always use virtual keyboard to keep my password hidden in front of others”** for variable occupation (Chi square= 155.597, df=3, p = 0.000), with a mean rank of test variable of 292.44 for Professional class, 363.85 for service class, 248.97 for business class, and 95.49 for Labour class.

Conclusion

The null hypothesis is rejected, there is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using internet banking 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 internet banking 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 Labour class.

(iii.) Mobile Banking

Table 5.66: Kruskal Wallis Test Result on Occupation for Technical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 52	550	4.23	.923	1	5
V 53	550	3.39	1.223	1	5
V 54	550	4.23	.924	1	5
V 55	550	3.47	1.309	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					

OCCUPATION		N	Mean Rank	
V 52	Professional	160	316.16	
	Service	160	277.73	
	Business	160	295.54	
	Labour	70	131.67	
	Total	550	`	
V 53	Professional	160	365.93	
	Service	160	203.88	
	Business	160	273.33	
	Labour	70	237.44	
	Total	550		
V 54	Professional	160	301.77	
	Service	160	303.43	
	Business	160	296.30	
	Labour	70	104.08	
	Total	550		
V 55	Professional	160	383.64	
	Service	160	332.86	
	Business	160	162.94	
	Labour	70	154.50	
	Total	550		
Test Statistics^{a,b}				
	V 52	V 53	V 54	V 55
Chi-Square	84.171	93.371	114.289	229.127
df	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H_{03.12}	There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using mobile banking services.
H_{a3.12}	There is a significant difference among consumers from different occupation with technical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that “**OTP is required while making 3rd party payments & adding payee account**” for variable occupation (Chi square= 84.171, df=3, p = 0.000), with a mean rank of test variable of 316.16 for Professional class, 277.73 for service class, 295.54 for business class, and 131.67 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that “**The user ID is not disabled for a considerable number of consecutive unsuccessful attempts**” for variable occupation (Chi square= 93.171, df=3,

p = 0.000), with a mean rank of test variable of 365.93 for Professional class, 203.88 for service class, 273.33 for business class, and 237.44 for Labour class.

- c) There is a significant difference among consumers from different occupation related to test variable that “**For transferring funds through mobile banking there is one-time password given to you to confirm the transfer**” for variable occupation (Chi square= 114.289, df=3, p = 0.000), with a mean rank of test variable of 301.77 for Professional class, 303.43 for service class, 296.30 for business class, and 104.08 for Labour class.
- d) There is a significant difference among consumers from different occupation related to test variable that “**Your bank mobile banking is well secured by firewalls and gateways**” for variable occupation (Chi square= 229.127, df=3, p = 0.000), with a mean rank of test variable of 383.64 for Professional class, 332.86 for service class, 162.94 for business class, and 154.50 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with technical awareness towards security and privacy while using mobile banking 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 mobile banking services. Finally, it concludes that there is a different influence about technical awareness towards security and privacy while using mobile banking services among the consumers from different occupations such as Professional class, Service class, Business class, and Labour class.

(e.) Sub-Occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.67: Kruskal Wallis Test Result on Sub-Occupation for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 43	550	2.79	1.270	1	5
V 44	550	2.14	1.137	1	5
V 45	550	2.97	1.382	1	5
V 46	550	2.48	1.143	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
	sub -occupation	N	Mean Rank		
V 43	Buss. + Labour	230	316.42		
	CA/CS	40	217.44		
	Engineer	40	163.70		
	Lawyer	40	197.38		
	Doctor	40	143.26		
	Govt. Ser.	80	343.54		
	Pvt. Ser	80	279.91		
	Total	550			
V 44	Buss. + Labour	230	306.09		
	CA/CS	40	199.69		
	Engineer	40	262.16		
	Lawyer	40	248.90		

	Doctor	40	295.11
	Govt. Ser.	80	342.28
	Pvt. Ser	80	168.85
	Total	550	
V 45	Buss. + Labour	230	226.33
	CA/CS	40	432.56
	Engineer	40	285.50
	Lawyer	40	291.66
	Doctor	40	315.76
	Govt. Ser.	80	274.86
	Pvt. Ser	80	305.78
	Total	550	
V 46	Buss. + Labour	230	258.61
	CA/CS	40	339.66
	Engineer	40	282.14
	Lawyer	40	340.41
	Doctor	40	130.08
	Govt. Ser.	80	280.75
	Pvt. Ser	80	323.67
	Total	550	
Test Statistics^{a,b}			
	V 43	V 44	V 45
Chi-Square	97.441	76.751	70.155
Df	6	6	6
Asymp. Sig.	.000	.000	.000

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

H_{03.13}	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_{a3.13}	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.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- 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 153.61 for 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.

- c) 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
- d) 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
- e) 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.

Conclusion

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 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.

(ii.) Internet Banking

Table 5.68: Kruskal Wallis Test Result on Sub-Occupation for Technical Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 47	550	4.07	.962	1	5
V 48	550	4.08	.850	1	5
V 49	550	3.84	1.144	1	5
V 50	550	3.46	1.293	1	5
V 51	550	3.64	1.204	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
	sub –occupation		N	Mean Rank	
V 47	Buss. + Labour		230	243.56	
	CA/CS		40	343.94	
	Engineer		40	342.96	
	Lawyer		40	342.96	
	Doctor		40	333.85	
	Govt. Ser.		80	348.18	

	Pvt. Ser	80	163.81		
	Total	550			
V 48	Buss. + Labour	230	215.04		
	CA/CS	40	362.61		
	Engineer	40	336.18		
	Lawyer	40	244.38		
	Doctor	40	227.16		
	Govt. Ser.	80	333.53		
	Pvt. Ser	80	357.12		
	Total	550			
V 49	Buss. + Labour	230	175.50		
	CA/CS	40	354.28		
	Engineer	40	340.10		
	Lawyer	40	286.94		
	Doctor	40	319.68		
	Govt. Ser.	80	366.09		
	Pvt. Ser	80	372.91		
	Total	550			
V 50	Buss. + Labour	230	155.70		
	CA/CS	40	409.41		
	Engineer	40	439.03		
	Lawyer	40	318.54		
	Doctor	40	265.10		
	Govt. Ser.	80	315.38		
	Pvt. Ser	80	415.00		
	Total	550			
V 51	Buss. + Labour	230	202.25		
	CA/CS	40	369.60		
	Engineer	40	255.19		
	Lawyer	40	209.24		
	Doctor	40	335.73		
	Govt. Ser.	80	386.43		
	Pvt. Ser	80	341.28		
	Total	550			
Test Statistics^{a,b}					
	V 47	V 48	V 49	V 50	V 51
Chi-Square	105.028	100.415	182.722	287.074	137.816
df	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.000

Based on sub-occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{03.14}	There is no significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using internet banking services.
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H_{a3.14}	There is a significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using internet banking services.
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The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that **“For transferring funds through internet banking there is one time password given to you to confirm the transfer”** for variable sub-occupation (Chi square= 105.028, 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.
- b) There is a significant difference among consumers from different sub-occupation related to test variable that **“I always keep my system up to date to avoid any risks from hackers.”** for variable sub-occupation (Chi square= 100.415, 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.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that **“I may aware of profile password security feature & insist login password transaction have to be changed frequently”** for variable sub- occupation (Chi square=182.722, 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.
- d) There is a significant difference among consumers from different sub-occupation related to test variable that **“Your bank Internet banking is well secured by firewall and gateway”** for variable sub- occupation (Chi square=287.074 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.
- e) There is a significant difference among consumers from different sub-occupation related to test variable that **“I always use virtual keyboard to keep my password hidden in front of others.”** for variable sub- occupation (Chi square=137.816 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.

Conclusion

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 internet banking 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 internet banking services. Finally, it concludes that a there is different influence about technical awareness towards security and privacy while using internet banking services among the consumers from different sub-occupation such as CA/CS, Engineers, lawyers, doctors, government employees and private employees.

(iii.) Mobile Banking

Table 5.69: Kruskal Wallis Test Result on Sub-Occupation for Technical Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics

Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 52	550	4.23	.923	1	5
V 53	550	3.39	1.223	1	5
V 54	550	4.23	.924	1	5
V 55	550	3.47	1.309	1	5
sub –occupation	550	4.65	4.165	0	10
Ranks					
sub –occupation		N	Mean Rank		
V 52	Buss. + Labour	230	245.67		
	CA/CS	40	296.06		
	Engineer	40	349.61		
	Lawyer	40	324.35		
	Doctor	40	294.60		
	Govt. Ser.	80	242.28		
	Pvt. Ser	80	313.18		
	Total	550			
V 53	Buss. + Labour	230	262.41		
	CA/CS	40	422.91		
	Engineer	40	417.55		
	Lawyer	40	278.35		
	Doctor	40	344.91		
	Govt. Ser.	80	150.33		
	Pvt. Ser	80	257.44		
	Total	550			
V 54	Buss. + Labour	230	237.80		
	CA/CS	40	288.98		
	Engineer	40	332.20		
	Lawyer	40	276.63		
	Doctor	40	309.29		
	Govt. Ser.	80	315.08		
	Pvt. Ser	80	291.78		
	Total	550			
V 55	Buss. + Labour	230	160.37		
	CA/CS	40	405.80		
	Engineer	40	397.31		
	Lawyer	40	337.04		
	Doctor	40	394.40		
	Govt. Ser.	80	273.54		
	Pvt. Ser	80	392.18		
	Total	550			

Test Statistics ^{a,b}				
	V 52	V 53	V 54	V 55
Chi-Square	35.668	133.427	31.701	257.641
Df	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000

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

H_{03.15}	There is no significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using mobile banking services.
H_{a3.15}	There is a significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different sub-occupation related to test variable that **“OTP is required while making 3rd party payments & adding payee account”** for variable sub-occupation (Chi square= 35.668, df=6, p = 0.000), with a mean rank of test variable of 296.06 for CA/CS, 249.61 for engineers, 324.35 for lawyers, and 294.60 for doctors, 248.28 for government employees, and 313.18 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“The user ID is not disabled for a considerable number of consecutive unsuccessful attempts.”** for variable sub-occupation (Chi square= 133.427, df=6, p = 0.000), with a mean rank of test variable of 422.91 for CA/CS, 471.55 for engineers, 278.35 for lawyers, and 344.91 for doctors, 150.33 for government employees, and 257.44 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“For transferring funds through mobile banking there is one-time password given to you to confirm the transfer.”** for variable sub-occupation (Chi square= 31.701, df=6, p = 0.000), with a mean rank of test variable of 288.98 for CA/CS, 332.20 for engineers, 276.63 for lawyers, and 309.29 for doctors, 315.08 for government employees, and 291.78 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Your bank mobile banking is well secured by firewalls and gateways”** for variable sub-occupation (Chi square= 257.641, df=6, p = 0.000), with a mean rank of test variable of 405.80 for CA/CS, 397.31 for engineers, 337.04 for lawyers, and 394.40 for doctors, 273.54 for government employees, and 392.18 for private employees.

Conclusion

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 mobile banking 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 mobile banking services. Finally, it concludes that there is different influence about technical awareness towards security and privacy while using mobile banking services among the consumers from different sub-occupation such as CA/CS, Engineers, lawyers, doctors, government employees and private employees.

(4.) Legal awareness towards security and privacy for Electronic Banking Services

(a.) Gender

(i.) ATM/Cards(Debit/Credit)

Table 5.70 Kruskal Wallis Test Result on Gender for Legal Awareness Towards Security and Privacy For ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 56	550	3.35	1.273	1	5
V 57	550	3.92	1.008	1	5
V 58	550	3.72	1.292	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER			N	Mean Rank	
V 56	Male		366	276.47	
	Female		184	273.57	
	Total		550		
V 57	Male		366	241.69	
	Female		184	243.82	
	Total		550		
V 58	Male		366	258.79	
	Female		184	308.74	
	Total		550		
Test Statistics ^{a,b}					
	V 56	V 57	V 58		
Chi-Square	.043	.029	13.109		
Df	1	1	1		
Asymp. Sig.	.836	.865	.000		

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

H04.1	There is no significant difference among the consumer gender groups with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
Ha4.1	There is a significant difference among the consumer gender groups with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among the consumer gender groups related to test variable that “**There is maximum number of incorrect password submission**” for variable gender (Chi square= .043, df=1, p = 0.836), with a mean rank of test variable of 276.47 for male and 273.57 for female.
- There is no significant difference among the consumer gender groups to test variable that “**Always take your receipt at the conclusion of every transaction to assure**

your financial privacy” for variable gender (Chi square=.029, df=1, p = .865), with a mean rank of test variable of 241.69 for male and 243.82 for female.

- c) There is a significant difference among the consumer gender groups to test variable that **“I should file a complaint with the IT adjudicator if I found any mis happening in transaction records”** for variable gender (Chi square= 13.109, df=1, p = 0.000), with a mean rank of test variable of 258.79 for male and 308.74 for female.

Conclusion

Null hypothesis is accepted, there is a significant difference among the consumer gender groups with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. Finally, it concludes that males and females have similar thinking about legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services except for one test variable i.e. **“I should file a complaint with the IT adjudicator if I found any mis-happening in transaction records”**.

(ii.) Internet Banking

Table 5.71: Kruskal Wallis Test Result on Gender for Legal Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 59	550	3.49	1.263	1	5
V 60	550	3.87	1.116	1	5
V 61	550	3.62	1.162	1	5
GENDER	550	1.33	.472	1	2
Ranks					
GENDER		N	Mean Rank		
V 59	Male	366	262.22		
	Female	184	301.91		
	Total	550			
V 60	Male	366	265.20		
	Female	184	296.00		
	Total	550			
V 61	Male	366	264.05		
	Female	184	298.27		
	Total	550			
Test Statistics ^{a,b}					
	V 59	V 60	V 61		
Chi-Square	8.079	5.081	6.099		
Df	1	1	1		
Asymp. Sig.	.004	.024	.014		

Based on gender following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{04.2}	There is no significant difference among consumer gender groups with legal awareness towards security and privacy while using Internet Banking services.
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H_{a4.2}	There is a significant difference among consumer gender groups with legal awareness towards security and privacy while using Internet Banking services.
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The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumer gender groups related to test variable that **“If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker”** for variable gender (Chi square=8.079, df=1, p = 0.004), with a mean rank of test variable of 262.22 for male and 301.91 for female.
- b) There is a significant difference among consumer gender groups to test variable that **“Banks periodically send updates & alerts regarding security features”** for variable gender (Chi square=5.081, df=1, p = .024), with a mean rank of test variable of 265.20 for male and 296.00 for female.
- c) There is a significant difference among consumer gender groups to test variable that **“Banks will no refund my money back if there is online fraud”** for variable gender (Chi square=6.099, df=1, p = 0.014), with a mean rank of test variable of 264.65 for male and 298.27 for female.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumer gender groups with legal awareness towards security and privacy while using Internet Banking Services. Finally, it concludes that a males and females have different thinking about legal awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.72: Kruskal Wallis Test Result on Gender for Legal Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	SD	Minimum	Maximum
V 62	550	3.68	1.234	1	5
V 63	550	3.54	1.200	1	5
V 64	550	3.28	1.323	1	5
GENDER	550	1.33	.472	1	2
Ranks					
		GENDER	N	Mean Rank	
V 62		Male	366	267.90	
		Female	184	290.61	
		Total	550		
V 63		Male	366	274.16	
		Female	184	278.17	
		Total	550		
V 64		Male	366	270.33	
		Female	184	285.78	
		Total	550		
Test Statistics ^{a,b}					
	V 62	V 63	V 64		
Chi-Square	2.684	.084	1.222		

Df	1	1	1
Asymp. Sig.	.101	.772	.269

Based on gender following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H04.3	There is no significant difference among consumer gender groups with legal awareness towards security and privacy while using mobile banking services.
Ha4.3	There is a significant difference among consumer gender groups with legal awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each gender groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is no significant difference among consumer gender groups related to test variable that “**Banks will not refund my money back if there is online fraud**” for variable gender (Chi square= 2.684, df=1, p = 0.101), with a mean rank of test variable of 267.90 for male and 290.61 for female.
- There is no significant difference among consumer gender groups to test variable that “**If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker**” for variable gender (Chi square=.084, df=1, p = .772), with a mean rank of test variable of 274.16 for male and 278.17 for female.
- There is no significant difference among consumer gender groups to test variable that “**Banks periodically send updates & alerts regarding security features**” for variable gender (Chi square=1.222, df=1, p = 0.269), with a mean rank of test variable of 270.33 for male and 285.78 for female.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer gender groups with legal awareness towards security and privacy while using mobile banking services. Finally, it concludes that a males and females have similar thinking about legal awareness towards security and privacy while using mobile banking services.

(b.) Age

(i.)ATM/Cards (Debit/Credit)

Table.5.73: Kruskal Wallis Test Result on Age for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 56	550	3.35	1.273	1	5
V 57	550	3.92	1.008	1	5
V 58	550	3.72	1.292	1	5
AGE	550	2.37	1.065	1	4
Ranks					
	AGE	N	Mean Rank		
V 56	Below30	141	255.08		
	31-45	169	273.67		

	46-62	134	284.91
	Above63	106	293.69
	Total	550	
V 57	Below30	141	238.27
	31-45	169	233.09
	46-62	134	261.64
	Above63	106	238.85
	Total	550	
V 58	Below30	141	281.67
	31-45	169	272.26
	46-62	134	272.59
	Above63	106	276.14
	Total	550	
Test Statistics^{a,b}			
	V 56	V 57	V 58
Chi-Square	4.430	3.291	.357
Df	3	3	3
Asymp. Sig.	.219	.349	.949

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

H_{04.4}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using ATM/Cards(debit/credit) services.
H_{a4.4}	There is a significant difference among consumer age groups with legal awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is no significant difference among consumer age groups related to test variable that “**There is maximum number of incorrect password submission**” for variable age group (Chi square= 4.430, df=3, p = .219), with a mean rank of test variable of 255.08 for age group below 30, 273.6 for Age group 31-45, 284.91 for age group 46-62, and 293.69 for age group above 63.
- (b.) There is no significant difference among consumer age groups related to test variable that “**Always take your receipt at the conclusion of every transaction to assure your financial privacy**” for variable age group (Chi square= 3.291, df=3, p = .349), with a mean rank of test variable of 238.27for age group below30, 233.09 for Age group 31-45, 261.64 for age group 46-62, and 238.85 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that “**I should file a complaint with the IT adjudicator if I found any mis-happening in transaction records**” for variable age group (Chi square= .357, df=3, p = .949), with a mean rank of test variable of 281.67 for age group below 30, 272.26 for Age group 31-45, 272.59 for age group 46-62, and 276.14 for age group above 63.

Conclusion

Null hypothesis is accepted, there is no significant difference among consumer age groups with legal 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 legal awareness towards security and privacy for 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 for ATM/Cards(debit/credit).

(ii.) Internet Banking

Table 5.74: Kruskal Wallis Test Result on Age for Legal Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	SD	Minimum	Maximum
V 59	550	3.49	1.263	1	5
V 60	550	3.87	1.116	1	5
V 61	550	3.62	1.162	1	5
AGE	550	2.37	1.065	1	4
Ranks					
AGE	N		Mean Rank		
V 59	Below30	141	273.39		
	31-45	169	266.61		
	46-62	134	275.52		
	Above63	106	292.45		
	Total	550			
V 60	Below30	141	266.04		
	31-45	169	273.51		
	46-62	134	276.27		
	Above63	106	290.29		
	Total	550			
V 61	Below30	141	284.87		
	31-45	169	267.64		
	46-62	134	263.68		
	Above63	106	290.51		
	Total	550			
Test Statistics ^{a,b}					
	V 59	V 60	V 61		
Chi-Square	1.861	1.599	2.784		
Df	3	3	3		
Asymp. Sig.	.602	.660	.426		

Based on age following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{04.5}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using Internet Banking services.
H_{a4.5}	There is a significant difference among consumer age groups with legal awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is no significant difference among consumer age groups related to test variable that **“If funds are not transferred to the payee account due to internet problem , reverse entry is immediatly given by the banker”** for variable age group (Chi square= 1.861, df=3, p = .602), with a mean rank of test variable of 273.39 for age group below 30, 266.61for Age group 31-45, 275.52 for age group 46-62, and 292.45 for age group above 63.
- (b.) There is no significant difference among consumer age groups related to test variable that **“Banks periodically send updates & alerts regarding security features”** for variable age group (Chi square= 1.599, df=3, p = .660), with a mean rank of test variable of 266.04for age group below30, 273.51 for Age group 31-45, 276.27 for age group 46-62, and 290.29 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that **“Banks will not refund my money back if there is online fraud”** for variable age group (Chi square= 2.784, df=3, p = .426), with a mean rank of test variable of 284.87 for age group below 30, 267.64 for Age group 31-45, 263.68 for age group 46-62, and 290.51 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with legal awareness towards security and privacy while using Internet Banking services. It means consumers of all age groups have similar thinking about above important factors of legal awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has young age have a similar influence about legal awareness towards security and privacy while using Internet banking services.

(iii.) Mobile Banking

Table 5.75: Kruskal Wallis Test Result on Age for Legal Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 62	550	3.68	1.234	1	5
V 63	550	3.54	1.200	1	5
V 64	550	3.28	1.323	1	5
AGE	550	2.37	1.065	1	4
Ranks					
AGE	N	Mean Rank			
V 62	Below30	141	269.22		
	31-45	169	269.37		
	46-62	134	266.46		
	Above63	106	305.05		
	Total	550			
V 63	Below30	141	258.01		
	31-45	169	256.96		
	46-62	134	277.12		

	Above63	106	326.27
	Total	550	
V 64	Below30	141	253.37
	31-45	169	293.68
	46-62	134	275.28
	Above63	106	276.23
	Total	550	
Test Statistics^{a,b}			
	V 62	V 63	V 64
Chi-Square	4.905	15.923	5.226
df	3	3	3
Asymp. Sig.	.179	.001	.156

Based on age following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H_{04.6}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using mobile Banking services.
H_{a4.6}	There is a significant difference among consumer age groups with legal awareness towards security and privacy while using mobile Banking services.

The Ranks table shows the mean rank of the respondents score for each age groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- (a.) There is no significant difference among consumer age groups related to test variable that “**Banks will not refund my money back if there is online fraud**” or variable age group (Chi square= 4.905, df=3, p = .179), with a mean rank of test variable of 269.22for age group below 30, 269.37for Age group 31-45, 266.46 for age group 46-62, and 305.05 for age group above 63.
- (b.) There is a significant difference among consumer age groups related to test variable that “**If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker**” for variable age group (Chi square= 15.923, df=3, p = .001), with a mean rank of test variable of 258.01for age group below30, 256.96 for Age group 31-45, 277.12 for age group 46-62, and 326.27 for age group above63.
- (c.) There is no significant difference among consumer age groups related to test variable that “**Banks periodically send updates; alerts regarding security features**” for variable age group (Chi square= 5.226, df=3, p = .156), with a mean rank of test variable of 253.37 for age group below 30, 293.68 for Age group 31-45, 275.28 for age group 46-62, and 276.23 for age group above 63.

Conclusion

The null hypothesis is accepted, there is no significant difference among consumer age groups with legal awareness towards security and privacy while using mobile Banking services. It means consumers of all age groups have similar thinking about above important factors of legal awareness towards security and privacy while using mobile banking services. Finally, it concludes that a respondent who has a young age have a similar influence about legal awareness towards security and privacy while using mobile banking services whatever a respondent has a higher group of age except one test variable i.e. “**If funds are not transferred**

to the payee account due to internet problem, reverse entry is immediately given by the banker”.

(c.) Education

(i.) ATM/Cards(Debit/Credit)

Table 5.76: Kruskal Wallis Test Result on Education for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 56	550	3.35	1.273	1	5
V 57	550	3.92	1.008	1	5
V 58	550	3.72	1.292	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
EDUCATION			N	Mean Rank	
V 56	Primary		80	251.30	
	Secondary		122	251.57	
	Graduation		137	292.43	
	Post-Graduation		211	287.52	
	Total		550		
V 57	Primary		80	234.12	
	Secondary		122	202.91	
	Graduation		137	250.91	
	Post-Graduation		211	255.90	
	Total		550		
V 58	Primary		80	156.63	
	Secondary		122	211.39	
	Graduation		137	327.06	
	Post-Graduation		211	324.16	
	Total		550		
Test Statistics^{a,b}					
	V 56	V 57	V 58		
Chi-Square	7.771	10.887	107.061		
Df	3	3	3		
Asymp. Sig.	.051	.012	.000		

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

H _{04.7}	There is no significant difference among consumers at different education level with legal awareness towards security and privacy while using ATM/Cards(debit/credit) services.
H _{a4.7}	There is a significant difference among consumers at different education level with legal awareness towards security and privacy while using ATM/Cards(debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers at different education level related to test variable that “**There is maximum number of incorrect password submission**” for variable education level (Chi square= 7.771, df=3, p = 0.051), with a mean rank of test variable of 251.30for primary level of education, 251.57 for secondary level of education, 292.43 graduate level of education, and 287.52 for post graduate level of education.
- b) There is a significant difference among consumers at different education level related to test variable that “**Always take your receipt at the conclusion of every transaction to assure your financial privacy**” for variable education level (Chi square=10.887, df=3, p = 0.012), with a mean rank of test variable of 234.12for primary level of education, 202.91 for secondary level of education, 250.91 for graduate level of education, and 255.90 for post graduate level of education.
- c) There is a significant difference among consumers at different education level related to test variable that “**I should file a complaint with the IT adjudicator if I found any mis happening in transaction records**” for variable education level (Chi square= 107.061, df=3, p = 0.000), with a mean rank of test variable of 156.63for primary level of education, 211.39 for secondary level of education, 327.06 for graduate level of education, and 324.16 for post graduate level of education.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers at different education level with legal 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 legal 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 legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services whatever a respondent has a post-graduate level of education.

(ii.) Internet Banking

Table 5.77: Kruskal Wallis Test Result on Education for Legal Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 59	550	3.49	1.263	1	5
V 60	550	3.87	1.116	1	5
V 61	550	3.62	1.162	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
EDUCATION				N	Mean Rank
V 59	Primary			80	206.59
	Secondary			122	226.53
	Graduate			137	314.54
	Postgraduate			211	304.60
	Total			550	
V 60	Primary			80	163.51

	Secondary	122	239.75
	Graduate	137	319.84
	Postgraduate	211	309.84
	Total	550	
V 61	Primary	80	280.33
	Secondary	122	272.93
	Graduate	137	288.54
	Postgraduate	211	266.69
	Total	550	
Test Statistics^{a,b}			
	V 59	V 60	V 61
Chi-Square	44.399	73.369	1.803
Df	3	3	3
Asymp. Sig.	.000	.000	.614

Based on education following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using Internet Banking services:

H_{04.8}	There is no significant difference among consumers at different education level with legal awareness towards security and privacy while using Internet Banking services.
H_{a4.8}	There is a significant difference among consumers at different education level with legal awareness towards security and privacy while using Internet Banking services.

The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers at different education level related to test variable that **“If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker”** (Chi square=44.399, df=3, p = 0.000), with a mean rank of test variable of 206.59 for primary level of education, 226.53 for secondary level of education, 314.54 graduate level of education, and 304.60 for post graduate level of education.
- There is a significant difference among consumers at different education level related to test variable that **“Banks periodically send updates & alerts regarding security features”** for variable education level (Chi square=73.369, df=3, p = 0.000), with a mean rank of test variable of 163.51 for primary level of education, 239.75 for secondary level of education, 319.84 for graduate level of education, and 309.84 for post graduate level of education.
- There is no significant difference among consumers at different education level related to test variable that **“Banks will no refund my money back if there is online fraud”** for variable education level (Chi square= 1.803, df=3, p = 0.614), with a mean rank of test variable of 280.33 for primary level of education, 272.93 for secondary level of education, 288.54 graduate level of education, and 266.69 for post graduate level of education.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers at different education level with legal awareness towards security and privacy while using Internet Banking services. It means consumers at different education level have a difference in thinking

about the above important factors of legal awareness towards security and privacy while using Internet banking services. Finally, it concludes that a respondent who has a primary level of education have a different influence about legal awareness towards security and privacy while using internet banking services whatever a respondent has a post-graduate level of education except for one test variable i.e. **“I should file a complaint with the IT adjudicator if I found any mis happening in transaction records”**.

(iii.) Mobile Banking

Table 5.78: Kruskal Wallis Test Result on Education for Legal Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 62	550	3.68	1.234	1	5
V 63	550	3.54	1.200	1	5
V 64	550	3.28	1.323	1	5
EDUCATION	550	2.87	1.083	1	4
Ranks					
	EDUCATION	N	Mean Rank		
V 62	Primary	80	261.23		
	Secondary	122	280.32		
	Graduate	137	291.31		
	Postgraduate	211	267.86		
	Total	550			
V 63	Primary	80	250.98		
	Secondary	122	230.93		
	Graduate	137	285.78		
	Postgraduate	211	303.89		
	Total	550			
V 64	Primary	80	193.00		
	Secondary	122	218.23		
	Graduate	137	282.88		
	Postgraduate	211	335.10		
	Total	550			
Test Statistics ^{a,b}					
	V 62	V 63	V 64		
Chi-Square	2.791	20.180	71.179		
Df	3	3	3		
Asymp. Sig.	.425	.000	.000		

Based on age following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using Mobile Banking services:

H_{04.9}	There is no significant difference among consumers at different education level with legal awareness towards security and privacy while using mobile Banking services.
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H_{a4.9}	There is a significant difference among consumers at different education level with legal awareness towards security and privacy while using mobile Banking services.
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The Ranks table shows the mean rank of the respondents score for each education groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is no significant difference among consumers at different education level related to test variable that **“Banks will not refund my money back if there is online fraud”** (Chi square= 2.791, df=3, p = 0.425), with a mean rank of test variable of 261.23 for primary level of education, 280.32 for secondary level of education, 219.31 graduate level of education, and 267.86 for post graduate level of education.
- b) There is a significant difference among consumers at different education level related to test variable that **“If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker”** for variable education level (Chi square=20.180, df=3, p = 0.000), with a mean rank of test variable of 250.98 for primary level of education, 230.93 for secondary level of education, 285.78 for graduate level of education, and 303.89 for post graduate level of education.
- c) There is a significant difference among consumers at different education level related to test variable that **“Banks periodically send updates & alerts regarding security features”** for variable education level (Chi square= 71.179, df=3, p = 0.00), with a mean rank of test variable of 193.00 for primary level of education, 218.23 for secondary level of education, 282.88 graduate level of education, and 335.10 for post graduate level of education.

Conclusion

The Null hypothesis is rejected, there is a significant difference among consumers at different education level with legal awareness towards security and privacy while using mobile Banking services. It means consumers at different education level have a difference in thinking about the above important factors of legal awareness towards security and privacy for mobile banking. Finally, it concludes that a respondent who has a primary level of education have a different influence about legal awareness towards security and privacy while using mobile banking services whatever a respondent has a post-graduate level of education except for one test variable i.e. **“Banks will not refund my money back if there is online fraud”**.

(d.) Occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.79: Kruskal Wallis Test Result on Occupation for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 56	550	3.35	1.273	1	5
V 57	550	3.92	1.008	1	5
V 58	550	3.72	1.292	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION				N	Mean Rank
V 56	Professional			160	316.56
	Service			160	254.01
	Business			160	297.35
	Labour			70	180.82
	Total			550	
V 57	Professional			160	300.06
	Service			160	203.99
	Business			160	225.16
	Labour			70	174.25
	Total			550	
V 58	Professional			160	367.85
	Service			160	337.85
	Business			160	202.31
	Labour			70	89.20
	Total			550	
Test Statistics ^{a,b}					
	V 56	V 57	V 58		
Chi-Square	43.653	46.951	226.202		
Df	3	3	3		
Asymp. Sig.	.000	.000	.000		

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

H_{04.10}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.
H_{a4.10}	There is a significant difference among consumers from different occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) there is statistically significant difference between the different occupations related to test variable that “There is maximum number of incorrect password submission” for variable occupation (Chi square= 43.653, df=3, p = 0.000), with a mean rank of test

variable of 316.56 for Professional class, 254.01 for service class, 297.35 for business class, and 180.82 for Labour class.

- b) there is statistically significant difference between the different occupations related to test variable that “**Always take your receipt at the conclusion of every transaction to assure your financial privacy**” for variable occupation (Chi square= 46.951, df=3, p = 0.000), with a mean rank of test variable of 300.06 for Professional class, 203.99 for service class, 225.16 for business class, and 174.25 for Labour class.
- c) there is statistically significant difference between the different occupations related to test variable that “**I should file a complaint with the IT adjudicator if I found any mis happening in transaction records**” for variable occupation (Chi square=226.202, df=3, p = 0.000), with a mean rank of test variable of 367.85 for Professional class, 337.85 for service class, 202.31 for business class, and 89.20 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with legal 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 legal awareness towards security and privacy while using ATM/Cards(debit/credit) services. Finally, it concludes that there is a different influence about legal 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 Labour class.

(ii.) Internet banking

Table 5.80: Kruskal Wallis Test Result on Occupation for Legal Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 59	550	3.49	1.263	1	5
V 60	550	3.87	1.116	1	5
V 61	550	3.62	1.162	1	5
OCUPATION	550	2.25	1.014	1	4
Ranks					
OCUPATION			N	Mean Rank	
V 59	Professional		160	342.41	
	Service		160	226.37	
	Business		160	331.90	
	Labour		70	105.95	
	Total		550		
V 60	Professional		160	343.94	
	Service		160	336.18	
	Business		160	223.87	
	Labour		70	98.37	
	Total		550		
V 61	Professional		160	257.94	
	Service		160	284.81	
	Business		160	316.01	

	Labour	70	201.77
	Total	550	
Test Statistics^{a,b}			
	V 59	V 60	V61
Chi-Square	151.798	173.248	30.052
Df	3	3	3
Asymp. Sig.	.000	.000	.000

Based on occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{04.11}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using internet banking services.
H_{a4.11}	There is a significant difference among consumers from different occupation with legal awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different occupation related to test variable that “**If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker**” for variable occupation (Chi square= 151.798, df=3, p = 0.000), with a mean rank of test variable of 342.41 for Professional class, 226.37 for service class, 331.90 for business class, and 105.95for Labour class.
- b) There is a significant difference among consumers from different occupation related to test variable that “**Banks periodically send updates & alerts regarding security features**” for variable occupation (Chi square= 173.248, df=3, p = 0.000), with a mean rank of test variable of 343.94for Professional class, 336.18for service class, 223.87 for business class, and 174.25 for Labour class.
- c) There is a significant difference among consumers from different occupation related to test variable that “**Banks will no refund my money back if there is online fraud**” for variable occupation (Chi square=30.052, df=3, p = 0.000), with a mean rank of test variable of 257.94 for Professional class, 284.81 for service class, 316.01 for business class, and 201.77 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with legal awareness towards security and privacy while using internet banking services. It means consumers from different occupation have a difference in thinking about the above important factors of legal awareness towards security and privacy while using internet banking services. Finally, it concludes that there is a different influence about legal 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 Labour class.

(iii.) Mobile Banking

Table 5.81: Kruskal Wallis Test Result on Occupation for Legal Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics

Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 62	550	3.68	1.234	1	5
V 63	550	3.54	1.200	1	5
V 64	550	3.28	1.323	1	5
OCCUPATION	550	2.25	1.014	1	4
Ranks					
OCCUPATION			N	Mean Rank	
V 62	Professional		160	232.89	
	Service		160	304.40	
	Business		160	322.72	
	Labour		70	198.93	
	Total		550		
V 63	Professional		160	339.04	
	Service		160	205.05	
	Business		160	336.48	
	Labour		70	151.92	
	Total		550		
V 64	Professional		160	399.02	
	Service		160	268.29	
	Business		160	189.86	
	Labour		70	205.40	
	Total		550		
Test Statistics ^{a,b}					
	V 62	V 63	V64		
Chi-Square	50.624	131.860	165.942		
Df	3	3	3		
Asymp. Sig.	.000	.000	.000		

Based on occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H_{04.12}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using mobile banking services.
H_{a4.12}	There is a significant difference among consumers from different occupation with legal awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different occupation related to test variable that “Banks will not refund my money back if there is online fraud” for variable occupation (Chi square= 50.624, df=3, p = 0.000), with a mean rank of test variable of 232.89 for Professional class, 304.40 for service class, 332.72 for business class, and 198.93 for Labour class.
- There is a significant difference among consumers from different occupation related to test variable that “If funds are not transferred to the payee account due to internet

problem, reverse entry is immediately given by the banker” for variable occupation (Chi square= 131.860, df=3, p = 0.000), with a mean rank of test variable of 339.04 for Professional class, 205.05 for service class, 336.48 for business class, and 151.92 for Labour class.

- c) There is a significant difference among consumers from different occupation related to test variable that “**Banks periodically send updates & alerts regarding security features”** for variable occupation (Chi square=165.942, df=3, p = 0.000), with a mean rank of test variable of 399.02 for Professional class, 268.29 for service class, 189.86 for business class, and 205.40 for Labour class.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different occupation with legal awareness towards security and privacy while using mobile banking services. It means consumers from different occupation have a difference in thinking about the above important factors of legal awareness towards security and privacy while using mobile banking services. Finally, it concludes that there is a different influence about legal awareness towards security and privacy while using mobile banking services among the consumers from different occupations such as Professional class, Service class, Business class, and Labour class.

(e.) Sub-occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.82: Kruskal Wallis Test Result on Sub-Occupation for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit)

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 56	550	3.35	1.273	1	5
V 57	550	3.92	1.008	1	5
V 58	550	3.72	1.292	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
	sub -occupation	N	Mean Rank		
V 56	Buss. + Labour	230	261.88		
	CA/CS	40	405.19		
	Engineer	40	345.46		
	Lawyer	40	254.40		
	Doctor	40	261.20		
	Govt. Ser.	80	271.48		
	Pvt. Ser	80	236.55		
	Total	550			
	V 57	Buss. + Labour	230	223.92	
CA/CS		40	343.93		
Engineer		40	290.46		
Lawyer		40	322.20		
Doctor		40	243.64		
Govt. Ser.		80	217.10		

	Pvt. Ser	80	190.88
	Total	550	
V 58	Buss. + Labour	230	167.88
	CA/CS	40	367.50
	Engineer	40	381.00
	Lawyer	40	376.50
	Doctor	40	346.39
	Govt. Ser.	80	315.09
	Pvt. Ser	80	360.61
	Total	550	

Test Statistics^{a,b}

	V 56	V 57	V 58
Chi-Square	44.168	60.741	204.247
df	6	6	6
Asymp. Sig.	.000	.000	.000

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

H_{04.13}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a4.13}	There is a significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that “**There is maximum number of incorrect password submission**” for variable sub-occupation (Chi square= 44.0168, df=6, p = 0.000), with a mean rank of test variable of 405.19 for CA/CS, 345.46 for engineers, 254.40 for lawyers, and 261.20 for doctors 271.48 for government employees, and 236.55 for private employees.
- b) There is a significant difference among consumers from different sub-occupation related to test variable that “**Always take your receipt at the conclusion of every transaction to assure your financial privacy.**” for variable sub-occupation (Chi square= 60.741, df=6, p = 0.000), with a mean rank of test variable of 343.93 for CA/CS, 290.46 for engineers, 322.20 for lawyers, and 243.64 for doctors, 217.10 for government employees, and 190.88 for private employees.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that “**I should file a complaint with the IT adjudicator if I found any mis happening in transaction records.**” for variable sub-occupation (Chi square= 204.247, df=6, p = 0.000), with a mean rank of test variable of 367.50 for CA/CS, 381.00 for engineers, 376.50 for lawyers, and 346.39 for doctors, 315.09 for government employees, and 360.61 for private employees.

Conclusion

The null hypothesis is rejected, there is a significant difference among consumers from different sub-occupation with legal 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 legal awareness towards security and privacy while using ATM/cards(debit/credit) services. Finally, it concludes that a there is different influence about legal 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.

(ii.) Internet Banking

Table 5.83: Kruskal Wallis Test Result on Sub-Occupation for Legal Awareness Towards Security and Privacy for Internet Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 59	550	3.49	1.263	1	5
V 60	550	3.87	1.116	1	5
V 61	550	3.62	1.162	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
sub –occupation			N	Mean Rank	
V 59	Buss. + Labour		230	263.13	
	CA/CS		40	392.49	
	Engineer		40	406.91	
	Lawyer		40	244.75	
	Doctor		40	325.50	
	Govt. Ser.		80	205.14	
	Pvt. Ser		80	247.59	
	Total		550		
V 60	Buss. + Labour		230	185.67	
	CA/CS		40	350.81	
	Engineer		40	334.81	
	Lawyer		40	344.59	
	Doctor		40	345.55	
	Govt. Ser.		80	367.25	
	Pvt. Ser		80	305.12	
	Total		550		
V 61	Buss. + Labour		230	281.24	
	CA/CS		40	243.35	
	Engineer		40	246.20	
	Lawyer		40	308.28	
	Doctor		40	233.95	
	Govt. Ser.		80	252.85	
	Pvt.Ser		80	316.76	
	Total		550		
Test Statistics ^{a,b}					
	V 59	V 60	V 61		
Chi-Square	78.313	146.694	15.853		

Df	6	6	6
Asymp. Sig.	.000	.000	.015

Based on sub-occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{04.14}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using internet banking services.
H_{a4.14}	There is a significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using internet banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- There is a significant difference among consumers from different sub-occupation related to test variable that **“If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker”** for variable sub-occupation (Chi square= 78.313, df=6, p = 0.000), with a mean rank of test variable of 392.49 for CA/CS, 406.91 for engineers, 244.75 for lawyers, and 325.50 for doctors 205.14 for government employees, and 247.59 for private employees
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Banks periodically send updates & alerts regarding security features”** for variable sub-occupation (Chi square= 78.313, df=6, p = 0.000), with a mean rank of test variable of 350.81 for CA/CS, 334.81 for engineers, 344.59 for lawyers, and 345.55 for doctors 367.25 for government employees, and 305.12 for private employees.
- There is a significant difference among consumers from different sub-occupation related to test variable that **“Banks will no refund my money back if there is online fraud.”** for variable sub-occupation (Chi square= 15.853, df=6, p = 0.015), with a mean rank of test variable of 243.35 for CA/CS, 246.20 for engineers, 308.28 for lawyers, and 233.95 for doctors, 252.85 for government employees, and 316.76 for private employees

Conclusion

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

(iii.) Mobile Banking

Table 5.84: Kruskal Wallis Test Result on Sub-Occupation for Legal Awareness Towards Security and Privacy for Mobile Banking

Descriptive Statistics					
Variable Name	N	Mean	Std. Deviation	Minimum	Maximum
V 62	550	3.68	1.234	1	5
V 63	550	3.54	1.200	1	5

V 64	550	3.28	1.323	1	5
sub -occupation	550	4.65	4.165	0	10
Ranks					
Sub –occupation				N	Mean Rank
V 62	Buss. + Labour			230	285.04
	CA/CS			40	215.55
	Engineer			40	204.20
	Lawyer			40	295.68
	Doctor			40	216.13
	Govt. Ser.			80	249.75
	CA/CS			80	359.04
	Total			550	
V 63	Buss. + Labour			230	280.31
	CA/CS			40	386.99
	Engineer			40	315.14
	Lawyer			40	283.26
	Doctor			40	370.79
	Govt. Ser.			80	209.09
	CA/CS			80	201.01
	Total			550	
V 64	Buss. + Labour			230	194.59
	CA/CS			40	432.83
	Engineer			40	404.53
	Lawyer			40	418.68
	Doctor			40	340.05
	Govt. Ser.			80	259.86
	CA/CS			80	276.73
	Total			550	
Test Statistics^{a,b}					
	V 62	V 63	V 64		
Chi-Square	48.308	73.392	174.353		
Df	6	6	6		
Asymp. Sig.	.000	.000	.000		

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

H_{04.15}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using mobile banking services.
H_{a4.15}	There is a significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using mobile banking services.

The Ranks table shows the mean rank of the respondents score for each sub-occupation groups. The Test Statistics table presents the Chi-square value (Kruskal-Wallis), the degrees of freedom and the significance level. In above hypothesis:

- a) There is a significant difference among consumers from different sub-occupation related to test variable that **“Banks will not refund my money back if there is online fraud”** for variable sub-occupation (Chi square= 48.308, df=6, p = 0.000), with a mean rank of test variable of 215.55 for CA/CS, 204.20 for engineers, 295.68 for lawyers, and 216.13 for doctors 249.75 for government employees, and 359.04 for private employees.
- b) There is a significant difference among consumers from different sub-occupation related to test variable that **“If funds are not transferred to the payee account due to internet problem, reverse entry is immediately given by the banker”** for variable sub-occupation (Chi square= 73.392, df=6, p = 0.000), with a mean rank of test variable of 386.99 for CA/CS, 315.14 for engineers, 283.26for lawyers, and 370.79 for doctors 209.09 for government employees, and 201.01 for private employees.
- c) There is a significant difference among consumers from different sub-occupation related to test variable that **“Banks periodically send updates & alerts regarding security features.”** for variable sub-occupation (Chi square= 174.353, df=6, p = 0.015), with a mean rank of test variable of 432.83 for CA/CS, 404.23 for engineers, 418.68 for lawyers, and 340.05 for doctors, 259.86 for government employees, and 276.73 for private employees.

Conclusion

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

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

1) Social Awareness Towards Security And Privacy For Electronic Banking Services

(a.) Gender

(i.)ATM/ Cards (Debit/ Credit)

Table 5.85: Chi-Square Test Result for Social Awareness Towards Security and Privacy For ATM/ Cards (Debit/ Credit) on The Basis of Gender

			Social			Total
			Low	Moderate	High	
GENDER	Male	Count	14	114	238	366
		Expected Count	16.6	107.8	241.6	366.0
	Female	Count	11	48	125	184
		Expected Count	8.4	54.2	121.4	184.0
Total		Count	25	162	363	550
		Expected Count	25.0	162.0	363.0	550.0
Chi-Square Tests						

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.470 ^a	2	.291
Likelihood Ratio	2.440	2	.295
Linear-by-Linear Association	.021	1	.884
N of Valid Cases	550		
Symmetric Measures			
	Value		Approx. Sig.
Nominal by Nominal	Phi	.067	.291
	Cramer's V	.067	.291
N of Valid Cases	550		

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

H _{05.1}	There is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H _{a5.1}	There is a significant association among the consumers gender groups with the level of social 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 social awareness & gender to evaluate the significant association between them. In this study overall seven factors were considered for the dimension of social awareness towards security and privacy while using ATM/Cards (Debit / Credit) services which are optimized into three levels known as low, moderate & high level. By the above table shows that consumers belong to high level of awareness i.e. 238(65.56%) and 125(34.43%) males & females respectively, consumers belong to low level of awareness i.e. 14(56%) and 11(44%) males & females respectively and consumers belong to moderate level of awareness i.e. 114(70.37%) and 48(29.62%) males and females. Chi square analysis shows chi square value as 2.470 and its p-value = 0.291 which is greater than level of significance .05, thus the null hypothesis is accepted, which shows there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using ATM/Cards (debit /Credit) services. The phi value is .067 which shows that there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.

(ii.) Internet Banking

Table 5.86: Chi-Square Test Result for Social Awareness Towards Security and Privacy for Internet Banking on The Basis of Gender

			Social			Total
			Low	Moderate	High	
GENDER	Male	Count	19	108	239	366
		Expected Count	18.6	101.8	245.6	366.0
	Female	Count	9	45	130	184
		Expected Count	9.4	51.2	123.4	184.0
Total		Count	28	153	369	550

Expected Count	28.0	153.0	369.0	550.0
Chi-Square Tests				
		Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square		1.668 ^a	2	.434
Likelihood Ratio		1.688	2	.430
Linear-by-Linear Association		1.157	1	.282
N of Valid Cases		550		
Symmetric Measures				
			Value	Approx. Sig.
Nominal by Nominal	Phi		.055	.434
	Cramer's V		.055	.434
N of Valid Cases			550	

Based on gender following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services.

H_{05.2}	There is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using internet banking services.
H_{a5.2}	There is a significant association among the consumers gender groups with the level of social awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & male & female to evaluate the significant association between them. In this study overall five factors were considered for the dimension of social awareness towards security and privacy while Internet Banking services which are optimized into three levels known as low, moderate & high level. By the above table shows that majority of respondent belongs to high level of awareness i.e. 239(64.76%) and 130(35.23%) males & females respectively, consumers belong to low level of awareness i.e. 19(67.85%) and 9(32.14%) males & females respectively and consumers belong to moderate level of awareness i.e. 108(70.58%) and 45(29.41%) males and females. Chi square analysis shows chi square value as 1.1668 & its p-value =0.434 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using internet banking services. The phi value is .055 which shows that there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.87: Chi-Square Test Result for Social Awareness Towards Security and Privacy for Mobile Banking on The Basis of Gender

			Social			Total
			Low	Moderate	High	
GENDER	Male	Count	69	134	163	366
		Expected Count	60.6	128.4	177.0	366.0
	Female	Count	22	59	103	184

	Expected Count	30.4	64.6	89.0	184.0
Total	Count	91	193	266	550
	Expected Count	91.0	193.0	266.0	550.0
Chi -Square Tests					
		Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		7.556 ^a	2	.023	
Likelihood Ratio		7.691	2	.021	
Linear-by-Linear Association		7.503	1	.006	
N of Valid Cases		550			
Symmetric Measures					
			Value	Approx. Sig.	
Nominal by Nominal	Phi		.117	.023	
	Cramer's V		.117	.023	
N of Valid Cases		550			

Based on gender following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{05.3}	There is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using mobile banking services.
H_{a5.3}	There is a significant association among the consumers gender groups with the level of social awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & male & female to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social awareness towards security and privacy while using mobile banking services which are optimized into three levels known as low, moderate & high level. By the above table shows that consumers belong to high level of awareness i.e. 163(61.27%) and 103(38.72%) males & females respectively, consumers belong to low level of awareness i.e. 69(75.82%) and 22(24.17%) males & females respectively and consumers belong to moderate level of awareness i.e. 134(69.43%) and 59(30.56%) males and females respectively. Chi square analysis shows chi square value as 7.556 & its p-value is 0.023 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .117 there is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using mobile banking services.

(b.) Age

(i.)ATM/Cards (Debit/Credit)

Table 5.88: Chi-Square Test Result for Social Awareness Towards Security and Privacy for ATM/Cards (Debit / Credit) on The Basis of Age

		Social			Total	
		Low	Moderate	High		
AGE	below 30	Count	6	38	97	141

	Expected Count	6.4	41.5	93.1	141.0
31-45	Count	5	57	107	169
	Expected Count	7.7	49.8	111.5	169.0
46-62	Count	8	42	84	134
	Expected Count	6.1	39.5	88.4	134.0
Above 63	Count	6	25	75	106
	Expected Count	4.8	31.2	70.0	106.0
Total	Count	25	162	363	550
	Expected Count	25.0	162.0	363.0	550.0

Chi – Square Test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.538 ^a	6	.477
Likelihood Ratio	5.642	6	.464
Linear-by-Linear Association	.043	1	.835
N of Valid Cases	550		

Symmetric Measures

	Value	Approx. Sig.
Nominal by Nominal	Phi	.100
	Cramer's V	.071
N of Valid Cases	550	

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

H_{05.4}	There is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H_{a5.4}	There is a significant association among the consumers age groups with the level of social 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 social awareness & age to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social 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 consumers belong to age group below 30 from which 97(26.72%) are highly aware,38(23.45%) are moderately aware and 6(24%) are low aware. Consumers belong to age group 31-45 from which 107(29.47%) are highly aware, 57(35.18%) are moderately aware and 5(20%) are low aware. Consumers belong to age group 46-62 from which 84(23.14%) are highly aware, 42(25.92%) are moderately aware and 8(32%) are low aware. Consumers belong to age group above 63 from which 75(20.66%) are highly aware,25(15.43%) are moderately aware and 6(24%) are low aware. Chi square analysis shows chi square value as 5.538 & its p-value is .477 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of social

awareness towards security and privacy while using ATM/Cards (Debit /Credit) services. The phi value of the above analysis is .100 which shows that there is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.

(ii.)Internet Banking

Table 5.89: Chi-Square Test Result for Social Awareness Towards Security and Privacy for Internet Banking on The Basis of Age

			Social			Total
			Low	Moderate	High	
AGE	Below 30	Count	7	39	95	141
		Expected Count	7.2	39.2	94.6	141.0
	31-45	Count	11	45	113	169
		Expected Count	8.6	47.0	113.4	169.0
	46-62	Count	6	35	93	134
		Expected Count	6.8	37.3	89.9	134.0
	Abobe63	Count	4	34	68	106
		Expected Count	5.4	29.5	71.1	106.0
Total		Count	28	153	369	550
		Expected Count	28.0	153.0	369.0	550.0
Chi – Square Test						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			2.296 ^a	6	.891	
Likelihood Ratio			2.254	6	.895	
Linear-by-Linear Association			.000	1	.995	
N of Valid Cases			550			
Symmetric Measures						
			Value		Approx. Sig.	
Nominal by Nominal	Phi		.065		.891	
	Cramer's V		.046		.891	
N of Valid Cases			550			

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{05.5}	There is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using internet banking services.
H_{a5.5}	There is a significant association among the consumers age groups with the level of social awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & age to evaluate the significant association between them. In this study overall five factors were considered for the dimension of social awareness towards security and privacy

while using Internet Banking 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 95(25.74%) are highly aware, 39(25.49%) are moderately aware and 7(25%) are low aware. Consumers belong to age group 31-45 from which 113(30.62%) are highly aware, 45(29.41%) are moderately aware and 11(39.28%) are low aware. Consumers belong to age group 46-62 from which 93(25.20%) are highly aware, 35(22.87%) are moderately aware and 6(21.42%) are low aware. Consumers belong to age group above 63 from which 68(18.42%) are highly aware, 34(22.22%) are moderately aware and 4(14.28%) are low aware. Chi square analysis shows chi square value as 2.296 & its p-value is .891 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .065 which shows that there is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.90: Chi-Square Test Result for Social Awareness Towards Security And Privacy for Mobile Banking on The Basis of Age

			Social			Total
			Low	Moderate	High	
AGE	Below30	Count	27	55	59	141
		Expected Count	23.3	49.5	68.2	141.0
	31-45	Count	28	60	81	169
		Expected Count	28.0	59.3	81.7	169.0
	46-62	Count	24	40	70	134
		Expected Count	22.2	47.0	64.8	134.0
	Above 63	Count	12	38	56	106
		Expected Count	17.5	37.2	51.3	106.0
Total		Count	91	193	266	550
		Expected Count	91.0	193.0	266.0	550.0
Chi-Square Test						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			6.267 ^a	6	.0394	
Likelihood Ratio			6.526	6	.0367	
Linear-by-Linear Association			3.957	1	.047	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal	Phi		.107	.0394		
	Cramer's V		.075	.0394		
N of Valid Cases			550			

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{05.6}	There is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using mobile banking services.
H_{a5.6}	There is a significant association among the consumers age groups with the level of social awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & age to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social awareness towards security and privacy while using Mobile Banking 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 59(22.18%) are highly aware, 55(28.49%) are moderately aware and 27(29.67%) are low aware. Consumers belong to age group 31-45 from which 81(30.45%) are highly aware, 60(31.08%) are moderately aware and 28(30.76%) are low aware. Consumers belong to age group 46-62 from which 70(26.31%) are highly aware, 40(20.72%) are moderately aware and 24(26.37%) are low aware. Consumers belong to age group above 63 from which 56(21.05%) are highly aware, 38(19.68%) are moderately aware and 12(13.18%) are low aware. Chi square analysis shows chi square value as 6.267 & its p-value is .394 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .107 which shows that there is no significant association among the consumers age groups with the level of social awareness towards security and privacy while using mobile banking services.

(c.) Education

(i.) ATM/Cards (Debit/Credit)

Table 5.91: Chi Square Test Result for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Education

			Social			Total	
			Low	Moderate	High		
EDUCATION	Primary	Count	2	20	58	80	
		Expected Count	3.6	23.6	52.8	80.0	
	Secondary	Count	1	34	87	122	
		Expected Count	5.5	35.9	80.5	122.0	
	Graduate	Count	4	50	83	137	
		Expected Count	6.2	40.4	90.4	137.0	
	Post-Graduate	Count	18	58	135	211	
		Expected Count	9.6	62.1	139.3	211.0	
	Total	Count	25	162	363	550	
		Expected Count	25.0	162.0	363.0	550.0	
	Chi-Square Tests						

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.631 ^a	6	.007
Likelihood Ratio	18.167	6	.006
Linear-by-Linear Association	6.604	1	.010
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.179	.007
	Cramer's V	.127	.007
N of Valid Cases		550	

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

H_{05.7}	There is no significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using ATM/ cards (Debit and credit) services.
H_{a5.7}	There is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using ATM/ cards (Debit and credit) services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & education to evaluate the significant association between them. In this study overall seven factors were considered for the dimension of social awareness towards security and privacy while ATM/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 primary level of education from which 58(15.97%) are highly aware, 20(12.34%) are moderately aware and 2(8%) are low aware. Consumers belong to secondary level of education from which 87(23.96%) are highly aware, 34(20.98%) are moderately aware and 1(4%) is low aware. Consumers belong to graduate level of education from which 83(22.86%) are highly aware, 50(30.86%) are moderately aware and 4(16%) are low aware. Consumers belong to Post Graduate level of education from which 135(37.19%) are highly aware, 58(35.80%) are moderately aware and 18(72%) are low aware. Chi square analysis shows chi square value as 17.631 & its p-value is .007 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using ATM/ cards (Debit and credit) services. The phi value of the above analysis is .179 which shows that there is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using ATM/ cards (Debit and credit) services.

(ii.) Internet banking

Table 5.92: Chi Square Test Result for Social Awareness Towards Security and Privacy for Internet Banking on The Basis of Education

EDUCATION			Social			Total
			Low	Moderate	High	
Primary	Count		8	24	48	80
	Expected Count		4.1	22.3	53.7	80.0
Secondary	Count		3	37	82	122

	Expected Count	6.2	33.9	81.9	122.0
Graduate	Count	2	38	97	137
	Expected Count	7.0	38.1	91.9	137.0
Post-Graduate	Count	15	54	142	211
	Expected Count	10.7	58.7	141.6	211.0
Total	Count	28	153	369	550
	Expected Count	28.0	153.0	369.0	550.0
Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square	12.355 ^a	6	.055		
Likelihood Ratio	13.145	6	.041		
Linear-by-Linear Association	.664	1	.415		
N of Valid Cases	550				
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.150	.055		
	Cramer's V	.106	.055		
N of Valid Cases	550				

Based on education following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{05.8}	There is no significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using internet banking services.
H_{a5.8}	There is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & education to evaluate the significant association between them. In this study overall five factors were considered for the dimension of social awareness towards security and privacy while using Internet Banking 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 48(13.00%) are highly aware, 24(15.68%) are moderately aware and 8(28.57%) are low aware. Consumers belong to secondary level of education from which 82 (22.22%) are highly aware, 37(24.18%) are moderately aware and 3(10.71%) is low aware. Consumers belong to graduate level of education from which 97(26.28%) are highly aware, 38(24.83%) are moderately aware and 2(7.14%) are low aware. Consumers belong to Post Graduate level of education from which 142(38.48%) are highly aware, 54(35.29%) are moderately aware and 15(53.57%) are low aware. Chi square analysis shows chi square value as 12.355 & its p-value is .055 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .150 which shows that there is a significant association among the

consumers at different level of education with the level of social awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table.5.93: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for Mobile Banking on The Basis of Education

			Social			Total
			Low	Moderate	High	
EDUCATION	Primary	Count	29	32	19	80
		Expected Count	13.2	28.1	38.7	80.0
	Secondary	Count	27	41	54	122
		Expected Count	20.2	42.8	59.0	122.0
	Graduate	Count	13	40	84	137
		Expected Count	22.7	48.1	66.3	137.0
	Post Graduate	Count	22	80	109	211
		Expected Count	34.9	74.0	102.0	211.0
Total		Count	91	193	266	550
		Expected Count	91.0	193.0	266.0	550.0
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			48.103 ^a	6	.000	
Likelihood Ratio			46.568	6	.000	
Linear-by-Linear Association			29.785	1	.000	
N of Valid Cases			550			
Symmetric Measures						
				Value	Approx. Sig.	
Nominal by Nominal			Phi	.296	.000	
			Cramer's V	.209	.000	
N of Valid Cases			550			

Based on age following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using Mobile Banking services:

H_{05.9}	There is no significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using mobile banking services.
H_{a5.9}	There is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & education to evaluate the significant difference between them. In this study overall four factors were considered for the dimension of social awareness towards security and privacy while using Mobile Banking 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 19(7.14%) are highly aware, 32(16.58%) are moderately aware and

29 (31.86%) are low aware Consumers belong to secondary level of education from which 54(20.30%) are highly aware, 41(21.24%) are moderately aware and 27(29.67%) is low aware. Consumers belong to graduate level of education from which 84 (31.57%) are highly aware, 40(20.72%) are moderately aware and 13(14.28%) are low aware. Consumers belong to Post Graduate level of education from which 109(40.97%) are highly aware,80(41.45%) are moderately aware and 22(24.17%) are low aware. Chi square analysis shows chi square value as 48.103 & 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 shows there is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.296 which shows that there is a significant association among the consumers at different level of education with the level of social awareness towards security and privacy while using mobile banking services.

(d.) Occupation

(i.)ATM/Cards (Debit/Credit)

Table 5.94: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for ATM/ (Debit /Credit) on The Basis of Occupation

			Social			Total
			Low	Moderate	High	
OCCUPATION	Profession	Count	10	51	99	160
		Expected Count	7.3	47.1	105.6	160.0
	Service	Count	10	50	100	160
		Expected Count	7.3	47.1	105.6	160.0
	Business	Count	5	34	121	160
		Expected Count	7.3	47.1	105.6	160.0
	Labour	Count	0	27	43	70
		Expected Count	3.2	20.6	46.2	70.0
Total	Count		25	162	363	550
	Expected Count		25.0	162.0	363.0	550.0
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			15.240 ^a	6	.018	
Likelihood Ratio			18.419	6	.005	
Linear-by-Linear Association			3.923	1	.048	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal	Phi		.166	.018		
	Cramer's V		.118	.018		
N of Valid Cases			550			

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

H_{05.10}	There is no significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a5.10}	There is a significant association among the consumers from different occupation with the level of social 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 social awareness & occupation to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social 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 consumers belong to Professional group from which 79(27.27%) are highly aware, 51(31.48%) are moderately aware and 10(40%) are low aware. Consumers belong to service group from which 100(27.54%) are highly aware, 50(30.86%) are moderately aware and 10(40%) is low aware. Consumers belong to business group from which 121(33.33%) are highly aware, 34(20.98%) are moderately aware and 5(20%) are low aware. Consumers belong to Labour group from which 43(11.84%) are highly aware,27(16.66%) are moderately aware. Chi square analysis shows chi square value as 15.240 & its p-value is .018 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.166 which shows that there is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services.

(ii.) Internet Banking

Table 5.95: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for Internet Banking on The Basis of Occupation

		Social			Total	
		Low	Moderate	High		
OCCUPATION	Professional	Count	9	36	115	160
		Expected Count	8.1	44.5	107.3	160.0
	Service	Count	6	33	121	160
		Expected Count	8.1	44.5	107.3	160.0
	Business	Count	8	58	94	160
		Expected Count	8.1	44.5	107.3	160.0
	Labour	Count	5	26	39	70
		Expected Count	3.6	19.5	47.0	70.0
Total		Count	28	153	369	550
		Expected Count	28.0	153.0	369.0	550.0

Chi-Square Tests

Value	df	Asymp. Sig. (2-sided)
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Pearson Chi-Square	17.408 ^a	6	.008
Likelihood Ratio	17.313	6	.008
Linear-by-Linear Association	7.891	1	.005
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.178	.008
	Cramer's V	.126	.008
N of Valid Cases		550	

Based on occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{05.11}	There is no significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using internet banking services.
H_{a5.11}	There is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & occupation to evaluate the significant association between them. In this study overall five factors were considered for the dimension of social awareness towards security and privacy while using Internet Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 115(31.16%) are highly aware, 36(23.52%) are moderately aware and 9(32.14%) are low aware. Consumers belong to service group from which 121(32.79%) are highly aware, 33(21.56%) are moderately aware and 6(21.42%) are low aware. Consumers belong to business group from which 94(25.47%) are highly aware, 58(37.90%) are moderately aware and 8(28.57%) are low aware. Consumers belong to Labour group from which 39(10.56%) are highly aware, 26 (16.99%) are moderately aware and 5(17.85%) are low aware. Chi square analysis shows chi square value as 17.408 & its p-value is .008 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using internet banking services. The phi value of the above analysis is 0.178 which shows that there is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.96: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for Mobile Banking on The Basis of Occupation

			Social			Total
			Low	Moderate	High	
OCCUPATION	Professional	Count	15	60	85	160
		Expected Count	26.5	56.1	77.4	160.0
	Service	Count	2	34	124	160
		Expected Count	26.5	56.1	77.4	160.0

Business	Count	45	73	42	160
	Expected Count	26.5	56.1	77.4	160.0
Labour	Count	29	26	15	70
	Expected Count	11.6	24.6	33.9	70.0
Total	Count	91	193	266	550
	Expected Count	91.0	193.0	266.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		136.414 ^a	6	.000	
Likelihood Ratio		145.904	6	.000	
Linear-by-Linear Association		68.389	1	.000	
N of Valid Cases		550			
Symmetric Measures					
			Value	Approx. Sig.	
Nominal by Nominal		Phi	.498	.000	
		Cramer's V	.352	.000	
N of Valid Cases		550			

Based on occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{05.12}	There is no significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services.
H_{a5.12}	There is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & occupation to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social awareness towards security and privacy while using Mobile Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 85(31.95%) are highly aware, 60(31.08%) are moderately aware and 15(16.48%) are low aware. Consumers belong to service group from which 124(46.61%) are highly aware, 34(17.61%) are moderately aware and 2(2.19%) are low aware. Consumers belong to business group from which 42(15.78%) are highly aware, 73 (37.82%) are moderately aware and 45(49.45%) are low aware. Consumers belong to Labour group from which 15(5.63%) are highly aware, 26(13.47%) are moderately aware and 29 (31.86%) are low aware. Chi square analysis shows chi square value as 136.414 & 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 shows there is a significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.498 which shows that there is a

significant association among the consumers from different occupation with the level of social awareness towards security and privacy while using mobile banking services.

(e.) Sub Occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.97: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Sub-Occupation

			Social			Total
			Low	Moderate	High	
sub - occupation	Business + Labour	Count	5	61	164	230
		Expected Count	10.5	67.7	151.8	230.0
	CA/Cs	Count	0	9	31	40
		Expected Count	1.8	11.8	26.4	40.0
	Engineer	Count	8	32	0	40
		Expected Count	1.8	11.8	26.4	40.0
	Lawyer	Count	0	4	36	40
		Expected Count	1.8	11.8	26.4	40.0
	Doctor	Count	2	6	32	40
		Expected Count	1.8	11.8	26.4	40.0
	Government	Count	5	29	46	80
		Expected Count	3.6	23.6	52.8	80.0
	Private	Count	5	21	54	80
		Expected Count	3.6	23.6	52.8	80.0
Total		Count	25	162	363	550
		Expected Count	25.0	162.0	363.0	550.0

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	107.839 ^a	12	.000
Likelihood Ratio	119.546	12	.000
Linear-by-Linear Association	4.246	1	.039
N of Valid Cases	550		

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.443	.000
	Cramer's V	.313	.000
N of Valid Cases		550	

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

H_{05.13}	There is no significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a5.13}	There is a significant association among the consumers from different sub-occupation with the level of social 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 social awareness & sub occupation to evaluate the significant association between them. In this study overall seven factors were considered for the dimension of social 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 31(8.5%) are highly aware, 9(5.55%) are moderately aware. Consumers belong to Engineers from which no one is highly aware, 32 (19.75%) are moderately aware and 8(32%) are low aware. Consumers belong to lawyers from which 36(9.91%) are highly aware, 4(2.46%) are moderately aware. Consumers belong to Doctors from which 32(8.81%) are highly aware,6(3.70%) are moderately aware and 2(8%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows:46 (12.67%) are highly aware,29(17.90%) are moderately aware and 5(20%) are low aware and the awareness level of Private employees is as follows: 54 (14.87%) are highly aware, 21(12.96%) are moderately aware and 5 (20%) are low aware. Chi square analysis shows chi square value as 107.839 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is 0.443 which shows that there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.98: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for Internet Banking on The Basis of Sub-Occupation

			Social			Total
			Low	Moderate	High	
sub - occupation	Business + Labour	Count	13	84	133	230
		Expected Count	11.7	64.0	154.3	230.0
	CA/Cs	Count	1	21	18	40
		Expected Count	2.0	11.1	26.8	40.0
	Engineer	Count	0	0	40	40
		Expected Count	2.0	11.1	26.8	40.0
	Lawyer	Count	0	0	40	40
		Expected Count	2.0	11.1	26.8	40.0
	Doctor	Count	8	15	17	40
		Expected Count	2.0	11.1	26.8	40.0

Government	Count	4	18	58	80
	Expected Count	4.1	22.3	53.7	80.0
Private	Count	2	15	63	80
	Expected Count	4.1	22.3	53.7	80.0
Total	Count	28	153	369	550
	Expected Count	28.0	153.0	369.0	550.0
Chi-Square Tests					
			Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square			89.408 ^a	12	.000
Likelihood Ratio			105.707	12	.000
Linear-by-Linear Association			10.723	1	.001
N of Valid Cases			550		
Symmetric Measures					
			Value	Approx. Sig.	
Nominal by Nominal		Phi	.403	.000	
		Cramer's V	.285	.000	
N of Valid Cases			550		

Based on sub-occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using internet banking services:

H_{05.14}	There is no significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using internet banking services.
H_{a5.14}	There is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & sub occupation to evaluate the significant difference between them. In this study overall five factors were considered for the dimension of social awareness towards security and privacy while using Internet Banking 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 18 (4.87%) are highly aware, 21(13.72%) are moderately aware and 1(3.57%) is low aware. All consumers belong to Engineers and lawyers are highly aware. Consumers belong to Doctors from which 17(4.60%) are highly aware, 15(9.80%) are moderately aware and 8(28.57%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 58 (15.71%) are highly aware, 18(11.76%) are moderately aware and 4 (14.28%) are low aware and the awareness level of Private employees is as follows: 63(17.07%) are highly aware, 15(9.80%) are moderately aware and 2(7.14%) are low aware. Chi square analysis shows chi square value as 89.408 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using internet banking services. The phi value of the above analysis is 0.403

which shows that there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.99: Chi -Square Tests Result for Social Awareness Towards Security and Privacy for Mobile Banking on The Basis of Sub-Occupation

			Social			Total
			Low	Moderate	High	
sub - occupation	Business + Labour	Count	74	99	57	230
		Expected Count	38.1	80.7	111.2	230.0
	CA/CS	Count	0	2	38	40
		Expected Count	6.6	14.0	19.3	40.0
	Engineer	Count	0	18	22	40
		Expected Count	6.6	14.0	19.3	40.0
	Lawyer	Count	7	22	11	40
		Expected Count	6.6	14.0	19.3	40.0
	Doctor	Count	8	18	14	40
		Expected Count	6.6	14.0	19.3	40.0
	Government	Count	1	31	48	80
		Expected Count	13.2	28.1	38.7	80.0
	Private	Count	1	3	76	80
		Expected Count	13.2	28.1	38.7	80.0
Total		Count	91	193	266	550
		Expected Count	91.0	193.0	266.0	550.0
Chi-Square Tests						
			Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			202.136 ^a	12	.000	
Likelihood Ratio			237.566	12	.000	
Linear-by-Linear Association			109.465	1	.000	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal			Phi	.606	.000	
			Cramer's V	.429	.000	
N of Valid Cases			550			

Based on sub-occupation following sub-hypothesis is formulated to test consumer social awareness towards security and privacy while using mobile banking services:

H_{05.15}	There is no significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using mobile banking services.
H_{a5.15}	There is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of social awareness & sub occupation to evaluate the significant association between them. In this study overall four factors were considered for the dimension of social awareness towards security and privacy while using Mobile Banking 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 38(14.28%) are highly aware, 2(1.03%) are moderately aware. Consumers belong to Engineers from which 22(8.27%) are highly aware and 18(9.32%) are moderately aware. Consumers belong to lawyers from which 11 (4.13%) are highly aware,22(11.39%) are moderately aware and 7(7.69%) are low aware. Consumers belong to doctors from which 14(5.26%) are highly aware,18(9.32%) are moderately aware and 8(8.79%) are low aware Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows:48(18.045%) are highly aware,31(16.06%) are moderately aware and 1(1.09%) is low aware and the awareness level of Private employees is as follows: 76(28.57%) are highly aware, 3(1.55%) are moderately aware and 1(1.09%) is low aware. Chi square analysis shows chi square value as 202.136& 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 shows there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.606 which shows that there is a significant association among the consumers from different sub-occupation with the level of social awareness towards security and privacy while using mobile banking services.

2. Ethical Awareness Towards Security And Privacy For Electronic Banking Services

(a.) Gender

(i.) ATM/Cards(Debit/Credit)

Table 5.100: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for ATM/ Cards (Debit/Credit) on The Basis of Gender

			Ethical			Total
			Low	Moderate	High	
GENDER	1	Count	47	68	251	366
		Expected Count	46.6	67.9	251.5	366.0
	2	Count	23	34	127	184
		Expected Count	23.4	34.1	126.5	184.0
Total		Count	70	102	378	550
		Expected Count	70.0	102.0	378.0	550.0
Chi-Square Tests						

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.015 ^a	2	.992
Likelihood Ratio	.015	2	.992
Linear-by-Linear Association	.015	1	.903
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.005	.992
	Cramer's V	.005	.992
N of Valid Cases		550	

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

H_{06.1}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H_{a6.1}	There is a significant association among the consumers gender groups with the level of ethical 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 ethical awareness & male & female to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical 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 shows that consumers belong to high level of awareness i.e. 251(66.40%) and 68(33.59%) males & females respectively, consumers belong to low level of awareness i.e. 47(67.14%) and 23(32.85%) males & females respectively and consumers belong to moderate level of awareness i.e. 68(66.66%) and 34(33.33%) males and females. Chi square analysis shows chi square value as .015 & its p-value is .992 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services. The phi value of the above analysis is .067 which shows that there is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.101: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis of Gender

			Ethical			Total
			Low	Moderate	High	
GENDER	Male	Count	47	68	251	366
		Expected Count	46.6	67.9	251.5	366.0
	Female	Count	23	34	127	184
		Expected Count	23.4	34.1	126.5	184.0
Total		Count	70	102	378	550

	Expected Count	70.0	102.0	378.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
	Pearson Chi-Square	3.982 ^a	2	.137	
	Likelihood Ratio	4.040	2	.133	
	Linear-by-Linear Association	3.011	1	.083	
	N of Valid Cases	550			
Symmetric Measures					
		Value	Approx. Sig.		
	Nominal by Nominal	Phi	.085	.137	
		Cramer's V	.085	.137	
	N of Valid Cases	550			

Based on gender following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{06.2}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using internet banking services.
H_{a6.2}	There is a significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & male & female to evaluate the significant association between them. In this study overall eight factors were considered for the dimension of ethical awareness towards security and privacy while using Internet Banking 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. 128 (63.68%) and 73(36.31%) males & females respectively, consumers belong to low level of awareness i.e. 141(71.39%) and 55(28.06%) males & females respectively and consumers belong to moderate level of awareness i.e. 97(63.39%) and 56 (36.60%) males and females. Chi square analysis shows chi square value as 3.982 & its p-value is .137 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association in between genders for level of ethical awareness among the consumers with regard to security and privacy for Internet Banking. The phi value of the above analysis is .085 which shows that there is no association in between genders for level of ethical awareness among the consumers with regard to security and privacy for Internet Banking.

(iii.) Mobile Banking

Table 5.102: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis of Gender

			Ethical			Total
			Low	Moderate	High	
GENDER	Male	Count	42	154	170	366
		Expected Count	39.9	153.1	173.0	366.0
	Female	Count	18	76	90	184
		Expected Count	20.1	76.9	87.0	184.0
Total		Count	60	230	260	550
		Expected Count	60.0	230.0	260.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		.496 ^a	2	.780		
Likelihood Ratio		.502	2	.778		
Linear-by-Linear Association		.470	1	.493		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.030	.780			
	Cramer's V	.030	.780			
N of Valid Cases		550				

Based on gender following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{06.3}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using mobile banking services.
H_{a6.3}	There is a significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & male & female to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using mobile banking 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. 170 (65.38%) and 90(34.61%) males & females respectively, consumers belong to low level of awareness i.e. 42(70%) and 18(30%) males & females respectively and consumers belong to moderate level of awareness i.e. 154 (66.95%) and 76(33.04%) males and females. Chi square analysis shows chi square value as .496 & its p-value is .780 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using mobile banking services.

The phi value of the above analysis is .030 which shows that there is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using mobile banking services.

(b.) Age

(i.) ATM/Cards (Debit/Credit)

Table 5.103: Chi-Square Test Result for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Age

			Ethical			Total
			Low	Moderate	High	
AGE	Below30	Count	12	23	106	141
		Expected Count	17.9	26.1	96.9	141.0
	31-45	Count	20	31	118	169
		Expected Count	21.5	31.3	116.1	169.0
	46-62	Count	21	21	92	134
		Expected Count	17.1	24.9	92.1	134.0
	Above63	Count	17	27	62	106
		Expected Count	13.5	19.7	72.9	106.0
Total		Count	70	102	378	550
		Expected Count	70.0	102.0	378.0	550.0
Chi-Square Tests						
		Value	Df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		10.122 ^a	6	.120		
Likelihood Ratio		10.076	6	.121		
Linear-by-Linear Association		7.313	1	.007		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.136	.120			
	Cramer's V	.096	.120			
N of Valid Cases		550				

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

H_{06.4}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H_{a6.4}	There is a significant association among the consumers age groups with the level of ethical 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 ethical awareness & age to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical 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, consumers belong to age group below 30 from which 106(28.04%) are highly aware,23(22.54%) are moderately aware and 12(17.14%) are low aware. Consumers belong to age group 31-45 from which 118(31.21%) are highly aware, 31(30.39%) are moderately aware and 20 (28.57%) are low aware. Consumers belong to age group 46-62 from which 92(24.33%) are highly aware, 21(20.58%) are moderately aware and 21(30%) are low aware. Consumers belong to age group above 63 from which 62(16.40%) are highly aware,27 (26.47%) are moderately aware and 17(24.28%) are low aware. Chi square analysis shows chi square value as 10.122 & its p-value is .120 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is .136 which shows that there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.

(ii.) Internet Banking

Table 5.104.: Chi-Square Test Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis of Age

			Ethical			Total
			Low	Moderate	High	
AGE	Below 30	Count	54	40	47	141
		Expected Count	50.2	39.2	51.5	141.0
	31-45	Count	66	43	60	169
		Expected Count	60.2	47.0	61.8	169.0
	46-62	Count	51	35	48	134
		Expected Count	47.8	37.3	49.0	134.0
	Above 63	Count	25	35	46	106
		Expected Count	37.8	29.5	38.7	106.0
Total		Count	196	153	201	550
		Expected Count	196.0	153.0	201.0	550.0
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			8.731 ^a	6	.189	
Likelihood Ratio			9.183	6	.164	
Linear-by-Linear Association			4.327	1	.038	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal	Phi		.126	.189		
	Cramer's V		.089	.189		
N of Valid Cases			550			

Based on age following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{06.5}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using internet banking services.
H_{a6.5}	There is a significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & age to evaluate the significant association between them. In this study overall eight factors were considered for the dimension of ethical awareness towards security and privacy while using Internet Banking 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 47(23.83%) are highly aware, 40 (26.14%) are moderately aware and 54(27.55%) are low aware. Consumers belong to age group 31-45 from which 60 (29.85%) are highly aware, 43(28.10%) are moderately aware and 66 (33.67%) are low aware.

Consumers belong to age group 46-62 from which 48 (23.85%) are highly aware, 35 (22.87%) are moderately aware and 51(26.02%) are low aware. Consumers belong to age group above 63 from which 46(22.88%) are highly aware,35(22.87%) are moderately aware and 25(12.75%) are low aware. Chi square analysis shows chi square value as 8.731 & its p-value is .189 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .126 which shows that there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using internet banking services.

(ii.) Mobile Banking

Table 5.105: Chi-Square Test Result for Ethical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Age

			Ethical			Total
			Low	Moderate	High	
AGE	Below30	Count	12	62	67	141
		Expected Count	15.4	59.0	66.7	141.0
	31-45	Count	21	63	85	169
		Expected Count	18.4	70.7	79.9	169.0
	46-62	Count	15	60	59	134
		Expected Count	14.6	56.0	63.3	134.0
	Above63	Count	12	45	49	106
		Expected Count	11.6	44.3	50.1	106.0
Total		Count	60	230	260	550
		Expected Count	60.0	230.0	260.0	550.0

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.058 ^a	6	.802
Likelihood Ratio	3.127	6	.793
Linear-by-Linear Association	.475	1	.491
N of Valid Cases	550		

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.075	.802
	Cramer's V	.053	.802
N of Valid Cases		550	

Based on age following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{06.6}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using mobile banking services.
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H_{a6.6}	There is a significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using mobile banking services.
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From above cross tabulation & chi Square analysis have been made between level of ethical awareness & age to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using Mobile Banking 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 67(25.76%) are highly aware,62(26.95%) are moderately aware and 12(20%) are low aware. Consumers belong to age group 31-45 from which 85(32.69%) are highly aware, 63 (27.39%) are moderately aware and 21(35%) are low aware. Consumers belong to age group 46-62 from which 59(22.69%) are highly aware, 60 (26.08%) are moderately aware and 15(25%) are low aware. Consumers belong to age group above 63 from which 49(18.84%) are highly aware,45(19.56%) are moderately aware and 12(20%) are low aware. Chi square analysis shows chi square value as 3.058 & its p-value is .802 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .075 which shows that there is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using mobile banking services.

(c.) Education

(i.) ATM/cards(Debit/Credit)

Table 5.106: Chi Square Test Result for Ethical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Education

			Ethical			Total
			Lo w	Moderate	High	
EDUCATIO N	Primary	Count	8	16	56	80
		Expecte d Count	10.2	14.8	55.0	80.0
	Secondar y	Count	8	22	92	122
		Expecte d Count	15.5	22.6	83.8	122.0
	Graduate	Count	15	24	98	137
		Expecte d Count	17.4	25.4	94.2	137.0
	Post Graduate	Count	39	40	132	211
		Expecte d Count	26.9	39.1	145.0	211.0
	Total	Count	70	102	378	550
		Expecte d Count	70.0	102.0	378.0	550.0
Chi-Square Tests						
			Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			12.292 ^a	6	.056	
Likelihood Ratio			12.471	6	.052	

Linear-by-Linear Association	6.907	1	.009
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.149	.056
	Cramer's V	.106	.056
N of Valid Cases	550		

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

H_{06.7}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using ATM/ Cards (Debit /credit) services.
H_{a6.7}	There is a significant association among the consumers at different level of education with the level of ethical 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 ethical awareness & education to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical 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, consumers belong to primary level of education from which 56(14.81%) are highly aware, 16(15.68%) are moderately aware and 8(11.42%) are low aware. Consumers belong to secondary level of education from which 92(24.33%) are highly aware, 22 (21.56%) are moderately aware and 8 (11.42%) are low aware. Consumers belong to graduate level of education from which 98(25.92%) are highly aware, 24(23.52%) are moderately aware and 15(21.42%) are low aware. Consumers belong to Post Graduate level of education from which 132(34.92%) are highly aware,40(39.21%) are moderately aware and 39(55.71%) are low aware. Chi square analysis shows chi square value as 12.292 & its p-value is .05 which is equal to level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using ATM/ Cards (Debit/ Credit) services. The phi value of the above analysis is .149 which shows that there is a significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using ATM/ cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.107: Chi Square Test Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis of Education

			Ethical			Total
			Low	Moderate	High	
EDUCATION	Primary	Count	31	17	32	80
		Expected Count	28.5	22.3	29.2	80.0
	Secondary	Count	49	31	42	122
		Expected Count	43.5	33.9	44.6	122.0
	Graduate	Count	37	41	59	137
		Expected Count				

	Expected Count	48.8	38.1	50.1	137.0	
	Post Graduate	Count	79	64	68	211
		Expected Count	75.2	58.7	77.1	211.0
Total		Count	196	153	201	550
		Expected Count	196.0	153.0	201.0	550.0
Chi-Square Tests						
		Value		Df	Asymp. Sig. (2-sided)	
	Pearson Chi-Square	9.249 ^a		6	.160	
	Likelihood Ratio	9.529		6	.146	
	Linear-by-Linear Association	.062		1	.804	
	N of Valid Cases	550				
Symmetric Measures						
		Value		Approx. Sig.		
	Nominal by Nominal	Phi	.130		.160	
		Cramer's V	.092		.160	
	N of Valid Cases	550				

Based on education following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{6.8}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using internet banking services.
H_{a6.8}	There is a significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & education to evaluate the significant association between them. In this study overall eight factors were considered for the dimension of ethical awareness towards security and privacy while using Internet Banking 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 32(15.92%) are highly aware, 17(11.11%) are moderately aware and 31 (15.81%) are low aware. Consumers belong to secondary level of education from which 42(20.89%) are highly aware, 31(20.26%) are moderately aware and 49 (25%) are low aware. Consumers belong to graduate level of education from which 59(29.35%) are highly aware, 41(26.79%) are moderately aware and 37(18.87%) are low aware. Consumers belong to Post Graduate level of education from which 68(33.83%) are highly aware, 64(41.83%) are moderately aware and 79(40.30%) are low aware. Chi square analysis shows chi square value as 9.249 & its p-value is .160 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .130 which shows that there is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.108: Chi -Square Tests Result For Ethical Awareness Towards Security And Privacy for Mobile Banking on The Basis of Education

			Ethical			Total
			Low	Moderate	High	
EDUCATION	Primary	Count	5	36	39	80
		Expected Count	8.7	33.5	37.8	80.0
	Secondary	Count	7	53	62	122
		Expected Count	13.3	51.0	57.7	122.0
	Graduate	Count	11	54	72	137
		Expected Count	14.9	57.3	64.8	137.0
	Post Graduate	Count	37	87	87	211
		Expected Count	23.0	88.2	99.7	211.0
Total		Count	60	230	260	550
		Expected Count	60.0	230.0	260.0	550.0
Chi-Square Tests						
		Value	Df		Asymp. Sig. (2-sided)	
Pearson Chi-Square		17.393 ^a	6		.008	
Likelihood Ratio		17.125	6		.009	
Linear-by-Linear Association		7.677	1		.006	
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.178	.008			
	Cramer's V	.126	.008			
N of Valid Cases		550				

Based on education following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using Mobile Banking services:

From above cross tabulation & chi Square analysis have been made between level of ethical

H_{06.9}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using mobile banking services.
H_{a6.9}	There is a significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using mobile banking services.

awareness & education to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using Mobile Banking 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 39(15%) are highly aware, 36(15.65%) are moderately aware and 5(8.33%) are low aware. Consumers belong to secondary level of education from which 62(23.84%) are highly aware, 53(23.04%) are moderately aware and 7(11.66%) are low aware.

Consumers belong to graduate level of education from which 72(27.69%) are highly aware, 54 (23.47%) are moderately aware and 11(18.33%) are low aware. Consumers belong to Post Graduate level of education from which 87 (33.46%) are highly aware, 87 (37.82%) are moderately aware and 37(61.66%) are low aware. Chi square analysis shows chi square value as 17.393 & its p-value is .008 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .178 which shows that there is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using mobile banking services.

(iv.) Occupation

(i.) ATM/Cards (Debit/Credit)

Table 5.109: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for ATM/ (Debit /Credit) on The Basis of Occupation

			Ethical			Total
			Low	Moderate	High	
OCCUPATION	Professional	Count	36	31	93	160
		Expected Count	20.4	29.7	110.0	160.0
	Service	Count	16	21	123	160
		Expected Count	20.4	29.7	110.0	160.0
	Business	Count	18	38	104	160
		Expected Count	20.4	29.7	110.0	160.0
	Labour	Count	0	12	58	70
		Expected Count	8.9	13.0	48.1	70.0
Total		Count	70	102	378	550
		Expected Count	70.0	102.0	378.0	550.0
Chi-Square Tests						
		Value	df		Asymp. Sig. (2-sided)	
Pearson Chi-Square		33.650 ^a	6		.000	
Likelihood Ratio		40.457	6		.000	
Linear-by-Linear Association		15.661	1		.000	
N of Valid Cases		550				
Symmetric Measures						
			Value		Approx. Sig.	
Nominal by Nominal	Phi			.247	.000	
	Cramer's V			.175	.000	
N of Valid Cases		550				

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

H_{06.10}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a6.10}	There is a significant association among the consumers from different occupation with the level of ethical 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 ethical awareness & occupation to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical 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 consumers belong to Professional group from which 93(24.60%) are highly aware, 31(30.39%) are moderately aware and 36(51.42%) are low aware. Consumers belong to service group from which 123 (32.53%) are highly aware, 21(22.85%) are moderately aware and 16(20.58%) are low aware. Consumers belong to business group from which 104(27.51%) are highly aware, 38(37.25%) are moderately aware and 18(25.71%) are low aware. Consumers belong to Labour group from which 58(15.34%) are highly aware,12(11.76%) are moderately aware. Chi square analysis shows chi square value as 33.650 & 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 shows there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.247 which shows that there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services.

(ii.) Internet Banking

Table 5.110: Chi -Square Test Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis pf Occupation

			Ethical			Total	
			Low	Moderate	High		
OCCUPATION	Professional	Count	80	50	30	160	
		Expected Count	57.0	44.5	58.5	160.0	
	Service	Count	47	55	58	160	
		Expected Count	57.0	44.5	58.5	160.0	
	Business	Count	13	37	110	160	
		Expected Count	57.0	44.5	58.5	160.0	
	Labour	Count	56	11	3	70	
		Expected Count	24.9	19.5	25.6	70.0	
	Total	Count	196	153	201	550	
		Expected Count	196.0	153.0	201.0	550.0	
	Chi-Square Tests						
				Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			170.977 ^a	6	.000		

Likelihood Ratio	182.008	6	.000
Linear-by-Linear Association	3.868	1	.049
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.558	.000
	Cramer's V	.394	.000
N of Valid Cases	550		

Based on occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{06.11}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using internet banking services.
H_{a6.11}	There is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & occupation to evaluate the significant association between them. In this study overall eight factors were considered for the dimension of ethical awareness towards security and privacy while using Internet Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 30(14.92%) are highly aware, 50(32.67%) are moderately aware and 80(40.81%) are low aware. Consumers belong to service group from which 58(28.85%) are highly aware, 55(35.94%) are moderately aware and 47(23.97%) are low aware. Consumers belong to business group from which 110(54.72%) are highly aware, 37(24.18%) are moderately aware and 13(6.63%) are low aware. Consumers belong to Labour group from which 3(1.49%) are highly aware, 11(7.18%) are moderately aware and 56(28.57%) are low aware. Chi square analysis shows chi square value as 170.977 & 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 shows there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is 0.558 which shows that there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.111: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Occupation

			Ethical			Total
			Low	Moderate	High	
OCCUPATION	Professional	Count	37	65	58	160
		Expected Count	17.5	66.9	75.6	160.0
	Service	Count	9	50	101	160
		Expected Count	17.5	66.9	75.6	160.0
	Business	Count	14	89	57	160

	Expected Count	17.5	66.9	75.6	160.0
Labour	Count	0	26	44	70
	Expected Count	7.6	29.3	33.1	70.0
Total	Count	60	230	260	550
	Expected Count	60.0	230.0	260.0	550.0
Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square	67.095 ^a	6	.000		
Likelihood Ratio	69.666	6	.000		
Linear-by-Linear Association	13.737	1	.000		
N of Valid Cases	550				
Symmetric Measures					
	Value	Approx. Sig.			
Nominal by Nominal	Phi	.349	.000		
	Cramer's V	.247	.000		
N of Valid Cases	550				

Based on occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{06.12}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services.
H_{a6.12}	There is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & occupation to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using Mobile Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 58(22.30%) are highly aware, 65(28.26%) are moderately aware and 37(61.66%) are low aware. Consumers belong to service group from which 101(38.84%) are highly aware, 50(21.73%) are moderately aware and 9(15%) are low aware. Consumers belong to business group from which 57(21.92%) are highly aware, 89 (38.69%) are moderately aware and 14(23.33%) are low aware. Consumers belong to Labour group from which 44(16.92%) are highly aware, 26(11.30%) are moderately aware. Chi square analysis shows chi square value as 67.095 & 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 shows there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.349 which shows that there is a significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services.

(e.) Sub- Occupation

(i.) ATM/ Cards (Debit/Credit)

Table 5.112: Chi -Square Tests Result For Ethical Awareness Towards Security And Privacy For ATM/Cards(Debit/Credit) On The Basis Of Sub-Occupation

			Ethical			Total
			Low	Moderate	High	
Sub - Occupation	Business + Labour	Count	18	50	162	230
		Expected Count	29.3	42.7	158.1	230.0
	CA/CS	Count	4	6	30	40
		Expected Count	5.1	7.4	27.5	40.0
	Engineer	Count	5	10	25	40
		Expected Count	5.1	7.4	27.5	40.0
	Lawyer	Count	3	9	28	40
		Expected Count	5.1	7.4	27.5	40.0
	Doctor	Count	24	6	10	40
		Expected Count	5.1	7.4	27.5	40.0
	Government	Count	6	7	67	80
		Expected Count	10.2	14.8	55.0	80.0
	Private	Count	10	14	56	80
		Expected Count	10.2	14.8	55.0	80.0
Total		Count	70	102	378	550
		Expected Count	70.0	102.0	378.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		98.955 ^a	12	.000		
Likelihood Ratio		70.832	12	.000		
Linear-by-Linear Association		2.606	1	.106		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.424	.000			
	Cramer's V	.300	.000			
N of Valid Cases		550				

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

H_{06.13}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
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Ha6.13	There is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
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From above cross tabulation & chi Square analysis have been made between level of ethical awareness & sub occupation to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using ATM/ Cards (Debit and 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 30(7.93%) are highly aware, 6(5.88%) are moderately aware and 4 (5.71%) are low aware. Consumers belong to Engineers from which 25 (6.61%) are highly aware, 10(9.80%) are moderately aware and 5(7.14%) are low aware. Consumers belong to lawyers from which 28(7.40%) are highly aware, 9 (8.82%) are moderately aware and 3 (4.28%) are low aware. Consumers belong to Doctors from which 10(2.64%) are highly aware,6(5.88%) are moderately aware and 24(34.28%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 67(17.72%) are highly aware,7(6.86%) are moderately aware and 6 (8.57%) are low aware and the awareness level of Private employees is as follows: 56(14.81%) are highly aware, 14(13.72%) are moderately aware and 10(14.28%) are low aware. Chi square analysis shows chi square value as 98.955 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is .424 which shows that there is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.113: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for Internet Banking on The Basis of Sub-Occupation

			Ethical			Total
			Low	Moderate	High	
Sub - Occupation	Business + Labour	Count	69	48	113	230
		Expected Count	82.0	64.0	84.1	230.0
	Ca/Cs	Count	23	8	9	40
		Expected Count	14.3	11.1	14.6	40.0
	Engineer	Count	20	13	7	40
		Expected Count	14.3	11.1	14.6	40.0
	Lawyer	Count	11	19	10	40
		Expected Count	14.3	11.1	14.6	40.0
	Doctor	Count	26	10	4	40
		Expected Count	14.3	11.1	14.6	40.0
		Count	19	30	31	80

	Government	Expected Count	28.5	22.3	29.2	80.0
	Private	Count	28	25	27	80
		Expected Count	28.5	22.3	29.2	80.0
Total		Count	196	153	201	550
		Expected Count	196.0	153.0	201.0	550.0
Chi-Square Tests						
		Value		Df		Asymp. Sig. (2-sided)
	Pearson Chi-Square	62.785 ^a		12		.000
	Likelihood Ratio	63.234		12		.000
	Linear-by-Linear Association	9.537		1		.002
	N of Valid Cases	550				
Symmetric Measures						
			Value			Approx. Sig.
Nominal by Nominal	Phi		.338			.000
	Cramer's V		.239			.000
	N of Valid Cases	550				

Based on sub-occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using internet banking services:

H_{06.14}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using internet banking services.
H_{a6.14}	There is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of ethical awareness & sub occupation to evaluate the significant association between them. In this study overall eight factors were considered for the dimension of ethical awareness towards security and privacy while using Internet Banking 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 9 (4.47%) are highly aware, 8(5.22%) are moderately aware and 23(11.73%) are low aware. Consumers belong to Engineers from which 7(3.48%) are highly aware, 13(8.49%) are moderately aware and 20(10.20%) are low aware. Consumers belong to lawyers from which 10(4.97%) are highly aware, 19 (12.41%) are moderately aware and 11(5.61%) are low aware. Consumers belong to Doctors from which 4 (1.99%) are highly aware, 10(6.53%) are moderately aware and 26 (13.26%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 31(15.42%) are highly aware, 30(19.60%) are moderately aware and 19(9.60%) are low aware and the awareness level of Private employees is as follows: 27(13.43%) are highly aware, 25(16.33%) are moderately aware and 28(14.28%) are low aware. Chi square analysis shows chi square value as 62.785 & 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 shows there is a significant

association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .338 which shows that there is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.114: Chi -Square Tests Result for Ethical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Sub-Occupation

		Ethical			Total	
		Low	Moderate	High		
sub - occupation	Business + Labour	Count	14	115	101	230
		Expected Count	25.1	96.2	108.7	230.0
	CA/CS	Count	12	22	6	40
		Expected Count	4.4	16.7	18.9	40.0
	Engineer	Count	0	0	40	40
		Expected Count	4.4	16.7	18.9	40.0
	Lawyer	Count	2	29	9	40
		Expected Count	4.4	16.7	18.9	40.0
	Doctor	Count	23	14	3	40
		Expected Count	4.4	16.7	18.9	40.0
	Government	Count	8	37	35	80
		Expected Count	8.7	33.5	37.8	80.0
	Private	Count	1	13	66	80
		Expected Count	8.7	33.5	37.8	80.0
Total		Count	60	230	260	550
		Expected Count	60.0	230.0	260.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		227.483 ^a	12	.000		
Likelihood Ratio		213.469	12	.000		
Linear-by-Linear Association		.870	1	.351		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.643	.000			
	Cramer's V	.455	.000			
N of Valid Cases		550				

Based on sub-occupation following sub-hypothesis is formulated to test consumer ethical awareness towards security and privacy while using mobile banking services:

H_{06.15}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using mobile banking services.
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H_{a6.15}	There is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using mobile banking services.
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From above cross tabulation & chi Square analysis have been made between level of ethical awareness & sub occupation to evaluate the significant association between them. In this study overall nine factors were considered for the dimension of ethical awareness towards security and privacy while using Mobile Banking 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 6(2.30%) are highly aware, 22(9.56%) are moderately aware and 12(20%) are low aware. Consumers belong to Engineers from which all (15.38%) are highly aware. Consumers belong to lawyers from which 9 (3.46%) are highly aware, 29(12.60%) are moderately aware and 2(3.33%) are low aware. Consumers belong to Doctors from which 3 (1.15%) are highly aware, 14(6.08%) are moderately aware and 23(38.33%) are low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 35(13.46%) are highly aware, 37 (16.08%) are moderately aware and 8(13.33%) are low aware and the awareness level of Private employees is as follows: 66(25.38%) are highly aware, 13 (5.65%) are moderately aware and 1(1.66%) is low aware. Chi square analysis shows chi square value as 227.483 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .643 which shows that there is a significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using mobile banking services.

3. Technical Awareness Towards Security And Privacy For Electronic Banking Services

(a.) Gender

(i.) ATM/ Cards (Debit/Credit)

Table 5.115: Chi-Square Test Result for Technical Awareness Towards Security and Privacy for ATM/ Cards (Debit/ Credit) on The Basis of Gender

			Technical			Total
			Low	Moderate	High	
GENDER	Male	Count	116	151	99	366
		Expected Count	115.1	149.7	101.1	366.0
	Female	Count	57	74	53	184
		Expected Count	57.9	75.3	50.9	184.0
Total		Count	173	225	152	550
		Expected Count	173.0	225.0	152.0	550.0
Chi-Square Tests						
		Value	Df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		.189 ^a	2	.910		
Likelihood Ratio		.188	2	.910		
Linear-by-Linear Association		.127	1	.722		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.019	.910			
	Cramer's V	.019	.910			
N of Valid Cases		550				

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 _{07.1}	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 _{a7.1}	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 using ATM/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 shows 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. 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.

(ii.) Internet Banking

Table 5.116: Chi-Square Test Result for Technical Awareness Towards Security and Privacy for Internet Banking on The Basis of Gender

			Technical			Total
			Low	Moderate	High	
GENDER	Male	Count	6	74	286	366
		Expected Count	4.7	60.6	300.8	366.0
	Female	Count	1	17	166	184
		Expected Count	2.3	30.4	151.2	184.0
Total		Count	7	91	452	550
		Expected Count	7.0	91.0	452.0	550.0
Chi-Square Tests						
			Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			12.249 ^a	2	.002	
Likelihood Ratio			13.338	2	.001	
Linear-by-Linear Association			11.785	1	.001	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal	Phi		.149	.002		
	Cramer's V		.149	.002		
N of Valid Cases			550			

Based on gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{07.2}	There is no significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using internet banking services.
H_{a7.2}	There is a significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of technical awareness & male and female to evaluate the significant association between them. In this study overall five factors were considered for the dimension of technical awareness towards security and privacy while using Internet Banking 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. 286(63.27%) and 166 (36.72%) males & females respectively, consumers belong to low level of awareness i.e. 6 (85.71%) and 1 (14.28%) males & females respectively and consumers belong to moderate level of awareness i.e. 74(81.31%) and 17(18.68%) males and females. Chi square analysis shows chi square value as 12.249 & its p-value is .002 which is less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted which shows there is a significant association among the consumers

gender groups with the level of technical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .149 which shows that there is a significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.117: Chi-Square Test Result for Technical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Gender

			Technical			Total
			Low	Moderate	High	
GENDER	Male	Count	57	115	194	366
		Expected Count	46.6	123.8	195.6	366.0
	Female	Count	13	71	100	184
		Expected Count	23.4	62.2	98.4	184.0
Total		Count	70	186	294	550
		Expected Count	70.0	186.0	294.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		8.865 ^a	2	.012		
Likelihood Ratio		9.569	2	.008		
Linear-by-Linear Association		2.391	1	.122		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.127	.012			
	Cramer's V	.127	.012			
N of Valid Cases		550				

Based on gender following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H _{07.3}	There is no significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using mobile banking services.
H _{a7.3}	There is a significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of technical awareness & male and 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 using mobile banking 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. 194(65.98%) and 100(34.01%) males & females respectively, consumers belong to low level of awareness i.e. 57(81.42%) and 13(18.57%) males & females respectively and consumers belong to moderate level of awareness i.e. 115(61.82%) and

71(38.17%) males and females. Chi square analysis shows chi square value as 8.865 & its p-value is .012 which is less than level of significance .05 thus the null hypothesis is rejected, which shows there is a significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .127 which shows that there is a significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using mobile banking services.

(b.) Age

(i.) ATM/ Cards (Debit/Credit)

Table 5.118: Chi-Square Test Result for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit And Credit) on The Basis Of Age

			Technical			Total
			Low	Moderate	High	
AGE	Below 30	Count	35	58	48	141
		Expected Count	44.4	57.7	39.0	141.0
	31-45	Count	54	67	48	169
		Expected Count	53.2	69.1	46.7	169.0
	46-62	Count	51	55	28	134
		Expected Count	42.1	54.8	37.0	134.0
	Above 63	Count	33	45	28	106
		Expected Count	33.3	43.4	29.3	106.0
Total	Count	173	225	152	550	
	Expected Count	173.0	225.0	152.0	550.0	
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			8.367 ^a	6	.212	
Likelihood Ratio			8.464	6	.206	
Linear-by-Linear Association			3.963	1	.047	
N of Valid Cases			550			
Symmetric Measures						
			Value	Approx. Sig.		
Nominal by Nominal	Phi		.123	.212		
	Cramer's V		.087	.212		
N of Valid Cases			550			

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_{07.4}	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_{a7.4}	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 using ATM/ 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 which 28(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 shows 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. 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

(ii.) Internet Banking

Table 5.119: Chi-Square Test Result for Technical Awareness Towards Security and Privacy for Internet Banking on The Basis of Age

		Technical			Total	
		Low	Moderate	High		
AGE	Below30	Count	5	19	117	141
		Expected Count	1.8	23.3	115.9	141.0
	31-45	Count	2	33	134	169
		Expected Count	2.2	28.0	138.9	169.0
	46-62	Count	0	27	107	134
		Expected Count	1.7	22.2	110.1	134.0
	Above 63	Count	0	12	94	106
		Expected Count	1.3	17.5	87.1	106.0
Total		Count	7	91	452	550
		Expected Count	7.0	91.0	452.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		14.119 ^a	6	.028		
Likelihood Ratio		15.429	6	.017		
Linear-by-Linear Association		2.617	1	.106		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.160	.028			
	Cramer's V	.113	.028			
N of Valid Cases		550				

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_{07.5}	There is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using internet banking services.
H_{a7.5}	There is a significant association among the consumers age groups with the level of technical awareness towards security and privacy while using internet banking 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 five factors were considered for the dimension of technical awareness towards security and privacy while using Internet Banking 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 117(25.88%) are highly aware,19(20.87%) are moderately aware and 5(71.4%) are low aware. Consumers belong to age group 31-45 from which 134 (29.64%) are highly aware, 33(36.26%) are moderately aware and 2(28.57%) are low aware. Consumers belong to age group 46-62 from which 107(23.67%) are highly aware,27(29.67%) are moderately aware. Consumers belong to age group above 63 from which 94(20.79%) are highly aware, 12(13.18%) are moderately aware. Chi square analysis shows chi square value as 14.119 & its p-value is .028 which is less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted, which shows there is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .160 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 internet banking services.

(iii.) Mobile Banking

Table 5.120: Chi-Square Test Result For Technical Awareness Towards Security And Privacy For Mobile Banking on The Basis of Age

		Technical			Total	
		Low	Moderate	High		
AGE	Below 30	Count	21	49	71	141
		Expected Count	17.9	47.7	75.4	141.0
	31-45	Count	29	52	88	169
		Expected Count	21.5	57.2	90.3	169.0
	46-62	Count	18	41	75	134
		Expected Count	17.1	45.3	71.6	134.0
	Above 63	Count	2	44	60	106
		Expected Count	13.5	35.8	56.7	106.0
Total		Count	70	186	294	550
		Expected Count	70.0	186.0	294.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		16.404 ^a	6	.012		
Likelihood Ratio		21.577	6	.001		
Linear-by-Linear Association		5.046	1	.025		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.173	.012			
	Cramer's V	.122	.012			
N of Valid Cases		550				

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services

H_{07.6}	There is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using mobile banking services.
H_{a7.6}	There is a significant association among the consumers age groups with the level of technical awareness towards security and privacy while using mobile banking 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 using Mobile Banking 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 71(24.14%) are highly aware,49(26.34%) are moderately aware and 21(30%)

are low aware. Consumers belong to age group 31-45 from which 88(29.93%) are highly aware, 52(27.95%) are moderately aware and 29 (41.42%) are low aware. Consumers belong to age group 46-62 from which 75(25.51%) are highly aware,41(22.04%) are moderately aware and 18(25.71%) are low aware. Consumers belong to age group above 63 from which 60(20.40%) are highly aware, 44(23.65%) are moderately aware and 2(2.85%) are low aware. Chi square analysis shows chi square value as 16.404 & its p-value is .012 which is less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted, which shows there is a significant association among the consumers age groups with the level of technical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .173 which shows there is a significant association among the consumers age groups with the level of technical awareness towards security and privacy while using mobile banking services

(c.) Education

(i.) ATM/ Cards (Debit/Credit)

Table 5.121: Chi Square Test Result for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Education

			Technical			Total
			Low	Moderate	High	
EDUCATION	Primary	Count	25	37	18	80
		Expected Count	25.2	32.7	22.1	80.0
	Secondary	Count	24	52	46	122
		Expected Count	38.4	49.9	33.7	122.0
	Graduate	Count	43	54	40	137
		Expected Count	43.1	56.0	37.9	137.0
	Post Graduate	Count	81	82	48	211
		Expected Count	66.4	86.3	58.3	211.0
	Total	Count	173	225	152	550
		Expected Count	173.0	225.0	152.0	550.0

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.731 ^a	6	.010
Likelihood Ratio	17.040	6	.009
Linear-by-Linear Association	5.025	1	.025
N of Valid Cases	550		

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.174	.010
	Cramer's V	.123	.010
N of Valid Cases		550	

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_{07.7}	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_{a7.7}	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 technical awareness & 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 while using 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 which 48(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 less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted, which shows 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. 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

(ii.) Internet Banking

Table 5.122: Chi Square Test Result for Technical Awareness Towards Security and Privacy for Internet Banking on The Basis of Education

		Technical			Total	
		Low	Moderate	High		
EDUCATION	Primary	Count	3	34	43	80
		Expected Count	1.0	13.2	65.7	80.0
	Secondary	Count	3	34	85	122
		Expected Count	1.6	20.2	100.3	122.0
	Graduate	Count	1	8	128	137
		Expected Count	1.7	22.7	112.6	137.0
	Post Graduate	Count	0	15	196	211
		Expected Count	2.7	34.9	173.4	211.0
	Total	Count	7	91	452	550
		Expected Count	7.0	91.0	452.0	550.0
	Chi-Square Tests					
			Value	df	Asymp. Sig. (2-sided)	

Pearson Chi-Square	86.328 ^a	6	.000
Likelihood Ratio	83.194	6	.000
Linear-by-Linear Association	72.059	1	.000
N of Valid Cases	550		
Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.396	.000
	Cramer's V	.280	.000
N of Valid Cases		550	

Based on education following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{07.8}	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 internet banking services.
H_{a7.8}	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 internet banking services.

From above cross tabulation & chi Square analysis have been made between level of technical awareness & education to evaluate the significant association between them. In this study overall five factors were considered for the dimension of technical awareness towards security and privacy while using Internet Banking 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 43(9.51%) are highly aware, 34(37.36%) are moderately aware and 3 (42.85%) are low aware. Consumers belong to secondary level of education from which 85(18.80%) are highly aware, 34(37.36%) are moderately aware and 3(42.85%) are low aware. Consumers belong to graduate level of education from which 128(28.31%) are highly aware, 8(8.79%) are moderately aware and 1(14.28%) is low aware. Consumers belong to Post Graduate level of education from which 196(43.36%) are highly aware, 15(16.48%) are moderately aware. Chi square analysis shows chi square value as 86.328 & 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 shows 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 internet banking services. The phi value of the above analysis is .396 which shows that 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 internet banking services.

(iii.) Mobile Banking

Table 5.123: Chi -Square Tests Result for Technical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Education

			Technical			Total
			Low	Moderate	High	
EDUCATION	Primary	Count	28	28	24	80
		Expected Count	10.2	27.1	42.8	80.0
	Secondary	Count	23	53	46	122
		Expected Count	15.5	41.3	65.2	122.0

Graduate	Count	12	42	83	137
	Expected Count	17.4	46.3	73.2	137.0
Post Graduate	Count	7	63	141	211
	Expected Count	26.9	71.4	112.8	211.0
Total	Count	70	186	294	550
	Expected Count	70.0	186.0	294.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		78.164 ^a	6	.000	
Likelihood Ratio		75.364	6	.000	
Linear-by-Linear Association		68.396	1	.000	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.377	.000		
	Cramer's V	.267	.000		
N of Valid Cases		550			

Based on age following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using Mobile Banking Services:

H_{07.9}	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 mobile banking services.
H_{a7.9}	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 mobile banking services

From above cross tabulation & chi Square analysis have been made between level of technical awareness & 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 while using Mobile Banking 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 24(8.16%) are highly aware, 28(15.05%) are moderately aware and 28(40%) are low aware. Consumers belong to secondary level of education from which 46(15.64%) are highly aware, 53(28.49%) are moderately aware and 23(32.85%) are low aware. Consumers belong to graduate level of education from which 83(28.23%) are highly aware, 42(22.58%) are moderately aware and 12(17.14%) are low aware. Consumers belong to Post Graduate level of education from which 141(47.95%) are highly aware, 63(33.87%) are moderately aware and 7(10%) are low aware. Chi square analysis shows chi square value as 78.164 & 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 shows 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 mobile banking services. The phi value of the above analysis is .377 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 mobile banking services.

(b.) Occupation

(i.)ATM/ Cards (Debit/Credit)

Table 5.124:Chi-Square Tests Result for Technical Awareness Towards Security And Privacy For ATM/ (Debit /Credit) on The Basis of Occupation

			Technical			Total
			Low	Moderate	High	
OCCUPATION	Profession	Count	63	64	33	160
		Expected Count	50.3	65.5	44.2	160.0
	Service	Count	49	58	53	160
		Expected Count	50.3	65.5	44.2	160.0
	Business	Count	47	69	44	160
		Expected Count	50.3	65.5	44.2	160.0
	Labour	Count	14	34	22	70
		Expected Count	22.0	28.6	19.3	70.0
Total	Count		173	225	152	550
	Expected Count		173.0	225.0	152.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		13.399 ^a	6	.037		
Likelihood Ratio		13.734	6	.033		
Linear-by-Linear Association		7.013	1	.008		
N of Valid Cases		550				
Symmetric Measures						
		Value		Approx. Sig.		
Nominal by Nominal	Phi	.156		.037		
	Cramer's V	.110		.037		
N of Valid Cases		550				

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

H_{07.10}	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_{a7.10}	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) services which 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 Labour group from which 22(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 shows 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. 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.

(ii.) Internet Banking

Table 5.125: Chi -Square Tests Result for Technical Awareness Towards Security and Privacy for Internet Banking on The Basis of Occupation

			Technical			Total	
			Low	Moderate	High		
OCCUPATIO N	Professional	Count	0	1	159	160	
		Expected Count	2.0	26.5	131.5	160.0	
	Service	Count	0	1	159	160	
		Expected Count	2.0	26.5	131.5	160.0	
	Business	Count	1	44	115	160	
		Expected Count	2.0	26.5	131.5	160.0	
	Labour	Count	6	45	19	70	
		Expected Count	.9	11.6	57.5	70.0	
	Total	Count	7	91	452	550	
		Expected Count	7.0	91.0	452.0	550.0	
	Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		230.331 ^a	6	.000			
Likelihood Ratio		223.122	6	.000			
Linear-by-Linear Association		171.996	1	.000			
N of Valid Cases		550					
Symmetric Measures							
		Value	Approx. Sig.				
Nominal by Nominal	Phi	.647		.000			
	Cramer's V	.458		.000			
N of Valid Cases		550					

Based on occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services

H_{07.11}	There is no significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using internet banking services.
H_{a7.11}	There is a significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using internet banking 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 five factors were considered for the dimension of technical awareness towards security and privacy while using Internet Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional and service group are equally aware i.e. 159(35.17%) are highly aware, 1(1.09%) is moderately aware. Consumers belong to business group from which 115(25.44%) are highly aware, 44 (48.35%) are moderately aware and 1(14.28%) is low aware. Consumers belong to Labour group from which 19(4.20%) are highly aware,45(49.45%) are moderately aware and 6 (85.71%) are low aware. Chi square analysis shows chi square value as 230.331 & 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 shows there is a significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using internet banking services. The phi value of the above analysis is 0.647 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 internet banking services.

(ii.) Mobile Banking

Table 5.126: Chi-Square Tests Result for Technical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Occupation

			Technical			Total
			Low	Moderate	High	
OCCUPATION	Profession	Count	1	18	141	160
		Expected Count	20.4	54.1	85.5	160.0
	Service	Count	8	75	77	160
		Expected Count	20.4	54.1	85.5	160.0
	Business	Count	20	78	62	160
		Expected Count	20.4	54.1	85.5	160.0
	Labour	Count	41	15	14	70
		Expected Count	8.9	23.7	37.4	70.0
Total	Count		70	186	294	550
	Expected Count		70.0	186.0	294.0	550.0
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			245.365 ^a	6	.000	
Likelihood Ratio			213.574	6	.000	
Linear-by-Linear Association			155.806	1	.000	
N of Valid Cases			550			

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.668	.000
	Cramer's V	.472	.000
N of Valid Cases		550	

Based on occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H_{07.12}	There is no significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using mobile banking services.
H_{a7.12}	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.

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 Mobile Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional group from which 141(47.95%) are highly aware, 18 (9.67%) are moderately aware and 1(1.42%) is low aware. Consumers belong to service group from which 77 (26.19%) are highly aware, 75(40.32%) are moderately aware and 8(11.42%) are low aware. Consumers belong to business group from which 62 (21.08%) are highly aware, 78 (41.93%) are moderately aware and 20 (28.57%) are low aware. Consumers belong to Labour group from which 14 (4.76%) are highly aware,15(8.06%) are moderately aware and 41 (58.57%) are low aware. Chi square analysis shows chi square value as 245.365 & 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 shows 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. The phi value of the above analysis is 0.668 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

(i.) ATM/ Cards (Debit/Credit)

Table 5.127: Chi -Square Tests Result for Technical Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Sub-Occupation

			Technical			Total
			Low	Moderate	High	
sub - occupation	Business + Labour	Count	61	103	66	230
		Expected Count	72.3	94.1	63.6	230.0
	CA/CS	Count	9	20	11	40
		Expected Count	12.6	16.4	11.1	40.0
	Engineer	Count	17	15	8	40
		Expected Count	12.6	16.4	11.1	40.0
	Lawyer	Count	12	17	11	40

	Expected Count	12.6	16.4	11.1	40.0
Doctor	Count	25	12	3	40
	Expected Count	12.6	16.4	11.1	40.0
Government	Count	17	32	31	80
	Expected Count	25.2	32.7	22.1	80.0
Private	Count	32	26	22	80
	Expected Count	25.2	32.7	22.1	80.0
Total	Count	173	225	152	550
	Expected Count	173.0	225.0	152.0	550.0
Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square	35.875 ^a	12	.000		
Likelihood Ratio	35.621	12	.000		
Linear-by-Linear Association	1.896	1	.169		
N of Valid Cases	550				
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.255	.000		
	Cramer's V	.181	.000		
N of Valid Cases	550				

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_{07.13}	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_{a7.13}	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/Cedit) 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 which 3(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 shows 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 .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.

(ii.) Internet Banking

Table 5.128: Chi -Square Tests Result for Technical Awareness Towards Security and Privacy for Internet Banking on The Basis of Sub-Occupation

			Technical			Total
			Low	Moderate	High	
Sub - occupation	Business + Labour	Count	7	89	134	230
		Expected Count	2.9	38.1	189.0	230.0
	Professional	Count	0	0	40	40
		Expected Count	.5	6.6	32.9	40.0
	Service	Count	0	0	40	40
		Expected Count	.5	6.6	32.9	40.0
	Lawyer	Count	0	0	40	40
		Expected Count	.5	6.6	32.9	40.0
	Doctor	Count	0	1	39	40
		Expected Count	.5	6.6	32.9	40.0
	Govt.	Count	0	0	80	80
		Expected Count	1.0	13.2	65.7	80.0
	Private	Count	0	1	79	80
		Expected Count	1.0	13.2	65.7	80.0
Total		Count	7	91	452	550
		Expected Count	7.0	91.0	452.0	550.0
Chi-Square Tests						
		Value	Df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		154.669 ^a	12	.000		
Likelihood Ratio		183.143	12	.000		
Linear-by-Linear Association		129.074	1	.000		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			

Nominal by Nominal	Phi	.530	.000
	Cramer's V	.375	.000
N of Valid Cases		550	

Based on sub-occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using internet banking services:

H_{07.14}	There is no significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using internet banking services.
H_{a7.14}	There is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using internet banking 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 five factors were considered for the dimension of technical awareness towards security and privacy while using Internet Banking 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 all consumers belong to CA/CS, engineers and lawyer is high. The awareness level of doctors is as follows: 39(8.62%) are highly aware, 1(1.09%) is moderately aware. Service class consumers are categorized into Government and private employees. The awareness level of all Government employees is high and the awareness of Private employees is as follows: 79(17.47%) are highly aware, 1(1.09%) is moderately aware. Chi square analysis shows chi square value as 154.669 & 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 shows there is significant association in between sub-occupation for level of technical awareness among the consumers with regard to security and privacy for Internet Banking. The phi value of the above analysis is .530 which shows that there is significant association in between sub-occupation for level of technical awareness among the consumers with regard to security and privacy for Internet Banking.

(iii.) Mobile Banking

Table 5.129: Chi -Square Tests Result for Technical Awareness Towards Security and Privacy for Mobile Banking on The Basis of Sub-Occupation

			Technical			Total
			Low	Moderate	High	
Sub - occupation	Business + Labour	Count	61	93	76	230
		Expected Count	29.3	77.8	122.9	230.0
	CA/CS	Count	0	3	37	40
		Expected Count	5.1	13.5	21.4	40.0
	Engineer	Count	0	1	39	40
		Expected Count	5.1	13.5	21.4	40.0
	Lawyer	Count	0	11	29	40
		Expected Count	5.1	13.5	21.4	40.0
	Doctor	Count	1	3	36	40

	Expected Count	5.1	13.5	21.4	40.0
Government	Count	7	51	22	80
	Expected Count	10.2	27.1	42.8	80.0
Private	Count	1	24	55	80
	Expected Count	10.2	27.1	42.8	80.0
Total	Count	70	186	294	550
	Expected Count	70.0	186.0	294.0	550.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	185.339 ^a	12	.000
Likelihood Ratio	208.721	12	.000
Linear-by-Linear Association	60.345	1	.000
N of Valid Cases	550		

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.580	.000
	Cramer's V	.410	.000
N of Valid Cases		550	

Based on sub-occupation following sub-hypothesis is formulated to test consumer technical awareness towards security and privacy while using mobile banking services:

H_{07.15}	There is no significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using mobile banking services.
H_{a7.15}	There is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using mobile banking 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 Mobile Banking 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 37 (12.58%) are highly aware and 3 (1.61%) are moderately aware Consumers belong to Engineers from which 39(13.26%) are highly aware and 1(53.76%) is moderately aware. Consumers belong to lawyers from which 29 (9.86%) are highly aware, 11(5.91%) are moderately aware. Consumers belong to Doctors from which 36(12.24%) are highly aware,3 (1.61%) are moderately aware and 1(1.42%) is low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 22 (7.48%) are highly aware, 51(27.41%) are moderately aware and 7 (10%) are low aware and the awareness level of Private employees is as follows: 55(18.70%) are highly aware, 24(12.90%) are moderately aware and 1(1.42%) is low aware. Chi square analysis shows chi square value as 185.339 & 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 shows There

is a significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .580 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 mobile banking services.

(d.) Legal Awareness Towards Security And Privacy For Electronic Banking Services

(a.) Gender

(i.)ATM/Cards (Debit/Credit)

Table 5.130: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for ATM/ Cards (Debit/ Credit) on The Basis of Gender

			Legal			Total
			Low	Moderate	High	
GENDER	Male	Count	36	139	191	366
		Expected Count	31.9	136.4	197.6	366.0
	Female	Count	12	66	106	184
		Expected Count	16.1	68.6	99.4	184.0
Total		Count	48	205	297	550
		Expected Count	48.0	205.0	297.0	550.0
Chi-Square Tests						
		Value	Df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		2.354 ^a	2	.308		
Likelihood Ratio		2.427	2	.297		
Linear-by-Linear Association		2.209	1	.137		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.065	.308			
	Cramer's V	.065	.308			
N of Valid Cases		550				

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

H _{08.1}	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H _{a8.1}	There is a significant association among the consumers gender groups with the level of legal 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 legal awareness & male & female to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal 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 shows that consumers

belong to high level of awareness i.e. 191(64.30%) and 106(35.69%) males & females respectively, consumers belong to low level of awareness i.e. 36(75%) and 12(25%) males & females respectively and consumers belong to moderate level of awareness i.e. 139(67.80%) and 66 (32.19%) males and females. Chi square analysis shows chi square value as 2.354 & its p-value is .308 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using ATM/Cards (debit /Credit) services. The phi value of the above analysis is .065 which shows that there is no significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using ATM/Cards (debit /Credit) services.

(ii.) Internet Banking

Table 5.131: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for Internet Banking on The Basis of Gender

			Legal			Total
			Low	Moderate	High	
GENDER	Male	Count	45	129	192	366
		Expected Count	32.6	117.8	215.6	366.0
	Female	Count	4	48	132	184
		Expected Count	16.4	59.2	108.4	184.0
Total		Count	49	177	324	550
		Expected Count	49.0	177.0	324.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		24.997 ^a	2	.000		
Likelihood Ratio		28.504	2	.000		
Linear-by-Linear Association		24.675	1	.000		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.213	.000			
	Cramer's V	.213	.000			
N of Valid Cases		550				

Based on gender following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.2}	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using internet banking services.
H_{a8.2}	There is a significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & male and female to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Internet Banking 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. 192(59.25%) and 132 (40.74%) males & females respectively, consumers belong to low level of awareness i.e. 45(91.83%) and 4(8.16%) males

& females respectively and consumers belong to moderate level of awareness i.e. 129(72.88%) and 48 (27.11%) males and females. Chi square analysis shows chi square value as 24.997 & its p-value is .000 which is less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted which shows there is a significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .213 which shows that there is a significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using internet banking services.

(ii.) Mobile banking

Table 5.132: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for Mobile Banking on The Basis of Gender

			Legal		Total	
			Low	High		
GENDER	Male	Count	38	328	366	
		Expected Count	32.6	333.4	366.0	
	Female	Count	11	173	184	
		Expected Count	16.4	167.6	184.0	
Total	Count	49	501	550		
	Expected Count	49.0	501.0	550.0		
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square		2.927 ^a	1	.087		
Continuity Correction^b		2.409	1	.121		
Likelihood Ratio		3.115	1	.078		
Fisher's Exact Test					.112	.057
Linear-by-Linear Association		2.921	1	.087		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.073	.087			
	Cramer's V	.073	.087			
N of Valid Cases		550				

Based on gender following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H _{08.3}	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using mobile banking services.
H _{a8.3}	There is a significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & male and female to evaluate the significant association between them. In this

study overall three factors were considered for the dimension of legal awareness towards security and privacy while using mobile banking 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. 328(65.46%) and 173(77.55%) males & females respectively, consumers belong to low level of awareness i.e. 38(34.33%) and 11(22.44%) males & females respectively. Chi square analysis shows chi square value as 2.927 & its p-value is .087 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .073 which shows that there is no significant association among the consumer's gender groups with the level of legal awareness towards security and privacy while using mobile banking services.

(b.) Age

(i.) ATM/Cards (Debit/Credit)

Table 5.133: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit And Credit) on The Basis of Age

		Legal			Total	
		Low	Moderate	High		
AGE	Below 30	Count	14	57	70	141
		Expected Count	12.3	52.6	76.1	141.0
	31-45	Count	17	63	89	169
		Expected Count	14.7	63.0	91.3	169.0
	46-62	Count	8	43	83	134
		Expected Count	11.7	49.9	72.4	134.0
	Above 63	Count	9	42	55	106
		Expected Count	9.3	39.5	57.2	106.0
	Total	Count	48	205	297	550
		Expected Count	48.0	205.0	297.0	550.0
	Chi-Square Tests					
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		5.453 ^a	6	.487		
Likelihood Ratio		5.553	6	.475		
Linear-by-Linear Association		1.256	1	.262		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.100	.487			
	Cramer's V	.070	.487			
N of Valid Cases		550				

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

H_{08.4}	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.
H_{a8.4}	There is a significant association among the consumers age groups with the level of legal 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 legal awareness & age to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal 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, consumers belong to age group below 30 from which 70 (23.56%) are highly aware,57(27.80%) are moderately aware and 14(29.16%) are low aware. Consumers belong to age group 31-45 from which 89 (29.96%) are highly aware, 63(30.73%) are moderately aware and 17 (35.41%) are low aware. Consumers belong to age group 46-62 from which 83(27.94%) are highly aware,43 (20.95%) are moderately aware and 8 (16.66%) are low aware. Consumers belong to age group above 63 from which 55(18.51%) are highly aware,42(20.48%) are moderately aware and 9(18.75%) are low aware. Chi square analysis shows chi square value as 5.453 & its p-value is .487 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is .100 which shows that there is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.

(ii.) Internet Banking

Table 5.134: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for Internet Banking on The Basis of Age

		Legal			Total	
		Low	Moderate	High		
AGE	Below 30	Count	9	50	82	141
		Expected Count	12.6	45.4	83.1	141.0
	31-45	Count	24	44	101	169
		Expected Count	15.1	54.4	99.6	169.0
	46-62	Count	13	49	72	134
		Expected Count	11.9	43.1	78.9	134.0
	Above 63	Count	3	34	69	106
		Expected Count	9.4	34.1	62.4	106.0
Total		Count	49	177	324	550
		Expected Count	49.0	177.0	324.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		15.402 ^a	6	.017		
Likelihood Ratio		16.389	6	.012		

Linear-by-Linear Association		.900	1	.343
N of Valid Cases		550		
Symmetric Measures				
		Value		Approx. Sig.
Nominal by Nominal	Phi	.167		.017
	Cramer's V	.118		.017
N of Valid Cases		550		

Based on age following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.5}	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using internet banking services.
H_{a8.5}	There is a significant association among the consumers age groups with the level of legal awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & age to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Internet Banking 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 82(25.30%) are highly aware,50(28.24%) are moderately aware and 9(18.36%) are low aware. Consumers belong to age group 31-45 from which 101(31.17%) are highly aware, 44(24.85%) are moderately aware and 24(48.97%) are low aware. Consumers belong to age group 46-62 from which 72(22.22%) are highly aware,49(27.68%) are moderately aware and 13(26.53%) are low aware. Consumers belong to age group above 63 from which 69(21.29%) are highly aware, 34(19.20%) are moderately aware and 3 (6.122%) are low aware. Chi square analysis shows chi square value as 15.042 & its p-value is .017 which is less than level of significance .05 thus the null hypothesis is rejected and alternate is accepted, which shows there is a significant association among the consumers age groups with the level of legal awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .167 which shows that there is a significant association among the consumers age groups with the level of legal awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.135: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for Mobile Banking on The Basis of Age

		Legal		Total	
		Low	High		
AGE	Below 30	Count	14	127	141
		Expected Count	12.6	128.4	141.0
	31-45	Count	17	152	169
		Expected Count	15.1	153.9	169.0
	46-62	Count	13	121	134
		Expected Count	11.9	122.1	134.0
		Count	5	101	106

	Above 63	Expected Count	9.4	96.6	106.0
Total		Count	49	501	550
		Expected Count	49.0	501.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		2.855 ^a	3	.414	
Likelihood Ratio		3.271	3	.352	
Linear-by-Linear Association		1.695	1	.193	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.072	.414		
	Cramer's V	.072	.414		
N of Valid Cases		550			

Based on age following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H_{08.6}	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using mobile banking services.
H_{a8.6}	There is a significant association among the consumers age groups with the level of legal awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & age to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Mobile Banking 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 127(25.34%) are highly aware and 14 (28.57%) are low aware. Consumers belong to age group 31-45 from which 152 (30.33%) are highly aware and 17(34.69%) are low aware. Consumers belong to age group 46-62 from which 121(24.15%) are highly aware and 13(26.53%) are low aware. Consumers belong to age group above 63 from which 101(20.15%) are highly aware and 5 (10.20%) are low aware. Chi square analysis shows chi square value as 2.855 & its p-value is .414 which is greater than level of significance .05 thus the null hypothesis is accepted, which shows there is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .072 which shows that there is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using mobile banking services.

(c.) Education

(i.)ATM/ Cards (Debit and Credit)

Table 5.136: Chi Square Test Result for Legal Awareness Towards Security and Privacy for ATM/Cards (Debit/Credit) on The Basis of Education

	Legal			Total
	Low	Moderate	High	

EDUCATION	Primary	Count	10	47	23	80
		Expected Count	7.0	29.8	43.2	80.0
	Secondary	Count	18	56	48	122
		Expected Count	10.6	45.5	65.9	122.0
	Graduation	Count	7	45	85	137
		Expected Count	12.0	51.1	74.0	137.0
	Post-Graduation	Count	13	57	141	211
		Expected Count	18.4	78.6	113.9	211.0
Total		Count	48	205	297	550
		Expected Count	48.0	205.0	297.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		51.410 ^a	6	.000		
Likelihood Ratio		51.866	6	.000		
Linear-by-Linear Association		39.817	1	.000		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi		.306	.000		
	Cramer's V		.216	.000		
N of Valid Cases		550				

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

H_{08.7}	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using ATM/ cards (Debit /Credit) services.
H_{a8.7}	There is a significant association among the consumers at different level of education with the level of legal 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 legal awareness & education to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) 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 23(7.74%) are highly aware, 47(22.92%) are moderately aware and 10(20.83%) are low aware. Consumers belong to secondary level of education from which 48(16.16%) are highly aware, 56 (27.31%) are moderately aware and 18(37.50%) are low aware. Consumers belong to graduate level of education from which 85(28.61%) are highly aware, 45 (21.95%) are moderately aware and 7(14.58%) are low aware. Consumers belong to Post Graduate level of education from which 141(47.47%) are highly aware, 57(27.80%) are moderately aware and 13(27.08%) are low aware. Chi square analysis shows chi square value as 51.410 & 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 shows there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using ATM/ Cards (Debit /Credit) services. The phi value of the above analysis is .306 which shows that there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using ATM/ cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.137: Chi Square Test Result for Legal Awareness Towards Security and Privacy for Internet Banking on The Basis of Education

			Legal			Total	
			Low	Moderate	High		
EDUCATION	Primary	Count	19	30	31	80	
		Expected Count	7.1	25.7	47.1	80.0	
	Secondary	Count	23	37	62	122	
		Expected Count	10.9	39.3	71.9	122.0	
	Graduate	Count	3	44	90	137	
		Expected Count	12.2	44.1	80.7	137.0	
	Post Graduate	Count	4	66	141	211	
		Expected Count	18.8	67.9	124.3	211.0	
	Total	Count	49	177	324	550	
		Expected Count	49.0	177.0	324.0	550.0	
	Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		62.985 ^a	6	.000			
Likelihood Ratio		62.683	6	.000			
Linear-by-Linear Association		43.415	1	.000			
N of Valid Cases		550					
Symmetric Measures							
		Value	Approx. Sig.				
Nominal by Nominal	Phi			.338	.000		
	Cramer's V			.239	.000		
N of Valid Cases		550					

Based on education following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.8}	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using internet banking services.
H_{a8.8}	There is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & education to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Internet Banking 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 31(9.56%) are highly aware, 30(16.94%) are moderately aware and 19(38.77%) are low aware. Consumers belong to secondary level of education from which 62 (19.13%) are highly aware, 37(20.90%) are moderately aware and 23(46.93%) are low aware. Consumers belong to graduate level of education from which 90(27.77%) are highly aware, 44 (24.85%) are moderately aware and 3(6.12%) are low aware. Consumers belong to Post Graduate level of education from which 141(43.51%) are highly aware,66(37.28%) are moderately aware and 4(8.16%) are low aware. Chi square analysis shows chi square value as 62.985 & 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 shows there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using internet banking services. The phi value of the above analysis is .338 which shows that there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.138: Chi-Square Tests Result for Legal Awareness Towards Security and Privacy for Mobile Banking on The Basis of Education

		Legal		Total	
		Low	High		
EDUCATION	Primary	Count	8	72	80
		Expected Count	7.1	72.9	80.0
	Secondary	Count	21	101	122
		Expected Count	10.9	111.1	122.0
	Graduate	Count	11	126	137
		Expected Count	12.2	124.8	137.0
	Post-Graduate	Count	9	202	211
		Expected Count	18.8	192.2	211.0
Total		Count	49	501	550
		Expected Count	49.0	501.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		16.221 ^a	3	.001	
Likelihood Ratio		15.430	3	.001	
Linear-by-Linear Association		8.975	1	.003	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.172	.001		
	Cramer's V	.172	.001		
N of Valid Cases		550			

Based on education following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using Mobile Banking services:

H_{08.9}	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using mobile banking services.
H_{a8.9}	There is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & education to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Mobile Banking 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 72(14.37%) are highly aware, and 8 (16.32%) are low aware. Consumers belong to secondary level of education from which 101(20.15%) are highly aware and 21(42.85%) are low aware. Consumers belong to graduate level of education from which 126(25.14%) are highly aware and 11(22.44%) are low aware. Consumers belong to Post Graduate level of education from which 202 (40.31%) are highly aware and 9(18.36%) are low aware. Chi square analysis shows chi square value as 16.221 & its p-value is .001 which is less than level of significance .05 thus the null hypothesis is rejected and alternate hypothesis is accepted, which shows there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .172 which shows that there is a significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using mobile banking services.

(d.) Occupation

(i.) ATM/Cards(Debit/Credit)

Table 5.139: Chi -Square Tests Result for Legal Awareness Towards Security and Privacy for ATM/(Debit /Credit) on The Basis of Occupation

			Legal			Total	
			Low	Moderate	High		
OCCUPATION	Professional	Count	1	26	133	160	
		Expected Count	14.0	59.6	86.4	160.0	
	Service	Count	16	67	77	160	
		Expected Count	14.0	59.6	86.4	160.0	
	Business	Count	12	70	78	160	
		Expected Count	14.0	59.6	86.4	160.0	
	Labour	Count	19	42	9	70	
		Expected Count	6.1	26.1	37.8	70.0	
	Total	Count	48	205	297	550	
		Expected Count	48.0	205.0	297.0	550.0	
	Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)		
	Pearson Chi-Square		120.108 ^a	6	.000		

Likelihood Ratio		128.636	6	.000
Linear-by-Linear Association		93.457	1	.000
N of Valid Cases		550		
Symmetric Measures				
		Value		Approx. Sig.
Nominal by Nominal	Phi	.467		.000
	Cramer's V	.330		.000
N of Valid Cases		550		

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

H_{08.10}	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a8.10}	There is a significant association among the consumers from different occupation with the level of legal 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 legal awareness & occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal 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 consumers belong to Professional group from which 133 (44.78%) are highly aware, 26(12.68%) are moderately aware and 1(2.08%) are low aware. Consumers belong to service group from which 77(25.92%) are highly aware, 67(32.68%) are moderately aware and 16(33.33%) are low aware. Consumers belong to business group from which 78(26.26%) are highly aware, 70 (34.14%) are moderately aware and 12(25%) are low aware. Consumers belong to Labour group from which 9 (3.03%) are highly aware,42 (20.48%) are moderately aware and 19(39.58%) are low aware. Chi square analysis shows chi square value as 120.108 & 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 shows there is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is .467 which shows that there is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.

(ii.) Internet Banking

Table 5.140: Chi -Square Tests Result for Legal Awareness Towards Security and Privacy for Internet Banking on The Basis of Occupation

			Legal			Total
			Low	Moderate	High	
OCCUPATION	Professional	Count	1	50	109	160
		Expected Count	14.3	51.5	94.3	160.0
	Service	Count	11	63	86	160
		Expected Count	14.3	51.5	94.3	160.0
	Business	Count	0	38	122	160
		Expected Count	14.3	51.5	94.3	160.0

Labour	Count	37	26	7	70
	Expected Count	6.2	22.5	41.2	70.0
Total	Count	49	177	324	550
	Expected Count	49.0	177.0	324.0	550.0
Chi-Square Tests					
		Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		225.385 ^a	6	.000	
Likelihood Ratio		181.639	6	.000	
Linear-by-Linear Association		55.583	1	.000	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.640	.000		
	Cramer's V	.453	.000		
N of Valid Cases		550			

Based on occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.11}	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using internet banking services.
H_{a8.11}	There is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Internet Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table consumers belong to Professional from which 109(33.64%) are highly aware, 50(28.24%) is moderately aware and 1(2.04%) is low aware. Consumers belong to service group from which 86(26.54%) are highly aware, 63(35.59%) are moderately aware and 11(22.44%) are low aware. Consumers belong to business group from which 122(37.65%) are highly aware, 38(21.46%) are moderately aware. Consumers belong to Labour group from which 7(2.16%) are highly aware, 26 are (14.68%) moderately aware and 37(75.51%) are low aware. Chi square analysis shows chi square value as 225.385 & 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 shows there is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using internet banking services. The phi value of the above analysis is 0.640 which shows that there is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using internet banking services.

(iii.) Mobile Banking

Table 5.141: Chi -Square Tests Result for Legal Awareness Towards Security and Privacy for Mobile Banking on The Basis of Occupation

	Legal	Total
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			Low	High	
OCCUPATION	Professional	Count	0	160	160
		Expected Count	14.3	145.7	160.0
	Service	Count	26	134	160
		Expected Count	14.3	145.7	160.0
	Business	Count	1	159	160
		Expected Count	14.3	145.7	160.0
	Labour	Count	22	48	70
		Expected Count	6.2	63.8	70.0
Total	Count	49	501	550	
	Expected Count	49.0	501.0	550.0	
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		83.546 ^a	3	.000	
Likelihood Ratio		89.167	3	.000	
Linear-by-Linear Association		23.059	1	.000	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.390	.000		
	Cramer's V	.390	.000		
N of Valid Cases		550			

Based on occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using mobile banking services:

H_{08.12}	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using mobile banking services.
H_{a8.12}	There is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Mobile Banking services which are optimized into three levels known as low, moderate & high level. From the above cross table all consumers belong to Professional group from are highly aware. Consumers belong to service group from which 134(26.74%) are highly aware, 26(53.06%) are moderately aware. Consumers belong to business group from which 159(31.73%) are highly aware, 1(2.04%) is moderately aware. Consumers belong to Labour group from which 48(9.58%) are highly aware, 22(44.89%) are moderately aware. Chi square analysis shows chi square value as 83.546 & 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 shows there is a significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is 0.390 which shows that there is a significant

association among the consumers from different occupation with the level of legal awareness towards security and privacy while using mobile banking services.

(e.) Sub-Occupation

(i.) ATM/ Cards (Debit/Credit)

Table 5.142: Chi-Square Test Result for Legal Awareness Towards Security and Privacy for ATM/ Cards (Debit/Credit) on The Basis of Sub- Occupation

Sub - Occupation			Legal			Total
			Low	Moderate	High	
Business + Labour	Count		31	112	87	230
	Expected Count		20.1	85.7	124.2	230.0
CA/CS	Count		0	2	38	40
	Expected Count		3.5	14.9	21.6	40.0
Engineer	Count		0	1	39	40
	Expected Count		3.5	14.9	21.6	40.0
Lawyer	Count		1	10	29	40
	Expected Count		3.5	14.9	21.6	40.0
Doctor	Count		0	13	27	40
	Expected Count		3.5	14.9	21.6	40.0
Government	Count		3	35	42	80
	Expected Count		7.0	29.8	43.2	80.0
Private	Count		13	32	35	80
	Expected Count		7.0	29.8	43.2	80.0
Total	Count		48	205	297	550
	Expected Count		48.0	205.0	297.0	550.0
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		103.869 ^a	12	.000		
Likelihood Ratio		125.282	12	.000		
Linear-by-Linear Association		15.265	1	.000		
N of Valid Cases		550				
Symmetric Measures						
		Value	Approx. Sig.			
Nominal by Nominal	Phi	.435	.000			
	Cramer's V	.307	.000			
N of Valid Cases		550				

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

H_{08.13}	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.
H_{a8.13}	There is a significant association among the consumers from different sub-occupation with the level of legal 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 legal awareness & sub occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal 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 38(12.79%) are highly aware, 2(.97%) are moderately aware. Consumers belong to Engineers from which 39(13.13%) are highly aware, 1(0.48%) is moderately aware. Consumers belong to lawyers from which 29(9.76%) are highly aware, 10(4.87%) are moderately aware and 1(2.08%) is low aware. Consumers belong to Doctors from which 27(9.09%) are highly aware,13(6.34%) are moderately aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 42(14.14%) are highly aware,35(17.07%) are moderately aware and 3(6.25%) are low aware and the awareness level of Private employees is as follows: 35(11.78%) are highly aware, 32 (15.60%) are moderately aware and 13 (27.08%) are low aware. Chi square analysis shows chi square value as 103.869 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services. The phi value of the above analysis is .435 which shows that there is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.

(ii.) Internet Banking

Table 5.143: Chi -Square Tests Result for Legal Awareness Towards Security and Privacy for Internet Banking on The Basis of Sub-Occupation

Sub - Occupation			Legal			Total
			Low	Moderate	High	
Business + labour	Count		37	64	129	230
	Expected Count		20.5	74.0	135.5	230.0
CA/CS	Count		0	13	27	40
	Expected Count		3.6	12.9	23.6	40.0
Engineer	Count		0	12	28	40
	Expected Count		3.6	12.9	23.6	40.0
Lawyer	Count		0	15	25	40
	Expected Count		3.6	12.9	23.6	40.0
Doctor	Count		1	10	29	40
	Expected Count		3.6	12.9	23.6	40.0

Government	Count	10	33	37	80
	Expected Count	7.1	25.7	47.1	80.0
Private	Count	1	30	49	80
	Expected Count	7.1	25.7	47.1	80.0
Total	Count	49	177	324	550
	Expected Count	49.0	177.0	324.0	550.0
Chi-Square Tests					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		42.658 ^a	12	.000	
Likelihood Ratio		54.348	12	.000	
Linear-by-Linear Association		5.146	1	.023	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.278	.000		
	Cramer's V	.197	.000		
N of Valid Cases		550			

Based on sub-occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.14}	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using internet banking services.
H_{a8.14}	There is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using internet banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & sub occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Internet Banking 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 consumers belongs to CA/CS from which 27(8.33%) are highly aware and 13(7.34%) are moderately aware. The awareness level of consumers belongs to engineers from which 28 (8.64%) are highly aware and 12(6.77%) are moderately aware the awareness level of consumers belongs to lawyers from which 25(7.71%) are highly aware and 15(8.47%) are moderately aware. The awareness level of doctors is as follows: 29 (8.95%) are highly aware, 10 (5.64%) are moderately aware and 1 (2.04%) is low aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 37(11.41%) are highly aware, 33(18.64%) are moderately aware and 1(20.40%) is low aware and the awareness of Private employees is as follows: 49(15.12%) are highly aware, 30(16.94%) are moderately aware and 1(2.04%) is low aware. Chi square analysis shows chi square value as 42.658 & 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 shows there is significant association in between sub-occupation for level of legal awareness

among the consumers with regard to security and privacy for Internet Banking. The phi value of the above analysis is .278 which shows that there is significant association in between sub-occupation for level of legal awareness among the consumers with regard to security and privacy for Internet Banking.

(iii.) Mobile banking

Table 5.144: Chi -Square Tests Result for Legal Awareness Towards Security and Privacy for Mobile Banking on The Basis of Sub-Occupation

			legal		Total
			Low	High	
Sub - Occupation	Business + labour	Count	23	207	230
		Expected Count	20.5	209.5	230.0
	CA/CS	Count	0	40	40
		Expected Count	3.6	36.4	40.0
	Engineer	Count	0	40	40
		Expected Count	3.6	36.4	40.0
	Lawyer	Count	0	40	40
		Expected Count	3.6	36.4	40.0
	Doctor	Count	0	40	40
		Expected Count	3.6	36.4	40.0
	Government	Count	16	64	80
		Expected Count	7.1	72.9	80.0
	Private	Count	10	70	80
		Expected Count	7.1	72.9	80.0
Total		Count	49	501	550
		Expected Count	49.0	501.0	550.0
Chi-Square Tests					
		Value	Df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		29.383 ^a	6	.000	
Likelihood Ratio		40.587	6	.000	
Linear-by-Linear Association		.328	1	.567	
N of Valid Cases		550			
Symmetric Measures					
		Value	Approx. Sig.		
Nominal by Nominal	Phi	.231	.000		
	Cramer's V	.231	.000		
N of Valid Cases		550			

Based on sub-occupation following sub-hypothesis is formulated to test consumer legal awareness towards security and privacy while using internet banking services:

H_{08.15}	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using mobile banking services.
H_{a8.15}	There is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using mobile banking services.

From above cross tabulation & chi Square analysis have been made between level of legal awareness & sub occupation to evaluate the significant association between them. In this study overall three factors were considered for the dimension of legal awareness towards security and privacy while using Mobile Banking 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: all consumers belong to CA/CS, engineers, lawyers and doctors are highly aware. Service class consumers are categorized into Government and private employees. The awareness level of Government employees is as follows: 64 (12.77%) are highly aware and 16 (32.65%) are low aware and the awareness level of Private employees is as follows: 70(13.97%) are highly aware and 10(20.40%) are low aware. Chi square analysis shows chi square value as 29.383 & 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 shows there is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using mobile banking services. The phi value of the above analysis is .231 which shows that there is a significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using mobile banking services.

5.7 Factor Analysis

Assessing The Factors Of Level Of Awareness With Regards To Security And Privacy In Electronic Banking Services Among Consumers

Table 5.145 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	9488.000
	Df	2016
	Sig.	0.000

Table shows two tests that indicate the suitability of data for structure detection. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in variables that might be caused by underlying factors. 0.886 values indicate that a factor analysis may be useful with data.

Bartlett's test of sphericity tests the hypothesis that correlation matrix is an identity matrix, which indicates variables are unrelated and therefore unsuitable for structure detection. Bartlett's value 0.000 of the significance level indicates here that a factor analysis may be useful with our data.

For measuring of level of awareness with regards to security and privacy in Electronic Banking services among consumers, sixty-four variables were measured. Based on the responses given by the consumers, factor analysis was done to group the variables into factors.

Table 5.146: Initial Eigen Values of The Factors of Level of Awareness With Regards To Security And Privacy In Electronic Banking Services Among Consumers

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.526	14.885	14.885	9.526	14.885	14.885	8.226	12.853	12.853
2	3.711	5.799	20.684	3.711	5.799	20.684	2.395	3.742	16.594
3	3.037	4.745	25.429	3.037	4.745	25.429	2.188	3.419	20.013
4	2.596	4.056	29.485	2.596	4.056	29.485	2.184	3.412	23.425
5	2.289	3.576	33.061	2.289	3.576	33.061	2.150	3.360	26.785
6	2.016	3.150	36.211	2.016	3.150	36.211	2.059	3.217	30.002
7	1.725	2.695	38.906	1.725	2.695	38.906	1.955	3.055	33.057
8	1.342	2.097	41.003	1.342	2.097	41.003	1.910	2.984	36.042
9	1.250	1.953	42.956	1.250	1.953	42.956	1.805	2.820	38.862
10	1.221	1.908	44.864	1.221	1.908	44.864	1.778	2.778	41.640
11	1.155	1.804	46.668	1.155	1.804	46.668	1.753	2.738	44.378
12	1.086	1.698	48.366	1.086	1.698	48.366	1.729	2.702	47.080
13	1.071	1.673	50.039	1.071	1.673	50.039	1.470	2.297	49.378
14	1.026	1.603	51.642	1.026	1.603	51.642	1.449	2.264	51.642

Principal Component analysis with **vari-max** rotation is used to group the factors. Sixty-four variables were reduced into fewer factors by analysing correlation between variables (opinions regarding the awareness level viz. social, ethical, technical and legal awareness). In this case sixty-four variables were reduced into fourteen which explain the much of the original data.

From the cumulative percentage column, the fourteen factors extracted together accounts for 51.642 % of the total variance.

Table 5.147: Factor Scores Of Awareness In Association Of E-Banking Level of Awareness With Regards To Security And Privacy In Electronic Banking Services Among Consumers

Factor	Statements	Factor scores
Confidentiality	Only one person is allowed to enter ATM cabin for transaction	0.72
	There is adequate privacy while using ATM	0.54
	I am aware about the process if I forget my login password/login ID	0.51
	I am aware about the process if I forget my login password/login ID	0.67
	Password should not be Date of birth, Mobile no	0.54
	I am aware about the process if I forget my login password/login ID.	0.57
	Password should not be Date of birth, Mobile no	0.56
	I always keep my system up to date to avoid any risks from hackers.	0.50
	I may aware of profile password security feature & insist login password transaction have to be changed frequently.	0.70
	Your bank Internet banking is well secured by firewall and gateways.	0.67
	I always use virtual keyboard to keep my password hidden in front of others	0.62
	For transferring funds through mobile banking there is one time password given to you to confirm the transfer	0.55
	Your bank mobile banking is well secured by firewalls and gateways	0.60
	I should file a complaint with the IT adjudicator if I found any mis happening in transaction records	0.68
Banks periodically send updates & alerts regarding security features	0.65	
Technicality	Someone can use your card for unauthorized transaction (e.g. give to salesperson for swiping).	-0.53
	If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker	0.61
	If funds are not transferred to the payee account due to internet problem , reverse entry is immediately given by the banker	0.569
Misappropriation	My ATM card pin will be revealed through spam mails & unsafe Applications	0.54
	My internet banking details are shared with third party if I use public PC	0.68
Alertness	Hackers can hack personal data if my mobile handset is stolen.	0.58
	My online banking details will be revealed if use unsecured Wi-Fi systems	0.64
	I may immediately report to the bank if I found irregularities in the last logged panel of the website	0.50
	My data will be lost when the bank server crashes	0.58

Scared with system	Someone can obtain my card information through telephone phishing in which a call centre is set up to pretend to be associated with a banking organization	0.63
Exposure with internet	I may reveal my internet banking password through spam mails	0.56
	I may reveal internet banking password on a fake website	0.54
Exposure with Equipment	Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot.	0.72
	Someone can access my personal information I download malicious apps	0.58
Safety	There is maximum number of incorrect password submission	0.52
	Always take your receipt at the conclusion of every transaction to assure your financial privacy	0.57
Procedural risk	Someone can use my name and information and apply for a credit card	0.53
	Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card	0.62
Sense of lost money	Banks will no refund my money back if there is online fraud	0.71
	Banks will not refund my money back if there is online fraud	0.57

From the table 5.147, it is inferred that factor 1 (Factors-Confidentiality) explains variance of 12.853% which is a combination of fifteen original variables. Researcher named it.

Factor 1 (Factors-Confidentiality)

Factor –Confidentiality reveals confidential awareness related to password/OTP/login ID, these are highly correlated. From e-banking customer’s perception, they believe that password security helps them to protect their money.

Factor 2 (Factors-Technicality)

Factor –Technicality is a combination of three original variables which is named as **Technicality** factor. Technicality which is regarded as the second most influencing factor includes addressing unauthorized use of card, if funds are not transferred in payee’s account due to internet problem, reverse entry immediately given by the banker through mobile and net banking. This factor explained variance of 3.742%. Thus it can be concluded that all the customers irrespective of any demographic category consider that banks revert fund immediately due to any technical fault. Customers were also aware that cards may be used unauthorized if falls in wrong hands.

Factor 3 (Factors –Misappropriation)

Factor –Misappropriation is influenced by two original variables i.e. My ATM card pin will be revealed through spam mails & unsafe Applications and My internet banking details are shared with third party if I use public PC , which is named as **Misappropriation** factor. It explains variance of 3.419%. It clearly indicates that spam and third party disclosure are important variables

Factor 4 (Factor- Alertness)

Factor –Alertness is loaded with three original variable regarding how alert are the customers in case any fraud takes place while dealing with financial transaction. This factor is named as “Alertness”. This factor includes “Hackers can hack personal data if my mobile handset is stolen”, “My online banking details will be revealed if use unsecured Wi-Fi systems”, “I may immediately report to the bank if I found irregularities in the last logged panel of the website”. Factor “Alertness” explain variance of 3.412%.

Factor 5 (Factor-Scared with system)

Factor-Scared with system is loaded with two original variables. This factor is named as “Scared with system”. This factor includes two variables i.e. “My data will be lost when the bank server crashes”, “Someone can obtain my card information through telephone phishing in which a call centres are set up to pretend to be associated with a banking organization”. Factor “Scared with system” explain variance of 3.360%.

Factor 6 (Factor-Exposure with Internet)

Factor –Exposure with Internet is loaded with two original variables. This factor is named as “Exposure with Internet”. The e-banking customers opined that these two variables “I may reveal my internet banking password through spam mails”, “I may reveal internet banking password on a fake website I download malicious apps” are highly correlated while using internet. Factor “Exposure with Internet” explains variance of 3.217%.

Factor 7 (Factor-Exposure with banking instruments)

Factor –Exposure with banking instruments is loaded with two original variables. This factor is named as “Exposure with banking instruments”. The e-banking customers realised that there is exposure with banking instruments, these two variables “Someone can copy information from the magnetic strip by attaching data skimming device in the card reader slot” and “Someone can access my personal information I download malicious apps” are highly correlated while transacting through e-banking. Factor “Exposure with banking instruments” explains variance of 3.055%.

Factor 8 (Factor-Safety)

Factor-Safety is loaded with two original variables. This factor is named as “Safety”. The e-banking customers opined that for better safety, these two variables “There is maximum number of incorrect password submission” and “Always take your receipt at the conclusion of every transaction to assure your financial privacy” are highly correlated while transacting through e-banking . Factor “Safety” explains variance of 2.984%.

Factor 9 (Factor-Procedural Risk)

Factor-Procedural Risk is loaded with two original variables. This factor is named as “Procedural risk”. The e-banking customers feel that they must take care these two variables i.e. “Someone can use my name and information and apply for a credit card” and “Someone can obtain a card through fraud application by obtaining all the information of a person who would be eligible to get a card” are highly correlated while applying for e-banking facilities. Factor “Procedural risk” explains variance of 2.820%.

Factor 10 (Factor-Sense of lost money)

Factor-Sense of lost money is loaded with two original variables. This factor is named as “Sense of money lost”. The e-banking customers feel that they may lose money i.e. “Banks will not refund my money back if there is online fraud” and “Banks will not refund my money back if there is online fraud” are highly correlated while any wrong happened. Factor “Sense of lost money” explains variance of 2.778%.

5.7.1 Model Fit For Security And Privacy In Electronic Banking Services

Structural Equation Modelling (SEM) is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions. This definition of SEM was articulated by the geneticist Sewall Wright (1921), the economist Trygve Haavelmo (1943) and the cognitive scientist Herbert Simon (1953), and formally defined by Judea Pearl (2000) using a calculus of counterfactuals.

SEM allows both confirmatory and exploratory modelling, meaning they are suited to both theory testing and theory development. Confirmatory modelling usually starts out with a hypothesis that gets represented in a causal model. The concepts used in the model must then be operationalized to allow testing of the relationships between the concepts in the model. The model is tested against the obtained measurement data to determine how well the model fits

the data. The causal assumptions embedded in the model often have falsifiable implications which can be tested against the data.

With an initial theory SEM can be used inductively by specifying a corresponding model and using data to estimate the values of free parameters. Often the initial hypothesis requires adjustment in light of model evidence. When SEM is used purely for exploration, this is usually in the context of exploratory factor analysis as in psychometric design.

Two models were developed by using analysis of moment structure (AMOS 23).

CA model is fit to ensure the level of awareness among e-banking consumers for security and privacy. In this model factors such as Confidentiality, Technicality, Misappropriation, Alertness, Scared with system, Exposure with internet, Exposure with banking instruments, Safety, Procedural risk, Sense of lost money, are taken as observed factors (measured through variables and reduced as factors). e1, e2, e3, e4, e5 and e6 are error terms (residuals) for these factors.

➤ **Model No. 1 with regards to Privacy**

H₀₉	“The model fitted among Consumer Awareness with regard to Privacy in Electronic Banking Services in Udaipur City is good”
H _{09.1}	Consumer awareness is positively associated with regard to “confidentiality” in e-banking services in Udaipur city is good.
H _{09.2}	Consumer awareness is positively associated with regard to “technicality” in e-banking services in Udaipur city is good.
H _{09.3}	Consumer awareness is positively associated with regard to “safety” in e-banking services in Udaipur city is good.
H _{09.4}	Consumer awareness is positively associated with regard to “sense of lost money” in e-banking services in Udaipur city is good.
H _{09.5}	Consumer awareness is positively associated with regard to “alertness” in e-banking services in Udaipur city is good.

This model is combination of five factors i.e. confidentiality (confidential issue), technicality (technical fault), Safety (general), sense of lost money (online fraud), alertness (exposure with internet) are inter correlated with each other and fitted among consumer awareness with regard to all mentioned five factors in electronic banking services in Udaipur city is good.

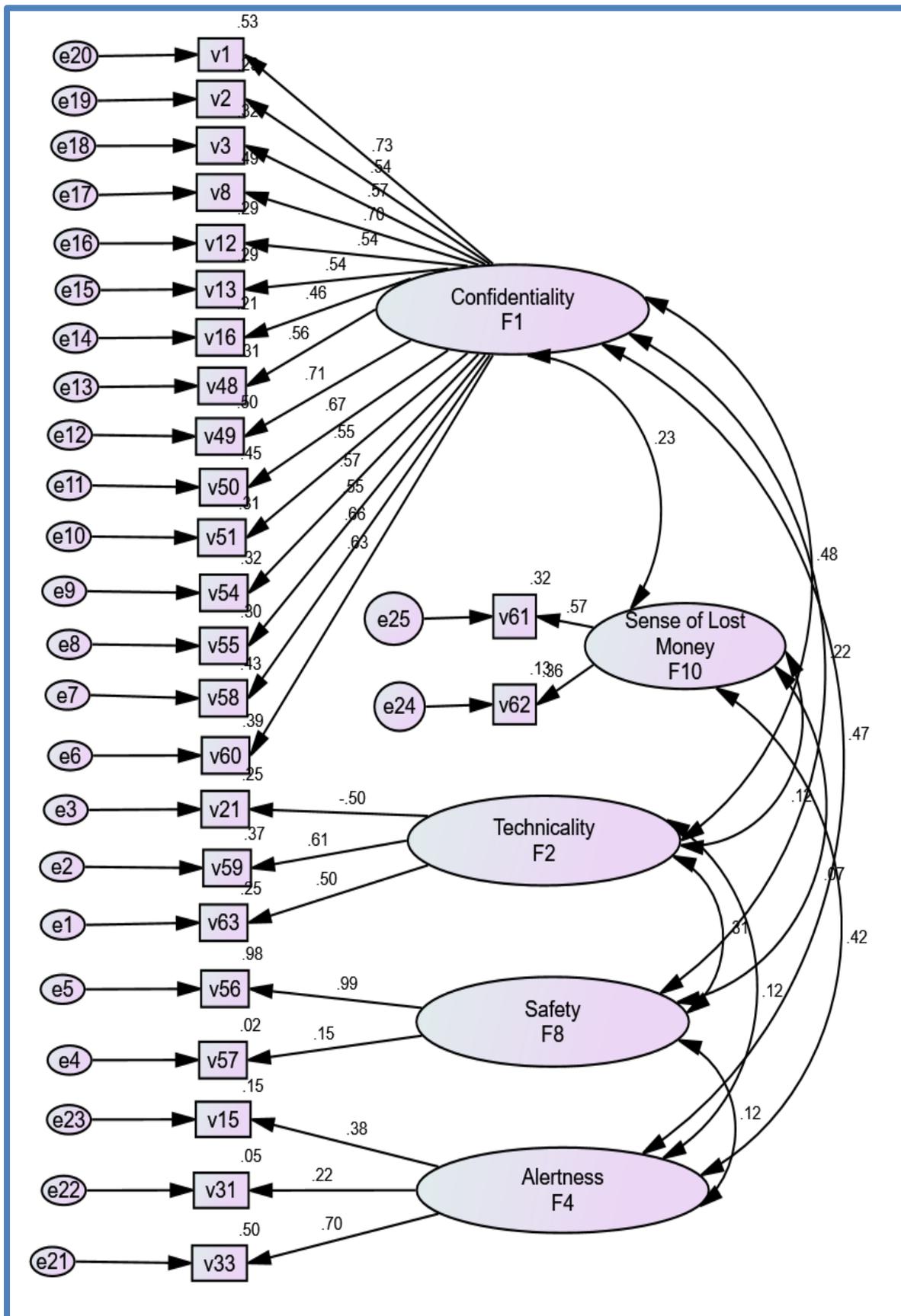


Figure 5.13: Standardized Model - for Consumer Awareness with regard to Privacy in E- Banking Services.

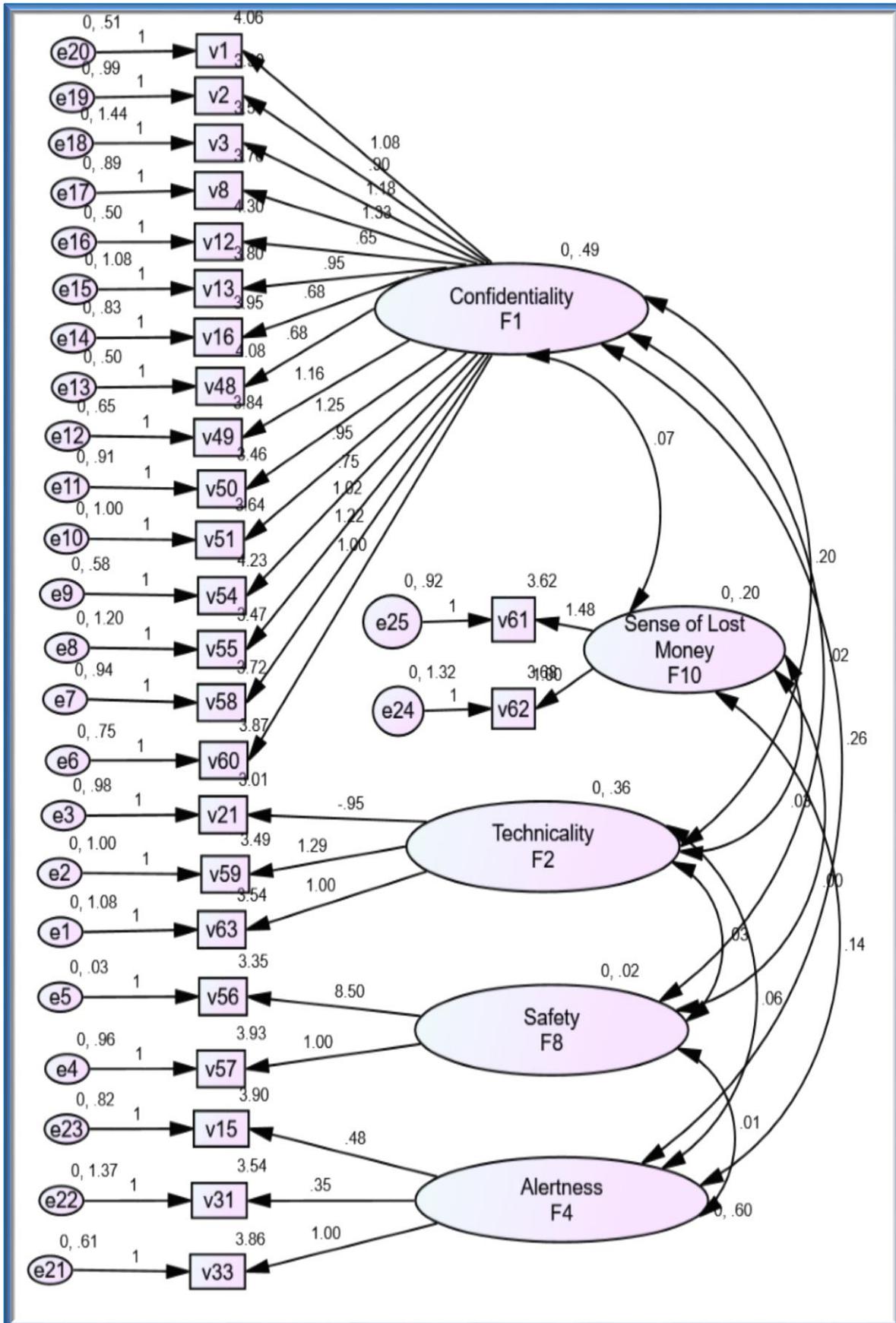


Figure 5.14: Unstandardized Model - for Consumer Awareness with regard to Privacy in E- Banking Services.

Model -Privacy for Consumer Awareness with regard to confidentiality (confidential issue), technicality (technical fault), Safety (general), sense of lost money (online fraud), alertness (exposure with internet) in Electronic Banking Services in Udaipur City is good.

Table 5.148 Computation of degrees of freedom for Privacy Model

Computation of degrees of freedom	
Number of distinct sample moments:	350
Number of distinct parameters to be estimated:	85
Degrees of freedom (350 - 85):	265
Result	
Chi-square	800.895
Degrees of freedom	265
Probability level	.000

Table 5.149 : Regression Weights for Privacy Model

			Estimate	S.E.	C.R.	P	Label
v63	<---	F2	1.000				
v59	<---	F2	1.285	.183	7.023	***	par_1
v21	<---	F2	-.946	.146	-6.462	***	par_2
v57	<---	F8	1.000				
v56	<---	F8	8.501	10.362	.820	.412	par_3
v60	<---	F1	1.000				
v58	<---	F1	1.216	.093	13.139	***	par_4
v55	<---	F1	1.022	.092	11.150	***	par_5
v54	<---	F1	.748	.065	11.588	***	par_6
v51	<---	F1	.952	.084	11.336	***	par_7
v50	<---	F1	1.245	.094	13.302	***	par_8
v49	<---	F1	1.159	.084	13.853	***	par_9
v48	<---	F1	.677	.060	11.344	***	par_10
v16	<---	F1	.678	.070	9.691	***	par_11
v13	<---	F1	.946	.086	11.011	***	par_12
v12	<---	F1	.647	.059	11.048	***	par_13
v8	<---	F1	1.328	.097	13.747	***	par_14
v3	<---	F1	1.176	.102	11.530	***	par_15
v2	<---	F1	.900	.081	11.107	***	par_16
v1	<---	F1	1.079	.076	14.140	***	par_17
v33	<---	F4	1.000				
v31	<---	F4	.345	.098	3.508	***	par_21
v15	<---	F4	.482	.122	3.940	***	par_22
v62	<---	F10	1.000				
v61	<---	F10	1.482	.623	2.378	.017	par_26

Note: N = 550; The C R (Critical Ratio) is the commonly recommended basis for testing statistical significance of SEM components with C.R. values beyond ± 2.58 establishing significance at $p < 0.01$ level.

Accordingly, we report that consumer's awareness regress significantly and positively on confidentiality (confidential issue), technicality (technical fault), safety (general), sense of lost money (online fraud), alertness (exposure with internet) with standardized estimates and critical ratios (above regression table 5.149) are in range of acceptance of hypothesis. All above mentioned hypothesis are accepted.

Table 5.150 Covariances for Privacy Model

			Estimate	S.E.	C.R.	P	Label
F2	<-->	F1	.199	.033	5.993	***	par_18

F8	<-->	F1	.023	.027	.844	.399	par_19
F2	<-->	F8	.027	.035	.781	.435	par_20
F8	<-->	F4	.014	.018	.771	.441	par_23
F2	<-->	F4	.057	.041	1.401	.161	par_24
F1	<-->	F4	.258	.041	6.265	***	par_25
F10	<-->	F1	.072	.034	2.095	.036	par_27
F10	<-->	F4	.145	.056	2.581	.010	par_28
F10	<-->	F2	.031	.026	1.199	.231	par_29
F10	<-->	F8	.005	.006	.759	.448	par_30

Model fit Summary

The model fit Chi-square $\chi^2=$, degree of freedom =800.895 and the model's p-value is .000 which is significant at 5% level, which shows that the null hypothesis "The model fitted among Consumer Awareness with regard to Privacy in Electronic Banking Services in Udaipur City is good" indicating that the model fits the data very well. The goodness of fit index (GFI) is .984 of the model, shows reasonably good fit, and its adjusted goodness of fit (AGFI) is .986. The Root Mean Square Error of Approximation (RMSEA) is .061, a smaller value indicates better model, and Expected Cross Validation Index (ECVI) is 1.768, which are within the acceptable range indicating a better model fit. The final revised model in Figure 5.14 (with unstandardized estimates) and in Figure 5.13 (with standardized estimates), yields a χ^2 (chi-square) of 800.895, degree of freedom = 265 and p value= 0.000 indicating that the model fits the data very well. However, because the chi-square statistic is very sensitive to the sample size it is more appropriate to look at other fit measures.

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	85	800.895	265	.000	3.022
Saturated model	350	.000	0		
Independence model	50	3748.280	300	.000	12.494
Parsimony-Adjusted Measures					
Model	PRATIO	PNFI	PCFI		
Default model	.883	.695	.746		
Saturated model	.000	.000	.000		
Independence model	1.000	.000	.000		
NCP					
Model	NCP	LO 90	HI 90		
Default model	535.895	454.619	624.790		
Saturated model	.000	.000	.000		
Independence model	3448.280	3254.532	3649.349		
FMIN					

Model	FMIN	F0	LO 90	HI 90
Default model	1.459	.976	.828	1.138
Saturated model	.000	.000	.000	.000
Independence model	6.827	6.281	5.928	6.647
RMSEA				
Model	RMSE A	LO 90	HI 90	PCLOSE
Default model	.061	.056	.066	.000
Independence model	.145	.141	.149	.000
AIC				
Model	AIC	BCC	BI C	CAIC
Default model	970.895	979.346		
Saturated model	700.000	734.799		
Independence model	3848.280	3853.251		
ECVI				
Model	ECVI	LO 90	HI 90	MECVI
Default model	1.768	1.620	1.930	1.784
Saturated model	1.275	1.275	1.275	1.338
Independence model	7.010	6.657	7.376	7.019
HOELTER				
Model	HOELTER .05	HOELTER .01		
Default model	209	221		
Independence model	51	53		

➤ **Model No. 2 with regards to Security**

H₁₀	“The model fitted among Consumer Awareness with regard to Security in Electronic Banking Services in Udaipur City is good”
H _{010.1}	Consumer awareness is positively associated with regard to “Scared with system” in e-banking services in Udaipur city is good.
H _{010.2}	Consumer awareness is positively associated with regard to “Exposure with internet” in e-banking services in Udaipur city is good.

H _{010.3}	Consumer awareness is positively associated with regard to “Exposure with banking instruments” in e-banking services in Udaipur city is good.
H _{010.4}	: Consumer awareness is positively associated with regard to “Procedural risk” in e-banking services in Udaipur city is good.
H _{010.5}	Consumer awareness is positively associated with regard to “Misappropriation” in e-banking services in Udaipur city is good.

This model is combination of five factors i.e. scared with system (threat related to data lost), exposure with internet (threat related to website), exposure with banking instruments (threat related to personal information), procedural risk (threats applying for e-banking instruments), misappropriation (leak of confidential information) are inter correlated with each other and fitted among consumer awareness with regard to all mentioned five factors in electronic banking services in Udaipur city is good.

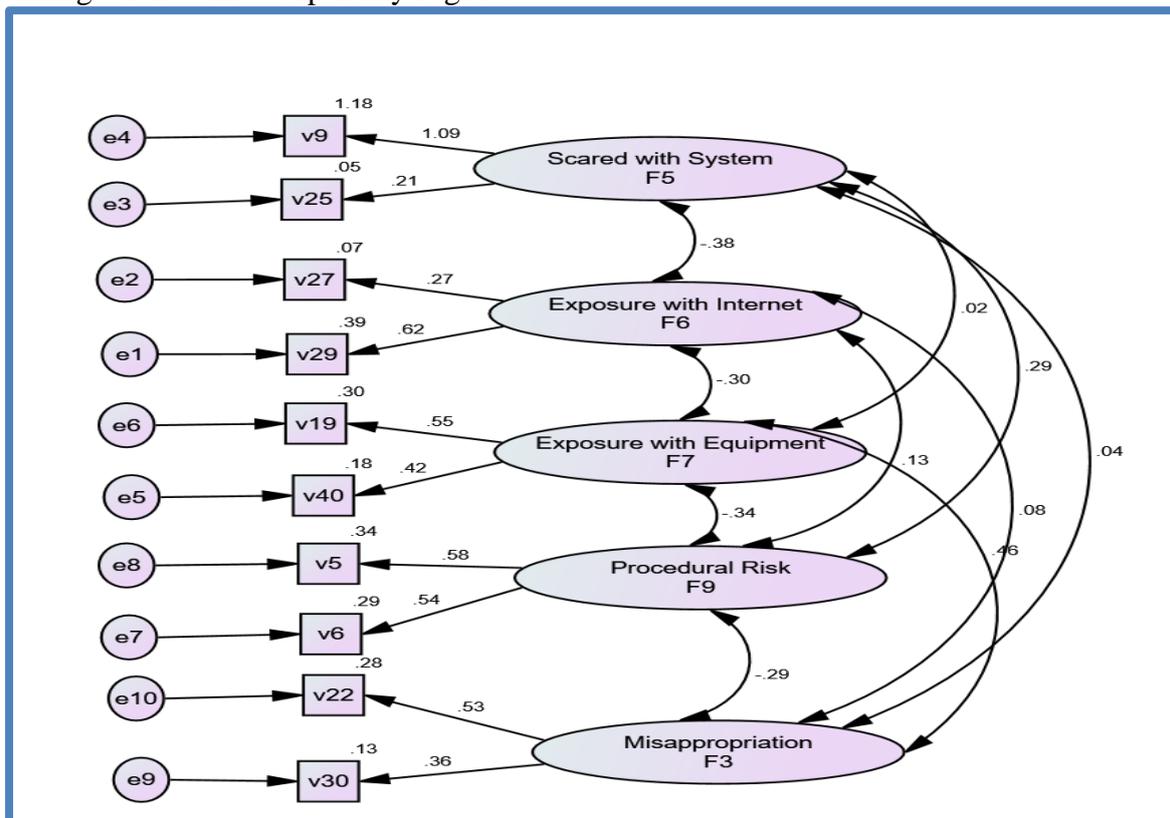


Figure 5.15: Standardized Model - for Consumer Awareness with regard to Security in E- Banking Services.

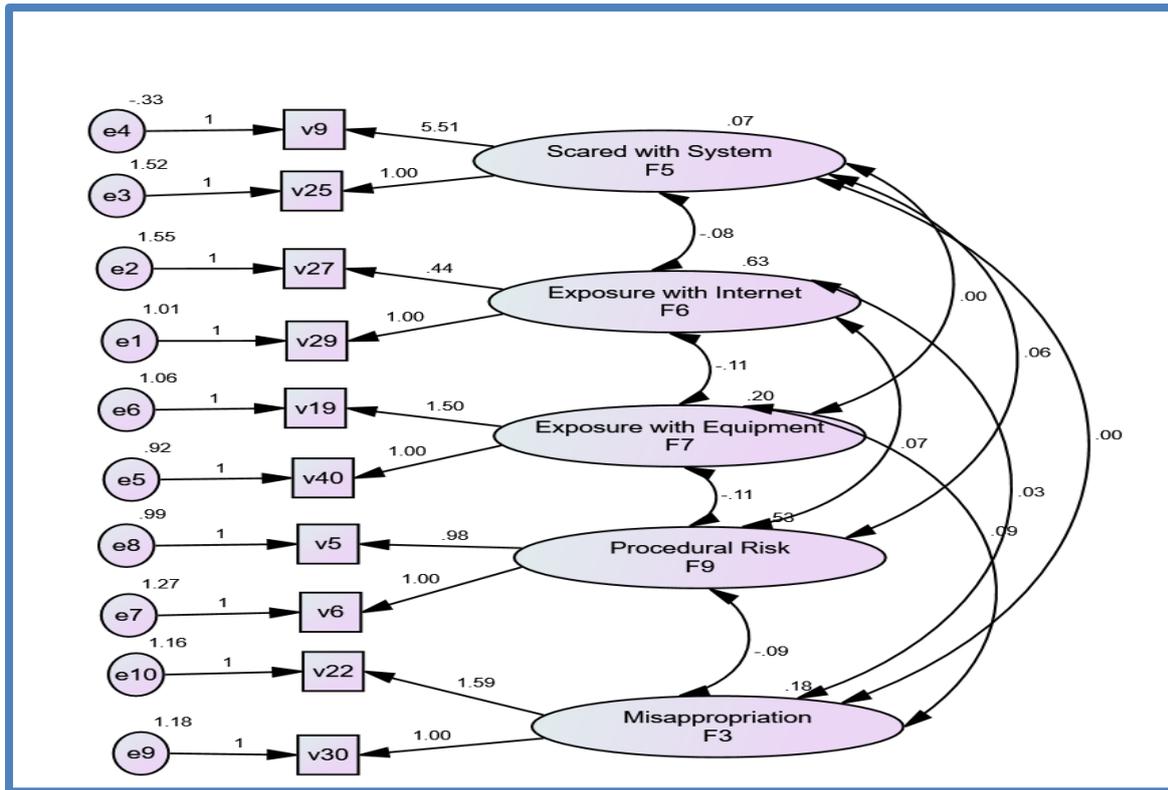


Figure 5.16: Unstandardized Model - for Consumer Awareness with regard to Security in E- Banking Services.

Model for Security for Consumer Awareness with regard to “scared with system” (threat related to data lost), “exposure with internet” (threat related to website), “exposure with banking instruments” (threat related to personal information), “procedural risk” (threats applying for e-banking instruments), “misappropriation” (leak of confidential information) in Electronic Banking Services in Udaipur City is good.

Table 5.151 Computation of degrees of freedom for Privacy Model

Computation of degrees of freedom	
Number of distinct sample moments:	55
Number of distinct parameters to be estimated:	30
Degrees of freedom (55 - 30)	25
Result	
Chi-square	43.175
Degrees of freedom	25
Probability level	.013

Table 5.152 : Regression Weights for Security Model

			Estimate	S.E.	C.R.	P	Label
v29	<---	F6	1.000				
v27	<---	F6	.436	.156	2.798	.005	par_1
v25	<---	F5	1.000				
v9	<---	F5	5.513	3.552	1.552	.121	par_2
v40	<---	F7	1.000				
v19	<---	F7	1.502	.476	3.158	.002	par_3
v6	<---	F9	1.000				
v5	<---	F9	.977	.204	4.796	***	par_7
v30	<---	F3	1.000				
v22	<---	F3	1.587	.858	1.849	.065	par_10

Note: N = 550; The C R (Critical Ratio) is the commonly recommended basis for testing statistical significance of SEM components with C.R. values beyond ± 2.58 establishing significance at $p < 0.01$ level.

Accordingly, we report that consumers awareness regress significantly and positively on “scared with system” (threat related to data lost), “exposure with internet” (threat relate to website), “exposure with banking instruments” (threat related to personal information), “procedural risk” (threats applying for e-banking instruments), “misappropriation” (leak of confidential information) with standardised estimates and critical ratios (above regression table 5.152) are in range of acceptance of hypothesis. All above mentioned hypothesis are accepted.

Table 5.153 Covariances for Security Model

			Estimate	S.E.	C.R.	P	Label
F5	<-->	F7	.002	.009	.209	.834	par_4
F6	<-->	F7	-.108	.046	-2.345	.019	par_5
F6	<-->	F5	-.081	.056	-1.448	.148	par_6
F5	<-->	F9	.057	.038	1.518	.129	par_8
F6	<-->	F9	.073	.062	1.179	.238	par_9
F7	<-->	F3	.086	.037	2.313	.021	par_11
F6	<-->	F3	.026	.058	.445	.656	par_12
F7	<-->	F9	-.111	.040	-2.815	.005	par_13
F9	<-->	F3	-.090	.039	-2.275	.023	par_14
F5	<-->	F3	.005	.009	.539	.590	par_15

Model Fit Summary

The model fit Chi-square χ^2 , degree of freedom = 43.175 and the model’s p-value is .013 which is significant at 5% level, which shows that the null hypothesis “The model fitted among Consumer Awareness with regard to Security (all five factors) in Electronic Banking Services in Udaipur City is good” indicating that the model fits the data very well. The goodness of fit index (GFI) is .984 of the model, shows reasonably good fit, and its adjusted goodness of fit (AGFI) is .966. The Root Mean Square Error of Approximation (RMSEA) is .036, a smaller value indicates better model, and Expected Cross Validation Index (ECVI) is 0.188, which are within the acceptable range indicating a better model fit. The final revised model in Figure 5.16 (with unstandardized estimates) and in Figure 5.15 with standardized estimates), yields a χ^2 (chi-square) of 43.175, degree of freedom = 25 and p value= 0.013 indicating that the model fits the data very well. However, because the chi- square statistic is very sensitive to the sample size it is more appropriate to look at other fit measures.

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	30	43.175	25	.013	1.727
Saturated model	55	.000	0		
Independence model	10	317.669	45	.000	7.059
RMR, GFI					
Model	RMR	GFI	AGFI	PGFI	
Default model	.059	.984	.966	.447	
Saturated model	.000	1.000			
Independence model	.170	.890	.865	.728	

Baseline Comparisons					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.864	.755	.938	.880	.933
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Parsimony-Adjusted Measures					
Model	PRATIO	PNFI	PCFI		
Default model	.556	.480	.519		
Saturated model	.000	.000	.000		
Independence model	1.000	.000	.000		
NCP					
Model	NCP		LO 90	HI 90	
Default model	18.175		3.763	40.437	
Saturated model	.000		.000	.000	
Independence model	272.669		219.848	332.981	
FMIN					
Model	FMIN	F0	LO 90	HI 90	
Default model	.079	.033	.007	.074	
Saturated model	.000	.000	.000	.000	
Independence model	.579	.497	.400	.607	
RMSEA					
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.036	.017	.054	.888	
Independence model	.105	.094	.116	.000	
ECVI					
Model	ECVI	LO 90	HI 90	MECVI	
Default model	.188	.162	.228	.190	
Saturated model	.200	.200	.200	.204	
Independence model	.615	.519	.725	.616	
HOELTER					

Model	HOELTER .05	HOELTER .01
Default model	479	564
Independence model	107	121

Chapter – 6

Findings, Conclusion & Suggestion

- 6.1 Background of The Study**
- 6.2 Summary of Work Done**
- 6.3 Summary of Major Findings**
- 6.4 Conclusion**
- 6.5 Suggestions & Recommendations**
- 6.6 Further Studies**

Chapter 6 Findings, Conclusion & Suggestion

Background of The Study

Technology has resulted in the computerization of the banking institution branches and has given an upward shove to electronic banking channels like automated teller machine, internet banking, mobile banking. Electronic banking is now a mass-market product that is demanded as an integral carrier by using increasing quantity of financial institution customer. Electronic-based habits are replacing the traditional banking gadget and banks are rethinking business manner designs and customer relationship administrative strategies. The definition of e-banking varies amongst researches partially because digital banking refers to a number of services through which financial institution clients can request records and lift out most retail banking offerings by means of a computer, television or cell phone (**Daniel, Mols, & Sathye, 1999; 1998; 1999**). Numerous studies have been conducted on each of these aspects namely, electronic banking adoption, perception towards electronic banking, security and privacy of electronic banking etc. but studies to find awareness towards security and privacy in electronic banking services are rare to find.

Despite the various benefits of Electronic banking, it has several issues also. (**Hutchinson & Warren, 2003**) security of information is frequently noted as being the single most important issue for consumers in e-banking and its associated things to do (**Ally, Mustafa, & Mark, 2005**), say that safety issues and worries are raised by clients extra frequently than usability, performance or other elements when dealing with digital services. It is essential that the banks providing e-banking offerings ought to make the customers aware about the availability of number offerings and their advantages and instruct them about safety & privateers and threat worried in e-banking transaction. Thus, customers with a higher degree of consciousness of security and privacy facets of e-banking are in greater probability to identify e-banking as greatly useful, effortless to use, extra impenetrable and reduce the perceived risk are the considerations that influence their mind-set towards e-banking.

The awareness among consumers regarding security and privacy in electronic banking is justifiable from the fact that according to RBI between, April 2014 and June 2017, Rs251 crore was lost to cybercrimes. This includes credit card frauds totaling Rs130.57 crore, ATM/debit card frauds of Rs 91.97 crore and internet banking frauds to tune of Rs30.01 crore. Similarly, as per the reports of Cyber Blog India on “Electronic Banking fraud in India on December 2017 reveals that Rs Thirty Lakhs thirty-eight thousand one hundred eighty-two was lost due to card skimming and cloning. Therefore, it is an evident that with the adoption of technology many malpractices like phishing and fraudulent activities, misleading information have also grown up.

In this background, it is apparent that security and privacy is the major the factor which influence the consumer towards the adoption of electronic banking services. So, there is a need to measure the awareness (Social, Ethical, Technical and Legal) level among the consumers regarding security and privacy in electronic banking services.

Summary of Work Done

Chapter 1- Introduction

This chapter defines impact of Information technology on Indian Banking sector evolution of E – banking, brief introduction of E banking services, present scenario of e-banking services in India with respect to ATM, Internet banking, Mobile Banking and non – cash retail payments. Further importance of the proposed study has been discussed along with the research objectives of the study.

Chapter-2- Security and privacy in Electronic Banking

In this chapter major concerns are given to privacy and security threats and frauds that are governing these days.

Chapter-3 Review of Literature

This chapter highlights the work done by various researchers on electronic banking. Studies related to consumer awareness towards e-banking services, Indian Banking industry, electronic banking –role and development, Security and privacy in electronic banking, Frauds and Threats in E- Banking, tools and techniques to prevent frauds and increase awareness in E-banking and cases of frauds in India.

Chapter -4 Research Methodology

This chapter of thesis focuses about the facts like background of the study, research approach, statement of research problem, importance of the study, objectives of the study, rationale of the study, research design, data collection method, scale development, population, sampling and sample size, sampling technique, data analysis technique and limitations of the study.

Chapter-5 Data analysis and Testing of Hypothesis

This chapter presents the demographical description of the respondents, data analysis in brief with the testing of the various hypothesis as per the requirement of research objectives, measuring difference among consumer level of awareness regarding security and privacy in electronic banking services with the help of SPSS-23.

Summary of Major Findings

The analysis done among consumers towards awareness with regards to their security and privacy while using electronic banking services can be classified on the basis of gender, age, education and occupation. The following findings from the results are:

A. Social Awareness

Table 6.1: Result of Hypothesis testing based on Kruskal Wallis Test Towards Social Awareness with regards to Security & Privacy in E-Banking Services

H ₀₁	There is no significant difference among consumers with social awareness with regards to security and privacy for Electronic Banking services.	
H _{01.1}	There is no significant difference among the consumer gender groups with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Rejected
H _{01.2}	There is no significant difference among consumer gender groups with social awareness towards security and privacy while using Internet Banking services.	Rejected
H _{01.3}	There is no significant difference among consumer gender groups with social awareness towards security and privacy while using mobile banking services.	Rejected
H _{01.4}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using ATM/Cards(Debit/Credit) services.	Accepted
H _{01.5}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using Internet Banking services	Accepted
H _{01.6}	There is no significant difference among consumer age groups with social awareness towards security and privacy while using mobile Banking services.	Accepted
H _{01.7}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.	Rejected
H _{01.8}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using Internet Banking services.	Rejected
H _{01.9}	There is no significant difference among consumers at different education level with social awareness towards security and privacy while using mobile Banking services.	Rejected

H _{01.10}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H _{01.11}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using internet banking services.	Rejected
H _{01.12}	There is no significant difference among consumers from different occupation with social awareness towards security and privacy while using mobile banking services.	Rejected
H _{01.13}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Rejected
H _{01.14}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using internet banking services.	Rejected
H _{01.15}	There is no significant difference among consumers from different sub-occupation with social awareness towards security and privacy while using mobile banking services.	Rejected

Table 6.2: Result of Hypothesis testing based on Chi-Square Test Towards Social Awareness with regards to Security & Privacy in E-Banking Services

H ₀₅	There is no significant association among consumers with the level of social awareness with regards to security and privacy for Electronic Banking services.	
H _{05.1}	There is no significant association among the consumers gender groups with the level of social awareness towards security and privacy while using ATM/Cards (debit /Credit) services.	Accepted
H _{05.2}	There is no significant association among consumer gender groups with social awareness towards security and privacy while using Internet Banking services.	Accepted
H _{05.3}	There is no significant association among consumer gender groups with social awareness towards security and privacy while using mobile banking services.	Rejected
H _{05.4}	There is no significant association among consumer age groups with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.	Accepted
H _{05.5}	There is no significant association among consumer age groups with social awareness towards security and privacy while using Internet Banking services.	Accepted
H _{05.6}	There is no significant association among consumer age groups with social awareness towards security and privacy while using mobile Banking services..	Accepted
H _{05.7}	There is no significant association among consumers at different education level with social awareness towards security and privacy while using ATM/Cards(debit/credit) services.	Rejected
H _{05.8}	There is no significant association among consumers at different education level with social awareness towards security and privacy while using Internet Banking services.	Rejected
H _{05.9}	There is no significant association among consumers at different education level with social awareness towards security and privacy while using mobile Banking services.	Rejected
H _{05.10}	There is no significant association among consumers from different occupation with social awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected

H _{05.11}	There is no significant association among consumers from different occupation with social awareness towards security and privacy while using internet banking services.	Rejected
H _{05.12}	There is no significant association among consumers from different occupation with social awareness towards security and privacy while using mobile banking services.	Rejected
H _{05.13}	There is no significant association among consumers from different sub-occupation with social awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Rejected
H _{05.14}	There is no significant association among consumers from different sub-occupation with social awareness towards security and privacy while using internet banking services.	Rejected
H _{05.15}	There is no significant association among consumers from different sub-occupation with social awareness towards security and privacy while using mobile banking services.	Rejected

I. ATM/Cards (Debit/Credit)

1. The outcomes of gender wise distribution show that males and females have different opinion however their level of social awareness is similar with regards to security and privacy while using ATM/Cards (Debit/Credit) services.
2. The level of social 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.
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 social awareness 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 varies on the idea of their occupation. The study also found that the extent of social awareness among the business class is higher as compare to professionals, service class and labour class. Further on analysing sub occupation it was found that among professionals the level of awareness of lawyers is high as compare to CA/CS, engineers and doctors and among service class consumers' private employees are more aware than government employees.

II. Internet Banking

1. The outcomes of gender wise distribution show that males and females have different opinion however their level of social awareness is similar with regards to security and privacy while using ATM/Cards (Debit/Credit) services. Statistical analysis also supports these findings.
2. The level of social 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 social awareness 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 varies on the idea of their occupation. The study also found that the extent of social awareness among the service class consumers is higher as compare to professionals, business class and labour class. Further on analysing sub occupation it was found that

among professionals the level of awareness of engineers and lawyers is high as compare to CA/Cs and doctors and among service class consumer's private employees are more aware than government employees. Statistical analysis also supports these findings.

III. Mobile Banking

1. The outcomes of gender wise distribution show that males and females have different opinion regarding social awareness towards security and privacy while using mobile banking service and their level of awareness also differs i.e. males are more socially aware than females. Statistical analysis also supports these findings.
2. The level of social 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 ethical awareness 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 varies on the idea of their occupation. The study also found that the extent of ethical awareness among the service class consumers is higher as compare to professionals, business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of social awareness of CA/CS is higher than engineers, lawyers and doctors and among service class consumers' private employees are more aware than government employees. Statistical analysis also supports these findings.

B. Ethical Awareness

Table 6.3: Results Of Hypothesis Testing Based on Kruskal Wallis on Demographic Factors For Ethical Awareness Towards Security and Privacy in Electronic Banking Services

H₀₂	There is no significant difference among consumers with ethical awareness towards security and privacy for Electronic Banking services.	
H_{02.1}	There is no significant difference among the consumer gender groups with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Accepted
H_{02.2}	There is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using Internet Banking services.	Accepted
H_{02.3}	There is no significant difference among consumer gender groups with ethical awareness towards security and privacy while using mobile banking services.	Accepted
H_{02.4}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using ATM/Cards(debit/credit) services.	Accepted
H_{02.5}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using Internet Banking services.	Accepted
H_{02.6}	There is no significant difference among consumer age groups with ethical awareness towards security and privacy while using mobile Banking services.	Accepted
H_{02.7}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using ATM/Cards(Debit/credit) services.	Rejected

H_{02.8}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using Internet Banking services.	Accepted
H_{02.9}	There is no significant difference among consumers at different education level with ethical awareness towards security and privacy while using mobile Banking services.	Rejected
H_{02.10}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H_{02.11}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using internet banking services.	Rejected
H_{02.12}	There is no significant difference among consumers from different occupation with ethical awareness towards security and privacy while using mobile banking services.	Rejected
H_{02.13}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Rejected
H_{02.14}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using internet banking services.	Rejected
H_{02.15}	There is no significant difference among consumers from different sub-occupation with ethical awareness towards security and privacy while using mobile banking services.	Rejected

Table 6.4 Results Of Hypothesis Testing Based On Chi-Square On Demographic Factors For Ethical Awareness Towards Security And Privacy In Electronic Banking Services

H₀₆	There is no significant association among consumers with the level of ethical awareness towards security and privacy for Electronic Banking services.	
H_{06.1}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit /Credit) services.	Accepted
H_{06.2}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using internet banking services.	Accepted
H_{06.3}	There is no significant association among the consumers gender groups with the level of ethical awareness towards security and privacy while using mobile banking services..	Accepted
H_{06.4}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using ATM/Cards (debit /Credit) services..	Accepted
H_{06.5}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using internet banking services..	Accepted
H_{06.6}	There is no significant association among the consumers age groups with the level of ethical awareness towards security and privacy while using mobile banking services.	Accepted
H_{06.7}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using ATM/ cards (Debit and credit) services.	Rejected
H_{06.8}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using internet banking services.	Accepted

H_{06.9}	There is no significant association among the consumers at different level of education with the level of ethical awareness towards security and privacy while using mobile banking services.	Rejected
H_{06.10}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H_{06.11}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using internet banking services.	Rejected
H_{06.12}	There is no significant association among the consumers from different occupation with the level of ethical awareness towards security and privacy while using mobile banking services.	Rejected
H_{06.13}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H_{06.14}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using internet banking services.	Rejected
H_{06.15}	There is no significant association among the consumers from different sub-occupation with the level of ethical awareness towards security and privacy while using mobile banking services.	Rejected

I. ATM/Cards (Debit/Credit)

1. The level of ethical awareness among the gender group is similar towards ethical awareness with regards to security and privacy 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 ethical 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 ethical awareness 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 varies on the idea of their occupation. The study also found that the extent of ethical awareness among the service class consumers is higher as compare to professionals, business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of ethical awareness of CA/CS is higher than engineers, lawyers and doctors and among service class consumers' government employees are more aware than private employees. Statistical analysis also supports these findings.

II. Internet Banking

1. The level of ethical awareness among the gender group is similar towards security and privacy while using internet banking 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 ethical 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. The level of ethical awareness at different level of education is comparative which means that the opinion of respondents from primary level of education is much like whatever a respondent has post-graduation level of education.

- Occupation wise analysis gives the information that the opinion of all the consumers varies on the idea of their occupation. The study also found that the extent of ethical awareness among the business class consumers is higher as compare to professionals, service class and Labour class. Further we analysed that among professionals the level of awareness of lawyers is high as compare to engineers, CA/CS and doctors and among service class consumers' government employees are more aware than private employees. Statistical analysis also supports these findings.

III. Mobile Banking

- The level of ethical awareness among the gender group is similar towards security and privacy while using mobile banking services which shows that the opinion of male group is much like whatever a respondent from female group. Statistical analysis also supports these findings.
- The level of ethical 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.
- 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 ethical awareness towards security and privacy while using mobile banking 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.
- Occupation wise analysis gives the information that the opinion of all the consumers varies on the idea of their occupation. The study also found that the extent of ethical awareness among the service class consumers is higher as compare to professionals, business class and Labour class. Further we analysed that among professionals the level of awareness of engineers are higher as compare to CA/CS, lawyers and doctors and among service class consumers' private employees are more aware than government employees. Statistical analysis also supports these findings.

C. Technical awareness

Table 6.5 Results of Hypothesis Testing Based on Kruskal Wallis on Demographic Factors for Technical Awareness Towards Security and Privacy in Electronic Banking Services

H₀₃	There is no significant difference among consumers with technical awareness towards security and privacy for Electronic Banking services.	
H_{03.1}	There is no significant difference among the consumer gender groups with technical awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Accepted
H_{03.2}	There is no significant difference among consumer gender groups with technical awareness towards security and privacy while using Internet Banking services.	Rejected
H_{03.3}	There is no significant difference among consumer gender groups with technical awareness towards security and privacy while using Mobile banking services.	Rejected
H_{03.4}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using ATM/Cards(debit/credit) services.	Accepted
H_{03.5}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using Internet Banking services.	Accepted
H_{03.6}	There is no significant difference among consumer age groups with technical awareness towards security and privacy while using Mobile Banking services.	Accepted

H_{03.7}	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.	Rejected
H_{03.8}	There is no significant difference among consumers at different education level with technical awareness towards security and privacy while using Internet Banking services.	Rejected
H_{03.9}	There is no significant difference among consumers at different education level with technical awareness towards security and privacy while using mobile Banking services.	Rejected
H_{03.10}	There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H_{03.11}	There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using internet banking services.	Rejected
H_{03.12}	There is no significant difference among consumers from different occupation with technical awareness towards security and privacy while using mobile banking services.	Rejected
H_{03.13}	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.	Rejected
H_{03.14}	There is no significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using internet banking services.	Rejected
H_{03.15}	There is no significant difference among consumers from different sub-occupation with technical awareness towards security and privacy while using mobile banking services.	Rejected

Table 6.6 Results of Hypothesis Testing Based on Chi-Square on Demographic Factors for Technical Awareness Towards Security and Privacy in Electronic Banking Services

H₀₇	There is no significant association among consumers with the level of technical awareness towards security and privacy for Electronic Banking services.	
H_{07.1}	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.	Accepted
H_{07.2}	There is no significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using internet banking services.	Rejected
H_{07.3}	There is no significant association among the consumers gender groups with the level of technical awareness towards security and privacy while using mobile banking services.	Rejected
H_{07.4}	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.	Accepted
H_{07.5}	There is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using internet banking services.	Rejected
H_{07.6}	There is no significant association among the consumers age groups with the level of technical awareness towards security and privacy while using mobile banking services.	Rejected
H_{07.7}	There is no significant association among the consumers at different level of education with the level of technical awareness towards	Rejected

	security and privacy while using ATM/ cards (Debit and credit) services.	
H_{07.8}	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 internet banking services.	Rejected
H_{07.9}	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 mobile banking services.	Rejected
H_{07.10}	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.	Rejected
H_{07.11}	There is no significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using internet banking services.	Rejected
H_{07.12}	There is no significant association among the consumers from different occupation with the level of technical awareness towards security and privacy while using mobile banking services.	Rejected
H_{07.13}	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.	Rejected
H_{07.14}	There is no significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using internet banking services.	Rejected
H_{07.15}	There is no significant association among the consumers from different sub-occupation with the level of technical awareness towards security and privacy while using mobile banking services.	Rejected

I. ATM/Cards (Debit/Credit)

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 varies on 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 Labour class. Further we analysed 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.

II. Internet Banking

1. The outcomes of gender wise distribution show that males and females have different opinion regarding technical awareness towards security and privacy while using internet

banking service and their level of awareness also differs i.e. males are more technically aware than females. Statistical analysis also supports these findings.

2. Age wise classification shows that the opinion among all the consumer age groups is similar towards technical awareness with regards to security and privacy while using internet banking service but their level of awareness differs i.e. middle age groups (31-45) is technically more aware than younger, elder and older age groups.
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 internet banking service 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 varies on the idea of their occupation. The study also found that the extent of technical awareness among the professional and service class consumers is higher as compare to business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of awareness of engineers, CA/CS, and lawyers is high as compare to doctors and among service class consumers the level of awareness of government employees is quite similar with private employees.

Mobile Banking

1. The outcomes of gender wise distribution show that males and females have different opinion regarding social awareness towards security and privacy while using internet banking service and their level of awareness also differs i.e. males are more technically aware than females. Statistical analysis also supports these findings.
2. Age wise classification shows that the opinion among all the consumer age groups is similar towards technical awareness with regards to security and privacy while using mobile banking service but their level of awareness differs i.e. middle age groups (31-45) is technically more aware than younger, elder and older age groups
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 mobile banking service 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 varies on the idea of their occupation. The study also found that the extent of technical awareness among the professional consumers is higher as compare to service class, business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of awareness of engineers is high as compare to CA/CS, lawyers and doctors and among service class consumers the level of awareness of private employees is more than government employees.

D. Legal Awareness

Table 6.7 Results Of Hypothesis Testing Based On Kruskal Wallis On Demographic Factors For Legal Awareness Towards Security And Privacy In Electronic Banking Services

H₀₄	There is no significant difference among consumers with legal awareness towards security and privacy for Electronic Banking services.	
H_{04.1}	There is no significant difference among the consumer gender groups with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Accepted

H _{04.2}	There is no significant difference among consumer gender groups with legal awareness towards security and privacy while using Internet Banking services.	Rejected
H _{04.3}	There is no significant difference among consumer gender groups with legal awareness towards security and privacy while using mobile banking services.	Accepted
H _{04.4}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using ATM/Cards(Debit/Credit) services.	Accepted
H _{04.5}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using Internet Banking services.	Accepted
H _{04.6}	There is no significant difference among consumer age groups with legal awareness towards security and privacy while using mobile Banking services.	Accepted
H _{04.7}	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.	Rejected
H _{04.8}	There is no significant difference among consumers at different education level with legal awareness towards security and privacy while using Internet Banking services.	Rejected
H _{04.9}	There is no significant difference among consumers at different education level with legal awareness towards security and privacy while using mobile Banking services.	Rejected
H _{04.10}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H _{04.11}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using internet banking services	Rejected
H _{04.12}	There is no significant difference among consumers from different occupation with legal awareness towards security and privacy while using mobile banking services.	Rejected
H _{04.13}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) services.	Rejected
H _{04.14}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using internet banking services.	Rejected
H _{04.15}	There is no significant difference among consumers from different sub-occupation with legal awareness towards security and privacy while using mobile banking services.	Rejected

Table 6.8 Results of Hypothesis Testing based on Chi-Square on demographic factors for legal awareness towards security and privacy in electronic banking services.

H ₀₈	There is no significant association among consumers with the level of legal awareness towards security and privacy for Electronic Banking services.	
H _{08.1}	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using ATM/Cards (debit /Credit) services.	Accepted
H _{08.2}	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using internet banking services.	Rejected

H08.3	There is no significant association among the consumers gender groups with the level of legal awareness towards security and privacy while using mobile banking services.	Accepted
H08.4	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using ATM/Cards (debit /Credit) services..	Accepted
H08.5	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using internet banking services.	Rejected
H08.6	There is no significant association among the consumers age groups with the level of legal awareness towards security and privacy while using mobile banking services.	Accepted
H08.7	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using ATM/ cards (Debit and credit) services.	Rejected
H08.8	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using internet banking services.	Rejected
H08.9	There is no significant association among the consumers at different level of education with the level of legal awareness towards security and privacy while using mobile banking services.	Rejected
H08.10	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H08.11	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using internet banking services.	Rejected
H08.12	There is no significant association among the consumers from different occupation with the level of legal awareness towards security and privacy while using mobile banking services.	Rejected
H08.13	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using ATM/Cards (Debit/credit) services.	Rejected
H08.14	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using internet banking services.	Rejected
H08.15	There is no significant association among the consumers from different sub-occupation with the level of legal awareness towards security and privacy while using mobile banking services.	Rejected

I. ATM/Cards (Debit/Credit)

1. The level of legal 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 legal awareness towards security and privacy while using ATM/Cards (Debit/Credit) service 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 varies on the idea of their occupation. The study also found that the extent of legal awareness among the professional consumers is higher as compare to service class, business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of awareness of CA/CS is high as compare to engineers, lawyers and doctors and among service class consumers the level of awareness of government employees is more than private employees.

II. Internet Banking

1. The outcomes of gender wise distribution show that males and females have different opinion regarding legal awareness towards security and privacy while using internet banking service and their level of awareness also differs i.e. males are more technically aware than females. Statistical analysis also supports these findings.
2. Age wise classification shows that the opinion among all the consumer age groups is similar towards legal awareness with regards to security and privacy while using mobile banking service but their level of awareness differs i.e. middle age groups (31-45) is technically more aware than younger, elder and older age groups.
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 legal awareness towards security and privacy while using internet banking service 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 varies on the idea of their occupation. The study also found that the extent of legal awareness among the business class consumers is higher as compare to service class, business class and Labour class. Further on analysing sub occupation it was found that among professionals the level of awareness of doctors is high as compare to engineers, lawyers and CA/CS and among service class consumers the level of awareness of private employees is more aware than government employees.

III. Mobile Banking

1. The level of legal awareness among the gender group is similar towards security and privacy while using mobile banking 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 legal 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 legal

awareness towards security and privacy while using internet banking service 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 varies on the idea of their occupation. The study also found that the extent of legal awareness among the professional and business class consumers is higher as compare to service class and Labour class. Further on analysing sub occupation it was found that among professionals CA/CS, engineers, lawyers and doctors all are equally aware and among service class consumers' private employees are more aware than government employees.

Table 6.9: Results of Hypothesis Testing Based on AMOS Model for Awareness Towards Privacy in Electronic Banking Services

H₀₉	The model fitted among Consumer Awareness with regard to Privacy in Electronic Banking Services in Udaipur City is good.	
H_{09.1}	Consumer awareness is positively associated with regard to “confidentiality” in e-banking services in Udaipur city is good.	Accepted
H_{09.2}	Consumer awareness is positively associated with regard to “technicality” in e-banking services in Udaipur city is good.	Accepted
H_{09.3}	Consumer awareness is positively associated with regard to “safety” in e-banking services in Udaipur city is good.	Accepted
H_{09.4}	Consumer awareness is positively associated with regard to “sense of lost money” in e-banking services in Udaipur city is good.	Accepted
H_{09.5}	Consumer awareness is positively associated with regard to “alertness” in e-banking services in Udaipur city is good.	Accepted

From the above table it was observed that Confidentiality, technicality, safety, sense of lost money and alertness are the five factors which mostly influence the consumers of Udaipur city while they consider about their privacy in electronic banking services.

Table 6.10: Results of Hypothesis Testing Based on AMOS Model for Awareness Towards Security in Electronic Banking Services

H₁₀	The model fitted among Consumer Awareness with regard to Security in Electronic Banking Services in Udaipur City is good.	
H_{10.1}	Consumer awareness is positively associated with regard to “Scared with system” in e-banking services in Udaipur city is good.	Accepted
H_{10.2}	Consumer awareness is positively associated with regard to “Exposure with internet” in e-banking services in Udaipur city is good.	Accepted
H_{10.3}	Consumer awareness is positively associated with regard to “Exposure with banking instruments” in e-banking services in Udaipur city is good.	Accepted
H_{10.4}	Consumer awareness is positively associated with regard to “Procedural risk” in e-banking services in Udaipur city is good.	Accepted

H_{10.5}	Consumer awareness is positively associated with regard to “Misappropriation” in e-banking services in Udaipur city is good.	Accepted
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From the above table it was observed that scared with system, exposure with internet, exposure with banking instruments, procedural risk and misappropriation are the five factors which mostly influence the consumers of Udaipur city while they consider about their security in electronic banking services.

Conclusion:

In present scenario technology has greatly influenced the consumers and encourage them to use electronic banking services in an innovative manner. Many financial innovations like ATMs, credit cards, Internet Banking, debit cards, mobile banking etc. have completely changed the face of Indian banking. Despite the various benefits offered that electronic banking offered to their consumers, there are also a number of security and privacy issues for the consumers in the online banking sector. Hence, in this research, an attempt is made to measure and analyse the level of awareness to the sample respondents on e-banking products and services.

According to the analysis results, it was identified that the consumers are well aware about the use of electronic banking products i.e. ATM/Cards(debit/Credit), internet banking and mobile banking. The study also reveals that demographic factors i.e. gender, age, education and occupation play an important role for measuring the level of awareness (Social, Ethical, Legal and Technical) among the consumers towards security and privacy in electronic banking services.

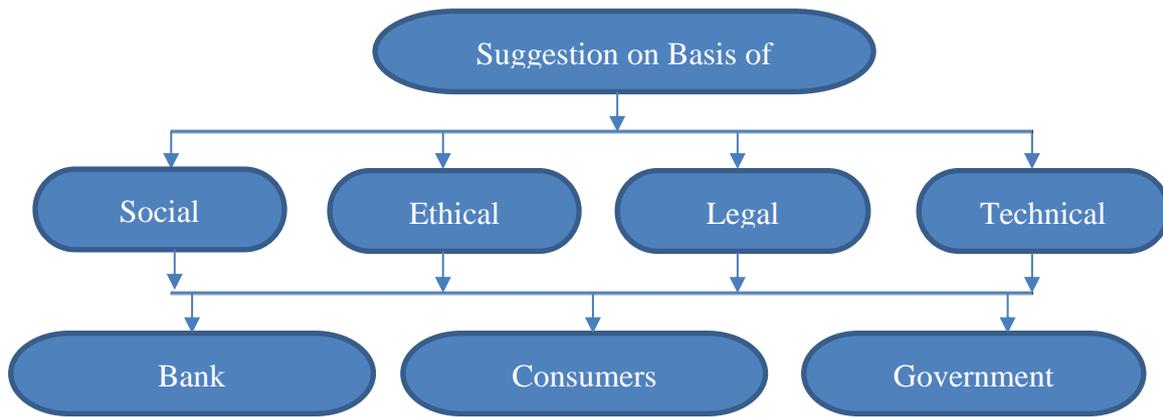
Further it was observed that except gender and age groups, other demographic factors i.e. education and occupation directly affect the level of awareness towards security and privacy in electronic banking services. The study reveals that highly educated consumers are more aware as compare to the consumers who have low level of education. In addition, the findings regarding occupation revealed that the level of social, ethical, technical and legal awareness among the consumers vary as per the electronic banking product offered by the banks.

The study also identifies ten factors such as Confidentiality, Technicality, misappropriation, alertness, scared with system, Exposure with internet, exposure with equipment, safety, procedural risk and sense of lost money which mostly influences the consumers’ awareness about their security and privacy in electronic banking services. Further analysis of 10 factors was done through AMOS in another segment. The results of the analysis propose a model which confirmed that five variables such as Confidentiality, Sense of lost money, Technicality, Safety and alertness are the factors which consumer mostly consider think about their privacy while using electronic banking services. Similarly results showed that another five variables that is Scared with system, exposure with internet, exposure with equipment, procedural risk and misappropriate are the factors which consumer mostly think about their security while using electronic banking services.

The findings will provide useful information to the banking institutions which helps them to understand the consumers where they mostly think about their security and privacy while using electronic banking services.

Suggestion and Recommendation

Based on the findings and conclusion, the following suggestions are drawn which help in improvement in this aspect of security and privacy of electronic banking.



➤ **Suggestion on the basis of Social Awareness**

○ **To the consumers**

1. PIN/password should not contain Date of birth, name or any other personal information. It should not be written in diary, cell phone or any other documents for avoiding the basic risks and fulfilment of primary objective of security and privacy. Never share your password with anyone including family members or to the bank employees.
2. Monitor your bank accounts regularly by generating bank statements and reviewing it for avoiding any unauthorized transaction that may occur in that short period of time.
3. Do not share your debit/credit card number with anyone and also the physical presence holder of card holder is requiring while swapping the card or do not give your card to the service provider.

○ **To the Banks**

1. Proper 24X 7 helpline centres with fully trained employees having adequate knowledge about banking products so that they can give real time solutions to the problems of the consumers may face when they use the electronic banking services.
2. Regular seminars and conferences must be organized by the banks as to aware more and more about security and privacy with the changes in information technology sector.

○ **To the government**

1. Government should make a provision of regular training to bank employees to foster a high level of awareness in them. The training provided should cover the fraud risks associated with the operations for which bank staff is responsible.
2. Government should conduct education programs to ensure consumers better understand their responsibilities in protecting against the frauds in electronic banking.

➤ **Suggestions on the basis of Ethical Awareness**

○ **To the consumers**

1. Do not use unsecure networks like common PC, open wi-fi networks, cyber cafes etc. while using internet banking as possible. Use only official websites for online banking. Avoid as much as to open POP ups and unknown links provided by any other organization while using the services as it will cause password theft, fraud.
2. Avoiding to reply spam e-mails which asked about providing personal information such as bank account number, card number, name of bank etc. by giving a bribe for winning the lottery.

○ **To the Banks**

1. Banks should never send online survey or rating the services after the completion of electronic banking service as additional pop up is being opened for the fulfilment of the information which may help hackers for fraudulent activities.

2. Banks should hire the services of anti-cybercrime professionals to avoid crimes and who take the responsibility of consumers' transactions.
3. Banks webpage must be identified by means of digital certificate which ensures the consumers that they are on the correct site and do not reveal their confidential information on fraudulent activities.
4. Quick fraud-detection competencies would enable banks to minimize their losses and also serve as a deterrent for fraudsters. Various essential requirements in this regard include the era of alerts, redressal mechanisms, and dedicated e-mail ids and phone numbers to facilitate reporting of suspected fraud, mystery purchasing and evaluations.

➤ **To the Government**

1. Government must take steps to prevent cybercrime and scams by setting up cybercrime cells and opening cyber forensic training and investigation labs across the country.
2. Government should invest in new and innovative security equipment's to identify fraudulent transactions to protect the consumers against frauds taking place in electronic banking services.
3. Government should provide free security software to the consumers and educate them to protect themselves from frauds taking place in electronic banking services

➤ **Suggestions on the Basis of Legal Awareness**

○ **To the consumers**

1. Ask your bank how they are keeping your records secure by getting a knowledge about any encryption technology which is used for security and whether banks are monitoring accounts for fraudulent activities and if it limits your liability for unauthorized transaction
2. Always check your bank account after making any online transaction and confirm whether or not the right amount has been deducted from your account. If you see any discrepancies in the amount, inform the banking institution without any delay.
3. Always check complete details of the bank account before initiating the bank transfer in case if fraud and wrong transaction is observed, immediately report the details to the police and to your banks.

○ **To the Banks**

1. Name and contact number of the complaint redressal authority officer who is dealing with e-banking frauds should be made known and widely publicized. Assigned officer should ensure the genuine grievances of customers are redressed without any undue delay.
2. Banks should provide the direct link to the consumers on the home page of their websites for lodging the complaints and ensure that immediate response is sent to the consumers acknowledging the grievance along with the registered grievance number.
3. Banking organization need to sincerely notify to the clients the timeframe and the instances in which any stop-payment instructions ought to be generic.

○ **To the Government**

1. Government should sponsor a specialized police team which targets fraudsters responsible for electronic banking fraud.

➤ **Suggestions on the basis of Technical Awareness**

○ **To the consumers**

1. Never buy anything online using your debit/credit card from a site that doesn't have SSL (secure socket layer) encryption installed.
2. Secure personal computer with proper anti-virus is the best option for secure internet banking transactions. Always use a good antivirus software to protect your device from the plethora of malware, spam, spyware on the internet.

3. Choose an account with two factor authentications as while logging in the application two-way authentication is required for making the transaction.
- **To the Banks**
 1. Banks additionally pay extensive interest to their firewalls. They desire to be certain that their web banking machine is protected from assaults over the internet. So, they are now not connected at once to the web. Their connection is made through a firewall which blocks unwanted undertaking on the server.
 2. Banks need to use secured socket layered encryption for customers on-line banking transactions. This is a distinctive form of encryption. The gadget will use a one-of-a-kind grasp key to put every transaction into code and then that code will not be used for other transactions.
 3. Banks need to put in place automated fraud-detection system that are based on advanced statistical algorithms and techniques.
 - **To the Government**
 1. Government should hire the agencies who take measures to prevent cyber-attacks, scams and net banking frauds.

Further Studies

The issues examined within the limitation segment ought to be taken as point for proceeding in this region. Research for consumer awareness towards security and privacy in E-banking is still in a beginning stage in India so there's lot more to think about and analyse a few avenues for continuing examining in this existing field as discussed below.

- The research model created in this study give adequate satisfactory result on awareness towards security and privacy in electronic keeping money services but there's scope for modifying the model. The factor recognized by the research may be validate further and more factor components may be considered for better awareness level of the model. In this manner, further study could look into this which would be more statistically fit.
- Further research could be done for security and privacy in the area of online e-wallet services such as Paytm wallet, BHIM, Citrus, Pay money etc.
- Investigate the difference between users and non-users regarding their awareness towards security and privacy in electronic banking services.