

**IDENTIFYING FACTORS INFLUENCING CREDIT
CARD IN A COLOMBO SUBURB AREA
LOGISTIC REGRESSION APPROACH**

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degree Master of Science in Financial Mathematics

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DECLARATION

I hereby certify that this submission is my own work and that, to the best of my knowledge and belief, it contains no material published or written by another person or material which to a substantial extent has been submitted or accepted for the award of any other degree or diploma of a University of other institutes of higher learning, except where the acknowledgment is made in the text.

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ABSTRACT

Credit cards are electronic products that are now becoming more important and well-known around the world. The usage of credit cards is becoming highly connected to peoples' day-to-day lives and credit cards have a greater impact on the rapidly changing lifestyles of busy people. However, penetration and usage of credit cards in Sri Lanka are still low when compared with other countries. Hence, identifying factors influencing the usage of credit cards would be of great importance for the banking industry, because through them, they can enact policies and take necessary measures to increase the number of Sri Lankans who use credit card. Though researchers have explored this study area in the recent past, In Sri Lanka, there is an empirical and knowledge gap. The purpose of this study is to figure out what factors influence or affect people's use of credit cards in Boralesgamuwa town area, which is a city in Colombo district, the western province of Sri Lanka. This is a cross-sectional study and was done in a non-contrived setting. The data was gathered using a questionnaire from 102 people in the Boralesgamuwa town area. Age, Gender, Education level, perceived cost, and Relatively advantages variables are highly affected by the use of credit cards in the Borelesgamuwa area. Thus, it was observed that customers' intention to use credit cards is highly dependent on those variables, and among those Perceived costs are discouraging the use of credit cards, relatively advantage encourages people to use credit cards. This result indicates the odds of using a credit card is 9.6 times higher for male than female. The odds of using a credit card is 10.2 times higher for those who have a diploma compared to up to A/L educated customers, The Odds of using a credit card is 18.4 times higher for who had a degree & above compared to up to A/L educated customers while other variables remain constant and change in one year in age changes the odds of use of a credit card increases by 1.5 units while other variable remain constant. The category of young age received a lot of responses. A young age group can be described using the odds value. Hence, the industries and policymakers should consider these when enacting policies, in order to improve the usage of credit cards among the people of the country.

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LIST OF ABBREVIATION

CBSL	Central Bank of Sri Lanka
USA	United States of America
UK	United Kingdom
SPSS	Statistical package for Social Science
ATM	Automated teller machine
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TAM	Technology Acceptance Model
CDM	Cash Deposit Machine
M-PAY	Mobile Payment
P&L	Profit and Loss
OTP	One Time Password
POS	Point Of Sale
OR	Odds Ratio

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In a general sense, “Bank” means it is an establishment authorized by a government under banking act no.30 of 1988 accepting deposits, paying interest, clearing checks, making loans, acting as an intermediary in financial transactions, and providing other financial services to its customers are all functions that the CBSL performs. Over the past decades, with the revolution of the banking industry credit card has become the most powerful role.

A credit card is a plastic card with certain security and other features that a bank issues to its customers in order for them to use it as a payment method. “*Credit cards, which are a combination of payment cards and personal consumption credit, are widely used all over the world.*” (Trinh, Tran & Vuong 2020). The card also entitles the cardholder to certain credit limits/ funds such that a payment can be made even if the customer’s account does not have an adequate balance. Thus, a credit card serves as both a payment instrument and a source of credit.

Now the credit card system has become universally popular throughout the world including the Communist countries. Many international credit card organizations have sprung up around the world and are now operating independently. The famous six brands of them are American Express, Japan credit bureau, Diners Club, MasterCard, Visa, and Chinese union pay. In Sri Lanka, credit card has become the most powerful role at state bank and private banks. It affects the bank's P&L as the main fee-based income source.

However, in Sri Lanka credit card usage, or in other words, credit card penetration is very low. According to Gamage (2007), credit card penetration in Korea and UK is 70%, in Singapore, it is 44%, in the USA 65%, 7% in China, and 3% in India, though in Sri Lanka it is just 0.4%. But, there is a capacity to increase the usage of credit

cards. Therefore, it should be popularized through which businesses and the government will be promoted to benefit from the indirect taxation coming out of the use of credit cards (Velananda 2020)

A person can receive a credit card from a bank with a specific credit limit that the bank determines based on a few key credit-related characteristics. Banks have analyzed the credit risk while issuing cards to their customers. Banks need to identify the factors that affect the credit evaluation and mitigate the default risk and provide a suitable card limit to the customers at the very same time depending on their requirements.

The majority of the customers do not know how to utilize credit cards. Therefore, most of the time customers are powerless to service at least their minimum payment. Hence, customers have to pay additional charges to the bank as well as bank earns commission income from the same. If this happens continuously there will be an enormous default risk to the bank since the majority of the credit cards are given by clean basics. Therefore banks need to evaluate the customer's creditworthiness to mitigate the default risk. 5C analysis is one of the famous methods of analysis for customer's creditworthiness which is used by banks already (Capital, Capacity, Collateral, Character, Conditions). In the Sri Lankan banking industry, the majority of the credit evaluation part is based only on the financial feasibility of the customers. Alongside, Sri Lankans are depending on culture, believe in norms very much, and have traditional activities, long-established relationships, and traditional events on their day to the calendar. These geographical and social factors at macro-environment always substance on customer's buying behaviors and usage of the credit card. Therefore, banks have to ensure, that all the financial and non-financial credit-related factors need to be evaluated prior to issuing credit cards.

A very few populations in Sri Lanka use credit cards. Most people use a credit card to buy items, get discounts/offers, and use an emergency. Some people do not use a credit card due to credit card charges, interest rates, and lack of understanding of the credit card operation.

Boralesgamuwa is one of the most important cities in the Colombo area. It is located in the heart of a major business hub. Maharagama, Piliyandala, Dehiwala, and Kohuwala are examples. The majority of the residents of that area are employed. Nearly, 60,000 people are living in the Boralesgamuwa area. When compared to other suburb towns, Boralesgamuwa residents have a slightly higher literacy rate. The area is recognized as a highly residential area since most of the houses are well built.

The state banks, private banks, and financial institutions that serve the villages' financial needs are all located in Boralesgamuwa town. Boralesgamuwa also has a huge number of grocery outlets, both retail and wholesale. The Bellanwila Raja Maha Viharaya and the Pillewa Buddhist temple are two of the most well-known temples in Boralesgamuwa. Boralesgamuwa's Buddhist population is overwhelmingly large. The following is a representation of the Boralesgamuwa city map.

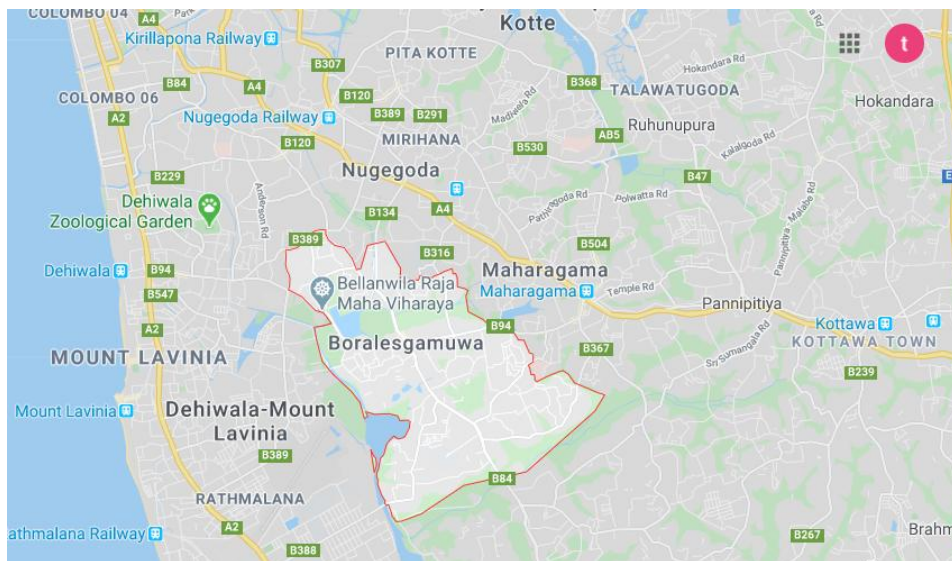


Figure 1.1 Boralesgamuwa area map

The map of Boralesgamuwa is shown in Figure 1.1.

There are eighteen Grama Niladhari Divisions in the Boralesgamuwa area.

1. Pepiliyana West
2. Pepiliyana East
3. Divulpitiya East
4. Divulpitiya West

5. Bellanvila
6. Raththanapitiya
7. Egodawatta
8. Werahera North
9. Werahera South
10. Neelammahara
11. Katuwawala North
12. Katuwawala South
13. Bodhirajapura
14. Boralesgamuwa West A
15. Boralesgamuwa West B
16. Boralesgamuwa West C
17. Boralesgamuwa East A
18. Boralesgamuwa East B

Five Gramaniladhari Divisions closest to Boralesgamuwa town were chosen to conduct a survey, gather data, analyze it, and eventually attain study goals.

Code	Location Code	Name	Population
030	1-1-36-030	Boralesgamuwa West A	4647
035	1-1-36-035	Boralesgamuwa West C	1545
050	1-1-36-050	Boralesgamuwa East A	5038
055	1-1-36-055	Boralesgamuwa West B	2937
065	1-1-36-065	Boralesgamuwa East B	5415

Table1.1 Boralesgamuwa Grama Niladhari Division

Table 1.1 shows the population of Boralesgamuwa town in West A 4647, West B 2937, West C 1545, East A 5038, and East B 5415.

1.1.1 Definitions of credit card

A credit card is defined in many ways. Different authors have put forth different definitions. In Investopedia, the credit card has been defined as a small rectangular slab made of plastic and provided by a financial institution and allows the cardholder to pay for their consumables within a given period.

Trinh, Tran & Vuong (2020), state that a Credit card is a type of payment card that also operates as a credit card for personal usage. As cited in Fineberg (2003) credit is always money, hence it gives a meaning that credit card always is a substitute for money. The credit card is also known as a borrowing write-down card.

1.1.2 Credit card system

In the current market situation, banks are acting as financial intermediaries. Because banks accept the deposit of the customers and they lend the additional funds to borrowers. Banks are using so many tools to lend funds. Credit card is the main component of the lending category.

1.2 Background of the Problem

The purpose of this research is to find out what factors affect the use of the credit card in the Boralesgamuwa town region. The purpose of this study is to figure out which factors influence credit card usage among customers in the Boralesgamuwa town region, which is in the Colombo district.

Several authors have undertaken studies in the past to discover the critical aspects that influence the use of credit cards. Some of the studies focus on customers' intentions and attitudes toward credit card usage. There are various dimensions of variables identified by previous researchers. Those factors and variables were derived based on theories like Theory of Planned Behaviour (TPB), Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), and such (Velananda 2020).

Consumer behavior on credit cards has been investigated in terms of individual demographic characteristics, credit card attributes, and personal impressions of credit cards. Velananda (2020) conducted a study among 500 randomly selected working adults in Sri Lanka, in order to identify crucial elements that influence credit card usage. Thereby, the more related factors among other factors are identified as Perceived ease of use and Perceived usefulness, along with demographical factors like Age, Marital status, occupation, education level, Income, and personal knowledge.

Findings of a study of Ahmed, Amanullah & Hamid (2009), among Pakistani consumers, show that customer preferences differ by age group. It has been suggested that credit cards are best marketed to people between the ages of 18 and 24. Credit

card usage is viewed negatively by customers who do not have credit cards. The cause is the realization of the interest rates and hidden charges of outstanding balances on the credit cards. The most important determinants of credit card use among Indian clients were ease of use and convenience as found out by Khare, Khare, and Singh (2012). "Sense of belonging" and "sense of fulfillment" moderated the attributes of use, convenience, and status. Furthermore, they found that youthful clients are more likely to utilize credit cards.

Though there are many studies relating to credit card usage in western countries and other foreign countries, fewer studies have been conducted in the Sri Lankan context. Therefore there is a huge empirical gap in this area. But as a credit card is one of the most significant products in the sharing economy, its usage should be maximized. Therefore, influencing factors have to be identified to achieve this. Investigating this influence is the purpose of this study.

1.3 Problem of the Study

The purpose of this study is to better understand the factors that influence credit card usage, with a focus on customers in the area of Boralesgamuwa of the Western province of Sri Lanka. Customer adoption and usage of credit card is still very poor due to inadequate knowledge of factors that impact credit card usage, research problem addressed the purpose of this study is to look at the essential elements that influence credit card usage among bank customers in the Boralesgamuwa town region, which is a large city in Sri Lanka. As a result, conducting a survey over the entire area is impossible.

Card payment has now become the largest payment system in the world because of the dramatic developments in the banking industry. Throughout the past three decades, innovation in the banking industry has rapidly increased, especially in electronic distribution channels like ATM, CDM, M-PAY devices, credit cards, and internet banking facilities, etc. Among them, credit card plays a vital role.

Credit card use is one of the cashless payment forms in Sri Lanka. Consumer adoption and usage of credit cards are still very poor due to inadequate knowledge of factors that impact credit card uses. Although it provides many benefits for the customers and

banks, some individuals still refuse this service. Most of the time, banks' top management wants to consider factors that affect credit card uses.

Many research areas have evolved relating credit cards and regarding its influencing factors, spending behavior of customers, consumer perception and attitudes, customer intention to use, and so on. But when going through literature it could be observed that there is an empirical gap in studies relating to this in the Sri Lankan context. Therefore, the research problem addressed to look at the essential elements that influence credit card usage among bank customers in the Boralesgamuwa town region, which is a large city in Sri Lanka

1.4 Objectives of the study

Having considered the above literature and research problem, for the objective of constructing a straightforward problem, the following research questions can be derived.

Main Objective,

1. To find the factors that affect the use of credit cards in the Boralesgamuwa town area,

Partial Objective,

2. To find factors that increase the number of credit cards in the Boralesgamuwa town area,
3. To identify factors that can be advertised in order to motivate people to use credit cards in the Boralesgamuwa town area.
4. To investigate the factors that lead people to utilize credit cards instead of cash in the Boralesgamuwa town area.
5. To identify the most suitable credit card that is acceptable to consumers in the Boralesgamuwa town area
6. To determine whether customers in the Boralesgamuwa town region are aware of the prices and fees associated with credit cards,
7. To determine the benefits and drawbacks of using credit cards in the Boralesgamuwa town area,

1.5 Significance of the study

One of the new topics for Sri Lanka is the acceptance of credit cards. The use of credit cards is used by a very small percentage of customers. The reason is lack of knowledge about this facility and very few studies were conducted on this topic. The study will be significant at the organizational level; many advantages can be generated for organizations. The majority of the time, senior management chooses to learn about the factors that influence credit card usage. As a result, determining the characteristics that attract or discourage clients from using a credit card will be beneficial.

The administrator can take necessary actions to upgrade credit cards and can get actions to attract new customers towards the credit card. This research will be a helpful reference for bankers to implement new features to improve credit card growth. These actions will affect to increase the profitability of the organization. Not only for bankers but also it will be helpful for the customers and the whole society to get an idea about this facility. And also, this will be a helpful reference for future researches.

This study will be sedative for the scare of knowledge and clear understanding about these critical factors to identify the factors that encourage and discourage customers to use the credit card and provide a helpful reference for the bankers to implement new features to improve the credit card market growth.

Because of the population density and the surrounding environment, This information can be applied to other cities in the Colombo suburbs as well. Maharagama, Homagama, and Piliyandala are among the examples.

1.6 Research methodology

This study consists of quantitative characteristics that lead to identifying factors that influence credit card usage. Here, it used primary data collected via the distribution of questionnaires. The type of this research is analytical. The target population is the people who live in the Boralegamuwa area and the sample is 102 respondents among them.

For this study probability sampling method was used, thus a stratified random sampling method was used. For data presentation graphs, charts, and tables are being used. The dependent variable divides into two parts, credit card users and credit card non-users. The data analyzing tool is binary logistic regression.

1.7 Limitations of the study

Like any study, this study also has several limitations that may affect the study.

- The selected sample was limited to the Boralegamuwa town area. The results may not be generalized for the whole Sri Lankan context.
- A sample of the population was studied. Hence, there may be sampling errors.
- Unavailability of required published documents.

1.8 Chapter Organization

The conceptual organization shows the road map of the research. Under this session, the researcher has tried to explain the research briefly.

Chapter one lays the background of the study, the foundation of the research which gives a comprehensive idea about the problem of research, and the main objective which researcher expects to fulfill at the end of the study. In chapter two, the researcher hopes to discuss a literature review that implies the key literature relevant to this study. The methodology will be discussed under chapter three and it demonstrates the methods which were used when conducting the research. It includes explanations about data, population, sample, and data analyzing tools as well as a model of this study. Data presentation, Analysis, and Discussion will be discussed under the fourth chapter of the study. At the end of the research, the researcher hopes to discuss chapter five which will include the Conclusion and recommendation of the research to investigate the factors that influence the use of credit cards by Chinese urban residents

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review includes a historical overview as well as descriptions of the major study variables. In this section, the literature review and opinions from other researches related to the topic are presented. This chapter gives an overview of prior mutual fund research and the finding that resulted in the formation of the study.

2.2 Application of Logistic Regression in past studies for data analysis

Logistic Regression can be divided into Binary Logistic Regression Analysis and Multinomial Logistic Regression Analysis. According to Sweet and Martin (2011), if an analysis calculates the relationship between multiple explanatory variables and a single binary response variable means a categorical variable with two categories, then that is Binary Logistic Regression. As in the present study, there are only two categories as Cardholders and Non-card holders; therefore Binary logistic regression has to be used. Sometimes, there may be more than two categories in a dependable variable. Then, on this occasion, Multinomial logistic regression has to be applied instead of Binary logistic regression. The multinomial logistic regression model is a simple extension of the binary/ binomial logistic regression model.

For instance, in a study conducted by Zhou (2016) to investigate the factors that influence the use of credit cards by Chinese urban residents, the dependent variable was taken as 'Frequency of credit card use', and the author has classified this dependent variable into four as, 'often use', 'Occasionally use', 'Cardholder but never use', and 'Non- cardholder'. As there were four categories, Multinomial logistic regression has been applied in this study to analyze data, to find out the relationship between the independent variables (trust variables, socioeconomic variables, demographic variables, and development of city).

In another research study done by Wang (2017) to analyze the Intention of consumer credit card use and Influence factors, the binary choice model of logistic curve model, or in other words, the Logit model, is used to represent the dependent variable, which

has two choices as 'willing to use' and 'not willing to use,' with values of '0' and '1'. Similarly, Binary logistic regression is used as one of the data analysis strategies in this study to attain the desired outcomes.

2.3 Evolution of credit cards

The credit cards arise with the need to buy first and pay later, as well as to enhance the relationship between vendors and consumers. *“According to historian Jonathan Kenoyer, The idea of employing a worthless item to symbolize banking operations stretches back 5,000 years, when the ancient Mesopotamians traded with the Harappan culture using clay tablets. While still inconvenient, a slab of clay containing seals from both civilizations beats the tons of copper each culture would have had to melt down to manufacture each era's currency....”*(Polpitiya, Perera, and Ediriweera 2019).

Historical evidence shows that some of the early credit systems included the Code of Hammurabi, named after the ruler of Babylon from 1792 to 1750 B.C. Hence, it is said that rules for loaning and paying back money were established after these laws, along with ways of charging interest (Jason, 2018).

Franklin National Bank in New York, USA, gave the first credit cards to the public in 1951. Gradually, the bank's managerial capability and accountability were outstripped by the rapid growth of consumer demand for credit cards. As a result, many independent international credit card companies have sprouted up all over the world.

The rapid expansion of the credit card business following full deregulation increased people's reliance on credit cards. Banks' credit card income has shifted from transaction fee credit card payments in the past to high revolving interest rate credit card loan income in the present. As a result of this shift, the credit card market has emerged as a key revenue generator for banks.

2.4 Theories related to consumer behavior and attitudes

Most scholars and researchers utilize social psychology as a model for studying consumer behavior since consumers' subjective psychological aspects have a direct impact on use. Over the years, several study frameworks have been established to explain consumer intentions and actual behavior.

2.4.1 Theory of planned Behavior

This model or theory has been used to understand the angles of human perception which consequently lead to their behavior in the acceptance of a good or service. The theory explains that people have the ability to exert self-control on all of their behaviors.

Theory of Planned Behavior was developed by Ajzen (1991), as a development of the Theory of Reasoned Action (TRA). This theory is based on the assumption that human beings are rational and can use information. Theory of Planned Behavior intends to show that intention to behave is the closest precursor of a behavior. The stronger the person's intention to show a certain behavior, the more successful he is expected to do so. Theory of Planned Behavior explains that the intention is a function of attitude toward the behavior, subjective norms of behavior, and the perceived behavior control (Velananda 2020).

2.4.2 Technology Acceptance Model (TAM)

This model or theory has been used to understand the angles of human perception which consequently lead to their behavior in the acceptance of a good or service. People have the power to exert self-control over all of their behaviors, according to the theory.

Theory of Planned Behavior was developed by Ajzen (1991), as a development of the Theory of Reasoned Action (TRA). This theory is based on the premise that humans are rational and capable of utilizing information. The Theory of Planned Behavior aims to demonstrate that the purpose to behave is the most immediate precursor to a behavior. The more determined a person is to exhibit a particular behavior, the more likely he is to succeed. According to the Theory of Planned Behavior, intention is a

result of attitude toward behavior, subjective behavioral norms, and perceived behavior control. (Velananda 2020).

2.4.3 Theory of Reasoned Action (TRA)

This model or theory has been used to understand the angles of human perception which consequently lead to their behavior in the acceptance of a good or service. People have the power to exert self-control over all of their behaviors, according to the theory.

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2.5 Factors impacting credit card usage based on past studies

According to Gross and Souleles (2002), high credit card balances are discovered to be the result of a person's behavior rather than a liquidity problem. When a credit limit is increased, debt rises quickly, and many credit card borrowers own low-yielding investments at the same time. The result of research implies that the consumer can play a vital role in monetary policy transactions and other credit stocks.

According to Jaspreet Singh (2012), customer behavior is highly impacted on credit card payment. An increase in financial knowledge is associated with improved credit card use behavior. The bank should clearly explain the credit card agreement to the customers before issuing them the credit card.

Abdou, HAH, and Pointon, J (2011), pointed out that according on their attributes and "credit" information, current and new clients have either good credit or negative credit. Credit sorting algorithms are an incredibly valuable tool that may assist banks manage a variety of risks. According to Lillian Kisivuli Essendi (2013), capital

adequacy, earnings, liquidity, and management quality have positive coefficients in relation to credit card allocation.

Jaspreet Singh Anand (2014) says if someone holding multiple cards, fraudulent payments and delays in statements are general reasons for default. The majority of the cardholders don't have proper knowledge regarding the consequences of credit card defaults and the agreement with their banks. According to the banks, the attitude of the customers regarding repayment of debt is very casual. Consumers now have more opportunity to use credit cards because of their widespread availability and ease of use. While many consumers are adept at managing their credit cards, others appear to be unable to do so.

Danes and Hira (1990) The researchers looked into the connections between credit card knowledge, beliefs, and practices. During 1982, data was collected from 198 household money managers in a midwestern town. Credit cards should be used more for installment purposes than for convenience, according to those with a high level of credit card understanding. Those who feel credit cards should be used for installment purposes are more likely to use more credit cards and accumulate financing costs. Those with higher levels of education and income have more knowledge than those with lower levels of education and income. Credit cards should be used for convenience, according to elderly respondents and those with low incomes. Those with a higher level of education and larger households are more likely to use credit cards and accumulate finance charges.

According to Laura C. Ricaldi (2015), consumer behavior is impacted by the high credit card balance. Uncertainty and mental accounting do not appear to have a substantial impact on solvent rotating households, but they are more likely to have more children and pay their bills late. Consumers may be unable to pay off their credit card bill as their households get busier due to constraints.

Brito and Hartley (1995) studied that borrowing on credit cards at high-interest rates might appear irrational but however, even low transaction costs can make credit cards attractive relative to bank loans. Credit cards also provide liquidity services by allowing consumers to avoid some of the opportunity costs of holding money. The

effect of alternative interest rates on the demand for card debits can explain why credit card interest rates only partially reflect changes in the cost of funds. Credit card interest rates that are inflexible relative to the cost of funds are not inconsistent with a competitive equilibrium that yields zero profits for the marginal entrant.

2.5.1 Demographic variables and credit card usage

When planning to make a choice and the use of credit cards Demographics variables seem to play the main role. Evidence shows that Age, income level has been explored previously and predict some indication for correlation between demographics and usage of the credit card. As cited in Ahmed, Amanullah & Hamid (2009), according to the investigation conducted by Jean Kinsey (1981) the probability of having credit cards and having the number of cards was highly correlated with age and occupation. Nonetheless, these two features were less important than the use of checking and savings accounts, residence, and attitude towards credit.

Differences in demographic variables could contribute to differences in credit card usage intentions (Dewri et al. 2016). A study was conducted by Trinh, Tran & Vuong (2020) to identify the influencing factors of credit card use among Vietnamese bank customers; findings of that study show that credit cardholders are mostly young adults whose age was below 45. The large majority of those who responded are male (51.3%), married. (61.4%) in comparison to female (48.7%), and single (38.6%). Moreover, 20.5% of respondents have a college education; 44.7% of them are graduated.

Velananda (2020) stated that *“When heads of households were younger, the probability of having a negative attitude toward installment debt decreased, peaking at 43 years old, before significantly increasing.”* The results of research conducted about Malaysian customers by

Ming-Yen et al. (2013) credit card holders' purchasing behavior is linked to their age, income, and marital status, according to research. The same can be said about bank policies (benefits provided and payment policies) and attitudes around money (willingness to pay and awareness of the total debt owed). In that study, occupation,

credit card application qualifications, and income vs. expense management were not found to be major factors in Malaysians' credit card spending habit.

According to Wang (2017), it is said that peoples' income would be positively correlated with credit card use; this is because when the income of people gets higher they just don't satisfy with the daily necessities only, they also move towards luxury goods, thus the cost increases, so the consumption would be more inclined to lending consumption. Therefore as per Wang (2017), high-income people are more willing to use credit card facilities. In one of the studies done in six metropolitan cities of India by Khare and Singh (2012), about the factors affecting credit card use, it is found out that young customers were more likely to use credit cards than other age groups. When it comes to gender versus credit card use, it is evident that more females show a less tendency towards using this facility as they are more concerned with security elements. Convenience and security offered by credit cards are most important for women (Afshan, Ayesha, and Madiha 2009)

Through this literature, it is clear that demographic variables have a significant influence on the intention to use credit cards. Hence, the following hypotheses can be developed.

H1: There is a relationship between intention to use the credit card and demographic factors of respondents.

H1a: There is a relationship between intention to use the credit card and Gender.

H1b: There is a relationship between intention to use the credit card and Age.

H1c: There is a relationship between intention to use the credit card and Marital status.

H1d: There is a relationship between intention to use the credit card and Education level.

H1e: There is a relationship between intention to use the credit card and Occupation.

H1f: There is a relationship between intention to use the credit card and Income level.

2.5.2 Relative advantage

Relative advantage is the degree to which an innovation provides benefits that replace those of its antecedents and is concerned with factors such as economic benefits, convenience, images, enhancement, and satisfaction (Rogers, 1983). It can also be explained as that benefit of a product or service is more relative to other products or services in the market.

It simply means that people who perceive that using a credit card is advantageous or beneficial would also be likely to adopt the usage. Indeed, a credit card is very advantageous to individuals in many ways. First of all, it is very convenient when compared with other payment methods as it is based on the ‘buy now pay later’ concept. It mitigates the problem of carrying cash at hand. Moreover, there are benefit packages (e.g. product warranties at zero cost), various insurance protections, credit card loyalty programs, and so on (Polpitiya, Perera, and Ediriweera 2019). “Credit cards also serve as an open-ended, easily available credit source” (Ahmed, Amanullah & Hamid 2009).

The concept of Relative advantage corresponds to the variable of ‘Perceived usefulness’ which was identified by former researchers as an influencing factor of credit card usage, which is said to be derived from Innovation Diffusion Theory. Because, The extent to which customers believe that utilizing a certain product/service will improve their performance was described as perceived usefulness (Davis et al., 1989; Venkatesh et al., 2003 as cited in Trinh, Tran & Vuong 2020). Thus, studies showed that people tend to use a credit card because of its usefulness and relative advantage they gain over other sources like e-money, debit cards, or cash. So, the following hypothesis is constructed.

H2: There is a relationship between intention to use the credit card and Relative advantage.

2.5.3 Financial Knowledge and Experience

Financial Knowledge and Experience is a vital component in consumer decision-making. Experience, family, and friends, with personal experience, are also considered as the main way of learning to use credit effectively and in turn, they are important sources of financial knowledge (Velananda 2020). Just being a day-to-day bank customer isn't enough, but knowledge and awareness about this service, credit card billing cycle, statement, interest rate, fees and charges as well as, use experience discussed by close people are also very crucial to adopt this service.

Hence, the following hypothesis is constructed.

H3: There is a relationship between intention to use the credit card and Financial Knowledge and Experience

2.5.4 Perceived Risk

Risk can be said as an obstacle recognized related to a particular thing. Perceived risk refers to consumer subjective expectations for incident losses according to consumer behavior perspective (Trinh, Tran & Vuong 2020). If consumers perceive a product as riskier, they would be less likely to adopt it.

Today most individuals fear to use this facility of the credit card by considering features like loss of personal privacy, system security, and uncertainty. Rational consumers not only consider the benefits they gain but also care about the potential losses when using a service. In many studies, it is proved that perceived risk is a major obstacle in using electronic services, also in credit card use (Roy et al., 2017; Yang et al., 2015 as cited in Trinh, Tran & Vuong 2020).

Trinh, Tran & Vuong (2020), in their study, categorized the concept of perceived risk into seven, and they are financial risk, performance risk, psychological risk, social risk, risk of time, and finally, security and privacy risk. It has been proved in that study that Perceived risk affects negatively the intention to use credit cards. Therefore, the fourth hypothesis is developed as,

H4: There is a relationship between intention to use the credit card and Perceived Risk

2.5.5 Perceived cost

The perception of a person about the cost of a particular product/service can be identified as perceived cost. This is how a consumer sees the price of a product relative to his discretionary income (Peter, 2008 as cited in Polpitiya, Perera, and Ediriweera 2019). Oliver & DeSarbo, 1988 described perceived cost as a “combination of monetary rewards and non-monetary sacrifices including time, energy, and customer experience”. It also can be considered as the evaluation of the customers whether they deserve the product for the cost they pay. Perceived cost with respect to credit cards is suggested by Polpitiya, Perera, and Ediriweera (2019), as all the costs involved in using credit cards facility include access cost, transaction cost, the interest cost, and applications download cost. Thus, the final hypothesis developed for this research is,

H5: There is a relationship between intention to the use the credit card and Perceived cost.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to provide in-depth coverage of the research technique used in this study. This chapter explains the research methodology, techniques, and standards used for this research to obtain representative data from a sample to determine the characteristics that influence credit card usage in the Boralesgamuwa town area. Further, It includes information about the study's demographic and sample, data collecting, instrument validity and reliability, and measurement methodologies. This chapter also provides a clear understanding of the way of conceptualizing the study variables and operationalizing of variables. The conceptual framework is also been graphically presented.

3.2 Research Design

This section describes the many sorts of studies, the research setting, the duration of the investigation, and the unit of analysis.

3.2.1 Types of the Study

This study is exploring out the most important characteristics that affect the use of credit cards in the Boralesgamuwa area, thus the dependent variable is the customer intention to use and on the other hand, independent variables are the influencing factors. Hence, this study needs to establish the impact of the independent variable on the dependent variable. As a result, this study's type of investigation is causal or analytical. This belongs to the quantitative type of research.

3.2.2 Research Setting

The physical, social, and cultural environment in which the researcher performs the study is referred to as the research setting. This study was conducted in the natural environment where events normally occur. None of the variables were controlled and no artificial setting was created for the study.

3.2.3 Time of the Study

The time horizon can be cross-sectional or across several days, weeks, or months, or it can be a longitudinal study, in which data is collected at multiple periods over time, as

explained by Sekeran (2003). The data collecting for this project only takes a few weeks. The study's data was obtained over a specific time period, and there are no extensions planned. As a result, the research is cross-sectional in nature.

3.2.4 Unit of Analysis

It's the topic of research that an analyst tries to generalize about. All of the respondents or clients chosen in the Boralesgamuwa city are individually analyzed in this study unit of analysis.

3.3 Population and Sampling

The population includes each and every element from the set of observations that can be made. The overall category of individuals or items that are the center of attention in a particular research study is referred to as the population. According to this research, the target population is the people who live in the Boralesgamuwa town area. Practically, it is difficult to take each and every person for the investigation. Hence, considering Krejcie & Morgan's table (1970). The sample of this study was used, 102 respondents. Sample means a subset of a population (Sekaran 2003). That is rather than selecting all possible elements in the population, a subgroup can be chosen for the investigation. Data was collected from the population using a stratified sample strategy in this investigation.

3.3.1 Sampling Method

The stratified random sampling method is one of the probability sampling methods. A stratified random sampling is the process of splitting the population elements into non-overlapping homogeneous groups known as strata and then picking a Stratified Random Sampling from each stratum. There are eighteen Grama Niladhari Divisions in the Boralesgamuwa area.

1. Pepiliyana West
2. Pepiliyana East
3. Divulpitiya East
4. Divulpitiya West
5. Bellanvila
6. Raththanapitiya
7. Egodawatta

8. Werahera North
9. Werahera South
10. Neelammahara
11. Katuwawala North
12. Katuwawala South
13. Bodhirajapura
14. Boralesgamuwa West A
15. Boralesgamuwa West B
16. Boralesgamuwa West C
17. Boralesgamuwa East A
18. Boralesgamuwa East B

Five Gramaniladhari Divisions closest to Boralesgamuwa town were chosen to conduct a survey, gather data, analyze it, and eventually attain study goals. Data was collected from persons in the Boralesgamuwa town area using stratified random sampling.

Name	Population	Number of Response
Boralesgamuwa West A	4647	$(4647/19582)*102 = 24$
Boralesgamuwa West C	1545	$(1545/19582)*102 = 8$
Boralesgamuwa East A	5038	$(5038/19582)*102 = 26$
Boralesgamuwa West B	2937	$(2937/19582)*102 = 16$
Boralesgamuwa East B	5415	$(5415/19582)*102 = 28$
Total	19582	102

Table 3.1 Boralesgamuwa Grama Niladhari Division

Table 3.1 indicates the amount of data that each Grama Niladhari Division requires. Each Grama Niladhari Division's response rate is determined by the sample size.

3.4 Conceptual Framework

To achieve the objectives of the study, the following conceptualization model (Figure 3.1) is used to depict the relationship between both independent (Influencing factors of credit card usage) and dependent (credit card use) variables. This model was developed based on the related theories on the variables and findings of the research articles of the scholars.

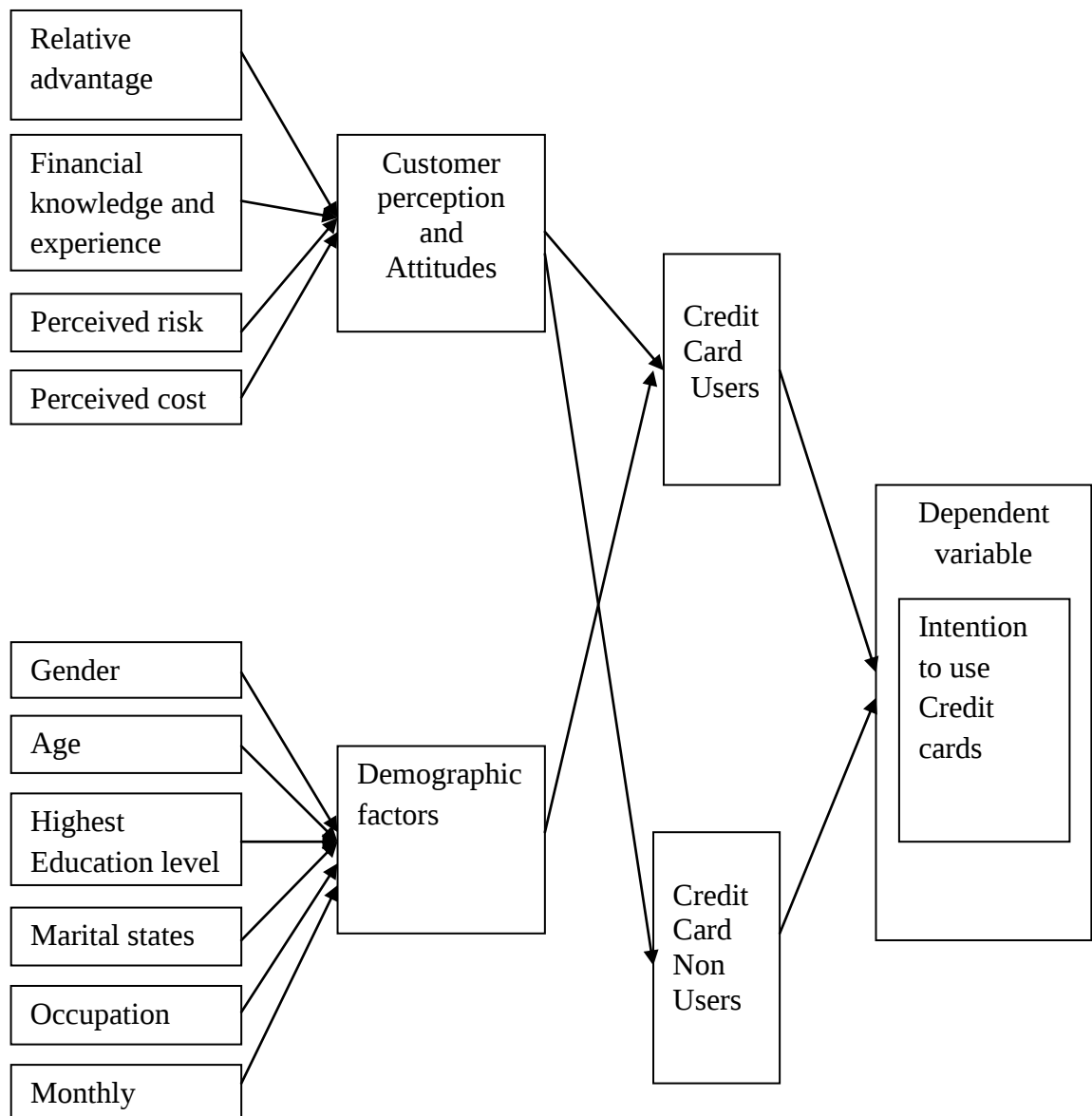


Figure 3.1 Conceptual Frame Work

3.5 Operationalization of variables

Operationalization refers to the attempt of reducing abstract concepts into measurable and tangible terms (Sekaran 2003).

Variable	Dimension	Indicators
Customer Perception and Attitude	Relative Advantage	Ease of use/ Convenience
		Economic benefits
		Security
		Prestige
	Financial knowledge and Experience	Personal knowledge
		Fees and chargers
		Awareness given by service provider
		Social influence
	Perceived Risk	Security and performance risk
		Psychological risk
		Privacy risk
	Perceived Cost	Credit Card interest rate
		Annual fee
		Over limit fee
		Late payment

Table 3.2: Operationalization of Variables

According to Table 3.2, the variables of Relative Advantage, Financial Knowledge and Experience, Perceived Risk, and Perceived Cost, as well as their dimensions and indicators, are operationalized.

3.6 Data collection Method

Sekaran (2003) in survey research, the major three data collection methods are utilized, as described. Interviewing, administering surveys, and watching people and phenomena are the methods used. Data was collected by the distribution of questionnaires among people living in the Boralesgamuwa town area.

The questionnaire method was used to collect data from the people of Boralesgamuwa town, as That was the most convenient method of gathering data from responders. The respondents' anonymity was deemed extremely important. The questionnaire used was divided into three sections, as shown below. Part 1- Demographic information, Part 2- Dimensions of customer perception and attitude, while Part 3 includes an open-ended question about using credit card facilities. The questions used in this study were modified from related past research. The questions for Relative advantage and Perceived risk were adopted from Trinh, Tran & Vuong (2020). The concept of Financial knowledge and experience was adopted from Velananda (2020). Perceived cost is adopted from the study of Polpitiya, Perera, and Ediriweera (2019).

3.6.1 Pre-testing

The pre-testing questionnaire involved a small portion of the sample of respondents who answered the questionnaire. Then a discussion with them about the questionnaire to determine questions is understandable for the customers happened. This is very important to ensure that customers are understandable and are interpreting the correct manner to maintain the quality of collected data. A pre-tested questionnaire was evaluated by using 15 respondents. This helped to understand the research topic clearly and to identify ambiguous questions and more sensitive questions.

3.7 Methods of Measurement

The level of measurement, or scales of measurement, is necessary to assign scores to response categories based on certain rules and quantify the responses.

3.7.1 Methods of Measuring Customer Perception and Attitude

This independent variable consists of four parts/dimensions namely,

- Relative advantage
- Financial knowledge and experience
- Perceived risk
- Perceived cost

The instrument consists of 15 statements related to those four dimensions which help to measure the variable of Customer Perception and Attitude, and these were obtained by combining questions found in past studies.

The statements/questions in the instrument that are related to the dimension of Relative advantage and Financial knowledge & experience are positive, on the other hand, the statements related to the dimension of Perceived risk and Perceived cost are negative in nature. Therefore the scales for positive and negative statements can be given as follows.

Scale	Point
Strongly Disagree (SD)	5
Disagree (DA)	4
Neutral	3
Agree (A)	2
Strongly Agree (SA)	1

Table 3.3: The Scales for Positive Statements in the Questionnaire

Scale	Point
Strongly Disagree (SD)	1
Disagree (DA)	2
Neutral	3
Agree (A)	4
Strongly Agree (SA)	5

Table 3.4: The Scales for Negative Statements in the Questionnaire

The scale for positive statements was presented in Table 3.3, and the scale for negative statements was given in reverse order, as indicated in Table 3.4.

3.8 Methods of Data Analysis and Evaluations

A computerized statistical analysis is essential in the analysis of data. The following approaches will be used to assess and evaluate the questionnaire using the software SPSS.

- Univariate analysis
- Bivariate analysis
- Reliability assessment
- Test for the goodness of fit

3.8.1 Univariate Analysis

The descriptive statistical method will be used to analyze each variable in the research model. All the Demographic variables or in other words personal characteristics of the respondents would be analyzed by the ways of bar charts, pie charts, and frequency distribution. Each item's frequency plots will be reported in percentages and displayed in tables and diagrams such as pie charts. As the data for this study was obtained from both credit card users and non-users, the frequency distribution analysis will be made individually for the credit card users and non-users and would be presented in one chart for easy comparison

3.8.2 Bivariate analysis

This research contains two variables as the dependent variable and the independent variable. As per the conceptual model, credit card usage is the dependent variable and the factors that influence credit card usage is the independent variable. Therefore, in this study, the bivariate analysis is done to find out the most influencing factors that induce credit card usage. The following statistical technique will be selected to do the above bivariate analysis.

- Correlation
- Binary logistic regression
- Odds and Odd ratio

3.8.2.1 Correlation

The strength of a relationship between two variables is measured by correlation. The hypothesis is used to identify correlations among the variables.

Hypothesis

H0: There is no Correlation

H1: There is a Correlation

Decision rule

P value < 0.05

There is enough evidence to reject Ho at 0.05 significant levels.

The correlation coefficient is a measurement of the degree and direction of a relationship between two variables. The value ranges from +1 to -1.

- Positive correlation : One variable increases, whereas the other increases.
- Negative correlation : One variable increases, whereas the other decreases
- No correlation : The two variables do not have any relationship.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

3.8.2.2 Binary logistic regression

When the dependent variable has a binary type and the explanatory variable has a binary type, binary logistic regression is utilized. Simply means, that the dependent variable divides into two parts. And also, predictors are treated as categorical to exist on a nominal and some are continuous variable exists with scale data. The logistic regression or logistic form can be taken as the following form,

$$\text{logit } p(x) = \log \frac{p(x)}{1 - p(x)} = \alpha + \beta(x)$$

Where,

$$p(x) = \frac{e^{\alpha + \beta(x)}}{1 + e^{\alpha + \beta(x)}}$$

In here,

X is the explanatory variable

P(x) is the probability of the outcome of the interest

α is the intercept term

This model has the following three models,

- Null model

The null model included only the intercept term and it hasn't explanatory variables. This is a simple model. But this is not a good model.

- Full model

The full model can be identifying as a saturated model. Model for which fitted values consistent with the actual observations. This is a model that completely fits the data.. But it is not useful since it does not provide the most simple summary of the data than the individual observations themselves.

- Current model

This model can be identifying as a new model. A model that contains some of the predictors is called the current model.

3.8.2.3 Odds and Odd ratio

The odd ratio is used to see if the probability of a specific event is the same in both groups. The ratio of the probability of success to failure can be identified as odds. An odds ratio of one means the event is equally likely in both groups, while an odds ratio greater than one means the event is more likely in the first group. If the odds ratio is smaller than one, the event is less likely to occur in the first group. The odd can be calculated as follows.

$$\text{odds}_1 = \frac{P_1}{1-P_1}$$

$$\text{odds}_2 = \frac{P_2}{1-P_2}$$

Odds ratio denoted by θ ,

$$\theta = \text{OR} = \frac{\Omega_1}{\Omega_2} = \frac{P_1/1 - P_1}{P_2/1 - P_2}$$

3.8.3 Reliability Assessment

The level of a measure's stability and consistency is usually referred to as its reliability. This will ensure consistent measurement across the time and various items in the measurement instrument. Measurement accuracy of the previously defined variables has been measured with 5 points Likert scale technique. Cronbach's Alpha, the most popular test on internal consistency reliability (Cronbach, 1946) has been used to evaluate the reliability of the multipoint scaled items.

3.8.4 Test for Goodness of Fit

The goodness of fit test is a statistical hypothesis test that determines how well the observed and anticipated values of the model fit together.

H0 : Model fits data well

H1 : Model does not fit data well

Hosmer and Lemeshow test can be used to test the goodness of fit of the model for the binary logistic regression model.

Test Statistic

$$G^2_{\text{HL}} = \sum_{i=1}^n \frac{(O_j - E_j)^2}{E_j(1 - E_j/N_j)} \sim \chi^2$$

CHAPTER FOUR

ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter deeply appraises research objectives based on the gathered information through the distribution of the analysis of the questionnaire of data. Mainly this chapter incorporates formal presentation of data, analysis, and discussion of the research results to accomplish the research objective. In the beginning, this chapter presents the credit card usage of the customers graphically. Demographics information has been also presented to clearly identify the effect of demographic variables on credit card usage. And also researcher analyzed data by using factor analysis, Chi-square test, and binary logistic regression.

The data was analyzed using SPSS version 16 of the Statistical Package for the Social Sciences (SPSS).

4.2 Univariate Analysis

This section includes data presentation of the study by using pie chart and bar chart that derived from collecting information through distribution of questionnaires from the respondents of the study. Furthermore, to represent the overall idea of the selected sample, frequency data have been converted to percentages

4.2.1 Credit card usage and non-usage among the sample

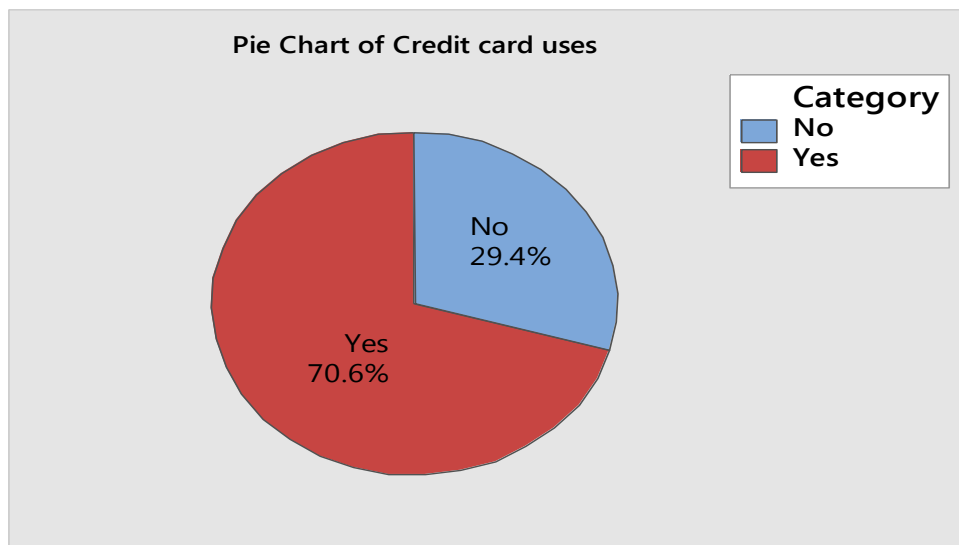


Figure 4.1: Credit Card Use

The data for this study has been collected from both credit card users and non-users of the selected sample of the Boralesgamuwa area. As reflected in Figure 4.1, around 70.6% of customers use Credit cards in the Boralesgamuwa area. Other 29.4% of people do not use this facility in this area. There may be more factors that affect the use of Credit Card and discourage the use of Credit Card. Identifications of those factors are very important, hence it may be useful to improve Credit Card usage.

4.2.2 Frequency Distribution Analysis of Respondents by Their Demographic characteristics

The gathered information on respondents' personal attributes is presented and analyzed as follows:

The following personal characteristics of respondents were gathered as data.

- Gender
- Marital Status
- Age
- Education level
- Occupation
- Monthly Income

4.2.2.1 Gender and Credit Card Uses

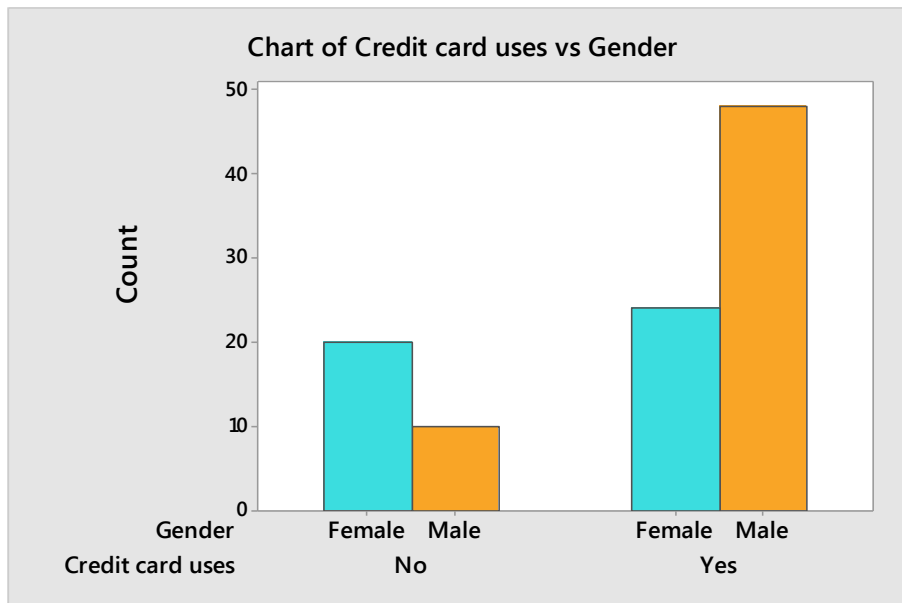


Figure 4.2: Gender and Credit Card Uses

Figure 4.2 shows gender distribution with the use of Credit Card in the Boralesgamuwa area. According to Figure 4.2, among credit card users male (48) are higher than female (24). When interpreted in percentage, male credit card users are 67%, while female users are only 33%. Among credit card non-users, more females are not using credit cards in the Boralesgamuwa area.

4.2.2.2 Age and Credit card uses

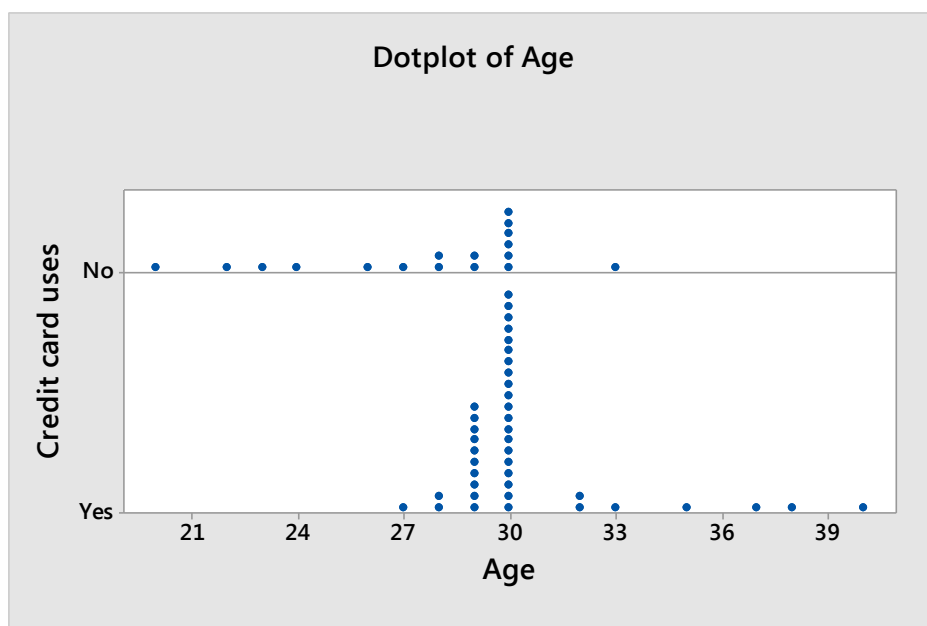


Figure 4.3: Age and credit card uses

Figure 4.3 demonstrates that people over the age of 30 are the most likely to use credit cards, while people under the age of 30 are less likely to use them.

	Credit card uses	Median	Inter Quartile Range	Skewness
Age	No	29	4.00	-1.08
	Yes	30	1.00	2.79

Table 4.1: Age and credit card uses

Table 4.1 demonstrates that the age distribution of credit card users is positively skewed (2.79) by the time they reach the age of 30. The distribution of non-credit card users is negatively skewed (-1.08), and 29-year-olds do not use credit cards regularly. The median age of credit card users and non-users is approximately equal. But the interquartile range of non-users is greater than the card users.

4.2.2.3 Education level and Credit card uses

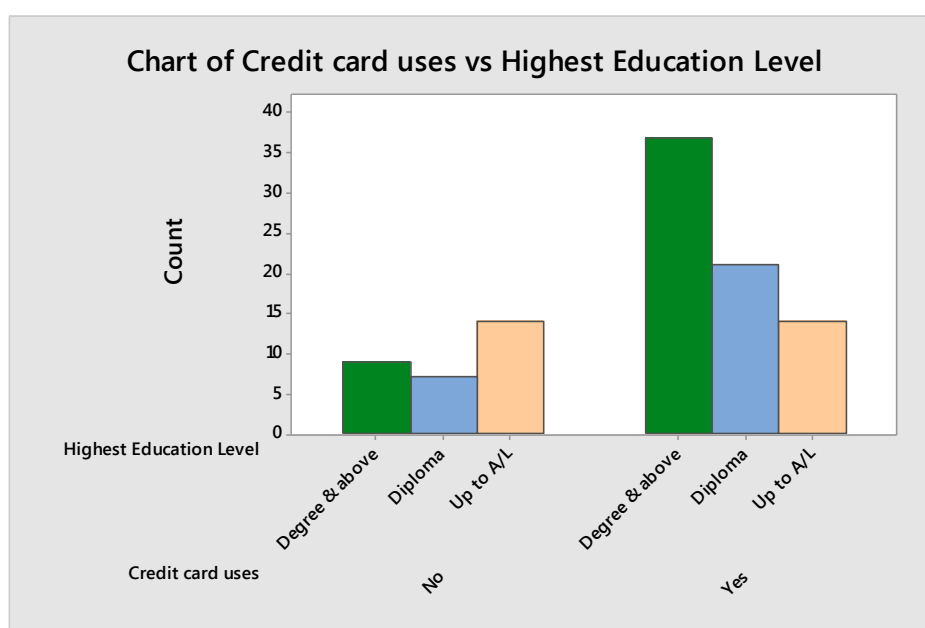


Figure 4.4: Education level and credit card uses

This graph shows in Figure 4.4, education level is an important factor to determine the use of Credit cards in the Boralesgamuwa area. Among credit card uses in the Boralesgamuwa area more customers have been completed degrees. Among credit card nonusers, less amount of higher educated people do not use the credit card and some of the customers who are educated up to A/L are not using this facility. But

higher amounts of the customers who have learned up to A/L do not use this facility. Education level can make a significant difference towards the use of credit cards.

4.2.2.4 Marital Status and Credit card uses

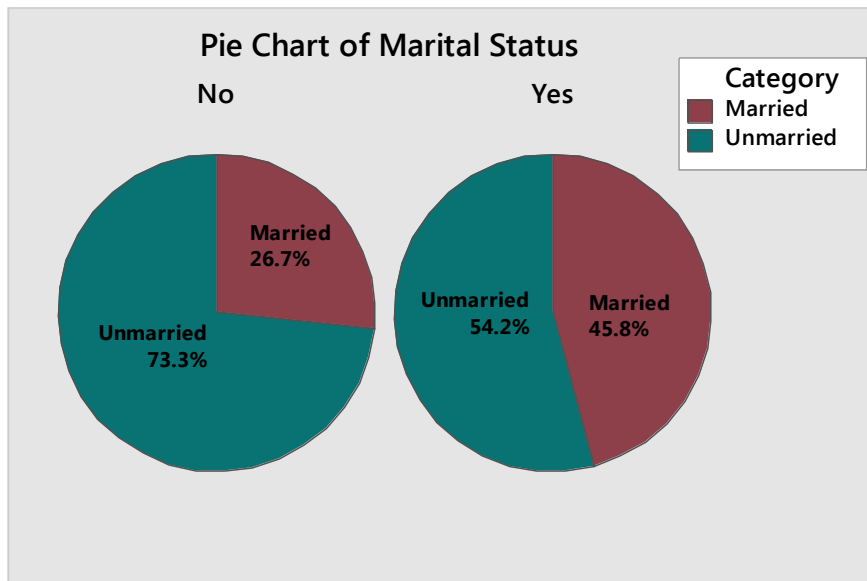


Figure 4.5: Marital Status and Credit Card uses

According to Figure 4.5, more specifically, when considered card users and non-users majority are unmarried. Credit card non-users 73.3% are unmarried and from card users 54.2% are unmarried

4.2.2.5 Occupation and Credit card uses

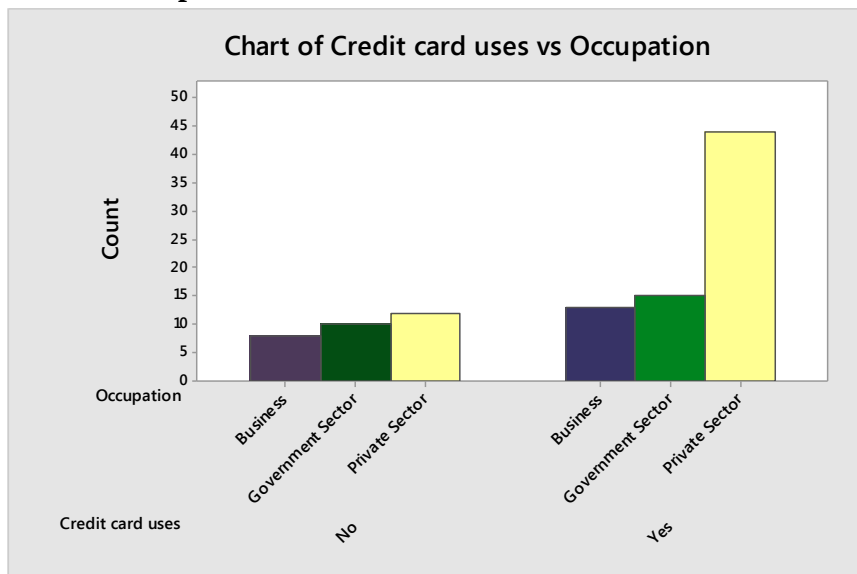


Figure 4.6: Occupation and Credit card usage

Figure 4.6, exhibits Credit card uses and non-users according to the occupation that they are currently engaged in. Most of the customers who use and don't use credit cards have been engaged in private sector occupations. But the difference between card users and non-users of the private sector is very higher than the other sectors. Through this it can be said that more the people get employed in the private sector, the more likely they use credit cards.

4.2.2.6 Monthly income and Credit card uses

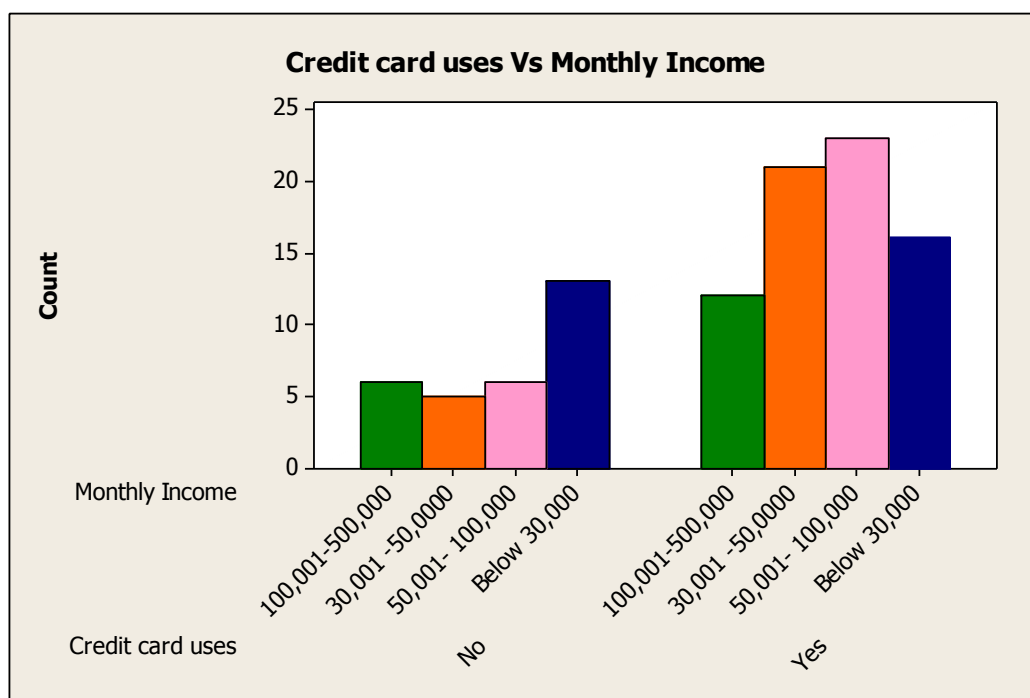


Figure 4.7: Monthly income and Credit card usage

According to Figure 4.7, most of the credit card nonusers' income level is below 30,000. Other income levels of nonusers' are approximately equal. Among the credit card users, most are in the 50,000-100,000 monthly income category and the lowest is in the 101,000-500,000 category.

4.3 Reliability test

By testing for consistency and stability, the reliability of a measure is established. Consistency tells us how well the items are measuring the concept hang together as a set.

The reliability of the items used to measure using Cronbach's alpha. it is a process for analyzing the internal consistency of objects. (Walsh & Betz, 1995). The reliability coefficient indicates how effectively objects in a set are related to one another. The coefficient value ranges from 0 (showing no internal consistency reliability) and 1 (representing high internal consistency reliability). This value's minimum level is 0.7, indicating an efficient level of internal consistency reliability.

4.3.1 Relative advantage

Cronbach's Alpha	Number of items
0.721	4

Table 4.2: Relative advantage

As per Table 4.2, Cronbach's alpha value is 0.721 which is greater than 0.7. So Relative advantage variable indicates high reliability as well as internal consistency.

4.3.2 Financial Knowledge and Experience

Cronbach's Alpha	Number of items
0.827	4

Table 4.3: Perceived Financial Knowledge and Experience

As per Table 4.3, Cronbach's alpha value is 0.827 which is greater than 0.7. So Relative advantage variable indicates high reliability as well as internal consistency.

4.3.3 Perceived Risk

Cronbach's Alpha	Number of items
0.703	3

Table 4.4: Perceived Risk

As per Table 4.4, Cronbach's alpha value is 0.703 which is greater than 0.7. So Relative advantage variable indicates high reliability as well as internal consistency.

4.3.4 Perceived cost

Cronbach's Alpha	Number of items
0.871	4

Table 4.5.: perceived cost

As per Table 4.5, Cronbach's alpha value is 0.871 which is greater than 0.7. So Relative advantage variable indicates high reliability as well as internal consistency.

4.4 Correlations

The strength of a relationship between two variables is measured by correlation. The behavior of credit card users in the Boralesgamuwa area can be identified using correlation analysis.

H0: There is no Correlation

H1: There is a Correlation

	Age	Relative Advantage	Financial Knowledge	Perceived Risk	Perceived cost
Age	1	-.259** (.009)	-.184 (.065)	-.292** (.003)	-.343** (.000)
Relative Advantage	-.259** (.009)	1	.652** (.000)	.274** (.005)	.515** (.000)
Financial Knowledge	-.184 (.065)	.652** (.000)	1	.294** (.003)	.570** (.000)
Perceived Risk	-.292** (.003)	.274** (.005)	.294** (.003)	1	.449** (.000)
Perceived cost	-.343** (.000)	.515** (.000)	.570** (.000)	.449** (.000)	1

Table 4.6 Correlation

According to Pearson correlation and p-value in Table 4.6, There is no linear relationship between age and financial knowledge & experience. Because the p-value is not significant 5% level of significance.

There is a large and positive linear relationship between relative advantage and financial knowledge & experience, Relative advantage and perceived cost, financial knowledge & experience and perceived cost Medium and positive linear relationship between perceived risk and perceived cost at 5% level of significance.

There is a small positive linear relationship between relative advantage and perceived risk, Financial knowledge & experience and perceived risk. A negative medium linear relationship between age and perceived cost. and there is a negative small linear

relationship between age and relative advantage, Age and perceived risk at 5% level of significance.

4.5 Binary logistic model

4.5.1 Fit the model for binary logistic regression

The logic that expresses the natural log of the probabilities of having chosen one of two decisions was predicted using the binary logistic regression model. The forward selection method was used in this study. The forward selection method begins with the simplest model and inserts one variable with a strong individual effect at a time, deleting variables when they become no longer significant.

According to this research Credit Card Users in the Boralesgamuwa area predicted the probability of the event. It has been coded with 0 representing “No” and 1 represent “ Yes” and all other factors of Credit card uses Boralesgamuwa area are explanatory variables of the study. Firstly should be considering the significance of the null model.

Parameter	B	Std. Error	Hypothesis Test			Exp(B)
			Wald Chi-Square	Df	Sig.	
(Intercept)	.875	.2173	16.231	1	.000	2.400

Table 4.7: Variables in the equation table null model

Table 4.7, represents a p-value of 0.000 and it is less than 0.05 significance level. Therefore the null model is significant at a 95% significance level and 1 degree of freedom.

$$\begin{aligned}
 \text{logit } p(x) &= \frac{p(x)}{1 - p(x)} \\
 &= \beta_0 \\
 &= 0.875
 \end{aligned}$$

Predicted odd value can be calculated by using both responses of “yes” and “no” of credit card uses, considering all respondents of the sample. 72 respondents represent “Yes” under credit card uses in the Boralesgamuwa area and 30 respondents represent “No”.

4.5.2 Model fitting using forward selection method

Parameter	B	Std. Error	Hypothesis Test			Exp(B)	95.0% C.I. for EX	
			Wald Chi-Square	Df	Sig.		Lower	Upper
(Intercept)	-7.526	6.082	1.531	1	.216	.001	-	-
Gender – Male	2.026	.701	8.361	1	.004	7.580	1.920	29.921
Age	.401	.188	4.537	1	.033	1.494	1.033	2.162
Highest Education – Diploma	1.843	.891	4.279	1	.039	6.318	1.102	36.236
Highest Education – Degree & Above	2.138	.793	7.276	1	.007	8.484	1.794	40.115
Relative Advantage	-2.617	.792	10.927	1	.001	.073	.015	.345

Table 4.8: Individual Variables

According to Table 4.8, All variables are significantly affected to the Credit Card uses Boralesgamuwa area at 5% level of significance.

Parameter	B	Std. Error	Hypothesis Test			Exp(B)	95.0% C.I. for EX	
			Wald Chi-Square	Df	Sig.		Lower	Upper
(Intercept)	-21.508	9.082	5.609	1	.018	.000	-	-
Gender – Male	2.262	.797	8.058	1	.005	9.602	2.014	45.772
Age	.432	.210	4.219	1	.040	1.540	1.020	2.324
Highest Education – Diploma	2.320	.978	5.632	1	.018	10.179	1.498	69.177
Highest Education – Degree & Above	2.912	.985	8.741	1	.003	18.397	2.669	126.819
Perceived Cost	4.043	2.138	3.578	1	.059	57.015	.864	57.015
Relative Advantage	5.493	3.023	3.302	1	.069	243.099	.650	243.099
Perceived cost * Relative Advantage	-2.572	1.074	5.730	1	.017	.076	.009	.076

Table 4.9: Tests of Model Effects (Fitted Model)

According to Table 4.9, Gender_Male, Age, Highest Education_ Diploma and Degree & Above and Interaction of Perceived cost and Relatively advantage variables are significant at 5% level of significance. Because the interaction term is significant, the model was expanded to include the main variables perceived cost and relative advantage.

Fitted model is,

$$\text{logit } p(x) = -21.508 + 2.262 * \text{Gender_ Male} + 0.432 * \text{Age} + 2.320 * \text{Highest Education_ Diploma} + 2.912 * \text{Highest Education_ Degree \& Above} + 4.043 * \text{Perceived Cost} + 5.493 * \text{Relative Advantage} - 2.572 * \text{Perceived Cost} * \text{Relative Advantage}$$

		Frequency	Parameter coding		
			(1)	(2)	(3)
Monthly_Income	Below 30,000	29	1.000	.000	.000
	30,001 - 50,000	26	.000	1.000	.000
	50,001 - 100,000	29	.000	.000	1.000
	100,001 - 500,000	18	.000	.000	.000
Highest_Education	Up to A/L	28	.000	.000	
	Diploma	28	1.000	.000	
	Degree & above	46	.000	1.000	
Occupation	Business	21	1.000	.000	
	Private Sector	56	.000	1.000	
	Govenment Sector	25	.000	.000	
Marital_States	Unmarried	61	1.000		
	Married	41	.000		
Gender	Male	58	1.000		
	Female	44	.000		

Table 4.10: Categorical Variable Coding

4.6 Test for Goodness of Fit

The goodness of fit test is a statistical hypothesis test that determines how well the observed and anticipated values of a model fit together.

H0: Model fits data well

H1: Model does not fit data well

	Chi-Square	Df	Sig.
Hosmer and Lemeshow Test	2.364	8	.968

Table 4.11: Goodness of Fit value

The respected p-value of Table 4.11 is 0.968. Since the p-value is > 0.05 we do not have enough evidence to reject our null hypothesis. Therefore we can conclude that the fitted model fits the data well.

4.7 R² Coefficient of determination

-2 log likely hood	Cox and sell R square	Nagelkerke R Square
60.453	0.461	0.657

Table 4.12: R² Value

According to Table 4.12, the coefficient of determination implies that 46.1% variation in the dependent variable is explained in binary logistic regression. Nagelkerke R Square represent 65.7% moderate relationship. Normally Nagelkerke R square shows a higher value than the cox and shell R square value.

4.8 Odds ratio

Table 4.9 provides the following information.

4.8.1 Odds Ratios for Continuous Predictors

	Odds ratio
Age	1.540

Table 4.13: Odds ratio for age

According to Table 4.13, This implies that a change in one unit in age changes the odds of using a credit card increases by 1.5 units other variables remain constant.

4.8.2 Odds Ratios for Categorical Predictors

Level A	Level B	Odds ratio
Gender		
Male	Female	9.602
Highest Education Level		
Diploma	Up to A/L	10.179
Degree or above	Up to A/L	18.397

Table 4.14: Odds ratio for categories

4.8.2.1 Odds ratio for Gender

According to Table 4.14, this result indicates the odds of using a credit card is 9.6 times higher for males than females while other variables remain constant.

4.8.2.2 Odds ratio for Highest Education Level

As per Table 4.14, This result indicates the odds of using a credit card is 10.2 times higher for who having a diploma compared to up to A/L educated customer while other variables remain constant

According to Table 4.14, Odds of using a credit card is 18.4 times higher for who had a degree & above compared to up to A/L educated customer while other variables remain constant

4.9 Discussion

The binary logistic regression was conducted and identified Age, Gender, and Education Level are highly affected by the use of credit cards in the Boralesgamuwa Area. The study results found that the middle-aged category (age 30) is the majority of use Credit cards in Boralesgamuwa. Males are more likely than females to use credit cards.. People who are lower education levels, use a credit card in less amount in the Boralesgamuwa area. People with the highest level of education, such as a diploma, degree & above, are more likely to use a credit card. According to Hosmer Lemesho test model is good.

People should focus on their financial behavior due to the difficult financial situation and the Covid 19 pandemic situation. Because the majority of the income-generating sources are declining. The bulk of the audience is looking for credit cards that offer more relative benefits and lower perceived costs in order to bridge the gap between their income and their expenses..

CHAPTER FIVE

CONCLUSION & RECOMMENDATIONS

5.1 Findings and Conclusions of the Study

Age, gender, level of education, perceived cost, and relative advantage variables have all been proven to have a significant impact on credit card usage in the Boralesgamuwa area. Educated up to diplomas and degrees & above show a high sensitiveness in acquiring credit cards. People with less education are less likely to utilize credit cards in the Boralesgamuwa area. The use of a credit card has a considerable impact on age-related characteristics. In the Boralesgamuwa area, young people over the age of 30 are more likely to use credit cards than others. Adults and people under 30 are less likely to use credit cards. Males are more likely than females to use credit cards. To find factors that increase the number of credit cards in the Boralesgamuwa town area, understanding of this partial objective can be gleaned from these demographic factors.

The study discovered that relative advantage had an impact on credit card usage in the Borlesgamuwa area. The majority of the audience is looking for a higher relative advantage to bridge the gap between their income and their expenses, such as purchasing power or credit card economic benefits. Security and prestige are also crucial issues to the people To identify factors that can be advertised in order to motivate people to use credit cards in the Boralesgamuwa town area , To investigate the factors that lead people to utilize credit cards instead of cash in the Boralesgamuwa town area. These semi-objectives are explained in this section. Under the Perceived cost, peoples think about financial fees and charges. Banks must charge lower fees and charges, so that the number of people who use credit cards increases.

To determine whether customers in the Boralesgamuwa town region are aware of the prices and fees associated with credit cards, This section delves into these partial objectives. To determine the benefits and drawbacks of using credit cards in the Boralesgamuwa town area, To identify the most suitable credit card that is acceptable to consumers in the Boralesgamuwa town area, These partial objectives are explained by the theories of relative advantage and perceived cost.

5.2 Recommendations and Implications

The conclusions of this study have important consequences for banking practitioners and policymakers. Thus, the following recommendation can be made.

The study suggests that awareness about credit cards should be improved and websites should be designed as effective delivery channels to provide more information apart from the banking service at the branch. Information and instructions should be available in both English and Sinhala medium on the web and bank leaflets to make adopters comfortable and to provide wide publicity about credit cards. Techniques should be adopted to improve Credit card use.

Bank staff can explain to their customers, advantages like convenience, more economical, prestige, and security with the bank; those can be generated with this service. In a practical situation, credit cards can be handled for emergency situations and get benefits. A friendly interface should be designed for credit card users to attract the system. It should not be more complex. The bank should be more concerned about the Fees and charges and Credit card interest rates.

Female customers are more fearful to use credit cards. Banks should be more concerned about these customers. Banks should provide more information, instructions, and encourage female non-users of credit cards. As the number of working women grows, a specialized product that provides additional benefits when shopping for domestic supplies can be introduced just for them.

People who are in a lower level of education are less likely to use credit cards in the Boralesgamuwa area. Therefore, information and instructions should be available in both English and Sinhala medium. It is found out through the investigation that young ones are the people who use credit cards more than older ones. To attract older customers towards a credit card, programs should be designed to fit them and clear awareness should be made to this category.

Most people do not acquire credit cards due to the fear of overspending and they think they couldn't repay the debt. Therefore, the banks that offer this credit card facility should set credit limit that is bearable by the customers. At the point of sales or in the

media, banks should provide a good rating and emphasize that credit is not a risk service.

A credit card app should be developed by the bank. People can use the mobile app to check their payment history and credit card offers. People can easily understand by using a user-friendly Smartphone app. As a result, the credit card transactions might be increased. Consumers should be able to get a loan with their credit card and pay it back in installments with a low-interest rate. Credit card users should be rewarded by the bank, as this will encourage them to use their cards more frequently. An OTP message should be available to confirm payment for POS transactions. It will improve credit card security.

People are encountering numerous financial issues as a result of the pandemic situation. For the most part, they are always concerned about the perceived expense. In order to enhance credit card usage and transaction volume, the bank should disregard credit card financial fees and charges. Banks should increase their deposits based on the results. Many people use credit cards for online transactions because of the pandemic situation. Banks must charge lower online transaction fees, so that the number of people who use credit cards increases.

5.3 Limitations of the Current Study and Directions for Future Research

Like any study, this study also has several limitations that may affect the study.

The generalizability of the research findings to the general population may not occur, even if some important findings were highlighted and revealed. And, the results cannot be generalized to the whole Sri Lankan context.

Another limitation can be that data collected through structured questionnaire method was only used to analyze and to generate results for this research and it may not be sufficient. Other than that, data collected from direct interviews could be used in the analysis.

However, this study provides useful insights to future researchers in the field of banking, with special reference to credit card marketing. As published researches are very less in this field, future research can be done to cover a large area like, Colombo

district of Western province. This study is an explorative type of study, so further research in this field could be done as an analytical or causal investigation. Other than those moderating effects of demographic features like gender, age, income, marital status, and other characteristics might also be tested about credit card usage. Conducting further research can give a whole view of credit card usage.

The data was collected using a stratified sample method and analyzed using binary logistic regression. However, the stratified logistic regression approach can be utilized for this analysis.

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ANNEXURE

Appendix A - Questionnaire

Survey on Factors influencing the usage of credit cards

Part I – Demographic Factors

Please answer the following questions by crossing (X) on the relevant box

1) Credit Card Uses

☐	Yes
☐	No

2) Gender

☐	Male
☐	Female

3) Marital Status

☐	Married
☐	Unmarried
☐	Other

4) Age

.....

5) Highest Education Level (If other, please specify)

☐	Up to O/L
☐	Up to A/L
☐	Diploma
☐	Degree and Above

6) Occupation

☐	Government Sector
☐	Private Sector
☐	Business
☐	Other

7) Monthly Income (Deducting loan and rental)

☐	Below 30,000
☐	30,001 – 50,000
☐	50,001 – 100,000
☐	100, 001 – 500,000
☐	Above 500, 000

Both Credit card users and non- users should answer the following questions

Part II

Please circle and indicate to what extent you agree with each of the following statements

No	Questions	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)
Relative Advantage						
8	I aware / like to use credit cards as through them I can pay bills and withdraw cash at ATM	1	2	3	4	5
9	I already know / prefer to use credit cards because through them I can buy first and pay later and its interest-free up to a certain day limit	1	2	3	4	5
10	I already know / prefer to use credit cards as purchases can be done conveniently without carrying cash at hand	1	2	3	4	5
11	I aware / perceive that using credit cards is prestigious and respectable among others	1	2	3	4	5
Financial knowledge and Experience						
12	I have a thorough knowledge of credit cards facility	1	2	3	4	5
13	The bank/ service provider where I do my daily transactions make me aware of credit card facilities	1	2	3	4	5
14	My family members and friends are using credit cards to a great extent	1	2	3	4	5
15	I already know the advantages gained through using a credit card	1	2	3	4	5

Perceived risk						
16	I fear to use credit card as payment through websites / ATM is unsecured	1	2	3	4	5
17	I fear to use credit cards and also feel anxious as they can be copied or counterfeited	1	2	3	4	5
18	I fear to use credit cards as personal information can be collected and used illegally	1	2	3	4	5
Perceived Cost						
19	I discourage the use of credit card as interest rates are high	1	2	3	4	5
20	I discourage the use of credit card as it includes annual fees and other optional fees	1	2	3	4	5
21	I agree that it costs more money to use credit cards from access cost to transaction cost	1	2	3	4	5
22	I fear to use credit cards as fees would be imposed to late payments	1	2	3	4	5

Part III

23) Do you have any suggestions or recommendations regarding credit card facility?

Appendix B – Table Outputs

Reliability analysis

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.721	.728	4

Financial Knowledge and Experience

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.827	.831	4

Perceived Risk

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.703	.704	3

Perceived Cost

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.871	.872	4

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	102	100.0
	Missing Cases	0	.0
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable

Encoding

Original Value	Internal Value
No	0
Yes	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
Monthly_Income	Below 30,000	29	1.000	.000	.000
	30,001 - 50,000	26	.000	1.000	.000
	50,001 - 100,000	29	.000	.000	1.000
	100,001 - 500,000	18	.000	.000	.000
Highest_Education	Up to A/L	28	.000	.000	
	Diploma	28	1.000	.000	
	Degree & above	46	.000	1.000	
Occupation	Business	21	1.000	.000	
	Private Sector	56	.000	1.000	
	Govenment Sector	25	.000	.000	
Marital_States	Unmarried	61	1.000		
	Married	41	.000		
Gender	Male	58	1.000		
	Female	44	.000		

Classification Table^{a,b}

Observed			Predicted		
			Creditcard_use		Percentage Correct
			No	Yes	
Step 0	Creditcard_use	No	0	30	.0
		Yes	0	72	100.0
Overall Percentage					70.6

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	.875	.217	16.231	1	.000	2.400

Classification Table^a

Observed			Predicted		
			Creditcard_use		Percentage Correct
			No	Yes	
Step 5	Creditcard_use	No	18	12	60.0
		Yes	3	69	95.8
Overall Percentage					85.3

a. The cut value is .500

Correlations

		Age	Relative_Advantage	Financial_Knowledge	Percieved_Risk	Perceived_cost
Age	Pearson Correlation	1	-.259**	-.184	-.292**	-.343**
	Sig. (2-tailed)		.009	.065	.003	.000
	N	102	102	102	102	102
Relative_Advantage	Pearson Correlation	-.259**	1	.652**	.274**	.515**
	Sig. (2-tailed)	.009		.000	.005	.000
	N	102	102	102	102	102
Financial_Knowledge	Pearson Correlation	-.184	.652**	1	.294**	.570**
	Sig. (2-tailed)	.065	.000		.003	.000
	N	102	102	102	102	102
Percieved_Risk	Pearson Correlation	-.292**	.274**	.294**	1	.449**
	Sig. (2-tailed)	.003	.005	.003		.000
	N	102	102	102	102	102
Perceived_cost	Pearson Correlation	-.343**	.515**	.570**	.449**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	102	102	102	102	102

** . Correlation is significant at the 0.01 level (2-tailed).

Full Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.026	.701	8.361	1	.004	7.580	1.920	29.921
Age	.401	.188	4.537	1	.033	1.494	1.033	2.162
Highest_Education			7.671	2	.022			
Highest_Education(1)	1.843	.891	4.279	1	.039	6.318	1.102	36.236
Highest_Education(2)	2.138	.793	7.276	1	.007	8.484	1.794	40.115
Relative_Advantage	-2.617	.792	10.927	1	.001	.073	.015	.345
Constant	-7.526	6.082	1.531	1	.216	.001		

a. Variable(s) entered on step 4: Highest_Education.

Interaction terms of variable with gender

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 6 ^a Age	.395	.201	3.850	1	.050	1.485	1.000	2.203
Highest_Education			8.007	2	.018			
Highest_Education(1)	1.933	.888	4.739	1	.029	6.910	1.212	39.379
Highest_Education(2)	2.297	.839	7.494	1	.006	9.941	1.920	51.465
Relative_Advantage	-2.193	.837	6.864	1	.009	.112	.022	.576
Perceived_cost	-1.265	.651	3.772	1	.052	.282	.079	1.012
Gender(1) by Perceived_Risk	.676	.238	8.038	1	.005	1.965	1.232	3.135
Constant	-4.347	6.464	.452	1	.501	.013		

a. Variable(s) entered on step 5: Perceived_cost.

Interaction terms of variable with marital status

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.026	.701	8.361	1	.004	7.580	1.920	29.921
Age	.401	.188	4.537	1	.033	1.494	1.033	2.162
Highest_Education			7.671	2	.022			
Highest_Education(1)	1.843	.891	4.279	1	.039	6.318	1.102	36.236
Highest_Education(2)	2.138	.793	7.276	1	.007	8.484	1.794	40.115
Relative_Advantage	-2.617	.792	10.927	1	.001	.073	.015	.345
Constant	-7.526	6.082	1.531	1	.216	.001		

a. Variable(s) entered on step 4: Highest_Education.

Interaction terms of variable with age

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	1.984	.696	8.125	1	.004	7.272	1.859	28.452
Relative_Advantage	-7.612	2.501	9.265	1	.002	.000	.000	.067
Age *			7.845	2	.020			
Highest_Education								
Age by Highest_Education(1)	.063	.030	4.399	1	.036	1.065	1.004	1.131
Age by Highest_Education(2)	.072	.027	7.342	1	.007	1.075	1.020	1.132
Age by Relative_Advantage	.171	.084	4.133	1	.042	1.186	1.006	1.399
Constant	4.257	1.733	6.037	1	.014	70.603		

Interaction terms of variable with highest education

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 6 ^a Gender(1)	2.069	.722	8.201	1	.004	7.916	1.921	32.616
Age	.421	.210	4.033	1	.045	1.524	1.010	2.298
Relative_Advantage	-2.985	.895	11.132	1	.001	.051	.009	.292
Perceived_cost	-1.257	.660	3.627	1	.057	.284	.078	1.037
Highest_Education * Relative_Advantage			8.932	2	.011			
Highest_Education(1) by Relative_Advantage	1.002	.420	5.686	1	.017	2.724	1.195	6.208
Highest_Education(2) by Relative_Advantage	1.151	.393	8.558	1	.003	3.162	1.462	6.837
Constant	-3.669	6.614	.308	1	.579	.025		

a. Variable(s) entered on step 5: Perceived_cost.

Interaction terms of variable with occupation

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.026	.701	8.361	1	.004	7.580	1.920	29.921
Age	.401	.188	4.537	1	.033	1.494	1.033	2.162
Highest_Education			7.671	2	.022			
Highest_Education(1)	1.843	.891	4.279	1	.039	6.318	1.102	36.236
Highest_Education(2)	2.138	.793	7.276	1	.007	8.484	1.794	40.115
Relative_Advantage	-2.617	.792	10.927	1	.001	.073	.015	.345
Constant	-7.526	6.082	1.531	1	.216	.001		

a. Variable(s) entered on step 4: Highest_Education.

Interaction terms of variable with monthly income

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.026	.701	8.361	1	.004	7.580	1.920	29.921
Age	.401	.188	4.537	1	.033	1.494	1.033	2.162
Highest_Education			7.671	2	.022			
Highest_Education(1)	1.843	.891	4.279	1	.039	6.318	1.102	36.236
Highest_Education(2)	2.138	.793	7.276	1	.007	8.484	1.794	40.115
Relative_Advantage	-	.792	10.927	1	.001	.073	.015	.345
	2.617							
Constant	-	6.082	1.531	1	.216	.001		
	7.526							

a. Variable(s) entered on step 4: Highest_Education.

Interaction terms of variable with relatively advantage

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.168	.753	8.302	1	.004	8.743	2.000	38.214
Age	.458	.219	4.367	1	.037	1.582	1.029	2.431
Highest_Education * Relative_Advantage			9.152	2	.010			
Highest_Education(1) by Relative_Advantage	1.037	.430	5.829	1	.016	2.821	1.216	6.549
Highest_Education(2) by Relative_Advantage	1.277	.429	8.862	1	.003	3.585	1.547	8.310
Perceived_cost by Relative_Advantage	-.839	.205	16.694	1	.000	.432	.289	.646
Constant	-9.606	6.626	2.102	1	.147	.000		

a. Variable(s) entered on step 4: Highest_Education * Relative_Advantage .

Interaction terms of variable with financial knowledge and experience

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 6 ^a Gender(1)	14.092	4.813	8.572	1	.003	1.319E6	105.474	1.649E10
Age	.671	.312	4.614	1	.032	1.955	1.060	3.605
Highest_Education			9.074	2	.011			
Highest_Education(1)	2.882	1.116	6.667	1	.010	17.857	2.003	159.214
Highest_Education(2)	3.441	1.160	8.795	1	.003	31.208	3.212	303.244
Relative_Advantage	-1.769	.864	4.187	1	.041	.171	.031	.928
Financial_Knowledge by Gender(1)	-3.927	1.457	7.263	1	.007	.020	.001	.343
Constant	-18.357	10.246	3.210	1	.073	.000		

a. Variable(s) entered on step 5: Financial_Knowledge * Gender .

Interaction terms of variable with perceived cost

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 5 ^a Gender(1)	2.122	.739	8.235	1	.004	8.345	1.959	35.540
Age	.425	.207	4.213	1	.040	1.529	1.019	2.294
Highest_Education			8.869	2	.012			
Highest_Education(1)	2.124	.932	5.194	1	.023	8.364	1.346	51.969
Highest_Education(2)	2.609	.896	8.483	1	.004	13.583	2.347	78.602
Perceived_cost by Relative_Advantage	-.662	.180	13.460	1	.000	.516	.362	.735
Constant	-9.673	6.357	2.316	1	.128	.000		

a. Variable(s) entered on step 4: Highest_Education.

Interaction terms of variable with perceived risk

Variables in the Equation								
		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)
								Lower Upper
Step 8 ^a	Age	.907	.412	4.844	1	.028	2.476	1.104 5.550
	Highest_Education			6.854	2	.032		
	Highest_Education(1)	23.730	10.304	5.303	1	.021	2.022E10	1.194E19
	Highest_Education(2)	-6.653	3.651	3.321	1	.068	.001	1.652
	Relative_Advantage	-4.351	1.468	8.786	1	.003	.013	.001 .229
	Perceived_cost	-2.541	1.008	6.354	1	.012	.079	.011 .568
	Gender(1) by Percieved_Risk	1.252	.398	9.900	1	.002	3.497	1.603 7.627
	Highest_Education * Percieved_Risk			8.257	2	.016		
	Highest_Education(1) by Percieved_Risk	-6.435	2.910	4.889	1	.027	.002	.000 .481
	Highest_Education(2) by Percieved_Risk	3.251	1.325	6.023	1	.014	25.806	1.924 346.052
	Monthly_Income * Percieved_Risk			6.802	3	.078		
	Monthly_Income(1) by Percieved_Risk	1.081	.502	4.640	1	.031	2.948	1.102 7.885
	Monthly_Income(2) by Percieved_Risk	1.531	.616	6.173	1	.013	4.623	1.382 15.467
	Monthly_Income(3) by Percieved_Risk	.635	.350	3.301	1	.069	1.887	.951 3.745
	Constant	-14.132	12.134	1.356	1	.244	.000	

a. Variable(s) entered on step 7: Monthly_Income * Percieved_Risk .

Considering all interaction terms

Variables in the Equation								
		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)
								Lower Upper
Step 4 ^a	Age	.404	.183	4.845	1	.028	1.498	1.045 2.145
	Gender *			8.992	2	.011		
	Highest_Education							
	Gender(1) by Highest_Education(1)	2.436	1.224	3.957	1	.047	11.423	1.036 125.899
	Gender(1) by Highest_Education(2)	2.283	.903	6.399	1	.011	9.809	1.672 57.535
	Perceived_cost by Relative_Advantage	-.653	.169	14.994	1	.000	.521	.374 .725
	Constant	-7.013	5.497	1.628	1	.202	.001	

a. Variable(s) entered on step 3: Gender * Highest_Education .

Full model

Variables in the Equation								
		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)
								Lower Upper
Step 1 ^a	Gender(1)	2.262	.797	8.058	1	.005	9.602	2.014 45.772
	Age	.432	.210	4.219	1	.040	1.540	1.020 2.324
	Highest_Education			9.143	2	.010		
	Highest_Education(1)	2.320	.978	5.632	1	.018	10.179	1.498 69.177
	Highest_Education(2)	2.912	.985	8.741	1	.003	18.397	2.669 126.819
	Perceived_cost	4.043	2.138	3.578	1	.059	57.015	.864 3.762E3
	Relative_Advantage	5.493	3.023	3.302	1	.069	243.099	.650 9.099E4
	Perceived_cost by Relative_Advantage	-2.572	1.074	5.730	1	.017	.076	.009 .627
	Constant	-21.508	9.082	5.609	1	.018	.000	

a. Variable(s) entered on step 1: Gender, Age, Highest_Education, Perceived_cost, Relative_Advantage, Perceived_cost * Relative_Advantage .

R² Coefficient of determination

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	60.453 ^a	.461	.657

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Hosmer and Lemeshow test

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.364	8	.968

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	63.130	7	.000
	Block	63.130	7	.000
	Model	63.130	7	.000