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Page | 1

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# DEVELOPMENT AND IMPACT OF MOBILE BANKING IN NEPAL



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## DEVELOPMENT AND IMPACT OF MOBILE BANKING IN NEPAL

Modern banking system has been completely changed with the initiation of Mobile Banking.

This thesis aims to provide information on the status of Mobile Banking in developing countries like Nepal as well as the impact of mobile banking in Nepalese society.

As a research methodology, an informal interviews with the friends who are currently working in the banking sector in Kathmandu, Nepal were carried out through different media such as Facebook, Viber and Skype. In addition, a questionnaire survey was conducted with a sample size of 500 respondents to support the data collection process. In order to minimize errors in data collection process, the questionnaire was tested with a pilot study and necessary adjustments were carried out. The main objective behind the research methodology was to find out the present situation of Mobile Banking in Nepal. In addition, relevant literature and internet articles were also studied throughout the research process in order to create good theoretical background.

The data collected from questionnaire survey were displayed through different graphical figures such as pie chart and table in this thesis. From the outcome of questionnaire survey, it was found that majority of mobile banking users are of young generation. According to survey result, 46.37% of the respondents were mobile banking users. As Mobile Banking is a new banking services in Nepal, the above figure shows positive impact among Nepalese society.

As Nepal is a developing and attempting to initiate new technologies in the country, this thesis will help to provide information on how Nepalese people are reacting towards this new technology of banking facility.

KEYWORDS:

Mobile banking, Nepal, Viber, Facebook, Skype, pilot study, technology

## Contents

<b>LIST OF ABBREVIATIONS (OR) SYMBOLS</b>	<b>5</b>
<b>1 INTRODUCTION</b>	<b>6</b>
1.1 Research Objectives And Questions	6
1. What are the challenges of mobile banking in Nepal?	7
2. What is the status of banking system in Nepal ?	7
3. How is the status of Nepalese customers with mobile banking ?	7
1.2 Structure Of The Work	8
<b>2 BANKING SYSTEM IN NEPAL</b>	<b>9</b>
2.1 Overview	9
2.2 Present Situation	9
<b>3 LITERATURE REVIEW</b>	<b>12</b>
3.1 History Of Mobile Banking	12
3.2 Types Of Mobile Banking Architecture	13
1. SMS OR MMS-BASED MOBILE BANKING:	13
2. WEBSITE-BASED MOBILE BANKING	14
3. CLIENT-BASED MOBILE BANKING	16
<b>4 MOBILE BANKING IN NEPAL</b>	<b>18</b>
4.1 Mobile Banking Development	18
4.2 Mobile Banking Payment Sample	19
4.3 Mobile Banking And Customer's Behavior	21
<b>5 RESEARCH METHODOLOGY</b>	<b>23</b>
5.1 Research Process	23
5.2 Survey	24
5.3 Sampling	25
<b>6 ANALYSIS OF RESEARCH METHODOLOGY</b>	<b>27</b>
6.1 Analysis Of Survey	27
6.2 Limitation	32
<b>7 CHALLENGES OF MOBILE BANKING IN NEPAL</b>	<b>33</b>
7.1 Infrastructure Development	33
7.2 Attitude Towards Banking	33
7.3 Trust In Mobile Banking	34
7.4 Linguistic Factor	34
7.5 Handset Operability	35
<b>8 CONCLUSION</b>	<b>36</b>

**APPENDIX**

40

**FIGURES**

Figure 1. Financial Institutions In Nepal .....	6
<a href="http://en.wikipedia.org/wiki/List_of_banks_in_Nepal">http://en.wikipedia.org/wiki/List_of_banks_in_Nepal</a>	
Figure 2. SMS-based Mobile Banking .....	9
<a href="http://www.mobileinc.co.uk/2009/07/when-are-we-going-to-be-able-to-do-a-balance-enquiry-via-sms/">http://www.mobileinc.co.uk/2009/07/when-are-we-going-to-be-able-to-do-a-balance-enquiry-via-sms/</a>	
Figure 3. Web Based Mobile Banking with Nordea, Finland.....	10
<a href="http://www.nordea.fi/">http://www.nordea.fi/</a>	
Figure 4. Client-Based Mobile Banking with Nordea, Finland.....	12
<a href="http://www.nordea.fi/">http://www.nordea.fi/</a>	
Figure 5. Payment Sample with NMB Mobile Banking App of Nepal .....	15
<a href="http://www.nmb.com.np/">http://www.nmb.com.np/</a>	
Figure 6. Number Of Mobile Banking Users In Nepal SBI BANK LTD.....	17
<a href="http://www.nepalsbi.com.np/">http://www.nepalsbi.com.np/</a>	
Figure 7. Survey Analysis With Age Group And Occupation .....	23
Figure 8. Survey Analysis For Mobile Phone Users .....	24

**TABLES**

Table 1 .Survey Analysis For Mobile Banking Users, Time Period Of Users And Choice Of Users For Mobile Banking Services .....	27
-------------------------------------------------------------------------------------------------------------------------------	----

## **LIST OF ABBREVIATIONS (OR) SYMBOLS**

CDMA	Code Division Multiple Access
CSS	Cascading Style Sheet
HTML	Hyper Text Markup Language
MMS	Multimedia Messaging Service
NIDC	Nepal Industrial Development Corporation
NPR	Nepalese Rupee
NTA	Nepal Telecommunications Authority
NTC	Nepal Telecom
PDA	Personal Digital Assistant
SMS	Short Messaging Service
USAID	United States Agency for International Development
WPA	Wi-Fi-Protected Access
WAP	Wireless Access Protocol

# 1 INTRODUCTION

Mobile banking also known as M-Banking has changed the traditional banking method. The use of mobile banking in developed countries are extremely higher than the developing countries due to technological and proper infrastructure development of the country. With the initiation of mobile banking, people's life has been completely changed in sense of financial activities. As mobile banking is always in your pocket wherever you go, the financial activities has become more easily day by day. As mobile banking service is completely in different path in developed countries but the story is quite different in developed countries.

Among those developing countries, this thesis will summarize the situation of mobile banking and its impact on one of the developing countries, Nepal. To give general status of Nepal, out of total population of 28,12 million [World Population Review 2014] ,more than 70% of the Nepalese people are unbanked [USAID NEPAL].The literacy rate is 48.6%[World Population Review 2014].According to recent figures from Nepal Telecommunication Authority (NTA) , 95% of the total internet subscribers uses mobile devices.

## 1.1 Research Objectives And Questions

The main objective behind the research methodology is find out the situation of mobile banking in Nepal. To give general idea about the technological services in Nepal, the number of mobile phone users are more than the people having bank accounts. It should be also noted that more than 70% of the Nepalese households are without their bank account. With the help of research methodology which is performed through questionnaire i.e. one kind of survey system, this thesis will provide information on popularity and the impact made by mobile banking among Nepalese people.

According to the research main purpose, the following questions have been designed in order to study the development and impact of mobile banking in Nepal.

1. What are the challenges of mobile banking in Nepal?

As mobile banking is just in development phase in case of Nepal. This question will help to find those factors and at the same this research question will also help those financial institutions in Nepal who are providing mobile banking services to their customers. Furthermore, the details of this question has been explained in section 7 of this thesis.

2. What is the status of banking system in Nepal ?

This question deals with the development of banking system in Nepal. With the growing technologies every day, many financial institutions in different part of the world are flowing with the new technology. This question will help to find out the modern banking system in Nepal which will help us to know whether the Nepalese banking system are progressing enough in sense of technologies.

3. How is the status of Nepalese customers with mobile banking ?

The above question deals with the relation between Nepalese customers and the mobile banking. As mentioned above in the research objectives, more than 70% of the Nepalese households are unbanked, with the help of above research question, it will help to find out the status of mobile banking in Nepal. As majority of Nepalese people still relies on traditional banking system, this question will help to know the popularity of mobile banking services and at the same time it will be interesting to know how Nepalese people are flowing with the modern technologies in sense of financial activities. In order to find out the relation between mobile banking and the Nepalese customers, the questionnaire survey has been implemented below to find out the conclusion.

## 1.2 Structure Of The Work

This thesis is divided into 7 chapters including introduction, banking system in Nepal, literature review, mobile banking in Nepal, research methodology, analysis of research methodology, challenges of mobile banking in Nepal and conclusion. Chapter 1 begins with the general introduction of mobile banking. Under the sub chapter of introduction part, this thesis discusses about the research objectives and questions. Chapter 2 discusses about the banking system in Nepal while chapter 3 is the literature review part where it discusses about the mobile banking in details with history and types of mobile banking. Chapter 4 is about the mobile banking in Nepal where it provides information on development of banking system in Nepal. This chapter also helps to provide information on how the banking system is developing in sense of its technological services i.e. mobile banking services. Chapter 5 is about research methodology. In research methodology, a practical approach has been done through questionnaire survey. The main objective behind the research methodology is to find out the impact of mobile banking services around Nepalese society. As mobile banking service is one of the emerging technological services in Nepal, this thesis, with the help of online survey method aims to provide the popularity and its impact on Nepalese society with the help of graphical figures such as pie chart and table. The remaining chapter, i.e. chapter 6 and 7 discusses about the challenges of mobile banking in Nepal and conclusion respectively.



## **2 BANKING SYSTEM IN NEPAL**

### **2.1 Overview**

Nepal Bank Limited established in 1937 A.D was the first commercial bank in Nepal to provide financial facilities to the people. It was initiated by King Tribhuvan Bir Bikram Shah Dev on 13<sup>th</sup> Kartik 1994 B.S. This contribution is considered as the milestone in the banking history of Nepal. It was formed under the co-operation between government and the general public with the certified capital of NPR 10 million and the paid-up capital of NPR 892 thousand. Until 1940 A.D the monetary system was based on metallic coins. Nepal Bank Limited remained as the sole financial institution until 1956 A.D when Nepal Rastriya Bank, also known as the central bank of Nepal these days was established. Nepal Rastriya Bank makes strategies for the banking sector in Nepal.

In order to maintain the economic development of the country, Industry Development Bank which was transformed into Nepal Industrial Development Corporation (NIDC) in 1959 A.D was established in 1957 A.D. The main purpose behind the establishment of this bank was to promote the industrialization in the country. After the initiation of first commercial bank, the similar bank called Rastriya Baniya Bank which is the largest commercial bank in Nepal these days was established in 1966. Agriculture is the main occupation as more than 70% of population depends on it. In order to keep an economic balance and flourish the agriculture sector, the first Agricultural Development Bank was established in 1968. After the establishment of joint venture banks in 1984, the superiority of national government bank came to an end.

### **2.2 Present Situation**

With the development of new technology in the country, the banking sector with its services has been completely changed. Today the banking sector is more

systematic, modernized and managed than 2 decades ago. Different banking facilities such as Banking software, ATM, Internet Banking, Mobile Banking, Debit Card, Credit Card, Prepaid Card etc. services are available in Nepalese bank these days. There are various types of banks working in current banking system of Nepal. They are central, development, commercial, financial, co-operative and Micro Credit (Grameen) banks. Presently there are 1 central, 30 commercials, 78 development, 37 micro finance development banks and 49 financial companies in Nepal [7]. Nepal Bank Limited also the first commercial bank of Nepal has the largest network in banking sector .Comparing modern banking system of Nepal with the traditional banking system, the modern banking system has started to establish many branches all over the country.

With the established branches, Nepalese life in sense of financial activities have become easier than before. Presently, many commercial banks that falls in class 'A' have started mobile banking services. Even though the commercial banks have started the mobile banking services to advance the banking system of Nepal but still the popularity towards mobile banking is slowly progressing in the country.

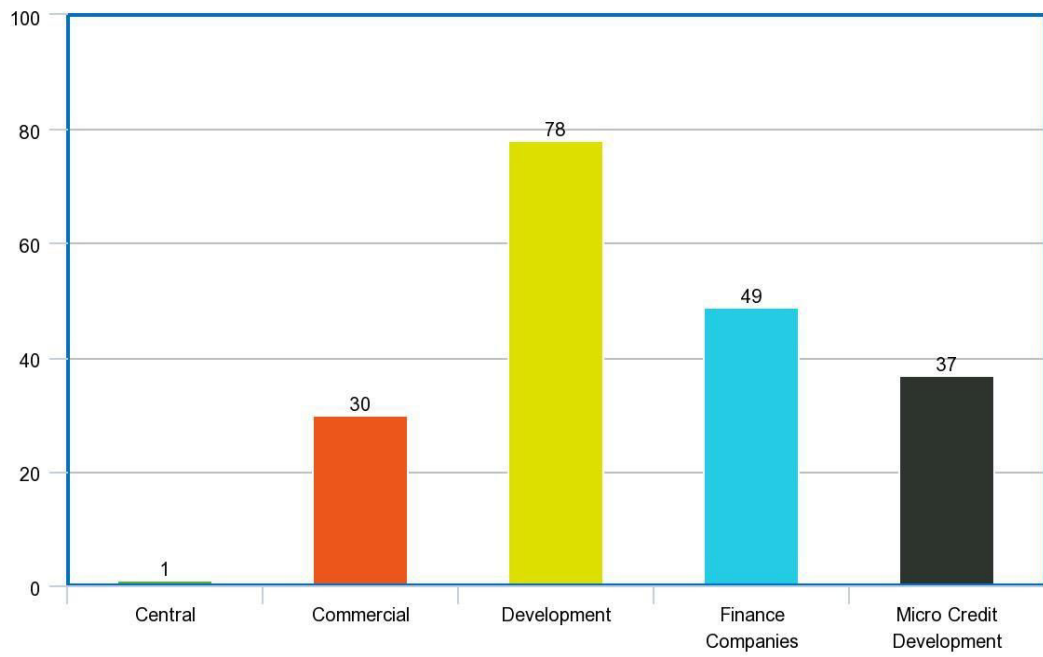


Figure 1. Financial Institutions In Nepal

## **3 LITERATURE REVIEW**

### **3.1 History Of Mobile Banking**

With the development of new payment system called mobile banking, the customer's life involving in financial activities has become much easier than before. It is not only secure but at the same time it is easily accessible from anywhere in the world where the technology is advanced and developed. Mobile banking is a system of payment where the people involving in financial institution can make various financial transactions offered by respective financial institution. The mobile banking service can be access from browser enabled mobile phones or from easily handled mobile banking application which can be found from various mobile application stores.

The first mobile banking was started in 1999 by the European company called PayBox which was supported by Deutsche Bank. As a mobile banking service, it was SMS at the time of evolution due to the limitation of mobile phone functionality. The expensive data cost and the quality of network were also the issues during the development phase of mobile banking. Until 2010, majority of mobile banking used to be perform by sms or mobile web. With the success of Apple's product such as iPhone and other operating system such as Android based phone, mobile banking these days can be accessed with its special client application or apps which has taken mobile banking into new path. With the development in web technologies such as HTML5, CSS3 and JavaScript, more banks have started to offer mobile banking web services to supplement native applications

According to leading analyst, Juniper research [Hampshire, UK 8th July 2014], it is expected that the mobile banking users will exceed to 1.75 billion by 2019, where it represents 32% of the global adult population.

### 3.2 Types Of Mobile Banking Architecture

There are 3 types of architecture in order to run mobile banking services on mobile phones. They are described below

#### 1. SMS OR MMS-BASED MOBILE BANKING:

SMS (Short Message Service) was the first mobile banking service when mobile banking came in existence. The communication is based on plain text. There are two modes in SMS banking. They are pull and push mode. Pull mode is one way messaging system where financial institution sends text messages to the user regarding their certain account transactions status. This method can be used to promote other mobile banking services where push method is two way messaging system where user sends certain request regarding their banking transactions with the help predefined code and bank replies it in the form of text messages.

Basically, there are 2 types of text messaging systems. They are SMS and MMS (Multimedia Messaging System). SMS banking carries only small sized messages which is the limitation of it while on other hand MMS can carry larger text messages but has a same working mechanism as SMS. In order to use this MMS type of mobile banking, a user has to register his/her cellular device to the bank and bank sends text messages with required password which acts as an activation code for mobile banking. The main advantage behind using SMS-based mobile banking is, it is inexpensive and familiar technological service, also it is virtually available in each and every cell phone irrespective of manufacturer, model number or carrier. It has the tendency to provide both way communication between the bank and the user. Regarding security things which is one of the major aspects to keep in mind, it does not transfer or store private information of users in the mobile device.



Figure 2. SMS-based Mobile Banking

(Source: <http://www.mobileinc.co.uk/2009/07/when-are-we-going-to-be-able-to-do-a-balance-enquiry-via-sms/>)

## 2. WEBSITE-BASED MOBILE BANKING

Another type of mobile banking based on the architecture is the browser-based mobile banking. This type banking service can be accessed from internet browser on mobile device. This service is accessed from banking website on mobile devices provided by the concerned financial institutions. The user can connect to mobile banking website either through WAP (Wireless Access Protocol) or other form of internet services provided by ISPs. WAP, which was formed in 1990 made it possible for mobile devices to access internet. It is an industry standard for gaining access to information over a mobile wireless network.

This type of banking service is easy to use and also easy to access as well where the network quality is acceptable. The main advantage behind using this type of service is that the majority of data handling is done on remote server which helps in quick processing of user interactions with the banking websites. This type of banking service has some limitations as well. In order to provide banking services in mobile devices, the website designed should also fit in the mobile screens. User who runs internet services through data plan on mobile devices, this might result in the additional cost as the user has to gain access through banking website. This type of banking service these days, is mostly designed for smartphones and other PDAs.

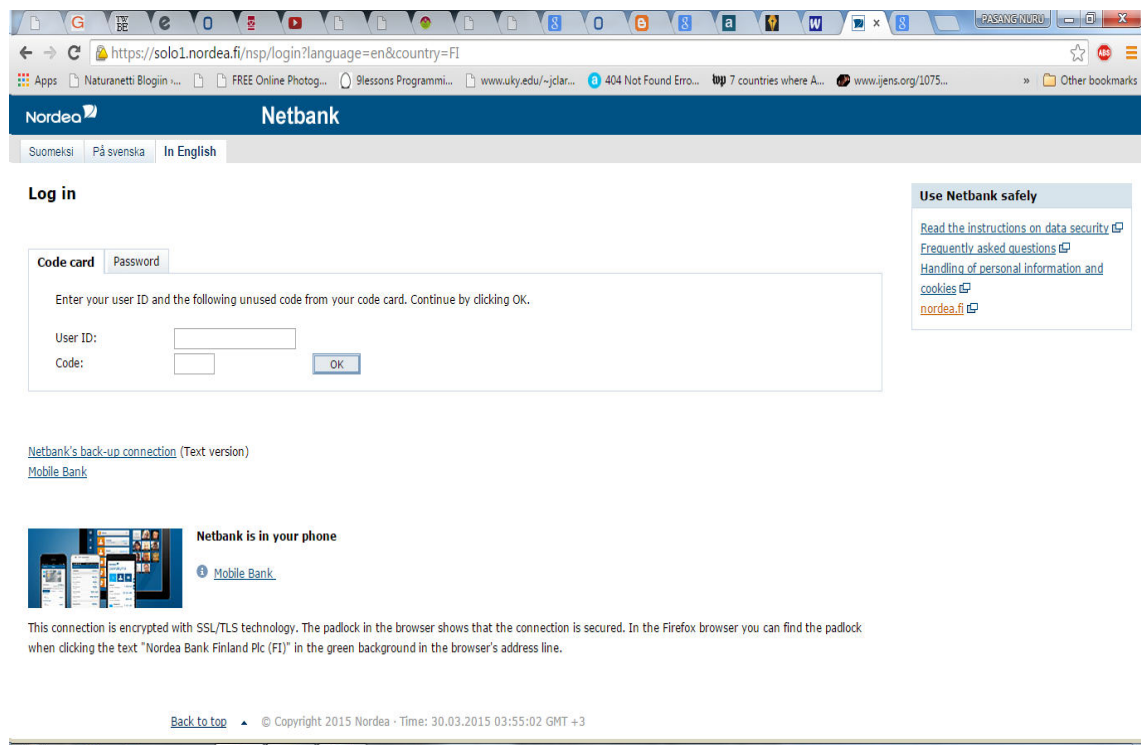


Figure 3. Web Based Mobile Banking with Nordea, Finland

(Source: <http://www.nordea.fi/>)

### 3. CLIENT-BASED MOBILE BANKING

With the development of smartphones, technology in terms of mobile phones have reached to new era. With smartphones, one can experience the feeling of having personal computers on hand. Client-based mobile banking is the one that is suitable for smartphones and other PDA's that has the tendency to run an application provided by concerned banks. This type of banking service requires a downloading and installation of respective banking application. This is also one of the easiest means of banking services.

With the help of banking application running on smartphones, user can have one touch access to various banking account services. This type of application-based banking services have similar services to that of web based banking services. The main drawback of using this banking service is that the users have to learn about this new application and at the same it is not supported for all kind of mobile devices due to technical limitation on mobile devices. As mentioned above in section 3.2.2 in web based mobile banking, this type of banking services also could be expensive for those users having data plan for internet connection.



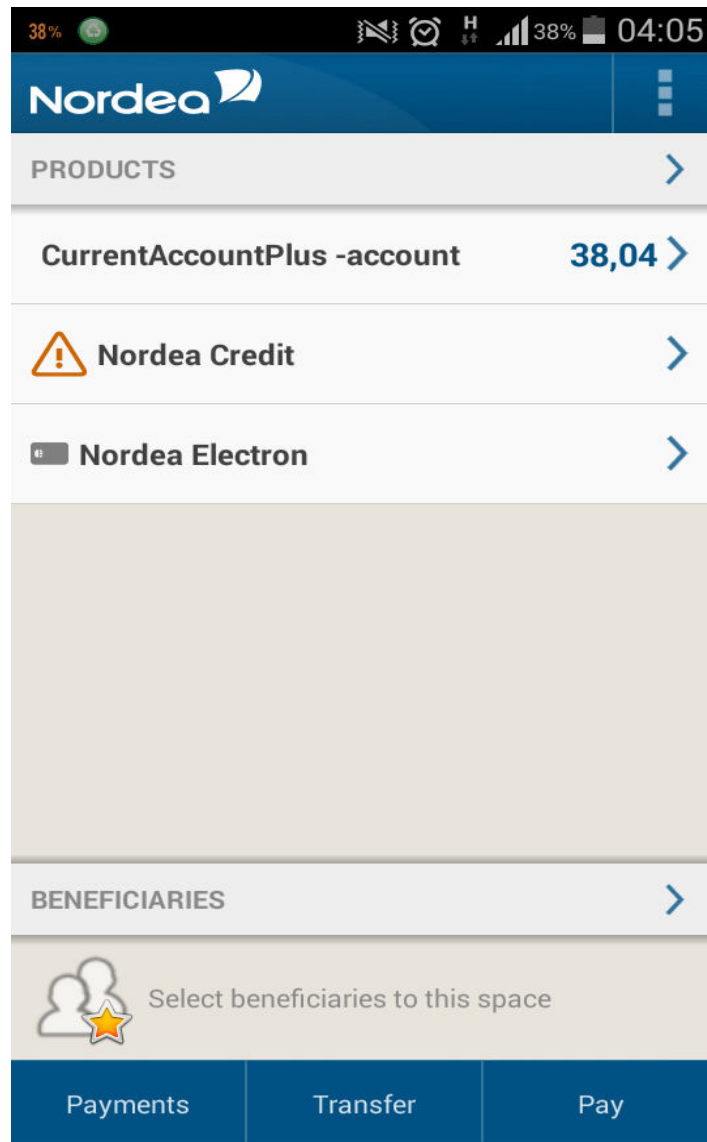


Figure 4. Client-Based Mobile Banking with Nordea, Finland

(Source: <http://www.nordea.fi/>)

## 4 MOBILE BANKING IN NEPAL

### 4.1 Mobile Banking Development

Before proceeding towards mobile banking status, it will be a good idea to look towards the status of mobile phone users in Nepal. Like in other developed countries, there has been huge increment of mobile phone users in Nepal. According to recent data from NTA (Nepal Telecommunication Authority 2014), the telephone penetration has passed to 84.77%. Out of the total telephone penetration rate, 74.97% (Nepal Telecommunication Authority 2014) belongs to the penetration rate of mobile phones.

The use of mobile banking in developed countries came into practice a long time ago. The developing countries like Nepal started its mobile banking lately in 2012. The first mobile banking in Nepal was launched by Laxmi Bank Limited, one of the leading commercial bank in Nepal, with its initial product called Mobile Khata. Mobile khata operated in third party platform called Hello Paisa which was in interconnection with all the telecoms in Nepal, namely Nepal Telecom, Ncell (similar to Sonera in Finland), UTL and SmartTel. Besides these telecoms, the service was also interoperable with various financial institutions in Nepal. After the initiation of mobile banking in the country by Laxmi Bank Limited with the platform Hello Paisa, other financial institution such as Siddhartha bank, Bank of Kathmandu, Commerz and Trust bank Nepal, and International Leasing and Finance Organization also started mobile payment system under the same platform. Such type of platform for payment services that is interoperable with various financial institutions and telecoms was considered as first of its kind in the world. Several banks in Nepal have started this type of services in order to make payment for utilities and to perform banking activities. The major platform in terms of mobile payment was started by the services like Hello Paisa and FonePay in Nepal. It was these services which made it possible to do inter banking activities in Nepal and the contribution made by those services for starting new payment system in the

country created a platform for other banking sector to initiate mobile banking in Nepal.

According to Umesh Singh Bhandari, assistant general manager of Machhapuchhre Bank, the multinational companies still relies on e-banking while other companies are attracted towards mobile banking due to its portable and easily handled features [19].

#### 4.2 Mobile Banking Payment Sample

With the initiation of new banking payment method in the country, it has made Nepalese life easier than before in sense of financial activities. In short time, this new banking system has progressed quickly. There was a time when people have to run towards their banking institution for any type of banking activities. The situation is even worse in rural areas of Nepal where people have not got that much opportunity to utilize and play with the new technology. In most part of the rural areas of Nepal, there are only few branches which makes people of rural areas to migrate towards urban areas i.e. Kathmandu where the technology penetration is high. With the establishment of this new banking services, Nepalese people especially of those in rural areas, it has made their life easier. Nowadays, they don't have to worry regarding their banking activities. Apart from banking activities, the mobile banking application in Nepal also includes the payment system for other financial activities such as utility payment. Under the utility payment, it includes the services like merchant payment, mobile money reload, payment of bill to telecommunication services such as NTC, NCELL, and CDMA.

The majority of mobile banking in Nepal is of SMS-based banking. In order to activate this service, the user gets required pin number. In order to do play

around the mobile banking application to perform various banking and other payment activities, pin number should be entered. Many banks especially those commercial banks in Nepal have been providing mobile banking services to its customers. The majority of mobile banking application in Nepal is developed by F1 Soft company, established in 2004, which works in the field of software development and providing it's Information Technology services since more than 10 years. In order to show how mobile banking payment is done in Nepal through its mobile banking application, the screen shots of one of the most popular and advanced bank of Nepal called NMB (Nepal Merchant Bank) Bank which falls under class 'A' commercial bank in Nepal has been shown below.

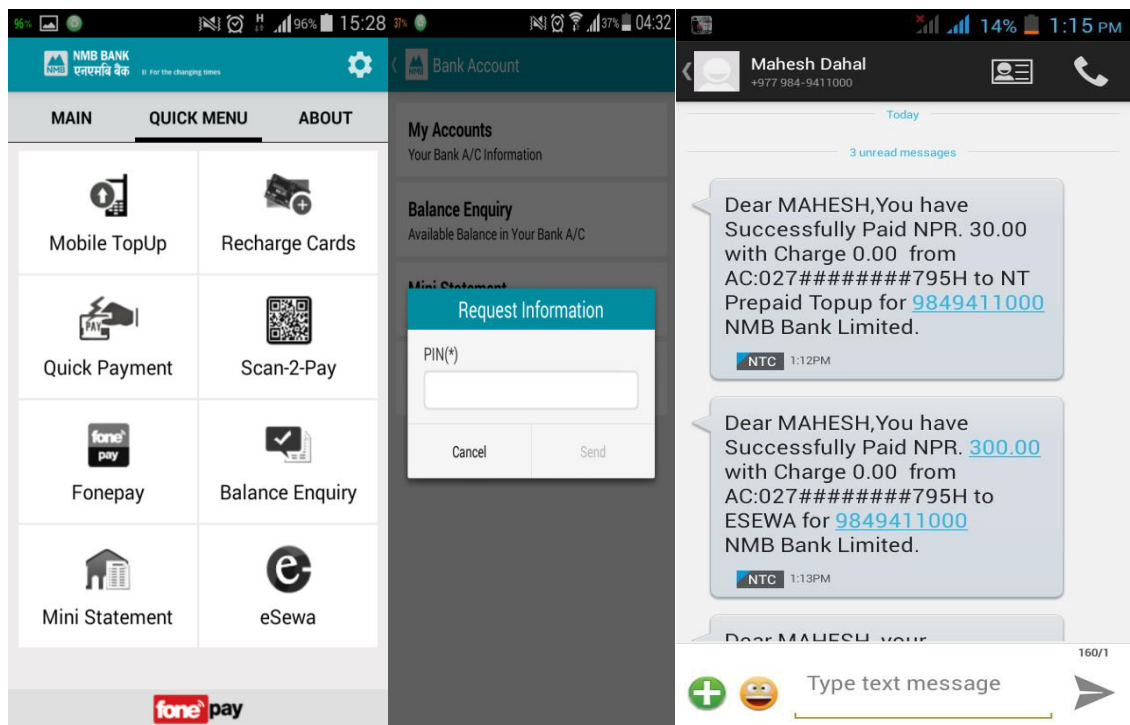


Figure 5. Payment Sample with NMB Mobile Banking App of Nepal

(Source: <http://www.nmb.com.np/>)

### 4.3 Mobile Banking And Customer's Behavior

The study towards customer's behavior on banking sector is essential for my research method in order to know the impact on Nepalese society. This research method will help to know how the Nepalese society is reacting towards this new method of banking service. Customer's behavior towards banking is also helpful for making fruitful strategies and proper decisions for concerned banks.

It has been just 3 years that mobile banking started in Nepal. Looking at the present status of the country, still more than 70% of the Nepalese households are unbanked. The majority of Nepalese customers who are using mobile banking services are of young ages. As literacy rate of Nepal is below 50%, those people in the country having access to modern banking services are of mostly literate and graduate people. Other people besides literate and graduate, they are still following the traditional banking system due to lack of awareness towards modern banking system. It should also be noted that majority of banking activities occurs in central development region of Nepal where capital city, Kathmandu lies.

Due to the development of advance technologies and infrastructure in capital city areas, almost all the people have access to banking services whether it is traditional or modern banking system but the condition is opposite in rural areas where the infrastructure is not well developed and people are lacking banking services. Many households especially in mountain areas have this impact. There might be some banking branches there, but the condition is in order to perform those normal traditional banking services they have to walk hours or in some cases days as well. As mobile banking is getting popular slowly, especially in city areas but still the service is not fully operated outside the city areas. Certain attempts are under process to make mobile payment facilities possible in rural areas. One of the government organization known as USAID Nepal (United States Agency for International Development) is working to provide mobile financial services in rural part of Nepal.

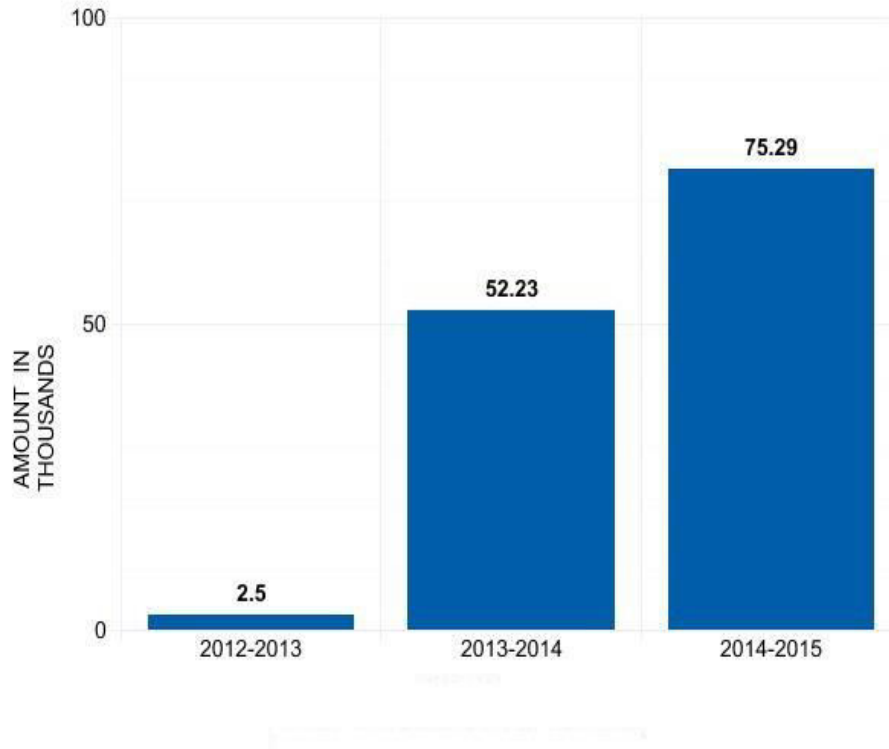


Figure 6. Number Of Mobile Banking Users In Nepal SBI BANK LTD  
(Source: <http://nepalsbi.com.np/content/annual-reports.cfm>)

## 5 RESEARCH METHODOLOGY

### 5.1 Research Process

Before moving towards the research process, the theoretical base towards the status of mobile banking in Nepal was prepared through different internet sources. The knowledge towards the status of mobile banking was essential for my research process in order to create well theoretical background. The conversation with the friends who are currently working in banking sector in Nepal and those who have been using mobile banking for more than two years was carried out through different media such as Facebook, email and Skype. After the online research and conversation regarding the status of mobile banking in Nepal, I designed a questionnaire in order to conduct a survey. In order to minimize the errors in questionnaire process, necessary adjustment was done through Pilot Study. Pilot Study is simply a smaller version of larger study. It is an essential method to test any idea or hypothesis. This method also helps to find out the feasibility of the study, in this case i.e. questionnaire for survey. After the necessary adjustment with pilot study, sampling technique was applied to make the questionnaire even easier and clear. The reason behind applying the sampling method was to find out the similar characteristics of targeted population for survey method.

After the implementation of pilot study and sampling method, survey questionnaire was sent to the respondents. The survey method was done through the form designed in Google Drive. The questionnaire were sent through social media such as Facebook, email, viber where the respondents were supposed to submit their responses from the given link of Google Drive so that it would be easier and faster process. As google drive is a cloud storage, the responses from the respondents were also collected through Google Drive spreadsheet. With the help of Google Drive, it was easy to perform survey method for both sending and receiving datas. The validity for responding questionnaire was given for 3 weeks. The following sub topics explains the method and techniques applied in my research process.

## 5.2 Survey

Survey refers to the collection of data through different methods such as interview or questionnaire [20]. The term survey may indicate to different types of method of observation. This method is widely used in research process. With the help of survey, one can easily analyze the individual's opinion on certain topics. In order to collect data, questionnaire, one of the types of survey was formulated in order to find the impact of mobile banking around Nepalese society.

There were altogether 9 questions prepared as questionnaire in order to conduct a survey. To make these questionnaire more clear and effective, pilot study was carried out among few participants. The responses from pilot study were thoroughly analyzed and studied to make the necessary changes in the questionnaire process. Before conducting actual survey, pilot study was carried out among 10 of my friends from Nepal including those currently working in banking sector. The reason behind selecting these 10 respondents was to match those characteristics to the target population for survey. These 10 respondents had similar characteristics to the target population. So with the help of these respondents, pilot study was successfully carried out. After the successful pilot study, a set of questionnaires were sent to the respondents. The questionnaires were sent through emails, viber and social media such as Facebook. In order to make survey process faster and easier, the questionnaires were made simple to answer with majority of multiple choices rather than explanation. During the survey process, the help from close friend in Nepal was also taken. With the help of close friend in Nepal, it was easier to send those questionnaire to different places of Nepal where the target population were situated.

The data collected from survey were closely studied and analyzed to find out the impact of mobile banking around Nepalese society. The data collected from



survey was represented in graph to make it more clear in terms of numerical data and for better comparison.

### 5.3 Sampling

Sampling method is one of the important process during survey. In statistics, sampling describes the process of selecting sample elements from target population in order to conduct survey [18]. In survey process, with the help of sampling, it helps to describe and analyze the characteristics, attitudes of the target population. It is due to sampling method where the particular participants are selected assuming that it carries the similar characteristics in order to conduct a survey. Survey sampling are of two types. They are probability based sampling and non-probability based sampling. Almost in all type of survey, probability based sampling is chosen as non-probability sampling has failed during error detection process. The main reason behind using sampling in survey process is to minimize the cost, time and amount of work done that would take for entire population.

In this thesis, as a sampling method, probability based sampling was chosen's mention above, it was difficult to perform survey for entire population of Nepal. So the sampling method was applied by selecting sample of population who carried similar characteristics to those of target population in Nepal. They were considered as sample representative for entire population. When choosing the sample population, one of the major thing to keep in mind is the sample size. Determining sample size is a complex process. Different factors need to be kept in mind while determine the sample size of the target population. The factors such as time, budget, and variability of elements should be considered while sampling. In order to find the better outcome of the study using sampling method, the sample size should be optimum.

Keeping in mind the total target population for survey, sample size of 500 people in Nepal was decided. The sample size was chosen on the basis of similar characteristics to that of the total population. There were different categories of people for sample size. They were student, teacher, businessman,

working group. The people were selected from different city areas of Nepal so that it will help to represent wide areas of Nepal. To represent the people from rural areas, those people were included who came from rural areas to city areas for different purposes. In addition, to make the survey clearer and to get better responses, sample size included different age group of people.

Besides the above mentioned research methods and procedures, applicable literature was also studied throughout the research process. The applicable literature for the thesis purpose was thoroughly studied in order to create the theoretical background on the given thesis topic.

## 6 ANALYSIS OF RESEARCH METHODOLOGY

The following section describes the survey result in details.

### 6.1 Analysis Of Survey

As mentioned above in research methodology section, a survey was performed among different working categories of people with different age groups. A set of questionnaires was sent to 500 people with the deadline of 3 weeks. Out of 500 people, the number of respondents were 138. This results in the overall survey response of 27.6%. In order to analyze the result from survey different statistical figures are illustrated in this thesis. When analysis was done through different age group in survey it was found that majority of age group responding the survey was the age group between 20-24 with 37% followed by the age group 25-29(28%), 30-34(12%), above 40(9%) and with the equal percentage i.e. 7% among the age group of 15-19 and 35-39. As shown in figure 7 below, when respondent by occupation was analysed, it was found that majority of the respondent were student with the percentage of 56 followed by the categories of businessperson and teacher with 16% and others category with 12%. Here in this survey, it should be noted that the category others are such people who migrated to city areas from rural areas and also it indicates those people involving in other occupation such as labour work.

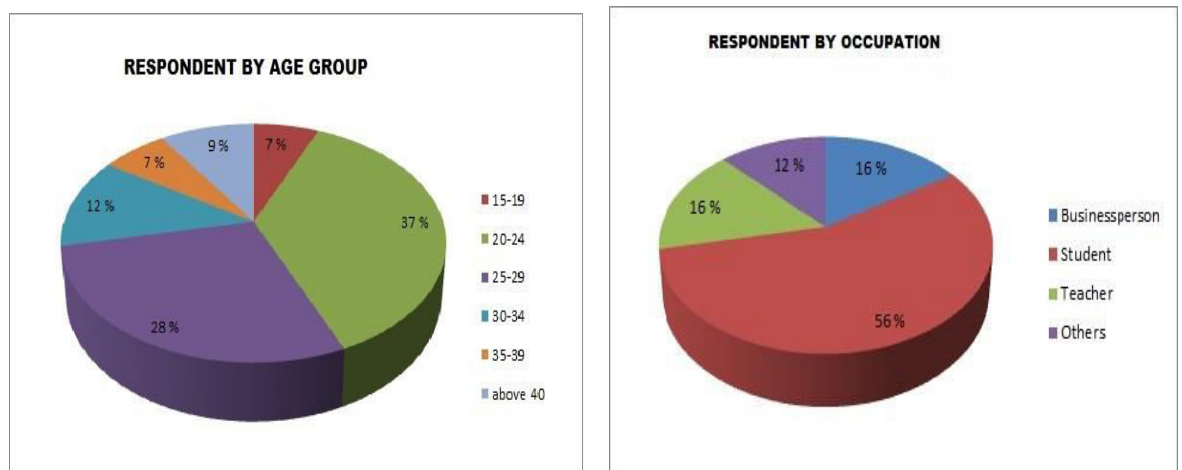


Figure 7. Survey Analysis With Age Group And Occupation

From the survey result, it was found that the male respondents were 65.21% while the female respondents were 34.79%. As mentioned above in literature part, the mobile phone users have been gradually increasing for past few years. As a result, the consequences have been seen in survey result. According to survey result, the people who are using mobile phones either smartphones or other traditional phones were 97% while the people who are not using mobile phones was found to be only 3%. This figure shows that the Nepalese people are attracted towards mobile technology as this technology has been one of the important needs in our daily life these days. The people who are not using mobile phone belongs to the age group of 15-19 and some belongs to the category of others as mentioned in survey. The possession of mobile phone users from the survey analysis is illustrated below in figure 8.

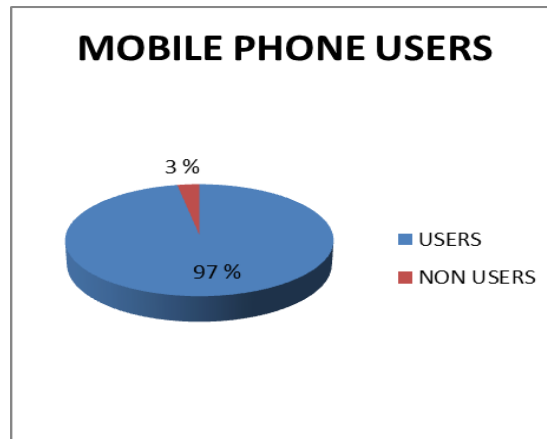


Figure 8. Survey Analysis For Mobile Phone Users

The other questionnaire analysis has been shown on figure 9 where it shows the state of mobile banking users, time period of users using mobile banking services and the opinion of an individual whether they are interested or not interested to use mobile banking services.

According to table 1, it can be seen that the non-users of mobile banking services is greater than the one using mobile banking services. The participants using mobile banking services is found to be 46.37% while conversely, the other rate is 53.63%. This shows that the mobile banking is slowly progressing and the number of users are increasing every year. When concluding the individual response towards the time period of using mobile banking services, it was found positive. During the very first year when mobile banking came into existence in Nepal, the rate was 5.04%. As still the people in Nepal are following the traditional banking system, this rate seems to be low. But if we look towards the second year of its establishment, the result is increased by around 10%, i.e. the rate of users in second year was found to be 15.25% which shows positive impact towards the new banking technological services. Similarly from this year, i.e. after 3 years of its establishment, the rate is increased by 5 times the first year and with the increment of around more than 11% than second year. The

rate for third year was found to be 26.08% as shown in figure 9 below. From this margins, in the increment of users towards mobile banking services, it can be concluded that the mobile banking users will grow as the year passes. This is also one of the positive impact towards Nepalese society that how they are getting familiar towards mobile banking services. When new technology comes in market, everyone wants to give it a try. Keeping those factors in mind, the questionnaire in survey was developed in such a way that it will take participant's opinion towards the use of new technology.

As mentioned above, one of the question was also included in the questionnaires, regarding the participant's interest towards mobile banking. From the result of survey it was found that, 91.31% of the participants showed their interest towards mobile banking while 8.69% said that they are not interested towards mobile banking. The majority of participants showing their interest towards mobile banking was found to be of young generation while on the other hand those participants who didn't show their interest towards mobile banking was found to be of age group of more than 40 and the one who falls in others categories. As survey was done only within the capital city of Nepal, there are still some kind people with old tradition who just work in cash and are unbanked. Normally those people are migrated from rural areas into city areas in search of opportunity. Here in our survey, those people were categorized as others.

In order to know how people uses their mobile banking services for different purposes in Nepal, it was found that 29.71% uses their mobile banking for account transaction, while 25.36% said that they use their mobile banking for bill payment purpose. As different software developing companies are trying to include different services on bill payment section of mobile banking, here in my survey questionnaire, I included recent bill payment categories that is almost available in every mobile banking in Nepal such as payment for postpaid mobile reload, i.e. mobile recharge ,payment for major mobile operator such as Nepal Telecom, NCELL.

<b>Mobile banking users</b>	<b>Respondent by %</b>	<b>Duration of mobile banking uses in years</b>	<b>Respondent by %</b>	<b>Interested /not interested in mobile banking facilities</b>	<b>Respondent by %</b>
<b>Yes</b>	<b>46.37</b>	<b>1</b> <b>2</b>	<b>26.08</b> <b>15.25</b>	<b>Interested</b>	<b>91.31</b>
<b>No</b>	<b>53.63</b>	<b>3</b>	<b>5.04</b>	<b>Not interested</b>	<b>8.69</b>

Table 1 .Survey Analysis For Mobile Banking Users, Time Period Of Users And Choice Of Users For Mobile Banking Services

As shown in figure 8, Nepalese people are getting better towards the use of mobile technology, it was found that 16.66% uses their mobile banking for reloading money in mobile phones. It is also a good payment facilities for Nepalese people because before the establishment of mobile banking, the situation was that the users had to run towards respective telecommunication offices in order to make a payment for phone bills. When the question about the satisfaction of mobile banking uses was asked as included in questionnaire, there were different types of responses. Majority of participants were happy about it while some participants were not happy about the errors created during the use of mobile banking due to delay in update.

As mobile banking is just in development phase in Nepal, Nepalese people are getting aware about it slowly. Above facts and figures created from survey shows that there is an increment in mobile banking users which is one of the

positive sign for Nepalese people. With the initiation of mobile banking in the country, it has made more and more commercial banks in Nepal to initiate mobile banking for their customers and they are initiating as well.

## 6.2 Limitation

In research process, there are some limitations as well. During the research process, time and cost were the major challenges. The survey could have got more responses than presented in this thesis if my availability was possible in Nepal. Due to time, cost factor, the survey process was done through online excluding paper questionnaires which made the responses rate low than expected. As Nepal is a developing country and there are still some areas in Nepal where internet connection has not been reached due to which the survey had to be carried out within the capital city areas. Looking at the infrastructure development of Nepal, it is not easy to get electricity every time. Nepalese had to live under the problem of load shedding of at least 5-6 hours a day. Due to this situation, the help from friend in Nepal was also taken who conducted the online survey from cyber with some of the targeted population. Due to above mentioned limitations the survey had to be conducted within the capital city of Nepal.

The above mentioned limitations were carefully analyzed and studied during the research process in order to give an accurate and effective outcomes. The mentioned limitations were also kept in mind during research process, so that it would not exceed the time for responses.



## **7 CHALLENGES OF MOBILE BANKING IN NEPAL**

Nepal is a country where technologies are growing in slow pace. Comparing with the developed countries, Nepal is still too far in sense of technologies. In spite of having acceptable technological services in urban areas, conversely, rural areas people are deprived of using new technological services. As mentioned earlier above that more than 70% of the Nepalese are unbanked, so there is a huge challenge in adoption of mobile banking in Nepal. The people living in capital city areas are more educated than the people living in rural areas. Here are some factors explained below which could be challenges mobile banking in Nepal.

### **7.1 Infrastructure Development**

The development of any country can be easily seen with the development in infrastructure. In case of Nepal, the infrastructure development is very poor. The condition is even hard in rural areas where people are deprived of using many services. Due to traditional system in mind around Nepalese people, they kept themselves away from the new technological services. In order to have a fluent mobile banking activities, the communication channels should be faster enough to response in time. As mentioned earlier that people in Nepal lives under the problem of load shedding which runs 5-6 hours which means that the communication channels between mobile banking users and the respective financial institutions gets poor communication. As mentioned earlier that the literacy rate of Nepal is below average which creates direct impact in using new technological services, here in our case mobile banking.

### **7.2 Attitude Towards Banking**

Due to lack of awareness around Nepalese people, mobile banking is not growing in expected ratio. Even though different commercial banks in Nepal have started mobile banking services for its customers but the people are still depending on old banking tradition. Majority of people especially in rural areas

deals on cash rather than banking. This results in the low rate of using mobile banking services. Majority of literate people are in city areas and according to my survey result above, it was found that the mobile banking seemed popular towards young generation. Even though the mobile phone users are growing in huge speed in Nepal but they lack ideas towards the use of mobile banking which is one of the easiest form of banking services.

### 7.3 Trust In Mobile Banking

In any form of technological services, security is one of the major issues. Here in the case of mobile banking, security is one that should be highly focused. The technological background of Nepal is not that strong as expected. In comparison with developed countries, the security system in technological services in Nepal need to be highly improved. Even though the different software developer company in Nepal is trying to apply different security measures in mobile banking services but still it lacks that high level security. The growth of any product is directly proportional to the uses by its customers. The continuous errors in mobile banking software which has been seen around Nepalese users according to my survey result can be taken as an example on how reliable is mobile banking in Nepal.

### 7.4 Linguistic Factor

Nepal is a country where there lies 4 caste and 36 subcastes. There are many people in Nepal who can speak and write Nepali but no other languages. There are also many government schools/colleges where majority of study is done in local language, i.e. Nepali which results in poor understanding of other languages i.e. English language. As present mobile banking application in Nepal are just running with English languages, there is a demand of developing mobile banking in local language as well. With the development of mobile banking in Nepali language not only makes Nepalese life easier but at the same time it will help to increase the popularity of mobile banking in Nepal as well.

## 7.5 Handset Operability

Even the mobile phone users are growing every year in Nepal but in case of mobile banking it depends on what type of mobile you are carrying. In case of SMS alert banking, it could support normal mobile phones but when it is about mobile banking client application then the platform is different. Apart from the platform, there can be issue with operating system, system requirements in mobile phones. The client based mobile application is especially suitable for current version of smartphones which is the latest mobile technology. But in case of Nepal where poverty is around 40% [RYAN MILLER, FEBRUARY 6, 2014], it is difficult for every Nepalese households to do mobile banking through smartphones.

As we saw from the survey result regarding the existing users and also the one who are interested to use and know about mobile banking, this gives us an idea that there is a positive impact of mobile banking around Nepalese people. Even though there is a big challenge for mobile banking in Nepal especially in rural areas but if Nepalese government can bring changes in those challenges mentioned above such as infrastructure development, people's attitude towards banking, security issues, etc. then it can play huge role in the economic development of the country. As we can see that there is a potential of development of mobile banking in Nepal, Nepalese government should take a look on it and proceed it towards into the new path of banking systems.

## 8 CONCLUSION

In summary, from both the literature and research methodology, it can be concluded that the mobile banking will progress further in Nepal. The number of mobile banking users are increasing every year with different figures especially in urban areas where technologies are highly developing in quick manner. Technologies have taken Nepalese traditional banking system into modern banking system with different services such as ATM, internet banking, mobile banking. As mobile banking is not fully reached in rural part of Nepal but different projects and efforts are being carried out by many organizations in order to flourish the information about mobile banking .Well, present status shows that more than 70 percent of Nepalese households are unbanked but it can be expected that with the initiation of mobile banking in different parts of Nepal will help those unbanked households to get an idea about normal banking systems. It can be also expected that with mobile banking, there will be huge change in payment systems in Nepal which will make Nepalese people's life easier and effective in terms of financial activities.

As we saw from the survey result regarding the existing users and also the one who are interested to use and know about mobile banking, this gives us an idea that there is a positive impact of mobile banking around Nepalese people. Even though there is a big challenge for mobile banking in Nepal especially in rural areas but if Nepalese government can bring changes in those challenges mentioned above such as infrastructure development, people's attitude towards banking, security issues, etc. then it can play huge role in the economic development of the country. As we can see that there is a potential of development of mobile banking in Nepal, Nepalese government should take a look on it and proceed it towards into the new path of banking systems.

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## **APPENDIX**

### **Survey Questionnaire**

**1. What is your age? Choose the correct range below**

**15-19**

**20-24**

**25-29**

**30-34**

**35-39**

**Above 40**

**2 What is your occupation?**

**Student**

**Business person**

**Teacher**

**Other**

**3 Gender**

**Male**

**Female**



**4 Do you have mobile phone?**

**Yes**

**No**

**5 Do you use your mobile for banking services? If not, then proceed to question number 8, 9**

**Yes**

**No**

**6 How long have you been using mobile banking services?**

**1 year**

**2 year**

**3 year**

**7 Do you find mobile banking easier than traditional banking?**

**Yes**

**No**

**8 Are you happy with the services? If not, what is the area to be Improved?**

**9 Which mobile banking service you mostly use?**

**Account transactions**

**Bill payment (Nepal Telecom Landline, Ncell Post Paid)**

**Mobile top up (NCELL, NTC, CDMA)**

**10 Do you feel mobile banking a secure way of doing financial activities?**

**Yes**

**No**

**11 Do you have any idea about mobile banking?**

**Yes**

**No**

**12 Would you use mobile banking if you could get more information about it?**

**Yes**

**No**