Chapter 1

INTRODUCTION
INTRODUCTION

1.1 Internet Banking an Overview

The Indian banking system has undergone a technological change over time. The banking system in India has created position for itself in the modern forceful global bubble where adoption of new and innovative technological development carries the key to additional room of banking business and its future improvement. The outstanding types of innovation in technology and solid amalgamation with information communication technology (ICT) prepared an archetype transfer in the Indian banking industry. Technology itself formed its own world in the global digital economy. Internet banking is an online system which enable customers or businesses to access their bank accounts, do their banking transaction online, getting information about banking products and services. The innovative initiation of internet banking has empowered banks with innovative ways of delivering their banking services to customers. Information communication technology (ICT) is becoming an important factor in the future development of financial services industry, and in particular banking industry. The dynamic forces behind the rapid renovation of banks are going through certain important changes in innovations in ICT. The growing applications of computerised networks to banking reduced the cost of transaction and increased the speed of service to a large scale. In today’s digital global economy, there is competition around the world in different sector or industry and with the explosion of new sectors in the present world, banks are changing their strategies to reach customers worldwide with ease and in a cost effective manner. Therefore banks are adopting the latest technology in order to deliver their banking and financial service product to the customers with a cost effective manner. Now days in order to provide more benefits to customer and to increase the performance of banks they are adopting the cost-effective distribution channel to distribute their financial or banking service to the customer. Through internet banking banks want to keep the existing customers as well as to attract new customers for their banks. Internet banking uses the internet platform or internet services as electronic delivery channel in order to deliver their banking services such as
balance enquiry, printing statement, fund transfer to other bank accounts, utility bill payments and so on and new banking services such as online payment or electronic payment without visiting to bank branches. As banking technology has focused on reducing cost of distribution, internet banking enable customers to go for banking at a remote place without visiting the bank branches. Now a days many customers are migrating towards the adoption of this distribution channel and in India all most all private and public banks are providing internet banking service facilities to give more value added services to their customers. The objectives of internet banking include cost manage through reduction in operating cost, performance improvement by making the service available at all times of the day, wider coverage by enabling the access to service from any location, revenue growth through better quality and additional non-financial services, and customer convenience through personalized services. Internet banking infrastructure investment include the promise of transaction cost reduction by limiting overheads associated with bank staff and bank branch costs and to provide better services to customers who increasingly desire 24 hour banking.(Khalfan, et al (2006)). Internet Banking facilitates a convenient and successful move toward to handle personal finances, as it is accessible 24 x7 hours without visiting the bank and from any remote locations. By using the internet platform, for providing banking services, convenience of customers are taken into account and this not only help the customers but also it increases the efficiency of the banking operation. It provides a boundary less banking i.e. doing transaction from anywhere in the world or within anywhere in the country. Internet banking is limited by operational timings, no geographical barriers and the services can be offered at a very small cost. Day by day there is an increase in number of users accessing internet in Orissa for other activities i.e. email, information search etc, the number of financial transactions carried out over Internet remains low. It is observed that potential users either do not adopt internet banking or do not use it continually after adoption. Most of the banks’ websites are getting accessed by huge number of customers in Orissa but only a very number of customers make online transactions. Although the use of Internet banking by customers is increasing in India but the adoption rate of Orissa is slower in comparison to other states as per the views of bankers of Orissa. Due to the slow adoption rates, the transformation of banking services from ‘bricks and mortar’ to ‘clicks and mortar’ is yet to eventuate to the degree it was supposed to be adopted or predicted in comparison to the adoption in developed countries. Among the customers mind internet banking is still ranked in less important than the other
financial distribution channels i.e. ATM, Tele banking, branch banking etc. In order to be successful, banks must understand to what extent customers are adopting or using Internet Banking services. Banks must regularly monitor the customer’s requirements frequently to understand the factors affecting their intention to adopt internet banking services. Sathye (1999) found that consumers will not be ready to change from present familiar ways of banking to Internet banking unless their specific need is satisfied. Researchers suggested banks for considering influence of socio economic conditions that affects income and levels of affluence, and the consumers’ ability to use internet banking need to be considered. Lee and Lee’s (2001) recent study shows that adopters of Internet banking tend to be more highly educated, more wealthy and younger with good knowledge of computers and especially familiarity with internet usage. Venkatesh and Morris, (2000), investigated gender differences in the overlooked context of individual adoption and sustained usage of technology in the workplace. Further banks must demonstrate the benefits of Internet banking. But due to limited number of studies that have been conducted in understanding users’ adoption, availability of information in this context is found limited in Orissa. In India private banks were the first to implement internet banking services and the pioneer player exploring the adaptability of the internet tools in the Indian banking industry. Banks can connect to the customers at any place and at any time though the internet applications. It is also playing a major role in marketing strategies resulting in high performance in the banking industry. Customers get satisfaction from the internet banking system when they derive maximum convenience and compatibility while transacting online. Banks adopting internet banking service are very much interested in knowing customers experience to a larger extent than just finding customer satisfaction. From this perspective it is very much essential to assess the customers experience for electronic banking product and services. Customers perceive the internet banking service as main feature in doing banking and evaluate the service on different parameters like convenience, 24x7 access, security, trust etc. The relative success of Internet Banking to date can be gauged by identifying the number of active users and anticipated future adopters. All major banks have introduced their internet banking services and are constantly investing and expanding their products and services in Orissa. Privacy, security and Trust are found to be the most important issues that inhibit customers from using Internet banking in Orissa. Few research or no research have been conducted in Orissa on factors that influence customer’s attitude and their behavioral intention to use internet banking. This research is an attempt to know customers
attitude towards internet banking and the findings of this research study will help the public and private sector bank in developing their marketing strategies to endorse banking products and services over the Internet in future.

1.2 Relevance of the Study

Indian banking system has gone through a radical change through the years where deregulation, technology innovations, liberalization, privatization and globalization are considerably affecting the banking services. Techno-innovation has transformed the banking business offering ATMs, credit cards, internet-banking, EFTs etc. along with other aspects of transformation, are replacing conventional products and services and creating new scale in banking environment. The twenty-first century is characterized by the use of ICT which has revolutionized our operational and livelihood patterns. The financial services industry has recently been open to historic transformation. So-called e-developments are budding and advancing quickly in all areas of financial intermediation and financial markets i.e. e-finance, e-money, e-banking, e-brokering, e-insurance, e-exchanges, e-supervision etc. IT is the most important factor in the future development of banking, influencing banks’ marketing and business strategies. An innovative age of banking, called as Internet banking, where customers do their financial transactions electronically through the devices i.e PC, Laptop, Notebooks at convenient hour without restricted to the bank operation hours. The success of internet banking adoption depends ion the customer attitudes towards this technology and their behavioral intention to use it. Factors’ affecting customer attitude and intention to use is a major concern for banks in order to provide a cost effective delivery channel. Many countries and particularly western countries have investigated the factors affecting customer acceptance and adoption of Internet banking (Lassar et al., 2005; Kolodinsky et al., 2004 in U.S), Europe (e.g. Littler and Melanthiou, 2006; Pikkarainen et al, 2004; Howcroft et al., 2002; Karjaluoto et al., 2002; Daniel, 1999), Australia (e.g. Lichtenstein and Williamson, 2006; Sathye 1999),and Asia (e.g. Yiu et al., 2007; Chan and Lu, 2004; Suh and Han, 2002). These researches about customer attitude and acceptance of internet banking has led to several technology acceptance theoretical models which origins its root from Information Technology or Information Communication Technology, sociology and psychology. In context of Orissa, there is few research regarding factors affecting customer attitude towards internet banking.
The present study aims, to investigate the world of Internet Banking through the eyes of the consumer, and by so doing seeks to increase the understanding of consumer attitude formation and behaviors towards internet banking. The research attempts to provide a specific understanding of internet banking from a consumer point of view and will provide success factors that influence the customers' attitude to use Internet banking as a main banking distribution channel in Orissa. Basing on the outcome of the research the banks in Orissa can design their strategic in promoting their financial services delivery through the Internet platform. In Orissa, now a days customer’s are motivated towards using electronic banking and shifting from branch banking to branchless banking, which provides many benefits, challenges, and also opportunities for the banking sector. In Orissa there is need for informational as well technological change in the banking industry. The study mainly focused on customer attitude and behavioral intention to use internet banking. Courtier & Gilpatric (1999) recommended that banks and financial companies must survey customers’ requirements on a regular basis in order to understand factors that can affect their intention to adopt or use internet banking. Researchers (I. Brown, Hoppe, Mugera & Newman, 2004) suggested banks for considering influence of national factors while introducing their services. For example a socio-economic condition that affects income and levels of affluence and the consumer’s ability to use internet banking need to be considered, further banks must be equipped with necessary technological infrastructure and resources to demonstrate the potential benefits of this new channel. But due to the limited number of studies that have been conducted in understanding users’ adoption or usage intention, availability of information in this context found limited for many states of India, including Orissa. Ravi et.al (2007), pointed out internet banking has not been widely accepted as expected in India. Malhotra & Singh (2007) suggested that banks with high customer base or banks with younger age, private ownership and lower branch intensity possess high probability of adoption of this new technology. Banks with lower market share also perceive internet banking technology as a means to increase the market share by attracting more and more customers through this new channel of delivery. Sathye (1999) note that low awareness of Internet banking is a critical factor in causing customers not to adopt internet banking. Currently all banks in India are in the process of building world-class Information Technology infrastructure. When banks invest heavily on technology, they must ensure that the facilities they provide match with the needs of the clients. Without understanding the preferences of the customers, whatever investment banks make on
technology will result in the loss of both money and customer base. So, the present study will provide many implications to bankers in understanding the customer preferences and help the banks to achieve better customer satisfaction. Therefore, research effort, especially an empirical study on the development of e-banking application is apparently in need. Further, there have been many studies published in many foreign countries on e-banking and internet banking based on customers’ perspective, but the number of studies on this area in Indian context is meager. Therefore, this study is significance to bridge this gap. Davies F, Luiz M & Bruce C (1996), used neural network techniques for analyzing customers’ perception towards ATM services. They analyzed the impact of input layer (explanatory variables) on the hidden layer characteristics, through the out layer i.e. endogenous variables like level of satisfication with ATMs services, frequency of use etc. This study has adopted the implementation of neural network in finding the customer adoption of internet banking or not. Neural network can bring together the psychometric and econometric approaches to the measurement of adoption of internet banking. it will define the user types as adopter or non-adopter and will give an idea how the bank will address the needs of each segment. This study also aims at determining factors underlying the adoption of internet banking by customers in Orissa. Once factors are identified for the adoption of internet banking, banks can design their marketing strategies to cope with challenges of attracting more customers towards usage of internet banking on order to reduce the operational cost as well as increased efficiency in delivering services to customers. The findings from this research will enrich the existing literature knowledge base in understanding customer attitudes towards the adoption of internet banking. The study deals with customer attitude as well as the actual usage behaviour. Customer attitude towards adoption of internet banking, rather than just behavioral intention to use. Moreover, the influence of external variables is examined. TAM is one of the most utilized models for studying IS acceptance (Al-Gahtani, 2001; Venkatesh and Davis, 1996; Davis et al., 1989). The current study proposes the application of the technology acceptance model (TAM) to capture factors which have significant impact on the acceptance of Internet banking. Banks need to understand which factors may influence and attract customers to use internet banking, so that they can build long relationships with existing customers. In the present banking environment, banks are competing for the same customer segment and resources being spent in terms of channel development and other efforts are made to attract the same customer for adoption of different banking channel. Different drivers contribute to
the growth of internet banking i.e. change in demographic scenario – younger consumers entering into the market. Customers’ are concerned about the cash crime so they will continue to drive for the adoption of internet banking. Internet browsing will reduce cost of financial transaction and enable new players to offer financial services. Economic meltdown or global banking recession may have an impact on adoption of internet banking. Now a day’s bank is facing challenges in proper segmentation of the customer demographics or psychographics with respect to adoption of internet banking. There has been no such study in respect to bank selection criteria or service selection criteria in Orissa. As banks are adopting changes in technology, an life style of consumers and thought process of customers are changing rapidly this study will give light in understanding the psychographic factors that are responsible for the customers for adopting the internet banking services.

1.3 Research Problem Statement

In today's digital world, the use of internet by customer’s are growing rapidly and this has led to the development of internet banking adopted by the banks all over the world. This techno-innovation has created competition among the banks to create a competitive advantage over others. Banks are trying to fulfill the ever changing probability of better performance expectation from customers and it is fulfilled by adoption of new innovative technology or improvement in the existing services or technology time to time by the banks. This has lead to the development of cyberspace banking or internet banking and as consequence the branch banking becomes less significant. Internet banking has provided customers more control in doing their banking transaction as well as performing their financial services. Customers have the control on their transaction as when, what and how much needed. From the bankers view point few percentages of bank customers are banking online or have banked online earlier in Orissa. Consumer acceptance of internet banking is not that encouraging figure in comparisons to other states and also very little evidence is there in understanding of factors influencing the customers attitude towards adoption of internet banking. The study tries to understand how socio-demographic characteristics, consumers’ perception such as compatibility, complexity, perceived risk, cost, social influence (opinions of family, friends, colleagues) and customers’ attitudes formation towards internet banking persuade the adoption of internet banking which can allow banks
to know the behaviour and pattern of online transaction to have a competitive advantage over other banks as well as to increase fat percentage of market share in internet banking. Orissa lacks behind than others states in India in knowing factors affecting the customer’s adoption of internet banking and attitude formation towards internet banking, therefore there is a need for a study of this temperament and to explore customers banking services behaviour and to assess their attitudes towards internet banking services. Branch banking is till popular but customer’s preferences over other channels will change their behaviour radically over the time.

1.3.1 Research Questions

Hence the following questions arise:

1. What are the factors that influence the adoption and usage of internet banking in Orissa and to find out customers’ attitude towards adoption of internet banking?

2. What is the relationship between demographic variable and customers’ perception towards internet banking; and, how the customers’ using and not using internet banking in their perception differs.

3. Why are users not using internet banking services despite its assured benefits?

4. Do banks communicate key points on security and privacy measure they have implemented to protect users’ interest?

5. Do banks make efforts to understand customers’ requirements on a regular basis or to create awareness of their products and services?

6. How the neural network can bring together the psychometric and econometric approaches to the measurement of attitudes towards internet banking?

7. What is the relationship between consumer characteristics i.e. voluntary, technology anxiety and impulse tendency on the customer attitude towards internet banking?


“8”
9. Do the users level of experience with internet activities have an impact on perceived usefulness which in turn influence the adoption level

This research study will enrich the literature knowledge base in understanding the factors and providing precious information to banks in designing their strategy for attracting different customer groups towards the adoption of internet banking and reducing the operation cost by pulling more customers to internet than the branch banking.

1.4 Research Objectives

The major research objectives of the study were

- To identify and describe the factors on their attitude towards adoption of internet banking.
- To investigate the effects of perceived usefulness, perceived ease of use, perceived security and risk on perceived intention to use mediated through customer attitude in the context of internet banking.
- To investigate the effects of relative advantage, compatibility, trialability, observability and image on perceived behavioral intention to use internet banking.
- To study the effects of voluntary, anxiety and impulse tendency of customers on attitude towards internet banking.
- To study the attributes that would play a role in the internet banking channel selection behavior of a customer and attitude towards internet banking.
- To describe the preferences for various delivery channels by Internet banking users and non-users and analyze the implementation of technology made by Indian banking industry and identify various internet banking services/products adopted by Indian banks.
- To explore customer value perceptions in internet banking and bankers’ perspectives on internet banking activities of customers’ and promotional activities taken by banks in order to promote the internet banking.
To evaluate the integration of Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), Social Cognitive Theory (SCT), Institutional theory (IT), and Diffusion of Innovation (DOI) provides a strong theoretical basis for the examining the customers attitudes towards internet banking adoption.

**Hypotheses of the Study**

The following research hypotheses are framed and tested in the present study.

- **H₁**: Demographic attributes i.e. age, income, education, gender; marital status and occupation have no significant impact on attitude towards internet banking.
- **H₂**: Individuals experiencing higher coercive pressure and normative pressures, are more likely to adopt internet banking.
- **H₃**: There is a significant difference between users and non-users of internet banking with regard to their perceptions of social influences.
- **H₄**: Perceived usefulness, perceive ease of use, perceived self efficacy and perceived security and risk have no significant impact on attitude towards internet banking.
- **H₅**: Relative Advantage, Compatibility, Observability, Trialability and Image have no significant impact on attitude towards internet banking.
- **H₆**: Attributes i.e. Voluntary, Anxiety and impulsive tendency have no significant impact on attitude towards internet banking.

**1.5 Research Design and Method of Study**

**1.5.1 Research Design**

Research design is the blueprint or comprehensive master plan for the collection, measurement and analysis of data to arrive at a conclusion. This study is mainly based on field survey and is exploratory type of study, which is appropriate, when the problem is difficult to distinguish, since an attempt has been made to describe the customer attitudes regarding the adoption and usage of Internet banking. The sources of data are mainly primary and the data were collected through tailor made questionnaires from bank customers and bankers. Literature on technology adoption theories was reviewed and the research frameworks was modeled that integrated factors that might have an influence on
the customer’s attitudes towards adoption and which will have an effect on the perceived behavioural intention to use internet banking services by customers’ in Orissa. Hypotheses were laid down to explore the impact of these factors by means of data collected from sample from population of Orissa.

1.5.2 Research Approach

The purpose of research is to create a better understanding of the actions of individuals, groups and institutions, and to analyse the influence on each other. Some researcher have preferred to the positivistic paradigm as ‘quantitative’ and the phenomenological paradigm as ‘qualitative’. This study is located within the positivistic paradigm as ‘quantitative’ rather than the phenomenological paradigm as ‘qualitative’, as the study intends to gain an overview of the present situation pertaining to adoption and continual usage of internet banking services in Orissa. In this study hypothesis were formulated by applying logical reasoning to the findings of prior studies. These hypotheses are tested with data collected from a survey using instruments applied in prior studies. An attempt was made to select samples that represent the characteristics of Orissa population. Further, we observe the problem domain, internet banking services, as an observer observes the world and remain neutral through the study. Therefore, this is a positivistic approach.

1.5.3 Sample Design

The present study has been conducted in the state of Orissa. The public and private sector banks were purposely selected for the present study. The sample for the study comprises of 407 bank customers. The population of this study consisted of bank customers in the Orissa across various sectors, industries, employed and unemployed. Customers from different public and private sectors banks in Orissa were considered as population of research concern. Population was segregated into several mutually exclusive subpopulations or strata. Stratified random disproportionate sampling was used .It was decided to collect data from customers in the different Governmental/ Semi Governmental/ Private Organization/ Private and Public Sector Banks / Commercial Organizations /Educational institute/ Universities/ATM counter/Shopping Mall/Insurance/ Businessman/ Small Retail stores etc covering different district headquarter of Orissa, so that the researcher could delivery survey questionnaires directly to customers. While selecting the
survey areas emphasis was given on internet access, educational levels, occupation and income since these factors were found to produce gap online and offline population. Therefore areas were selected where values for these factors were at par. Further importance was placed on areas with larger number of internet banking users. The results from the study can then be weighted i.e. based on the proportion of the strata to the population and combined into appropriate population estimate. Stratified random sampling was used to increase a sample’s statistical efficiency, to provide adequate data for analyzing the various subpopulations or strata and to enable different research methods and procedures to be used in different strata. With 600 distributed, only 407 filled in questionnaires were received by the researcher with response rate of 67.8 per cent, complete information were finally retained for the study. Considering different formula for sample size calculation, survey cost, time requirement, unwillingness of the customers to provide data and available resources, it was decided to survey 407 subjects for this study.

1.5.4 Data Collection methods and Techniques

There are number of approaches for a researcher to undertake data collection and it depends upon the questions, depthness and the time period of the research. Depending upon the research question and objectives, a researcher may choice different method for the study i.e. Experiment, logituditional study, cross sectional study, survey or case study. In this research survey method was used as an effective and powerful tool for collecting data on customer’s attitudes, behaviour and characteristics. The survey is made when a sample of elements is selected to be representative of the investigated population. Some time it is the only available option for acquiring information to examine research questions. Considering the benefits of survey methods and its common use in business studies, a survey method was considered suitable for this study. Empiricial data have to be collected and will be used for analyzing and finding results. A structure questionnaire was designed for collecting the empirical data. While preparing the questionnaire review of literature, results of other researcher and feedback from bankers and experts in the area of interest were taken into consideration. The empirical data was collected from customers in Orissa to achieve the research objectives. 7-point likert type scale, ranging from 1 representing “strongly disagree” to 7 representing “strongly agree”. As part of the pilot testing initially questionnaire was developed and pre tested on small sample of bank customers to ensure
the quality of the questionnaire that the questions were not misleading or confusing to avoid any bias answers. After revision, a final questionnaire was developed to collect the data. The questionnaire designed consisted of different sections: first section comprises questions concerning the demographic characteristics of the respondents, motivation of using internet banking and preference of ranking among banking services used, the second part consisting of questions regarding frequency of using banking services, using branch banking, usefulness of internet banking services and factors considered for selecting an internet banking account, the third section explore the respondent’s attitude towards Internet banking. The demographic characteristics like gender, age, occupation, education level, salary level, internet experience and so forth. And the factors-related items collected some constructs from TAM, DOI, SCT, TRA, TPB, IST such as perceived usefulness, perceived ease of use, perceived risk. Means-end approach and laddering interview technique was used in order to reveal how different value creating factors are hierarchically structured and related to each other. Items used for the constructs were adapted from prior research to ensure the content validity of the scale used. The scales for perceived usefulness, perceived ease of use, and behavioural intention were measured using items adapted from the original instrument (Davis, 1989) and subsequent applications of TAM to internet banking and other technology acceptance studies (Agarwal & Prasad, 1997; Davis et al., 1989; Luarn & Lin, 2004; Venkatesh & Davis, 2000; Wang et al., 2003). Items for the perceived self-efficacy construct were adapted from an original instrument developed by Compeau and Higgins (1995) and from other studies that have used self-efficacy as a construct (Tan & Teo, 2000; Venkatesh, 2000; Wang et al., 2003). Measures of perceived risk were adapted from studies on Internet banking (Tan & Teo, 2000) and e-commerce (Jarvenpaa & Todd, 1997; Lim, 2003). The total sample size was set at 407 usable responses for data analysis. This study targeted different district headquarters i.e. Bhubaneswar, Cuttack, Puri etc of Orissa customers with a observation to include all segments of the population who currently use or be going to use Internet banking in the near future and non-users. Questionnaires were given to - people in employment or self employment or students or businessman or housewife etc. and in the age group of 20-65 years. The basis was that, perhaps, these members of the general public would be more inclined to use internet banking. The collected data are tested for reliability / validity using Reliability / Item analysis with Cronbach Alpha Coefficient.
1.5.5 Tools and Techniques for Data Analysis and Modeling

Survey data was entered into a statistical package, SPSS (Statistical Package for Social Sciences) for analysis and graphical presentation of the results. The collected data are first tested for reliability /validity using reliability/Item analysis with Cronbach’s alpha coefficient using SPSS, frequencies and percentage distributions of respondents’ demographic information were developed in tables to check that these responses were representative of the larger population of Orissa. For each research variable was computed to test for reliability, while factor analysis was used for convergent and discriminat validity for the variables. Hypotheses were tested using linear regression analysis. Multi-linear regression analysis was used to test models’ prediction capabilities. To test whether or not the observed differences of two samples means drawn from independent populations are significant, is tested through t-test. The use of t-test is made when the population standard deviation for either population is unknown or when the one or both samples are small (n1<30). The degree of the association between two variables is computed by using correlation coefficient, denoted by ‘r’. A measure of linear correlation coefficient between two variables x and y is measured by correlation coefficient. This measure can assume any value between -1 to +1 and is independent of units of measurements. The multivariate technique, Factor analysis with Principal Component method is applied to identify the dimensionality underlying various characteristics of internet banking services. The significance of difference in group mean perception scores is tested with t-test for two groups and with F-test (also called one-way ANOVA) for more than two groups. The cross-tabulation analysis between two factors is also used and association between two factors is tested using chi-square analysis. The unique impact of demographic and other independent factors on adoption, intention of using internet banking services is evaluated with the help of multiple regression technique. For structural equation modeling purpose, AMOS-4 software was used. Structural models were tested on the basis of path analysis. Chi-squared Automatic Interaction Detection (CHAID) decision tree technique was used for prediction and classification of the customer’s demographic profile. CHAID graphically display multivariate relationship and its tree structure output is easy to interpret. This technique was used in the light of directing and database marketing research and makes a prediction how different group of customers responses affect the variables. The Two-step clustering analysis procedure which is an exploratory tool was used in natural grouping of
clusters within the dataset based on the input variables. The Multilayer Perceptron (MLP) procedure was used in producing a predictive model for one or more dependent (target) variables based on values of the predictor variables. The bank desires to classify features that are symptomatic of customer’s those are probable to adopt internet banking and exercise those features to classify as yes or no adopter of internet banking.

### 1.6 Scope and Limitations

The present study is in Orissa. The current study was conducted at one of time and the study represent slice of time, and does not show how customers’ attitude may change over time. Further study employing a longitudinal design would ascertain whether or not the customers’ attitude towards adoption of internet banking would change over time. This research provided a useful snapshot of consumer data, helping to understand the phenomenon of study. There were limitations arising from the sample used in quantitative study. The sample size is small looking at a population’s attitude and behavior. Despite these limitations the present study provides precious insights into the study of internet banking adoption. The acknowledged limitation of this study has led to suggestion for further research. Further the scope of the study is limited to Orissa, where adoption of internet banking is at the early stage and such the results may not be able to generalize in the contexts of developing countries where it has reached the maturity stage. Lack of earlier researches in this Orissa, restricted the scope and direction of the present study. Reluctant customers became a problem at the time of collection of data. In-spite of assurance given on secrecy of the survey some customers’ did not cooperate due to some apprehensions. Through, sufficient care has been taken to study the various aspects of the topic, but the study is limited to different cities of Orissa, therefore leaving scope for further research in this area in future.

### 1.7 Summary of Chapters

The study is divided into eight chapters.

**Chapter One:** is the introductory chapter, which introduces the background to the research topic-internet banking and customer attitudes, which highlights introduction, relevance of the study, Research Problems, Objective and significance of the research, Research Methodology adopted, Scope & Limitations, Chapterisation and references.
Chapter Two: reveals the review of literature from various sources for an understanding of the development of banking i.e. pre and post banking development. It makes a critical examination of the trend and progress of banking in India with special reference to growth and development of banking in Orissa.

Chapter Three: Reveals the review of literature on theoretical background of technology adoption in internet banking i.e. Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Diffusion of Innovation (DOI), Social Cognitive Theory (SCT), and Institutional Theory (IST). It depicts the research model.

Chapter Four: Data analysis, based on data collected from primary sources through questionnaire among user and non-users of internet banking is analyzed. This gives a clear picture of customers’ attitudes towards adoption of Internet Banking. Data analysis based on banker’s perspectives on internet banking activities of customer’s and customer value perception analysis is analyzed.

Chapter Five: This chapter contains Path analysis and Structural equation modeling (SEM) with the model result and test of goodness of fit.

Chapter Six: This chapter focuses on customer segmentation analysis using the Chi-Squared Automatic Interaction Detection (CHAID) and clustering techniques.

Chapter Seven: This chapter contains the forecasting of customer adoption of internet banking based on the neural network model and model summary and results.

Chapter Eight: is the conclusive chapter, which also means the summary of the study. This gives a clear picture of findings of the study and suggestions for further research opportunities are recommended.