



Cape Peninsula  
University of Technology

**THE COST OF CREDIT DEFAULT IN THE VEHICLE FINANCE INDUSTRY IN  
SOUTH AFRICA**

**By**

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## ABSTRACT

The risk that borrowers may not fulfil borrowing obligation presents credit owners (lenders) with a default risk management opportunity to maximize risk-adjusted rate of return and maintain minimum exposure to default associated cost. This study investigated respondents' perception of the cost of credit default and examines requirements for default risk management (DRM) in the vehicle finance industry in South Africa. It is noted that with increased level of consumer indebtedness, an unstable economy, and high unemployment, vehicle financing faces a higher probability of default from borrowers. This descriptive investigation utilised both the quantitative and qualitative approaches using the survey method to collect data from 381 purposive, randomly selected respondents who are vehicle finance customers in South Africa; Cape Town specifically. Data collection took place in the Western Cape over a nine months period, utilising personal interview, and emails to administer open-ended questionnaires for credit managers and close-ended questionnaires, for the vehicle finances' customers, as data collection instrument. Responses received were codified and quantitative data was analysed using the Statistical Packages for Social Sciences (SPSS version 25) while qualitative data was analysed using the content analysis of percentage of word similarities. The study found mixed and variable respondents' perception of the cost of credit default. In conclusion, it is perceived that in South Africa the cost of credit would become more costly with credit default. It can be recommended that a default risk management intervention could be applied to mitigate the risk of credit default within the context of unified credit assessment policy of South Africa.

**Keywords:** Default Risk Management, Cost Management Accounting, Vehicle Finance, Credit History

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## DEDICATION

To my son Sakhelwe Soga, you bring joy to my life and you are a huge inspiration. You are the reason I constantly improve myself academically and socially. To my beautiful mom Lulama Soga who believes in me and my sister Nandipha Mzizi who had taught me resilience. To my personal Lord and saviour, none of this would have been possible without you.

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## GLOSSARY

### Abbreviations

### Definition

APR	Annual Percentage Rate
SARB	South African Reserve Bank
CEO	Chief Executive Officer
GDP	Gross Domestic Product
SPSS	Statistical Package for Social Sciences
DRM	Default Risk Management



## **CHAPTER ONE**

### **1.1 INTRODUCTION TO THE RESEARCH STUDY**

Vehicle finance enables the provision of credit finance services to support the financing of vehicle on credit. This study investigates the default risk associated with credit financing of motor vehicles in South Africa – in order to identify potential risk mitigating factors needed to manage the cost of credit default. With increased household debt, the risk of credit default is at an all-time high, requiring a new approach in assessing and approving credit vehicle finance application (Schwarz, 2011). It can be argued that assessment requirements may need to be varied in the context of growing household indebtedness and consequent government regulation as a risk management measure. The variation of credit assessment outcomes of cost management is assumed to be complex and trans-disciplinary, requiring different approaches and techniques that involve both quantitative and qualitative methods (Brown & Moles, 2014). The quantitative research in this study has utilised questionnaires to collect data from customers and descriptive analysis was used to analyse the data. The qualitative aspect has used open-ended questionnaires to survey the credit managers. Content analysis was utilised to analyse the data.

The assumption that there are costs of credit default creates the need to perform credit checks on potential customers. This credit check enables the estimation of probability of credit default by customers. The credit check is performed in order to minimize the risk associated with default and to maximize benefit of credit financing. Despite the credit checks, it has been observed that customers default in their payments resulting in the repossession of their vehicles by the financial institution. This study focuses on the cost implications of credit default for customers and financial institution alike.

The understanding of the cost of credit default in the vehicle finance sector is a step towards default risk identification and management: an important aspect of risk management success. Credit costs credit and it is risky as some of the customers may not be able to meet their vehicle finance obligations. Even when customers' (low) probability of default has been assessed upfront and credit checks performed and passed, some customers still default. The estimation of the cost of credit default indicates the likelihood of loss arising from credit financing. The cost of default is an important component of cost of banking operations as it offers an understanding of different behaviours of default rates and institution's financial position. Customers may pass the screening process prior to the granting of vehicle finance but still end up defaulting.

## **1.2 BACKGROUND OF THE STUDY**

Each vehicle application costs money to the financial institutions and some of the customers may not pay, resulting in credit default. Each financial institution's objective is to generate income and make a profit. Extending credit finance is risky, however, as some customers may not repay the full amount. Every credit loan is presumably at risk of default. Each vehicle finance application for a loan should be assessed for probability of default. The aim of the credit management team is to try, as much as possible, to prevent credit default and to check the credit worthiness of each and every customer (Schwarz, 2011).

The cost of default can either be indirect and/ or direct. Indirect costs are costs that are difficult to measure or traced directly to the default, for instance investor confidence, and change in the economy while the direct costs can be lawyers' fees in a case of bankruptcy, reduced profits as a result of loss income (Strebulaev, Davydenko & Zhao, 2012). These costs can affect the financial institution negatively, costing the institution money that could be utilised in a more positive way such as building its brand, improving reserves and building of shareholders wealth.

The cost of credit default is an important component of cost of banking operation as it offers an understanding of different behaviours of default rates and an institution's financial decisions. In other words, by looking at the financial institutions' past defaulters it can offer an estimate of average cost of credit default. Most financial institutions make provision for costs arising from defaults, however, it is difficult to measure the cost of credit default as it varies from time to time, which may be caused by a poor economy or company closure and retrenchments. This could affect the institution's financial stability and cash flow. This study, therefore, investigated the respondents' perception of the cost of credit default and examines the requirements for default risk management (DRM) in the vehicle finance industry in South Africa.

## **1.3 STATEMENT OF PROBLEMS**

The assumption that there are costly risks of credit defaults creates the need for credit checks on potential customers. This credit check enables the estimation of probability of credit default by customer (The National Credit Act, 2015). The credit check is performed in order to minimise the risk associated with default and to maximise the benefit of credit financing. Despite the credit checks, it has been observed that customers do default on their payments, resulting in the repossession of their vehicles by the financial institution. This

study focuses on the cost implications of credit default, both on the supply side (financial institution), and the demand side (customers) in the vehicle finance industry.

## **1.4 RESEARCH QUESTIONS AND OBJECTIVES**

Research questions and objectives below which have guided this study are explained below.

### **1.4.1 Research questions**

- What is the cost of credit default?
- Are there possible credit predictor variables to predict the likelihood of customers' credit default?
- How much of the credit defaults can be ascribed to the changes in the customers' circumstances?
- What are the cost implications of repossession on the customer and the financial institution?

### **1.4.2 Research objectives**

- To determine the cost of credit default in the vehicle finance industry.
- To ascertain whether there are predictor variables that can be used to predict the likelihood of customer credit defaults.
- To establish how much of the credit defaults can be ascribed to changes in economic circumstances.
- To investigate the cost implications of customers' default when vehicles are repossessed to a customer and the financial institution.

## **1.5 RESEARCH DESIGN AND METHODOLOGY**

The research design is the full plan on how the study will be conducted (Mouton, 2001). This study utilised the descriptive research approach, combining both qualitative and quantitative research methods. The quantitative phase utilised the survey method which collected data from respondents using closed-ended questionnaires. The qualitative phase utilised open-ended questionnaires which collected data from credit managers through unrecorded personal interviews. The interview required the respondents' completed handwritten questionnaires. Purposive random sampling was utilised to select the respondents. The researcher had targeted the top financial institutions in Cape Town which represented the whole of South Africa. Customers' responses were received of which 381 were accepted as valid while only 8 responses were received from credit managers. After data was received, quantitative data was analysed using descriptive analysis and qualitative data was analysed using content analysis. The analysis was preceded by triangulation in order to understand the interplay of qualitative and quantitative factors and their interpretation of the respondents' perceived costs.

## **1.6 SIGNIFICANCE OF THE STUDY**

It is perceived that the outcome of this study will assist financial institutions with further insight in the mitigation of the risk of credit default. For this researcher, this study will form the basis for further investigation in the areas of credit default in the vehicle finance industry.

## **1.7 SCOPE AND LIMITATION**

The research limitations are restrictions to the study which the researcher has no control over (Baltimore Country Public Schools, 2015). The research study was initially proposed as investigating the cost of credit default using the actual cost of default, however, with the confidentiality clause imposed by the financial institutions, the researcher couldn't obtain data on defaulting customers. The defaulting customers' data would have been used to identify the actual cost of credit default. The study was changed to the cost of credit default using the perceptions of the customers/ credit managers. The vehicle finance industry assessment policy is unified, the same policy that applies in Cape Town, is the same throughout the industry. This study was undertaken in Cape Town, which was representative of South Africa.

## **1.8 SUMMARY**

There are costs associated with credit defaults. One of the costs is the risk that the borrower may not fulfil his/ her borrowing obligation. Financial institutions have systems in place to perform credit checks on applications and to assess and minimise the probability of credit default, however, customers still default, resulting in the repossession of their vehicle by the financial institutions. With increasing household debt, the risk of credit default is at an all-time high, requiring a new approach to assessing and approving credit vehicle finance applications and, also, ways of mitigating the risk. The research problem was formulated based on this hypothesis.

## **CHAPTER TWO LITERATURE REVIEW**

### **2.1 INTRODUCTION**

This chapter reviews literature related to the risk and/ or probability of credit default and associated costs. The review begins with the collection of relevant literature, identified topics that respond to research problems, objectives and questions. The literature is analysed in order to understand aspects of risk and probability and their relationship with cost of credit in default situations. The structure of the literature review begins with aspects of credit checks history, determination of the cost of credit default, credit predictor variables, defaults associated with economic conditions, and cost implication of defaults on customers.

### **2.2 CREDIT CHECK HISTORY FOR ASSESSMENTS**

Credit checks into the history of customers through the credit bureaux in South Africa came into existence in late 1989 (Vlok, 2017). In South Africa, three companies collect customer's credit check histories and store them in databases. These companies are: The TransUnion Credit Bureau, Experian and Equifax. In the event of new vehicle finance application, a risk assessment for each customer is conducted with an historical credit check in order to determine affordability and the probability of default (Abdou & Pointon, 2011). Normally, lender and borrower relationship should be cordial, with psychological and financial benefits. With the increased socio-economic uncertainty, this relationship becomes risky, with the possibility of non-affordability and a probability of default occurrence, hence the use of an additional cost item like the credit bureau credit check history services in vehicle and other financing. Customers' information requested from a credit bureau aggregates all credit portfolios of a customer in order to understand their payment history and discipline in consideration of new credit financing requests.

The collection, storage and analysis of this information by the lender has become a cost item that could lead to increased costs of credit and cost in default. Although credit check history utilization in financing decisions may not accurately predict the likelihood of default, it certainly helps lenders to understand risk profile for credit structure customization for maximum return on credit finance services.

Vlok (2017) noted further that credit checks and computerized scoring systems were not available around the early 1980s. Before the introduction of credit check history in the late 1980s, the assessment of credit applications for vehicle finance was done manually. This manual credit application assessment relied on human judgement with a potential for incorrect estimates recorded long after credit application approval. As noted by Vlok (2017)

assessment of customers' credit application in the 1980s was based on the manager's mood and was usually fraught with inconsistencies due to poor calculation of scores and the mood of managers. With the introduction of credit check history in the late 1980s, manual risk assessment challenges for creditors was resolved and the introduction of the new credit structure came with increased cost of credit and also increased default probability for vehicle finance customers.

In addition to credit check history, financial managers used predictor variables based on their knowledge and judgment. A predictor variable is used to predict and explain a dependent variable (Racine, Hart & Li 2006). For example, using age and period of employment can ascertain whether the customer is financially fit or stable. Introducing more predictor variables will assist in predicting the possibility of default. Gender, age, occupation, period of occupation, marital status, amount of loan, property owner or not, and finance amount are the predictor variables that financial institutions use to assess an application.

Since manual applications became too cumbersome for the financial institution managers, a credit scoring system was introduced in the 1940s in America (Vojtek & Kocenda, 2011). By the late 1960s, the computer credit scoring system was popular amongst financial institutions. The independent variables mentioned above were connected to the computer scoring system. This became an easier way to score applications by using the variables mentioned. To this day, the problem is that even after assessment and using the top of the range computer scoring systems, customers still default.

Paddy (2012) argued that customers default and the possibility of default differ between males and females. Depending on some extraneous factors, males would have more financial household responsibilities and therefore would present a higher probability of default than female. Despite the benefit of the assessment of credit check history, the determination of the cost of credit default and the cost of credit remains increasingly risky due to socio-economic uncertainty (South Africa. National Treasury of the Republic of South Africa, 2008). Even though the reference is stale, it is still relevant to The National Credit Act of 2015.

## **2.3 DETERMINATION OF THE COST OF CREDIT DEFAULT**

With increased socio-economic uncertainty, determination of the cost of credit default may become a risk management function that enables the review of credit assessment and check process in order to understand financial and non-financial benefits for both borrowers and lenders. Furthermore, this would be used to identify the cost of credit and the cost of credit

default which are two different components. The cost of credit on the one hand, relates to the cost of capital as well as interest payment on loans. On the other hand, cost of credit default relates to an additional fee charged to defaulting customers (Rodrigues, 2017).

#### **Cost of credit – borrower**

With each application for credit, the lender conducts a credit assessment using the following variables: interest rate, loan term, insurance and late payment fees. Rodrigues & Carelse, (2017) note that the cost of credit for customers differs according to their credit check history. The difference is in the terms of credit. While a customer with negative credit history would likely be charged higher interest rate, the customer with a positive credit history would be charged a lower interest rate.

#### **Cost of credit- lender**

The cost of credit is the cost of holding money instead of investing it. The financial institution buys cash from the South African Reserve Bank (SARB) through a repo rate and lends that same money to the public at a higher interest rate in order to make a profit (Keiser & Mc Andrews, 2009). Furthermore, holding money for an extended period can cause money to lose its value through inflation. Keeping too much cash is expensive, while the opportunity exists to invest it at a higher rate. Financial institutions use customers' deposits to lend it to the public at a higher interest rate and in that way profit is generated.

#### **Cost of credit default- borrower**

Listed on TransUnion Credit Bureau as a 'bad payer' and/ or 'slow payer' are some of the costs of credit default on customers. This affects the customer's chances of obtaining a future loan from any other financial institution or retail store. The South African Banking Overview (2014) has noted an increase in unsecured lending (debts which are not attached to an asset) and, as a result, about 10m South Africans were listed on the credit bureau in 2013 with adverse records. Most South Africans were over-indebted at the time and couldn't service their financial obligations. In 2018 the stats didn't improve as much, about 50% of credit active customers are listed 'defaulters and distressed' customers (SA Consumer Credit Index, 2018). Q1 2019, shows that the risk of default continued to rise. The over-indebtedness has become a concern and the government has introduced the National Credit Act to create single credit regulation (Botha, 2014).

## **Legal requirement for vehicle finance by the National Credit Act (NCA)**

The NCA has different functions, one of which is to ensure that consumers do not become over-indebted. In other words, the introduction of the National Credit Act is in order to establish prohibitions on reckless lending. This means that a lender must complete an affordability assessment in order to ensure that the borrower can afford the credit finance before the loan is granted. If the borrower has been found to be negligent in providing credit to an over-indebted borrower in terms of the Act, the lender will face serious consequences (The National Credit Act, 2015). This Act protects borrowers from being granted loans they cannot afford.

The National Credit Act stipulates that vehicle finance credit is reckless if, at the time of agreement, the lender did not conduct a proper risk assessment on the borrower. The lender is obliged by the NCA to properly assess the borrower and should make certain that the borrower can, in fact, afford the vehicle finance. A vehicle finance agreement can also be declared reckless if the lender, after it has assessed the borrower, and has entered into the agreement with the borrower, has ignored the indication that the borrower did not understand the risks and the consequences that would make the borrower over-indebted (National Credit Act, 2019). It is vital, therefore, for the lender to scrutinise the borrower's ability to repay the loan. It has been noted that even though the full assessment has been done, customers will still default. A South African Credit Bureau (Transunion) which gathers information on active finance accounts, presents information on the performance of the vehicle finance industry (Transunion, 2019).

## **Insight on default risk from the Vehicle Finance industry for Q1 2019**

A cursory review of vehicle finance presents insights of default risk to the entire industry. The vehicle finance industry presents evidence of demand pressure in vehicle finance services that remains constant, decline and delinquency with an occasional increase in demand (TransUnion Industry Insight Report, 2019). In this circumstance, a credit owner (lender) should apply the DRM as a strategy to mitigate the probability of credit default. In table 1.1 below, the outlook of vehicle finance activities in the industry shows a decline of 0.8 per cent year-on-year representing a decrease of 2.5 per cent driven by default risk arising from the application of stricter lending requirement in order to minimize the risk of default.



**Table 2. 1 TransUnion (2019)**

<b>VAF DATA</b>	<b>Q1 2019</b>	<b>QOQ CHANGE</b>	<b>YOY CHANGE</b>
<b>NUMBER OF ACCOUNTS</b>	2.2m	1.2%	-0.8%
<b>OUTSTANDING BALANCE</b>	R405B	-2.7%	0.2%
<b>AVERAGE BALANCE(PER ACCOUNT)</b>	R180 962	1.0%	1.1%
<b>NUMBER OF CUSTOMERS WITH AN ACTIVE TRADE</b>	1.92m	1.1%	0.4%
<b>NUMBER OF CUSTOMERS CARRYING A BALANCE</b>	1.89m	-1.0%	0.5%
<b>ORINATION VOLUMES</b>	142 668	-4.8%	-2.5%
<b>AVERAGE NEW ACCOUNT LOAN AMOUNT</b>	R301 063	-3.1%	1.7%
<b>ACCOUNT-LEVEL DELINQUENCY RATE (3+MIA)</b>	5.2%	20bp	70bp
<b>CUSTOMER-LEVEL DELINQUENCY RATE (3+MIA)</b>	5.7%	10bp	70bp
<b>BALANCE-LEVEL DELINQUENCY RATE (3+MIA)</b>	4.1%	60bp	110 bp

TransUnion Newsletter (2019)

While the number of vehicle finance customers in default continues to increase, with the account-level default rate of  $\pm$  3 Months-In-Arrears (MIA) in quarter 1 of 2019. This default increase for Vehicle finance customers presents a trend of rising default witnessed in the preceding two years. Although, economic and social factors contributed to credit default in vehicle finance, table 1.1 shows that the structure of credit of a major contributor will increase in default. The current economic context, increase demand for vehicle finance services, the probability of customer meeting the credit repayment obligation remains under pressure due to the vehicle finance structure – that comes with a balloon payment at the end of the credit term. While vehicle finance default is low compared to unsecured credit financing such as credit cards, the increase in default by vehicle financed customers remains alarming and risky for both lenders and borrowers.

The economy has been sluggish and comparing the same stats from the 4<sup>th</sup> quarter of 2018

**Table 2. 2 TransUnion (2018)**

<b>VAF DATA</b>	<b>Q4 2018</b>	<b>QOQ CHANGE</b>	<b>YOY CHANGE</b>
<b>NUMBER OF ACCOUNTS</b>	2.2m	-1.8%	-1.6%
<b>OUTSTANDING BALANCE</b>	R411B	-0.8%	3.3%
<b>AVERAGE BALANCE(PER ACCOUNT)</b>	R185 922	1.0%	5.0%
<b>NUMBER OF CUSTOMERS WITH AN ACTIVE TRADE</b>	1.89m	1.1%	7.8%
<b>NUMBER OF CUSTOMERS CARRYING A BALANCE</b>	1.88m	-1.1%	8.2%
<b>ORIGINATION VOLUMES</b>	149 889	5.5%	0.4%
<b>AVERAGE NEW ACCOUNT LOAN AMOUNT</b>	R291 957	-3.1%	-0.9%
<b>ACCOUNT-LEVEL DELINQUENCY RATE (3+MIA)</b>	5.0%	15bp	100bp
<b>CUSTOMER-LEVEL DELINQUENCY RATE (3+MIA)</b>	5.6%	13bp	73bp
<b>BALANCE-LEVEL DELINQUENCY RATE (3+MIA)</b>	4.5%	14bp	113 bp

TransUnion Newsletter (2018)

The vehicle finance account decreased by 1.6% YoY in Q4 2018 and origination volumes remained the same, however, with a slight increase of 0.4%, this could also have been driven by stricter lending criteria. In Q4 2018, vehicle finance balances grew slowly by 3.3%. There has not been any jump in new accounts which showed a decrease year on year of 0.9%, which indicates a challenging, sluggish economy. Account delinquency or, in layman's terms, credit default showed a continuous increase due to the economic environment and structured balloon payments due at the end of the contract term. Comparing the two tables, one from Q4 in 2018 and Q1 in 2019, it is quite evident that the credit fault in vehicle finance is rising due to the sluggish economic environment.

Credit default is defined as when a customer misses about 3 instalments within a 24 month period. As soon as a customer reaches the 3<sup>rd</sup> missed instalment, Transunion Credit Bureau would have been updated with the information. There are a couple of authors who have argued about what causes customers to default. Addae-Korankye (2014) noted that high interest rates provokes credit default among customers. High cost of credit is argued by (Chakravarty, 2002). Cost of credit can be costly as financial institutions can include other costs such as insurance and documentation fees to the price of the vehicle. Fofack (2005), found that poor or unstable economic growth can increase credit default. As a result, this will have a negative impact on the repayment abilities of a customer. Some factors are not in

control of the customer, for instance, FNB is under fire for overcharging black customers on home loan interest rates (van Zyl, 2010).

According to bond calculator van Zyl (2010), Saambou sold the home loan book to FNB in 2002. Black customers were overcharged, up to 100 percent. Black customers were charged R60 000 on a R60 000 home loan account while white customers were only charged about 10 percent. This discrimination against black customers has produced non-ending, high payments on accounts which could have been settled already. This had a negative cost to customers and impacted on the repayment abilities. Customers ended up defaulting. Customers were discouraged since the repayments never reached an expiry date and couldn't afford the instalments anymore, and defaulted.

The death of a breadwinner can also have a negative impact on cost of credit default (Appolus, 2012). When a bread winner of a family dies, most times the family is left without any monthly income and, additionally, might be left with debt of the late bread winner. It is very difficult if the bread winner had no life insurance in place or any other insurance which could have benefited the family. In most cases the family is left to fend for themselves, and since household debts would have risen substantially, the surviving spouse (if there is) would have to find work or means to service the monthly debts such as vehicle finance/ home loan. The circumstances arising from the death of a bread winner will often lead to credit default by the surviving spouse as the monthly income might drop or be changed to a bare minimum. The cost of credit default will often lead to cash flow problems and financial distress.

### **Cost of credit default to the financial institution**

Cost of credit default can be destructive to the financial institution, it jeopardises its financial position and reputation. For instance, when customers default on vehicle finance, they put a strain on the financial institution's cash flow, which will subsequently, be harmful to its daily operations. This is called default risk and it threatens the financial institution's existence (Vassalou & Xing 2002). Default risk is one of the major costs of credit default affecting financial institutions. This is critical and should be monitored on the daily basis.

### **Default risk**

The drivers of default risk in the economy are high customer debt, interest rates, inflation, economic performance and unemployment (Bonfim, 2007; Zabai, 2019). These drivers increase the risk of default by a customer obtaining vehicle finance. Instances where the customer is highly indebted, granting addition credit facility could increase exposure to the

probability of default. The risk of default could also be influenced by the economic conditions where interest rate fluctuation becomes an element of cost of credit in vehicle financing. Fluctuations in interest rates, occasioned by economic conditions, becomes an important default risk factor – that provides context to credit financing and content associated with risk of default. Here, attention is placed on vehicle financing risk that is contrived by the challenges of risk management and customers' repayment ability that becomes imperative when s/ he becomes unemployed.

Merton (1973) also studied contributors of default risk. He looked at two variables which are amount borrowed and interest rates offered to the customer. Although the Merton study was conducted five decades ago, the findings remain relevant in today's borrowing and interest rate context. This borrowing and interest rate context is amplified by increased inflation, the rising price of goods and services, a high rate of unemployment and an unstable economic climate (Aubrey, 2015). In this instance, both the owner of the credit facility (lender) and the debtor (borrower) are confronted with the probability of default risk that could become too costly for vehicle financing obligations, while the owner of the credit facility (lender) should be concerned with the risk of loss in revenue and reputational damage arising from defaulting customers. The customer on the other hand, is concerned with an increase in cost of debt arising from dispute resolution mechanisms required to enforce financing obligations.

The cost of credit default can be mitigated using Default Risk Management (DRM) to evaluate customer credit profiles as a requirement for the approval of credit application (Brown & Moles, 2016). DRM is the process of controlling potential consequences of credit risk. It is inevitable that some of the customers will not adhere to their financial obligations. DRM also assists financial institutions in determining how much can be salvaged in the event of a default.

A financial institutions' main objective is to generate a profit through the granting of vehicle finance loans. Even though it is a high risk business, it is a gamble as some customers may default which can put the financial institution in a negative financial state. It is imperative that financial institutions learn to understand the costs involved in credit default in order to minimize and manage it. The cost of a credit default can be an unpleasant one for both the customer and the financial institution.

Dumbrava (2013) proposed the formula for risk calculation: risk = probability (of a default) x loss (associated with default variable) quantifies loss in the event of an occurrence or an event (such as default). In this paper, the examination of the estimated loss connected with credit default (credit structure, economic activities, credit check history and return on

investment) are all such events that could contribute to the probability of credit default. Although, this researcher was focused on the description of respondents' perception of the cost of credit default, the understanding of respondents' perception created an opportunity to understand the risk management that could be useful for both credit lenders and borrowers.

The cost of credit default can be classified as non-financial and financial loss (Vlok, 2017). Credit costs money and it costs more when customers default. For each vehicle, financial institution provision for default is usually calculated through past experiences and a reasonable amount of money is reserved for such, however, it can happen that more clients than anticipated default which can leave the financial institution in a compromising financial position. This can cause liquidity problems, less income and more financial loss to the financial institution.

#### **Cost of credit default: Financial costs**

With vehicle repossessions, legal and operational costs are some of the costs incurred caused by the defaulting customers. Repossessions can be expensive to both the customer and financial institution. Once the client defaults, the financial institution starts the legal process: the collection department will contact the client to follow up on repayments and if all fails then a summons is issued by the Sheriff of the court. The financial institution pays the Sheriff for the summons issued and when the vehicle is repossessed (vehicle gets collected from the customers). These are some of the costs incurred by the financial institution (Jacobs, 2017). Customers also incur financial loss, for instance, once the vehicle has been repossessed, the financial institution adds more costs to the existing debt (for example Sheriff's fees). Once the vehicle is repossessed the customer is left stranded, with more debt and in a compromised financial position.

#### **Cost of credit default: Non-financial costs**

A reputational cost is one of the costs associated with costs of default. A relationship between the financial institution and a customer can go sour. It has been proven that word of mouth is a powerful advertising tool (Naz, 2014). The customer can lay a complaint on social media, to colleagues, families and friends. In response to this, the financial institution can lose millions of rands caused by a tarnished or dented reputation. A customer whose vehicle has been repossessed will not be singing the praises of the financial institution. The Basel Committee of Banking Supervision (2003) defined reputation risk as risk arising from negative perceptions on the part of the customer. Damage to reputation can generate financial loss, broken trust and a tarnished image. For the customer, the effect is high debt

incurred through repossessions and loss of trust in the financial institution. The explanation of the benefit of both the Basel Committee of Banking Supervision (perception of reputational risk) and five scenario default situations below are provided using the example of the African bank which collapsed during 2014 financial year.

### **The collapse of the African Bank Investment Ltd**

African bank investment Ltd came down in shambles during 2014 due to negligence in lending. According to NUS Risk Management Institute (2014) African Bank used to lend out money without requesting a security from its customers. Since it is not a deposit taking institution, it only raised funds through debt creation. African Bank investment Ltd had targeted low income earners, offering unsecured loans without any asset or mortgage backup. During 2014 the South African economy slowed down, resulting in a high unemployment rate of 25% and with an inflation of 6.6%. This period made African bank susceptible to credit default by its customers. In 2014 ABIL had a loss of 7.6bn and SARB had to come to the rescue. Without the rescue, the collapse would have crippled the whole economy, increasing unemployment, with a potential loss of income to investors and billions of rands to be written off. The problem with African Bank is the fact that loans were granted without acquiring security and buying Ellerines Furniture retail store, which was already non-performing, with a high credit default ratio.

### **Home loan crisis**

Financial institutions in South Africa may be facing a huge fine to an amount of 60billion Rand if found guilty of selling defaulting customers' homes under market value (The Citizen, 2017). About 100 000 homes were sold from the year 1994 and 90% of these houses were sold for less than their market values. This could be an example of financial institutions exploiting risks for extra gain in order to maximise profit for shareholders. Risks are part of running a financial institution, however, each financial institution should decide which risk is worth exploiting and which risk must be eliminated in order to maintain a sound, profitable business (Simpa, Adabenege, Mohammed & Mohammed, 2015). Houses of defaulters were being sold below their market value, while the defaulter was left with the full default amount to be repaid.

## **Sovereign Default and Financial institutions.**

Government is the largest spender in any economy. It borrows through issuing government bonds and it borrows mainly from financial institutions. What happens when a (sovereign) government defaults? It can cripple the entire economy, resulting in a probability of default from a good scoring customer. A crippled economy arising from government default may have negative consequences on the repayment ability of both financial institutions and customers (Gennaioli, Martin & Rossi, 2014). The Russian government default in 1998 is a good example of government default which resulted in losses as financial institutions invested heavily on government bonds.

### **Saambou financial disaster**

In 2002 Saambou (one of South African's financial institutions) with assets of R20 billion failed as a result of funding issues. These issues were related to micro lending resulting in reputational risks (conduct risk) for smaller financial institutions. This caused depositors to withdraw their money in the long run and the financial institution became insolvent which resulted in the failure of the bank (Steyn, De Beer, Steyn & Schreiner, 2004).

### **SA Bank Regal Private Treasury**

In 2001 a small South African financial institution Regal Private Treasury failed as a result of operational risk (fraud and financial reporting issues). Reckless lending and financial fraud led to the ultimate failure. The CEO was found guilty of recklessness and fraud. Reckless lending is a serious offence. Before granting loan to a customer an affordability test must be performed in order to assess customer's repayment abilities (Fin24, 2002). Regal Private Treasury failed to assess customer's repayment abilities and this resulted in an increase in reckless lending and probability of default. Customers should be assessed in full before credit is granted, in order to minimise and control credit default.

### **The Bank of Venda**

The Bank of Venda (VBS) was put under curatorship by the South African Reserve Bank due to the overwhelming cost of credit (News 24, 2018). This financial institution has become notorious for fraud by defrauding investors and offering finance recklessly without proper processes and procedures in place. The products (vehicle finance, credit cards, home loans etc.) were granted without proper procedures in place and many customers did not meet their financial obligations. VBS had no system in place to follow up on repayments which

increased the cost of credit and subsequently led to the collapse of the financial institution. Imbunga (2014) noted that when financial institutions are not interested in collecting their money from customers, most customers will not pay.

## 2.4 CREDIT PREDICTOR VARIABLES

Every financial institution's goal is to minimise and control credit default. Racine, Hart & Li (2006) studied methods on how financial institutions can control credit default by studying and researching predictor variables in order to identify a probability of default. Predictor variable is a variable used in regression to predictor and another variables (Vlok, 2017). In other words, age, which is an independent variable, predicts the likelihood of credit default (dependent variable). Racine *et al* (2006) also noted in his study that degree, customer's employer's relation to the financial institution and professional titles (all independent variables) should be utilised in the calculation of credit default. The obstacle with the three authors' studies mentioned about is that variables such as the degree and employer's relation to the financial institution may not prohibit a customer from defaulting (Carelse, 2017). A customer can hold the highest qualification and yet still default, due to a change in circumstances, for example as a result of loss of employment a customer may fall behind in their obligatory instalments.

Using age and period of employment, for example, can ascertain whether the customer is financially fit or stable. Introducing more predictor variables will assist in predicting the possibility of default. The predictor variables mentioned below are used to assess the possibility of default on customers by financial institutions' credit managers.

Gender, age, occupation (period of occupation), marital status, amount of loan, term of loan, property ownership (whether the applicant owned property or not), income and dependants are some of the predictor variables used by the financial institutions in South Africa in order to analyse probability of default (Boguslauskas, Mileris & Adlyte, 2011). The main objective is to determine which predictor variable can influence probability of default (Marshall, Tang & Milne, 2010). It is believed that some predictor variables can assist institutions in determining risky customers who might not be able to repay the loan. Weller (2008) added that race and ethnicity could assist in the prediction of the probability of default. Adding more predictors, however, like variables such as credit history and relationship with the institution can assist in determining probability of default (Boguslauskas, *et al*, 2011). Others have argued about the relationship that the customer has with the institution.



According to Saurina & Jimenez (2002) the stronger the relationship the customer develops with the institution, the greater the likelihood of default, meaning the more that the institution lends to the customer (vehicle finance, credit card, personal loans etc.), the greater the likelihood that the customer will fall behind with their obligations and ultimately default. A customer can be bombarded with debt with the same institution and may end up defaulting. The term of loan has also been studied to predict probability of default. Miller (2014) explained that the longer the term of the loan the greater the likelihood of default. The customer's characteristics and financial position may change over the term of the loan and may cause a default. It is imperative that the financial institution studies predictor variables and financial characteristics of the customer before granting credit facility. There are other factors that affect customers' repayment abilities, such as economic conditions, which customers have no control over.

## **2.5 DEFAULT ASSOCIATED WITH ECONOMIC CONDITIONS**

"Inflation is the continuous increase in price of goods and services over a period of time" (Imbuga, 2014). Inflation is caused by the demand of money decreasing and an increase in the supply of money which subsequently increases the price of foods and services. Customers who are used to a certain price of their basic foods are shocked to learn that the same foods have increased in price. It has been observed that customers would rather not pay debts and would rather buy basic utilities and services for survival. Inflation measures how much a basket costs compared to the same time in previous years (Mokgola, 2015). Inflation and financial crises of the economy can lead to customers to default on their loans. South Africa suffered a recession between years 2008-2009. The recession was caused by the collapse of housing markets in America (Verick & Islam, 2010). This had a major impact on the economy, resulting in customers defaulting. More customers were caught up in a web of debts and could not maintain their financial commitments.

Macro-economic conditions such as change in interest rates, the exchange rate, unemployment rate, stock index and gross domestic product growth (GDP) has an effect on the probability of default (Qu, 2006). In general, when the economy is stable, customers tend to buy and adhere to their obligations, however, during recession the probability of default tends to be high as customers are failing to honour their obligations.

There are quite a few studies on the macro-economy and the influence it has on the probability of default. Rosch (2005); Marcucci & Quagliariello (2009) have suggested that

macro-economic factors should be included in the calculation of the probability of default. The unemployment rate has increased from 27.1% in the fourth quarter of 2018 to 27.6% in South Africa's first quarter of 2019 (Fin24, 2019). In order to maintain economic growth and curb unemployment fiscal and monetary policies should be used together (South African Monetary Fiscal Mix Policy, 2019). Monetary policy is the responsibility of the central bank (SARB, money supply in SA), while fiscal policy is concerned with the government spending.

### **Fiscal and Monetary Policies**

The economy can be restored to full employment if both the fiscal and monetary policies are combined (Ocran, 2009). The two generate financial stability and balance in the economy. The lack of combination of these policies can create instability in the economy, high interest rates and inflation.

Furthermore, we cannot conclude that the government and the SARB will always be in conjunction and it could be that both policies are not teaming up. In other words, assume that the government desires to increase output and to reduce unemployment by expanding spending on government. If the economy is unstable, however, for example when prices of services and goods are high, the consequence will be inflation. It has been argued that, since 1994, monetary policy has shown more significant contribution to the economy of South Africa compared to the fiscal policy (Smit & Sturzenegger, 2007). If the policies are well mixed and working together, however, the unemployment rate and inflation can be well controlled.

Inflation is a continuous increase in the price level of goods (Imbuga, 2014). The price of goods increases because customers have more money to spend on goods, causing the prices of goods to increase. The buying power decreases if, for example, the rand starts losing its buying power. The monetary value of loans start to drop and this, in the long run, forces financial institutions to increase interest rates in order to cover the premium of inflation, in other words, to cover the loss of the monetary value. An increase in interest rates means an increase in loan instalments.

The granting of credit facilities is predicated on the assumption that the customer, at the time of the loan application, has met the pre-determined repayment criteria. These repayment criteria, though useful in loan application assessment, does not guarantee complete loan repayment due to changing circumstances such as inflation, retrenchment, dismissal, illness that could prevent the individual from continuing work. Also, in a different circumstance, customers could find themselves in a situation where a small portion of their income is paid

or not paid at all (Brehanu & Fufa, 2008). These situations enable the application of higher interest rate by the creditor to safeguard the probability of costly default. In other words, application social economic condition create room for interest higher than inflation to be charged to customers with poor social economic profile revealed by the credit assessment process. Okpugie's (2009) in their study shared the same sentiment about how vehicle finance companies makes higher profit from customers with poor social economic assessment report with some possibility of declined credit application.

According to Addae-Korankye (2014) high interest rates charged by the institution on the vehicle finance account can cause more customers to default, as customers cannot afford the repayments anymore. Customers on a prime linked rate option are affected when the reserve bank announces a change in the repo interest rate (repo interest rate is the rate at which the reserve bank lends money to financial institutions). When the reserve bank increases the repo rate it affects the prime linked interest rate. Prime linked rate is the rate at which financial institutions lend money to its customers. Once the repo rate increases, the prime linked rate increases as well; customer's instalments will increase due to an increase in the prime linked rate. With a higher instalment rate, the customer's living expenses increases, subsequently, an increase in general price levels may be experienced due to increased interest rates.

Customers sometimes face financial difficulties during the duration of the loan repayment. Changes in the prime rate can affect the customer's ability to repay the debt. Poor economic decisions, increases in living expenses caused by the change in the economy and death in the family are some of the reasons why customers may default or ignore their obligation altogether (Carelse, 2017).

Repayment are a monthly obligation. When a customer loses employment, it becomes a challenge to keep up with the repayments. Many customers may be illiterate or have a lack of knowledge when it comes to reading the contract, in other words, customers may not read all the terms and conditions of the finance and may not have knowledge of how to approach the financial institution in case of job loss (Okpugie, 2009). Changes in the economy such as inflation could also have a further negative impact on the customer's financial position.

Customers who have opted for the fixed rate option are usually in a better position as the repayments remain the same through the loan period. Customers defaulting, however, may be due to the customer's unwillingness to repay the loan. Customers can decide to stop with the repayments especially when the financial institution has no strict measures in place for collection of repayments. Kebede, Kaur & Kaur (2015) stated that some customers lack the

intelligence of proper financial management, whereby they don't budget correctly for household and other expenses, making it difficult to keep up with the repayments of credit obligations. If the government and financial institutions school the public about credit management, it will decrease the number of defaulters significantly (Norman, 2010). By creating the awareness on credit default amongst the public, financial institutions will be able to lower their credit loss ratio associated with default. In this way, in the long run, financial institutions may be able to lower the amount of repossessions of vehicles.

## **2.6 COST IMPLICATION OF DEFAULT CAUSED BY REPOSSESSION**

When defaulting on a loan over a period of time (vehicle finance loan), the financial institution will hand over to a debt collector. The debt collector will start phoning the borrower in order to obtain the outstanding funds (Pritchard, 2018). He goes on to explain, the vehicle doesn't belong to the customer until the final amount is paid. The customer is leasing the vehicle from the financial institution until it is fully paid for.

Defaulting reduces the customer's credit score, impacting the ability to receive future credit, and can lead to repossession of the vehicle. In addition to losing the vehicle, the customer's credit score suffers, and the customer will owe additional costs which will be added to the loan. Pritchard (2018) explains further, that repossession of the vehicle can affect the customer's credit score for almost 7 years on a credit bureau and it does not matter whether the customer has received the vehicle back or not.

After repossession, there is still lot done, for instance, if the financial institution sells the vehicle, the amount realised settles the customer's debt. If the vehicle sells for less than the amount owed, however, the customer is liable for the remaining amount. The amount remaining is called deficiency.

Added to the original deficiency are the costs of storage, preparing the vehicle for sale, advertising and insurance. These are some of the costs added to the customer's deficiency account. In some instances, customers fail to settle the deficiency account, or some settle it in full or pay it off monthly. In all cases, repossession is a nightmare both to the customer and the financial institution as there is too much administration and costs involved. For the customer it entails both the loss of a vehicle and also a favourable credit score, meaning, a customer will probably not receive financial assistance from financial institutions for a period of up to 7 years (Williams, 2017). Financial institutions' last resort is repossession; it is more expensive to repossess. Norman (2010) suggested that financial institutions should educate its customers on financial management. It has been observed that financial literacy can improve the financial position of the customers. In turn, customers will make more informed

financial decisions which, in the long run, will improve the economy as a whole. Most customers live beyond their means (Wentzel, 2015). Customers turn to loan sharks for basic needs such as food and daily necessities.

According to Norman (2010) the financial institutions should also provide training to its staff members in order to be better equipped with knowledge regarding identifying risky customers. Equipping staff members with knowledge should be accompanied by a good scoring system. Financial institutions have also received permission from the bureaux in South Africa which allows them to check a customer's credit history and conduct. Equipped with knowledge from the staff member, a credit history check and an up to date scoring system could assist financial institutions in identifying probability of default in their customers (Rezac, 2011).

## **2.7 SUMMARY**

The cost of credit default suggest that intervening variables constitute an important aspect of the consideration of credit applications. Evidence of these variables has been well researched but default cost calculation remains an important research interest that forms the focus of this study. Credit default can put a customer in a position of delinquency, with increased risk of bad debt for the financial institutions – creating the need for a new understanding of default cost calculations in vehicle finance specifically. Other investigation into default costs have found a higher risk of default in South Africa compared to developed countries. These findings consider aspects of the consideration of credit applications and socio-political-economic climates of different countries. While South Africa remains highly depressed (at least for now) other developed countries have emerged from recession with relatively stable economic and political certainty.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

The previous chapter outlined the relevant literature to assist in understanding the theory regarding cost of credit defaults in the vehicle finance industry. This chapter is about applying methodologies used to conduct a study on the cost of credit default in the banking industry in South Africa. This chapter presents components of the methodology and a descriptive discussion of the research plan followed in conducting the study.

This presentation will cover the research design and methodology. The research design gives a plan, structure and execution. There are many interpretations of research methodology in the world. Kothari (2004) explained that methodology is a way to systematically solve the research problem. He explained further that research methodology is the full process of identifying a researchable problem, how to solve the problem and ways and procedures of collecting data in order to solve the problem. Data collection methods, collection instruments and collection procedures will also be dealt with in this chapter.

Chapter one, which is the introduction phase presented cost of credit default in the vehicle finance industry in South Africa and chapter two explored the literature in order to establish the theoretical understanding of the cost of credit default for the customer and the financial institution. In order to discuss the research design and methodology in detail, the research objectives were used in the creation and structuring the questionnaire and the open-ended questions. Briefly, the objectives are:

#### **To determine the cost of credit default in the vehicle finance industry.**

- To ascertain whether there are credit predictor variables that can predict the likelihood of customer credit defaults.
- To establish how much of the credit defaults that can be ascribed to changes in economic circumstances.
- To investigate the cost implications of customers' default when vehicles are repossessed.

The researcher has undertaken this research in the hope that it will assist financial managers in identifying and understanding the cost of credit defaults and to mitigate the risk. The findings, however, need to be valid and reliable. Mohajan (2017) explained that it is important

to establish validity and reliability in research in order to ensure that the data collected is trustworthy and truthful. The research methodology used in this research, therefore, is discussed below in order to achieve the research objectives mentioned above.

## **3.2 METHODOLOGICAL OPTIONS**

This section will explore the different methodologies used in the study such as quantitative and qualitative studies as well as the reasons for using both methods. The quantitative method was administered using questionnaires in a survey of the financial institutions' customers and the qualitative, open-ended questionnaire was administered to the credit managers who make the decision to approve or decline applications. The data was triangulated because more than one method has been used to collect data (Devault, 2019). In other words, the relationship within the data can be scrutinized and studied.

### **3.2.1 Research Philosophy**

A research philosophy is the confidence in which data information should be collected and also it is a sum-up of the research experience, all that is presented in a thesis and all the information gathered over the entire period (Saunders, 2009).

### **3.2.2 Qualitative Research Method**

Strauss & Corbin (2010) explained that qualitative research is based on a natural approach, interpreting emotions and feelings. The data is arrived at by unfolding interest naturally and not by means of predetermined procedures. In other words, the qualitative research exploits open-ended questionnaires and interviews to be able to understand the problem in more detail and also, the qualitative research method is ideal for the smaller groups such as the credit managers in the vehicle industry.

The disadvantage of it however, is that results are difficult to generalize to the full population but the advantage is that the results can be utilized as a tool for the quantitative studies in future. This type of research lets the researcher enjoys both numbers and words. The researcher supplied open-ended questionnaires to 25 respondents who were credit managers regarding what they perceive to be the cost of credit default in the financial institution.

### **3.2.3 Quantitative Research Method**

Quantitative research is about using pre-determined instruments to solve a social problem (Hoepfl, 1997). This type of research analyses the relationship between variables by using numbers, graphs and charts. In other words, the researcher can draw up a list of behaviours to be measured. The advantage of using a quantitative research method is that the results can be collected from a large number of respondents and be analysed (Baines & Chansarkar, 2002). In that way the whole population can be sampled.

### **3.2.4 Rationale for using both qualitative and quantitative research methods**

The advantage of using both qualitative and quantitative methods of analysis is to undertake a detailed description of the problem (Halcomb & Hickman, 2015). The researcher has used both research methods in order to understand the interplay of credit managers' and customers' perspectives about factors that contributes to the cost of credit default.

The researcher has adopted this strategy by using a questionnaire (quantitative) administered to the customers in order to view their perception of the cost of credit default while for qualitative purposes, an open-ended questionnaire was administered to the credit managers in order to view their perception as well (McKim, 2015). In order to achieve the research objectives, the quantitative data was analysed by employing descriptive analysis while the qualitative study was analysed using content analysis. Triangulation was used to understand the interplay of both methods and their interpretation of the respondents' perceived cost of credit.



### **3.3 RESEARCH DESIGN**

Research design underlines the procedure and processes that will execute the design purpose (Creswell, 2014). The research design provides the overall full objectives for collecting data and for answering research questions. Van Wyk further explained that research designs provide a functional plan, provides the process, decisions and creates the foundation for elucidation. It provides the full plan using the research questions and interview information.

The researcher based the research on qualitative and quantitative research methods. The researcher had planned to hand out the questionnaires to the customers from the top financial institutions which is the quantitative aspect of the research, in order to determine perceptions regarding the cost of credit default. The walk in customers at the financial institutions were politely asked to participate in the questionnaires. For the qualitative aspect, meetings with the credit managers of the financial institutions were requested at their convenience in order to carry out the interviews. Permission was sought from the financial institutions in order to approach walk in customers for the interviews and completion of the questionnaires. The data was analysed using descriptive analysis for the close-ended questionnaires and content analysis for open-ended questionnaires.

### **3.4 TARGET POPULATION**

A target population is the entire group from which the sample is selected (Mugenda & Mugenda, 2003). In this study the population was the Cape Town customers who have had or still have, vehicle finance from the top financial institutions. The vehicle finance industry assessment policy is unified. The policy that applies in Cape Town, is the same throughout the country (Williams, 2017).

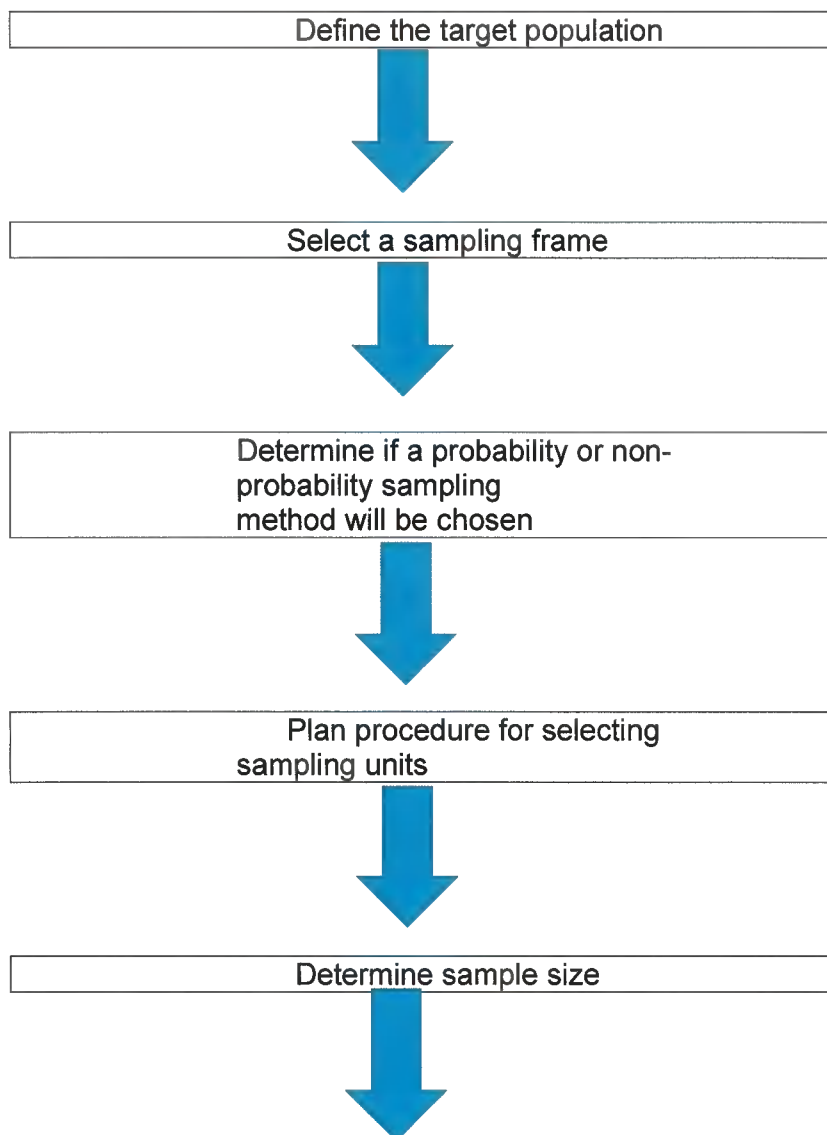
### **3.5 SAMPLE POPULATION**

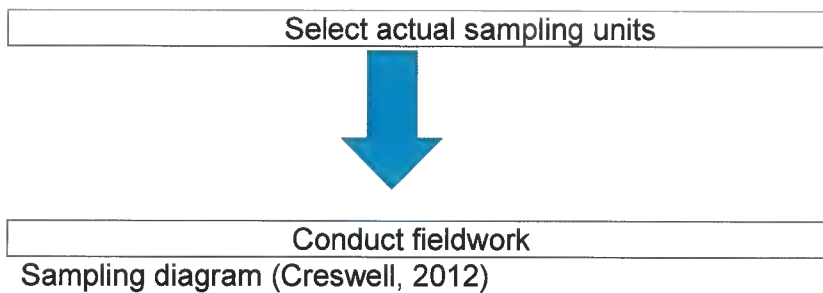
Sampling is the selection of random participants from the entire population (Mugenda & Mugenda, 2003). It is impossible to interview the entire population. Sampling was introduced to select units from the total population in order to understand the truth about the population (Alvi, 2006). The researcher's target population comprises credit managers who approve and decline application on a daily basis. Credit managers have more knowledge regarding the variables needed to calculate probability of default. The researcher used a sample of 25 credit managers for the open-ended questionnaire and unrecorded interview. The sample for the closed-ended questionnaire comprised 400 customers.

### 3.5.1 Sampling Techniques

Sampling technique refers to the procedure that allows researchers to select a representative subset or part of the total population (Alvi, 2016). In other words, sampling enables the researcher to select a small number of elements (credit managers and customers) to be studied. The researcher has focused on particular traits of the population that are of interest: the sample of the population that currently has or have had vehicle finance in the vehicle finance sector. Creswell (2012) completed the diagram, below, explaining a sample that is selected.

**Figure 1. 1 Sampling Technique**





As per diagram 1.1, the target population comprises the customers in the financial institutions that have or have had vehicle finance, and credit managers that make the decision to approve or decline the application in the day-to-day process. Purposive sampling is a non-probability sampling method (Kumar, 2005). The researcher is interested in studying, in this instance, the group which has or have had vehicle finance in the financial institutions. The initial plan was to use purposive random sampling across South Africa, however, due to time constraints, the researcher has opted to use Western Cape customers in this study. Since the researcher is utilizing the top financial institutions' data which specializes in vehicle finance, whatever policy applies in other provinces is the same as in the Western Cape.

### **3.5.2 Rationale for purposive random sampling**

The purposive random sampling was used to select respondents from the population sample designated as the financial institutions' customers and for the credit managers as well. This sampling method is suitable compared to stratified random sampling since the data was collected with the purpose of achieving the research objective. With the purposive random sampling, it was at the researcher's discretion when choosing members of the population to participate. While the research plan was 400 random walk in customers, 381 agreed to complete the questionnaire. The researcher politely asked the customers to participate in the survey for a few minutes, while waiting in the queue. The questionnaires were administered on Saturdays since it was the most convenient day for most customers as well as the researcher.

## **3.6 COLLECTION OF DATA**

The researcher's plan was to administer open-ended questionnaires to 25 credit managers. Where the credit managers were not in the same area as the researcher, the questionnaire was emailed to them. It was a bit challenging as some credit managers went on annual leave or took sick leave before completing the questionnaire. Telephonic follow up was conducted with the non-responding credit managers. Even though follow ups were conducted, 11 credit managers still did not complete the questionnaires and 6 were on annual leave at the time of the study. The researcher managed to receive 8 respondents. The 400 (100 customers from each top financial institutions) were randomly selected. The researcher requested a few

minutes of their time with consenting walk-in customers to complete the questionnaires. While other customers waited for their turn to be helped or asked to be excused from the queue to take part in the research, 19 customers declined to participate.

A questionnaire was designed to be directed at customers who have or have had vehicle finance at the top 4 financial institutions. A questionnaire was designed, with 8 questions (see appendix 7.1.) The first 5 questions were concerned mainly with the demographics such as gender, marital status and income bracket etc. One of the important questions was regarding whether the customer has or has had vehicle finance. This was deliberate as the study was aimed at customers with vehicle finance either presently or in the past. The last 3 questions were regarding the perception of the cost of credit. There were also open-ended questions aimed at credit managers to also view their perception regarding the cost of credit default. Both open-ended and close-ended questionnaire are included as appendix 7.1.

The strategy of data collection began by submitting a request for permission to conduct research with the financial institution. The permission letter was granted to proceed with the collection of data in the financial institution. The researcher had introduced herself as a master's student from Cape Peninsula University Technology and explained the reason for the research. Respondents completed the questionnaire and returned it to the researcher within few minutes after completion. The qualitative, open ended questionnaire was sent to the credit managers, via email, to those who were outside Cape Town. The researcher had made appointments to meet the credit managers within reach in order to complete the open-ended questionnaires.

### **3.7 QUESTIONNAIRE DESIGN**

The questionnaire was designed after the review of the literature. The questionnaire is basically close-ended with easily understandable responses to choose from. Copeland (2017) noted that among the advantages of open-ended questions are greater precision, easy to understand and easy to analyse responses. The open-ended questionnaire was designed in to be clear, easy to understand and for respondents to easily be able to select an answer from the list of options. There were few close-ended questions designed for the credit managers. These were easy to respond to and understandable. The questions were relevant to the work that credit managers did.

#### **3.7.1 The questionnaire layout.**

This section explains the reasoning for each question/s of the questionnaire.

**B1 question:**

The reason for this crucial question was to establish whether the respondent has or has had vehicle finance as the questionnaire was designed for only those who have or have had vehicle finance. If not, then the questionnaire will not be used for that respondent.

**B2-B5 questions:**

These questions contain demographics information such as marital status, gender, age group and income. The reason for this is to establish whether the respondents' perception of the cost of credit differs in relation to their demographic profile.

**B6 question:**

This question elicits the respondents' opinion regarding the effect of when the vehicle is repossessed. This will fulfil the objective that speaks of investigating the cost implications when the customer's vehicle is repossessed.

**B7 question:**

B7 assesses the perception when changes in the economic circumstances cause credit default on vehicle finance.

**B8 question:**

The last closed-ended question highlighted the opinion regarding the cost of financing a vehicle. This assessment is vital to the study as it provides respondents' perception on the cost of credit.

The open-ended questionnaires were administered to the credit managers. The 4 questions were designed around the objective, which is to determine the cost of credit default and the researcher was intent on ascertaining their opinion on how a vehicle application is reviewed and what the key factors are that seeks to assess the application. The credit managers' perception is vital in establishing the cost of credit default to the financial institution.

### **3.8 DATA ANALYSIS**

Data analysis is the process of describing and summarizing of collected data (Vosloo, 2014). The purpose of data analysis is to receive useful and usable information. This section discusses how the data was analysed in order to answer the research questions. Descriptive analysis and content analysis, in conjunction with triangulation, were used to explain the data. The completed questionnaires were edited where necessary and coded. The data was

captured on Microsoft excel before being exported to the SPSS statistical package for analysis. Descriptive statistics, in the form of frequency tables, were produced from SPSS data, converted into graphs and charts. The graphs and charts such as tables and figures were utilized to explain and discuss the findings.

The open-ended questionnaire responses were also captured on Microsoft excel and comparison made of the similarities in the answers. Similar answers were grouped together using the pie chart. Content analysis is a research technique used by researchers to interpret and code textual information (Bengtsson, 2016). In other words, it assists in converting qualitative data to quantitative for discussion and explanations. For the purposes of this study, the qualitative data was coded and discussed using charts.

### **3.8.1 Triangulation**

Triangulation is a tool that facilitates verification of data through cross validation of two or more research methods (Olsen, 2004). In other words, it is the use of two or more methods in one research problem. In this way validity and reliability of the research can be satisfied. For this research, it involves the understanding of the relationship between the qualitative and quantitative data, in order to achieve the perceived costs of credit default.

## **3.9 VALIDITY AND RELIABILITY**

Validity is the degree to which a construct is truthfully quantified (Mohajan, 2017). The researcher used two measures which are content and construct validity (Drost, 2011). Construct validity tests how questions produce data that measures what it is intended to measure (Bernard, 2000). Content validity is the suitable and sufficient use of the content in the questionnaire or any other data collection method (Golafshani (2003). Furthermore, in order to satisfy content validity, the objectives and the research questions were formulated since these were the basis of the questionnaire. An intensive literature review was completed which was the foundation that was used to create the questionnaire. The researcher made certain that the questionnaire was simple to understand. To validate construct validity, the researcher consulted the senior managers in the financial institutions, as well as experts in the field of study, to ensure that the content relates to the study underway. It was confirmed that the content indeed measured the construct under study.

## **3.10 ETHICAL CONSIDERATION**

Since this study is based on confidential information. The searcher obtained approval from CPUT. The researcher has also obtained ethical approval (certificate number 217080731) from the financial institution in order to interview their customers and credit managers. The

information is highly confidential and no information or names of customers/ credit managers from the financial institutions will be published in any form or manner.

The researcher has explained to all participants that they have the right to withdraw from participating and that all their information would be handled strictly confidentially and that no names would be mentioned in the study.

### **3.11 SCOPE AND LIMITATION**

This study is based on the top financial institutions in South Africa. This study was based on customers in Cape Town (Western Cape) which represents the whole South Africa. The same policies which applies to vehicle finance applications in the Western Cape applies throughout South Africa. The top financial institutions have a strong foot print in this market and the other, smaller, financial institutions are now only entering the vehicle finance industry and their data may not be sufficient for data analysis.

The researcher couldn't obtain actual data from the financial institutions due to strict confidentiality clauses. The research will be based on cost of credit default using perceptions of customers and credit managers (qualitative and quantitative) and not the actual cost of credit default.

### **3.12 SUMMARY**

This chapter has explained the methodology used in this study and the rationale behind it. It also explained the reasons for the methods used, the research questions, questionnaires and the process of data analysis. The researcher collected 381 closed-ended and 8 open-ended questionnaires. In the next chapter the results of the study will be fully explained. Methods and procedures for the qualitative and quantitative data analysis and descriptive statistics will be explained.

## **CHAPTER FOUR PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA**

### **4.1 INTRODUCTION**

This study is based on qualitative and quantitative research methods. This chapter focuses on the analysis of raw data and explanation of the results from a sample of 381 respondents (quantitative) from respondents who have or have had vehicle finance from the top financial institutions in the Western Cape. 381 Respondents were selected randomly in the Western Cape. The qualitative analysis is from the 8 respondents who were credit managers from the top financial institutions.

The quantitative research data was analysed using the descriptive analysis and for qualitative analysis, content analysis was applied. This analysis details the customers' perception of the cost of credit default as well as the opinion of credit managers representing the financial institutions.

### **4.2 THE INTERPRETATION OF DESCRIPTIVE ANALYSIS**

Descriptive analysis is the interpretation and explanation of raw data in order to make it simpler for the reader to understand. Hussain (2014) explained that descriptive analysis research employs terms such as frequencies which measures the number of times each variable occurs. Example of these variables are age, gender, marital status and income bracket etc. This study uses triangulation in order to better understand the relationship between the variables, in order to understand the cost of credit default. The presentation of data was done using the SPSS system to generate descriptive analysis using cross tabulation.

#### **4.2.1 Data analysis by triangulation**

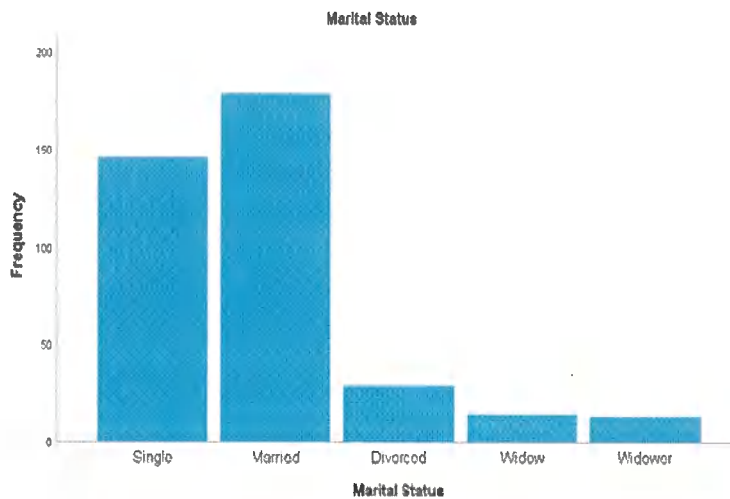
Analysis was completed with a use of triangulation to describe the inter-relationship between qualitative and quantitative methods and their interpretation of the respondents' perceived costs (Olsen, 2004).



### 4.3 ANALYSIS OF DEMOGRAPHIC FINDINGS

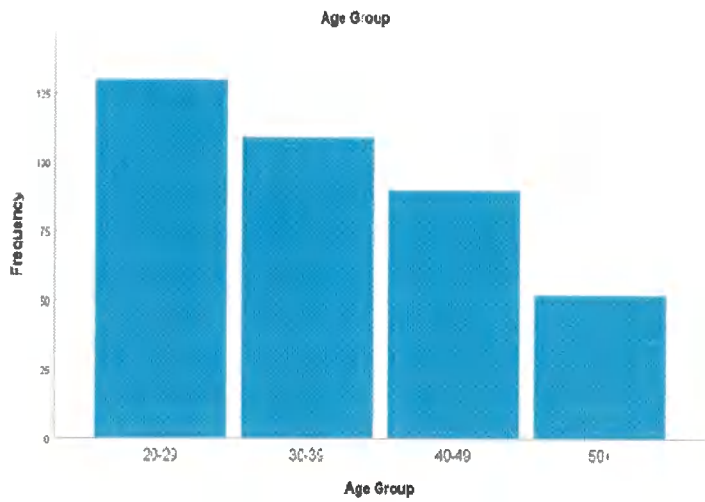
This section describes demographic of respondents according to their gender, age, marital status and income bracket. The demographic findings provide a new insight into pattern of respondent's perception and the influence that demographic results play in the understanding of cost of credit default. The demographic data provides variability to describe credit predictors that can be used to understand gender, age and income level contribution to the discourse of credit default as presented below:

**Figure 1. 2 Analysis of Marital Status**



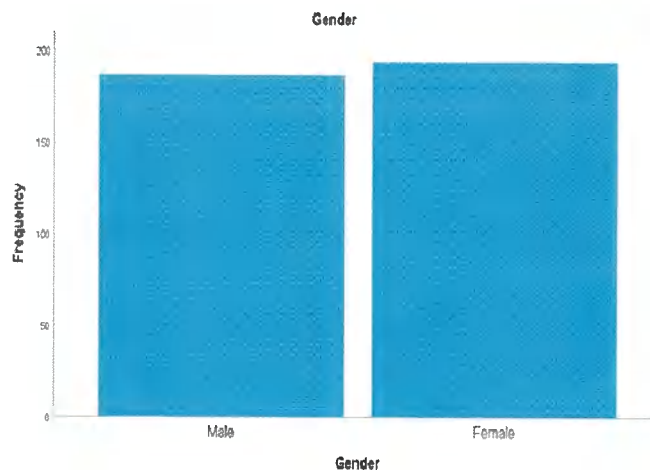
The study comprised of 381 respondents of which 179 (47%) are married, single 146 (38.3%), divorces 29 (7.6%), widows 14 (3.7%) and widowers had 13 respondents which makes (3.4%). The figure above shows that the majority of the respondents were married.

**Figure 1. 3 Age group**



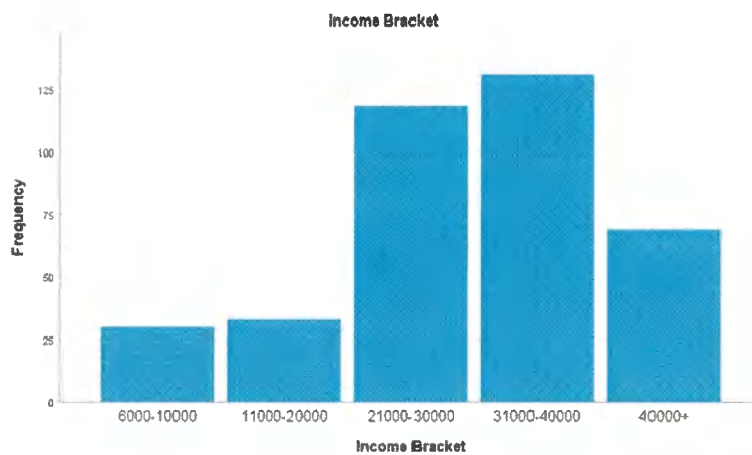
The age profile of the total sample N381 presented in the chart above explains that the majority of respondents were from the ages of 20-29 (34%), followed by ages 30-39 (29%). Furthermore, the ages 40-49 comprised 24%. The 50 years and older classification comprised only 14% of the respondents.

**Figure 1. 4 Gender profiles**



The illustration above suggests that out of N381 respondents, 194 (51%) were females and 187 were males (49%). This suggests that the majority of respondents were females. This can also mean that more females were affected by the cost of credit default than their male counterparts.

**Figure 1. 5 Income Bracket**



The figure above illustrates that the income bracket of the majority respondents were between R31 000 - R40 000, followed by R21 000 - R30 000, and the last income bracket is R6000 - R10000. This can also suggest that respondents in the income groups of R31 000- R40 000 were mostly affected by the cost of credit default compared to other income groups.

#### 4.4 DESCRIPTIVE ANALYSIS USING TRIANGULATION

This section describes responses received from the study and discusses the influence of variables such as increase in petrol price, increase in food prices and respondents' other financial obligations on the cost of credit default. The description utilizes tables and figures to show the relationship between multiple variables. The frequencies are presented in a cross tabulation format.

The relationship between variables have direct influence on the respondents' demographics: with 51% respondent being female and 41% male. Married couples, at 47%, likely agree that credit default is costly to customers. Younger respondents, between the ages of 20 – 29 years, likely agree with maximum value of 34%. This descriptive study suggests an interesting pattern of varied perception regarding the cost of credit default in the vehicle finance industry.

**Table 4. 1 Legal and administrative costs**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	83	21.8	21.8	21.8
	likely	142	37.3	37.3	59.1
	unlikely	113	29.7	29.7	88.7
	very unlikely	41	10.8	10.8	99.5
	not at all	2	.5	.5	100.0
	Total	381	100.0	100.0	

In order to understand legal and administrative costs as an additional cost of credit default, the respondents were asked to identify the cost of vehicle repossession. The frequency distribution and discussion show that 37% of the N381 sample likely agreed that legal and administrative costs are an additional cost to the credit while only 0.5% do not agree at all. This is clearly evident that majority of respondents likely agree.

This is therefore clearly evident that majority of respondents likely agree that legal and administrative cost would likely increase the cost of credit when a customer has defaulted. When triangulated on a gender basis, 73 males and 69 females out of 381 respondents agreed that legal and administrative costs increase the cost of credit for the customer in default. The probable reason for the high percentage of respondents' agreement to the statement is, according to Pritchard (2018), that it is costly for a vehicle to be repossessed since the financial institution will approach the court to issue a warrant to repossess, and all the costs incurred in the process of obtaining the warrant are added to the existing credit obligation.

**Table 4. 2 Bank listing customer on TransUnion Credit Bureau**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	70	18.4	18.4	18.4
	likely	155	40.7	40.7	59.1
	unlikely	118	31.0	31.0	90.0
	very unlikely	38	10.0	10.0	100.0
	Total	381	100.0	100.0	

The fact that banks listing customers on Transunion Credit Bureau is also one of the costs of credit default, as illustrated in the frequency table 4.2 above. To determine if that was the case, the question was administered to the N381 respondents regarding bank listing customers on Transunion after default or multiple defaults. 41% of respondents likely agreed and 31% unlikely agreed with the statement.

According to the results, 46% of respondents between the ages of 20-29 agree that banks listing customers on credit bureaux is an additional cost to the customer. 41% of the respondents were female. This descriptive data meant that females between ages of 20-29 agree that bank listing customers on credit bureau is an additional cost of credit. This finding was elaborated upon by The South African Banking Overview (2014), noting an increase in secured lending (debts which are attached to an asset). Credit Bureaux had announced that in the financial year 2013 about 10m South Africans were listed on credit bureaux with adverse records. Some credit active South Africans were over-indebted and could not sustain their financial obligations. In 2018 the statistics indicated that about 50% of credit active customers were listed as 'credit defaulters and under financial strain'.

**Table 4. 3 Loss of confidence in the bank**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid highly likely	70	18.4	18.4	18.4
likely	151	39.6	39.6	58.0
unlikely	124	32.5	32.5	90.6
very unlikely	36	9.4	9.4	100.0
Total	381	100.0	100.0	

Loss of confidence in the bank is a non-financial cost. It has been demonstrated that word of mouth is a powerful advertising tool (Naz, 2014). Loss of confidence can arise when the customer has lost trust in the financial institution. The respondents' perception on the loss of confidence in the bank are listed on table 4.3 above. The descriptive analysis shows that out of N381 respondents, 40% of respondents likely agree that losing confidence in the bank as a result of vehicle repossession is an additional cost while only 9% of respondents thought it was very unlikely that the loss of confidence will be costly.

However, 49% of respondents in the income brackets of R31 000-R40 000, aged 20-29 support the perceived notion of repossession to mean loss of confidence in the bank. The Basel Committee of Banking Supervision (2003) defined reputational risk as risk arising from negative perception on the part of the customer which means that once the customer loses confidence in the financial institution, the reputation of the financial institution will be affected.

**Table 4. 4 Psychological problems**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	68	17.8	17.8	17.8
	likely	145	38.1	38.1	55.9
	unlikely	114	29.9	29.9	85.8
	very unlikely	52	13.6	13.6	99.5
	not at all	2	.5	.5	100.0
	Total	381	100.0	100.0	

Psychological problems are an additional costs of credit. According to the frequency table above 38% likely agreed that psychological problems are an additional cost when a vehicle is repossessed, with 14% thinking that it is very unlikely and 0.5% not agreeing at all.

Using triangulation based on gender, 40% of respondents between the ages of 20-29 agree. Females were the majority at 85 out of 381 respondents. The majority of females aged 20-29 perceived that psychological problems are an additional cost to the customer once the vehicle has been repossessed. Normally, the relationship between financial institution (lender) and customer (borrower) should be pleasant with psychological and financial benefits. Due to the increase in socio-economic uncertainty, this relationship becomes risky, with the likelihood of non-affordability and probability of default occurrence (Abdou & Pointon, 2011).

**Table 4. 5 Increase in interest rates**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	66	17.3	17.3	17.3
	likely	157	41.2	41.2	58.5
	unlikely	113	29.7	29.7	88.2
	very unlikely	44	11.5	11.5	99.7
	not at all	1	.3	.3	100.0
	Total	381	100.0	100.0	

Increase in interest rate is the cost of credit default derived from the question/ objective stating the likelihood that the change in economic circumstances causes credit default in the vehicle finance industry in chapter 1. The frequency table above states that 41% of respondents agree with the statement while 30% perceived it to be unlikely that an increase in interest rates could result in a higher instalment.

This is clearly perceivable by the majority of respondents who likely agreed that the increase in interest rates would likely increase the cost of default. When triangulated on a gender basis, 43% males and 36% females' respondents agreed that the increase in interest rates would increase the possibility of credit default. This statement corresponds with Addae-Korankye (2014) in chapter 2, arguing that an increase in interest rates provokes credit defaults among customers. In other words, the higher the interest rates the higher the possibility of default among customers.

**Table 4. 6 Increase in petrol price**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	66	17.3	17.3	17.3
	likely	157	41.2	41.2	58.5
	unlikely	113	29.7	29.7	88.2
	very unlikely	44	11.5	11.5	99.7
	not at all	1	.3	.3	100.0
	Total	381	100.0	100.0	

The likelihood that the increase in petrol price will increase the possibility of credit default is presented on the above frequency table and 41% of respondents likely agree, 17% highly agree and 30% unlikely agree. This is out of 381 respondents.

In essence, stemming from the results above, triangulated on a gender basis, 45% of 20-29yr olds agree with the statement while only 12% of 50+ ages unlikely agree. This demonstrates that respondents between the ages of 20 - 29 agree with the likelihood that the increase in petrol price would increase the possibility of credit default in the vehicle finance industry, while, respondents aged 50+ do not agree. The risk of the costs of credit default may be greater, taking into consideration the literature on the socio-economic factors (South Africa. National Treasury of the Republic of South Africa. 2008).

**Table 4. 7 Recession**

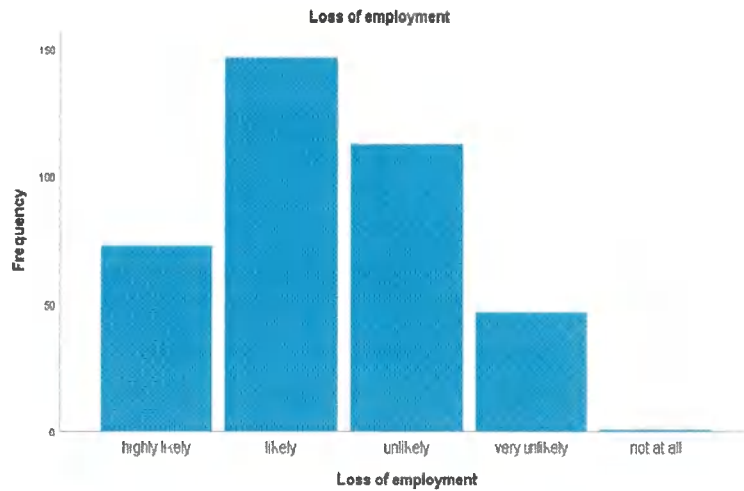
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly likely	63	16.5	16.5	16.5
	likely	141	37.0	37.0	53.5
	unlikely	124	32.5	32.5	86.1
	very unlikely	48	12.6	12.6	98.7
	not at all	5	1.3	1.3	100.0
	Total	381	100.0	100.0	

The frequency table above, show that 37% of respondents likely agree that that recession can increase the chances of credit fault in vehicle finance, followed by 124 (33%) of respondents who said that it was unlikely. Out of N381, 13% of respondents thought that it was very unlikely that recession could increase the possibility of credit default.

The descriptive analysis results presented suggest that respondents between the ages of 20-29 (60%) agreed that recession can increase the possibility of credit default. Respondents in the income-brackets of (R31 000-R40 000), at 38%, within the income bracket, also agree with the notion. This shows that respondents aged 20-29, earning an income between R31000-R40 000 agree that recession likely causes the possibility of credit default. This concurs with studies from the literature in chapter 2 whereby it was established that the unstable, sluggish economy could increase the possibility of credit default among South Africans (Verick & Islam, 2010).



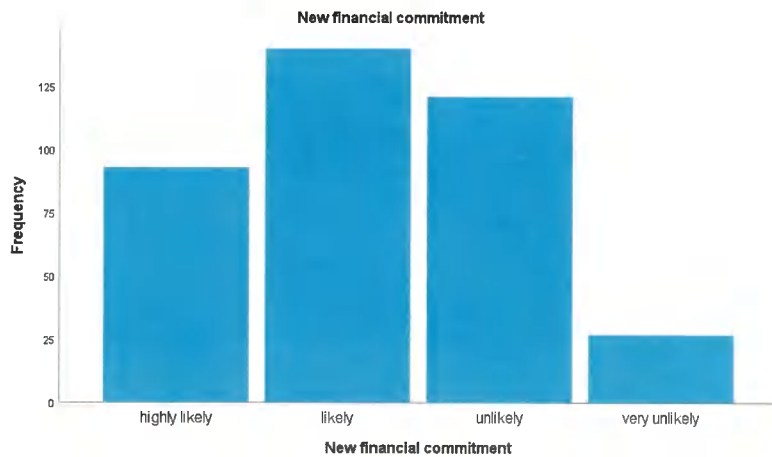
**Figure 1. 6 Loss of employment**



The question of loss of employment as a cost of credit default was presented to test the perception of the respondents. The above figure, 1.6, states that 39% of respondents said that it was likely that loss of employment may influence credit default, 19% said that it was highly likely and only 30% thought that it was unlikely. Most respondents agree that loss of employment can likely prompt credit default.

Triangulation on marital status confirmed that married respondents with a count of 73 and a count of 80 for females, likely agree that loss of employment can influence the possibility of customer default on his/her vehicle finance. The perception is that married females are likely to default when they lose their employment. These results concurs with the argument by Bonfim (2007) and Zabia (2019) that the drivers of credit default in the economy are, to name a few, interest rates, inflation, economic performance and loss of employment.

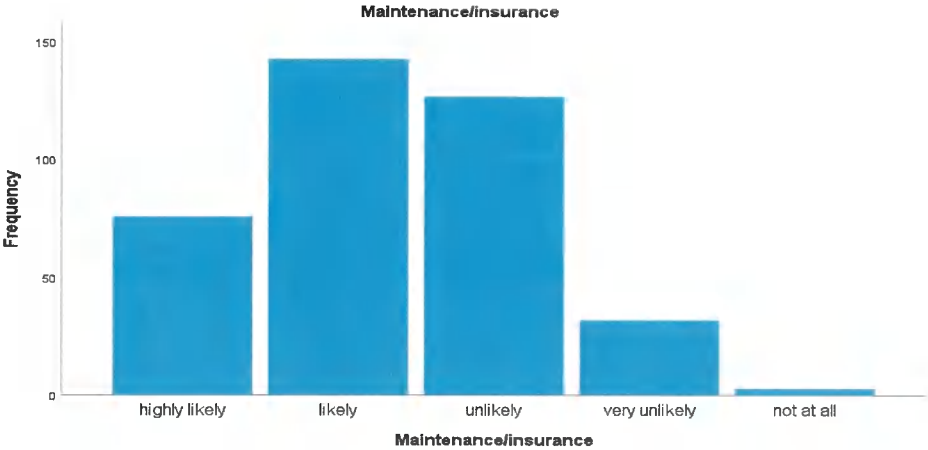
**Figure 1. 7 New financial Commitment**



The results from the figure above provides the insight on the respondents' opinion regarding new financial commitment. The question asked establishes whether the additional financial commitment increases the possibility of credit default. This statement corresponds with the research question/ objective in chapter 1: to determine the cost of credit default in the vehicle finance industry. The majority of the respondents (37%) agree that new financial commitment can increases chances of default, with 24% saying it is highly likely and 32% disagreeing.

The above data was triangulated based on income brackets and marital status. The results indicate that single respondents earning between R31 000 - R40 000 agreed that new financial commitment is an additional cost in an event of credit default. This statement stems from the argument that granting additional credit obligations could increase the exposure to the probability of credit default (Bonfim, 2007). The respondents' perception suggests that customers remain over-indebted due to increasing financial commitments.

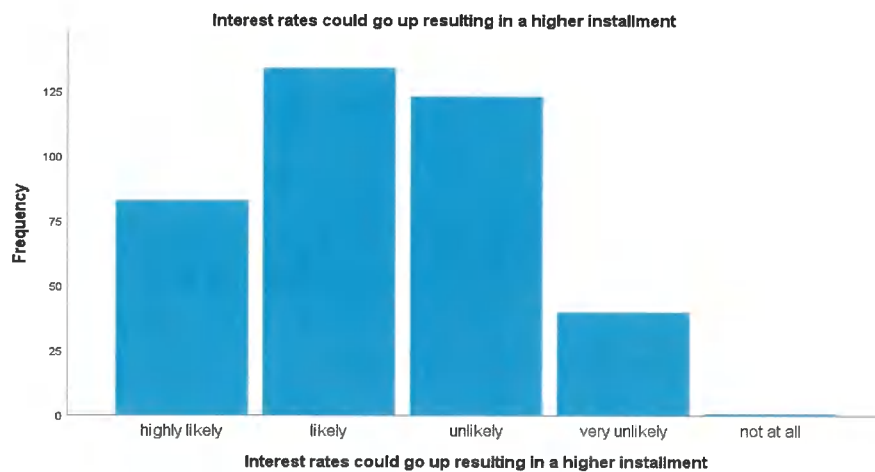
**Figure 1. 8 Maintenance/insurance**



It can be argued that maintenance and insurance is an additional cost of financing a vehicle. The above figure represents respondents' perception. Despite the differences in opinion, the majority respondents agreed (38%) that maintenance/ insurance is an additional cost of credit, while only 33% say it was unlikely true and 0.8% respondents disagreeing.

The maintenance/ insurance as an additional cost of credit is supported by majority of females (75 count) and the majority of the income bracket R21 000 - R30 000 suggested that maintenance/ insurance is an additional cost of credit to the customer. Respondents earning between R6 000-R10 000 did not agree with the statement. It can therefore be generalised that females earning between R21 000-R30 000 agree with this analysis.

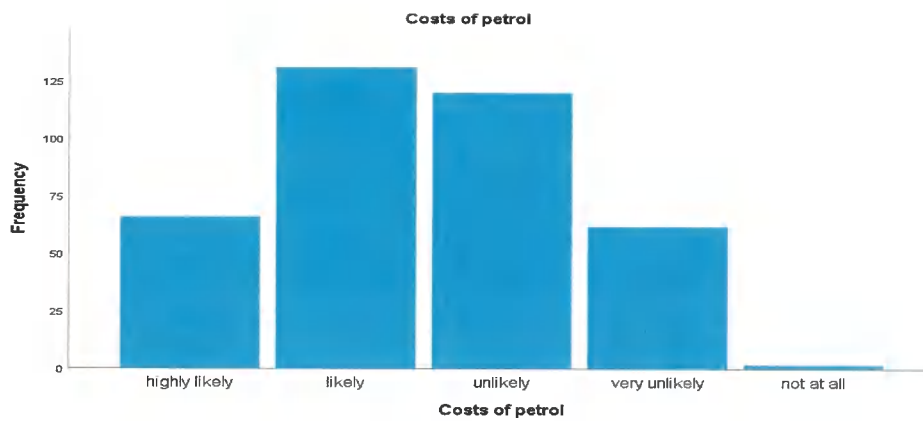
**Figure 1. 9 Interest rates could go up resulting in a higher instalment**



In the figure above, the respondents were asked to rate their perception on the interest rates increase resulting in higher instalments. The result is that 35% of respondents agree that higher instalments caused by an increase in interest rates is an additional cost of credit, while 32% saying that it was unlikely and 0.3% respondents disagreeing.

The descriptive results states that respondents between the ages of 20-29 have the highest count (49), Furthermore, married respondents are the highest in the marital status category, however, respondents earning between R6 000 - R10 000 did not agree at all. The descriptive analysis suggests that married respondents between ages of 20 - 29 agree that an increase in interest rates could result in higher instalments which is an additional cost of credit.

**Figure 1. 10 Cost of Petrol**



The above test shows that the highest number of respondents at 34% agree that cost of petrol is an additional cost of credit followed closely by respondents who do not agree (32%) with the statement and only 16% disagreeing.

Based on the results of descriptive analysis, the income bracket that supports cost of petrol as an additional cost of credit is R21 000-R30 000 of which the highest count are single respondents. This perception means that single respondents earning between R21 000 - R30 000 agree that cost of petrol is an additional cost of credit.

## 4.5 ANALYSIS OF RESPONSES FROM THE OPEN-ENDED QUESTIONNAIRE

This section presents the analysis of responses received from the open-ended questions. The responses received were analysed using content analysis in order to understand the requirements considered in the appraisal of credit application. As described in the chapter 2 literature review, the following understanding of factors considered in a vehicle financing application is consequent upon the analysis of responses received from the open-ended section of the data.

**Figure 1. 11 Factors considered when reviewing applications**

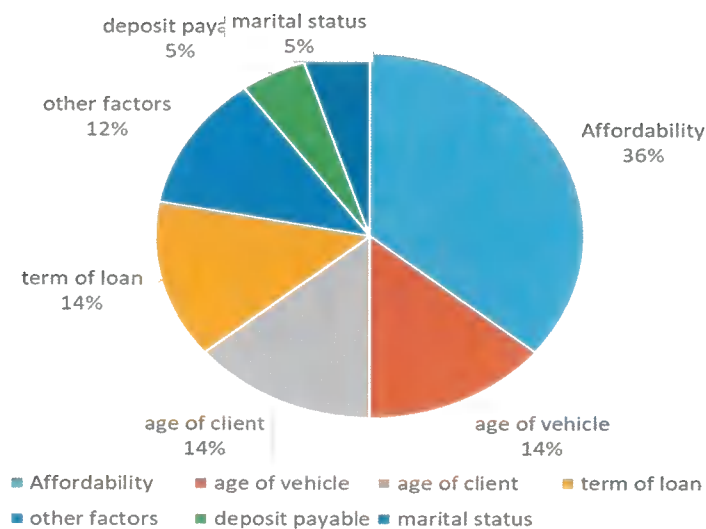
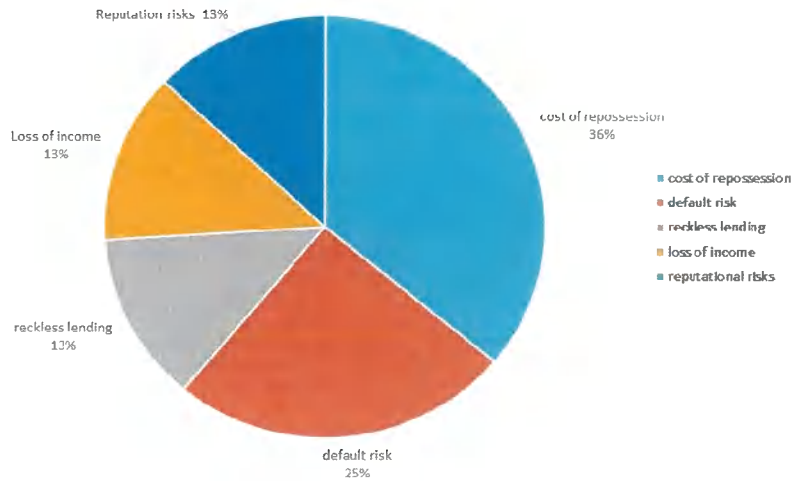


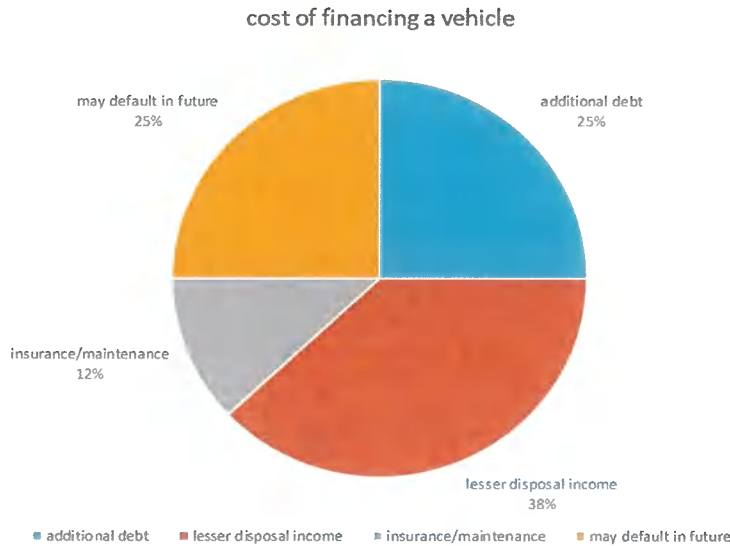
Figure 1.11 above is a pie chart of factors that are considered when applications are reviewed for consideration. The chart shows that 36% of the respondents said that affordability is the most important factor considered when approving an application followed by term of the loan, age of the client and age of the vehicle while all three are 14%, with marital status and deposit payable at only 5% each. Other factors which include how long a customer lived in his/ her residence is not a major reason to approve an application. The majority of respondents mentioned affordability as a most sought after factor considered when reviewing a vehicle finance application, however, the other factors mentioned in the pie chart are also important when reviewing an application.

**Figure 1. 12 Cost of Credit default to the bank**



In presenting the cost of credit default as in figure 1.12 above, repossession cost is perceived to be the highest at 36%. Reckless lending and loss of income are lower, at 13%, as perceived by respondents. Reputation and default risk rates 13% and 25% respectively. The high and low representation of percentages as per the above figure remain a perception and not actual cost of credit default to the financial institutions. The majority of the managers that participated in the open ended questionnaire, 36%, believe that cost of repossession is part of the costs of credit default while 25% perceive default risk as the cost of credit default. All the costs in the chart are associated with credit default as perceived by the respondents.

**Figure 1. 13 Cost involved when a customer finances a vehicle**



Regarding the cost of refinancing a vehicle noted in the pie chart above, respondents noted that lesser disposal income at 38% is the highest costs. The second perception is that once customers finance a vehicle it automatically becomes an additional debt (25%) which is the same as the perception that a customer might default at a future date due to unforeseeable circumstances (25%). This means that the respondents perceived 'the lesser disposal income' as the highest cost for financing a vehicle, in other words, when a customer finances a vehicle, an instalment must be paid, resulting in a reduction of disposal income.

#### **4.6 SUMMARY**

This chapter discussed and highlighted the approaches and methodology that was followed. It discussed demographic findings such as age, marital status and gender profiles and the demographics were analysed using descriptive analysis and this was done to establish the variables of the respondents. The responses to the closed- ended questionnaire was also analysed using descriptive analysis, while the open-ended was analysed using content analysis-word similarities. The analysis was triangulated in order to describe the interaction of qualitative and quantitative surveys and their interpretation of the respondents' perceived costs.

In Chapter 3, data validity and data reliability was established and discussed. This chapter discussed the cost of credit default as perceived by the respondents. There is an interesting



pattern of mixed perception between the genders, income group and marital status categories. It can be observed that cost of credit default has an impact on both genders.

In the following chapter (5), the research questions and research objectives are re-visited, and conclusion and recommendations are stated.

## **CHAPTER FIVE: CONCLUSION AND RECOMMENDATION**

### **5.1 INTRODUCTION**

This study investigated the perception of the cost of credit default in vehicle finance industry. The cost of credit default is an important component of the cost of banking operations as it offers an understanding on different behaviours of defaulters. Since every application is presumably at risk to default, all applications must be assessed in-depth for affordability and past payment behaviour. Even though there are systems in place to perform credit checks on applications and default assessment, customers still default. It was imperative to do a study on the cost of credit default to the financial institution and the impact that it has on the customer. A quantitative and qualitative research paradigm was chosen for this study. The study had open-ended and closed-ended question and 381 respondents participated in the study as well as 8 credit managers. The objectives of the study formed a guideline in the preparation of the questionnaire. In this chapter conclusions are discussed and are based on the data analysis. The interpretation of the results were in accordance with the research objectives in chapter 1.

### **5.2 CONCLUSION DERIVED FROM THE LITERATURE REVIEW**

There were quite a few interesting findings from the literature, such as that cost of credit default can have negative impact on both the customer and the financial institution. The impact to the customer can be caused by economic changes such as hike in interest rates and death of the breadwinner which can have an effect on the customer's ability to repay the debt. Furthermore, the cost of credit default to the financial institution can have dire repercussions. The results can range from non-financial such as reputational costs while financial costs are legal and operational costs. From the literature, it can be concluded that credit default costs are part of the trading risk to the financial institutions. Since customers will be in need of vehicle finance during their life time, the probability of credit default is eminent. What is imperative is how the cost of credit default is managed and controlled in order not to overwhelm and destroy both the customer and the financial institution.

### **5.3 CONCLUSION DERIVED FROM THE OBJECTIVE**

This section presents a discussion of the conclusion regarding study objectives with a focus on respondents' perception of 1) determinant of the cost of credit default, 2) credit predictor variables, 3) the relationship between credit defaults and economic condition and 4) cost implications of default. In conclusion, this chapter through extrapolation of data from the literature and data analysis chapters concluded that the perceived cost of credit default has become a risk management function that enables the review of credit assessment and check process in order to understand financial and non-financial benefits for both borrowers and lenders.

This conclusion depart from the initial objective that seeks to determine the cost credit default to a simple analysis of perceived cost. While lending has become more risky due to volatile social, economic and political condition, the probability of default has become even higher creating the need for higher cost of credit with higher default risk. In responding to the objective of this study, the conclusion provides except into perceived cost of default, predictive factors and economic and implication for both lenders and borrowers.

#### **Objective One**

To determine the cost of credit default in the vehicle finance industry.

The determination of the cost of credit default presented here is derived from empirical data that seeks to understand perceived cost of default according to the opinion of participating respondents. This understanding is derived from the social, economic and political uncertainty that make borrowing and lending for vehicle financing more risky, unpredictable and costly. This is evident from data on increased cost of petrol, interest rate, inflation leading in some instances to loss of employment, indebtedness and other social vices. While the actual cost of default calculation was not done, the perceived cost is found to be overwhelmingly high, so is the risk as per the table 1. Reputational risk, 2. Loss of customers, reckless lending, default risk and repossession.

#### **Objective Two**

Ascertain whether there are: (a) credit predictor variables (b) predictors of the likelihood of customer credit defaults.

Using the credit predictor variable, the analysis shows mixed respondents' perception of the relationship between demographic variable and how they could be useful in the assessment of credit application. In the opinion of the majority of respondents, age, gender, and marital

status when correlated with other social economic factor provide a better understanding of applicant risk profile and thus credit assessment and decision to grant or decline credit application. The application of predictive variable is found to have majority agreement regarding their importance in credit assessment and default estimation determinant. As with most predictive variable, the cost of credit default can be predicated on applicant context and prevailing social economic condition at the time the application is finalised.

### **Objective Three**

To establish how much of the credit defaults can be ascribed to changes in economic circumstances.

The actual cost of credit default can be determine when history customers' data is used to conduct a longitudinal analysis. In conclusion, this study is based on respondent perception and conclusion would be based on their opinion. The constantly changing price of petrol, interest rate and other external factors is fund to be base on which to establish the cost of credit default. This finding supports research objective as stated in this section of the thesis/. Although other variable like applicant context have been found to contribute to the likelihood of credit default, the economic factors create the background for uncertainty and uncontrollable nature of the default probability.

To establish the cost of credit default therefore, the appraisal of the macro-economic factor should be evaluated in tandem with fluctuating petrol price, interest rate, recession and loss of employment are found to be economic conditions and circumstances that can contribute to credit default.

### **Objective Four**

To investigate the cost implications of customers in default

As indicated above, before concluding on the cost implication for customer in default, it would be prudent to make general conclusion of the implication for cost of credit default. This study has found that as the cost of credit increases so is the risk of default. While the increase in probability of default relates to applicants' social economic condition and the environment, risk management has been applied to mitigate the default associated risk. Risk mitigation and/ or management has added a new cost item to the total cost of credit thus increasing the probability of default.

Other implication for both lender and borrower relates to repossession of the vehicle with ultimate legal dispute. At this stage point the enforcement of the contract terms would be subjected a longer and more costly process of litigation with consequences of more cost added to the cost of credit. In this instance, the cost of credit continues to increase and probability of repayment decrease until such a time that situation improve.

## **5.4 FUTURE RESEARCH**

This study was based on cost of credit default using the perception of customers in the vehicle finance industry in South Africa. The study analysed opinions on what is understood as the cost of credit by both the customer and representatives of the financial institutions. The longitudinal/ continuous study of the cost of credit default is imperative for vehicle financing in South Africa.

The determination of the actual cost of default in the vehicle finance would be predicated on the legality of using data from credit bureau with or without anonymity. This recommendation is predicated on the finding and limitation of the current study that test respondent perception due to inability to assess historical data.

The understanding of the gap between perceived versus actual cost of credit cost of default may also add a new dimension with which to understand investigative merit of estimation using predictive data to estimate cost of credit within context that is uncertain, volatile and changing continuously.

Also the need for risk management framework to support and/ or replace the existing practice to assume certainty for credit financing practice. It assumed that regulator should provide regulatory instrument should be evaluated.

A comparative analysis using the opinion of respondent from other province could also help to deepen and broaden understanding of the usability of predictor variable to test the relationship between demographic variable and application assessment.

The comparative analysis is recommended in ensuring reliability and validity of opinion that may be correlated with actual cost of credit default when customer credit history is used

Other recommendation are summarised below:

- 1) The implementation of default risk management intervention in order to mitigate credit default risk;

- 2) Further research that utilizes historical default data from trans-union for longitudinal analysis;
- 3) Comparative analysis of default costs across the biographical profile of vehicle finance customers;
- 4) Development of a risk assessment formula to support and/ or replace the current credit structure of vehicle financing.

## 6. REFERENCES

- Abdou, H. & Pointon, J. 2011. 'Credit scoring, statistical techniques and evaluation criteria: a review of the literature. *Intelligent Systems in Accounting, Finance & Management*, 18 (2-3): 59-88, April.
- Adabenege, Y.O., Simpa, L. Y., Mohammed, K.U. & Mohammed, A. 2015. The correlation between risk management and organizational performance: An empirical investigation using panel data. *Research Journal of Finance and Accounting*, 6(16):2222-2847, 2015.
- Addae-Korankye, A. 2014. Causes and control of loan default/delinquency in Microfinance Institution in Ghana. *American International Journal of Contemporary Research*, 4(12):1-10, December.
- Alvi, M. H. 2016. A manual for selecting sampling techniques in research. Karachi: University of Karachi.
- Appolus, T. K. 2012. *Death of a bread winner*. South Africa: Xlibris Corporation.
- Basel Committee on Banking Supervision. 2009. *Copyright policy*. <http://www.bis.org/publ/bcbs98.htm> [20 April 2017].
- Aubrey, M. 2015. The effect of inflation targeting on economic growth in South Africa. Unpublished Master thesis, University of Limpopo, Mankweng.
- Baines, P. & Chansarkar, B. 2002. *Introducing Marketing Research*. Chichester: John Wiley and Sons.
- Baltimore County Public Schools. 2015. Develop a research proposal: planning the methodology – limitations and delimitations. [https://www.bcps.org/offices/lis/researchcourse/develop\\_writing\\_methodology\\_limitations.html](https://www.bcps.org/offices/lis/researchcourse/develop_writing_methodology_limitations.html) [20 February 2019]
- Bengtsson, M. 2016. *How to plan and perform a qualitative study using content analysis*. Malmo: University of Malmo.
- Bernard, H.R. 2000. *Social research methods: qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Boguslauskas, V., Mileris, R. & Adlyte, R. 2011. The selection of financial ratios as independent variables for credit risk assessment. *Economics and Management*, 2011(16), 2011.
- Bolton, C. 2009. *Logistic regression and its application in credit scoring*. Unpublished PhD thesis, University of Pretoria, Pretoria.
- Botha, L.G. 2014. A discussion of access to credit in South Africa to specific reference to reckless lending and over-indebted consumers. Unpublished masters thesis, University of Kwa-Zulu Natal, Durban.
- Brehanu, A. & Fufa, B. 2008. Repayment rate of loans from semi-formal financial institutions among small-scale farmers in Ethiopia. *Journal of Socio-Economics*, 37(6):2221-2230, December.

- Brown, K. & Moles, P. 2014. *Credit risk Management*. Edinburgh Business School: Heriot-Watt University.
- Brown, K & Moles, P. 2016. *Credit risk Management*. Edinburgh Business School: Heriot-Watt University.
- Brown Chakravarty, S. 2002. *Relationship and rational in consumer loans evidence from the nineties*. West Lafayette: Purdue University.
- Copeland, A. 2017. The pros and cons of open and closed questions.  
<https://environment.awaterloo.ca/research/watgreen/projects/library/1020/orcg.html>  
 [22 March 2019].
- Creswell, J.W. 2009. Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, 3(2):95-108, April.
- Creswell, J.W. 2014. *Research design: qualitative, quantitative, and mixed approaches*, 4th ed. London: Sage.
- Crouhy, M., Galai, D. & Mark, R. 2000. A comparative analysis of current credit risk models. *Journal of banking & finance*, 24:59-117.
- Davydenko, A.S. 2007. When do firms Default? A study of the Default Boundary. Unpublished Master thesis, University of Toronto, Canada.
- Davydenko, A.S., Strebulaev, I.A. & Zhao, X. 2012. A Market-Based Study of the Cost of Default. *The Review of Financial Studies*, 25(10):2960-2999, September 21.
- Delgadillo, L.M. & Green-Pimentel, L.E. 2007. Analysis of mortgage default clients and mortgage default counselling at housing counselling agency. *Journal of Financial Counselling and Planning*, 18(1).  
<https://www.researchgate.net/publication/237246272>  
 [14 October 2018].
- Devault, G. 2019. Learn about using cross tabs in quantitative research. *The balance small business*: 19 March 2019.
- Drost, E.A. 2011. Validity and reliability in social science research. *Education Research and Perspectives*, (38)1:105-123, June.
- Duffee, G.R. 1999. Estimating the Price of Default Risk. *Federal Reserve Board*, 12(1):197-226, Spring.
- Fin24, 2002. *Bank CEO faces court action*.  
<https://www.fin24.com/Companies/Bank-CEO-faces-court-action-20020228>  
 [28 February 2019].
- Fofack, H. 2002. *Non- performing loans in Sub-Saharan Africa: causal analysis and macro-economic implications*.
- Garson, G.D. 2012. *Testing Statistical Assumption*. North Caroline: University of North Caroline.
- Gennaioli, N., Martin, A. & Rossi, S. 2014. Sovereign default, domestic banks and financial institutions. *The Journal of Finance*, 69(2), April.
- Giesecke, K. 2005. Default and Information. *Journal of Economic Dynamics & Control*. 2281-2303, July.



- Gilbert, A.T. 2013. Analyzing financial risk management in Banks: Evidence of Liquidity, Credit and Capital risk in South Africa. Unpublished Master thesis, University of Eastern Mediterranean, North Cyprus.
- Golafshani, N. 2003. Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), January.
- Gumparthi, S. 2010. Risk Assessment for Assessing NBFCs (Asset Financing) Customers. *International Journal of Trade and Finance*, 1(1):2010-023X, June.
- Gunduz, Y., Memmel, C., & Raupach, P. 2012. The common drivers of default risk. *Deutsche Bundesbank*. 36.
- Halcomb, E. & Hickman, L. 2015. Mixed method research. *Faculty of Science and Medicine and Health*, 29(32):41-47, 2015.
- Heimlich, E.J. & Ardoin, M.N. 2008. Understanding behaviour to understand behaviour change. *Environmental Education Research*, 14(3):215-237, June.
- Hoepfl, M.C. 1997. Choosing Qualitative research: A primer for technology education research. *Journal of Technology Education*, 9(1), Fall.
- Hussain, M. 2014. Descriptive statistics-presenting your results I. *Journal of the Pakistan Medical Association*, 62(7):741-743, July.
- Imbuga, B. M. 2014. An assessment of the effect of inflation on loan repayment among commercial banks. Unpublished Master thesis, University of Nairobi, Nairobi.
- Kealhofer, S. & Rohn, R. J. 1993. *Portfolio management of Default risk*. San Francisco: KMV.
- Johannessen, J.A., Olsen, B. & Lumpkin, G.T. 2001. Innovation as newness: What is new, how new, and new to whom? *European Journal of Innovation Management*, 4(1):20-31.
- Kebede, M., Kaur, N.D. & Kaur, J. 2015. Financial literature and management of personal finance: A review of recent literatures. *Research Journal of Finance Accounting*, 6(13):2222-2847.
- Keiser, T. & Mc Andrews, J. 2009. Why are banks holding so many excess reserves? *Current issues in Economic and Finance*, 15(8):1-10, December.
- Kothari, C.R. 2014. *Research Methodology methods and techniques*. 2<sup>nd</sup> ed. Jaipur: University of Rajasthan.
- Krishnamurthy, A. & Vissing-Jorgensen, A. 2011. *The effect of quantitative easing on interest rates*. Cambridge: National Bureau of Economic Research.
- Kumar, R. 2005. *Research methodology: A step-by-step guide for beginners*. Thousand Oaks, CA: Sage Publications Ltd.
- Liao, S. & Change, J. 2010. Economic determinants of default risks and their impacts on credit derivative pricing. *The Journal of Future Markets*, 30(11).  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/fut.20453>  
 [16 March 2019].
- Louzada, F., Ara, A. & Fernandes, G.B. 2016. Classification methods applied to credit scoring: A systematic review and overall comparison. Sao Carlos: USP.

- Marcucci, J. & Quagliariello, M. 2009. Asymmetric effects of the business cycle on the bank credit risk. *Journal of Banking & Finance*, 33(9).  
<https://www.sciencedirect.com/science/article/pii/S0378426609000648>  
 [16 May 2018].
- Marshall, A., Tang, L. & Milne, A. 2010. Variable reduction, sample selection bias and bank retail credit scoring. *Journal of Empirical Finance*, 17(3):501-512.
- McKim, C.A. 2015. The value of mixed methods research. A mixed methods study. *Journal of Mixed Methods Research*, 11(2):202-222.
- Miller, S. 2014. Risk factors of consumer loan default: A censored quantile regression analysis. Michigan: University of Michigan.
- Mohajan, H.K. 2017. Two criteria for good measurement in research: Validity and Reliability. *Munich Personal RePEc Archive*, 17(3):58-82, December 24.
- Mokgola, A. 2015. The effects of inflation targeting on economic growth in South Africa. Unpublished Master thesis, University of Limpopo, Limpopo.
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: a South African guide and resource book*. Pretoria: Van Schaik.
- Mugenda, O.M., Mugenda, A.G. 2003. *Research Methods: quantitative and Qualitative approaches*. Nairobi: ACTS.
- Muzicek, P. 2010. Credit risk monitoring in the Czech Banking Sector: Early warning model. Unpublished Master thesis, Charles University, Prague.
- National Credit Amendment Act, 2019. *General Explanatory Note*.  
[https://www.gov.za/sites/default/files/gcis\\_document/201908/42649gon1081.pdf](https://www.gov.za/sites/default/files/gcis_document/201908/42649gon1081.pdf)  
 [16 June 2019].
- Naz, F. 2014. Word of mouth and its impact on marketing. *International Journal of Scientific and Research Publications*, 4(1):2250-3153, January.
- News 24. 2018. *Explosive report into VBS Mutual Bank reveals large scale 'looting'*.  
<https://www.news24.com/SouthAfrica/News/explosive-report-into-vbs-bank-reveals-large-scale-looting-20181010>.  
 [16 February 2019].
- Norman, A.S. 2010. Importance of financial education in making informed decision on spending. *Journal of Economics and International Finance*, 2(10):199-207, October.
- NUS Risk Management Institute. 2014. *African Bank goes under central bank's curatorship amidst mounting credit losses*.  
<https://rmicri.org/media/static/images/thumbnaill-pdf/wcbaug05aug112014.pdf>  
 [7 August 2018].
- Okpugie, G. 2009. High microfinance interest rates cause loan default in Nigeria. *The Guardian*: 25 September 2009.
- Paddy, J. 2012. Credit risk management in banking industry, Kwame Nkrumah. Unpublished Master thesis, University of Science and Technology, Kwame Nkrumah.
- Peng, C.J., Lee, K.L. & Ingersoll, G.M. 2002. An introduction to logistic regression analysis and reporting. *The Journal of Educational Research*, 96(1), October.

- Pritchard, S. 2018. Interview with the researcher on 3 May 2018, Cape Town.
- Qu, Y. 2006. Macro-Economic factors and probability of default. Unpublished Master thesis, Stockholm School of Economics, Stockholm.
- Racine, F., Hart, J. & Li, Q.I. 2006. Testing the significance of categorical predictor variables in nonparametric regression models. Paper presented at the 2002 International Conference on current advances and trends in non-parametric statistics, Crete, 20 March 2006.
- Rezac, M. 2011. Estimate information value for credit scoring models. *Journal of Applied Mathematics*, 4(3), January.
- Rodrigues, L. 2017. *Step change affordable discussion paper*, July 2017.
- Rosch, D. 2005. The empirical comparison of default risk forecasts from alternative credit rating philosophies. *International Journal of Forecasting*, 21(2005):37-51.
- Rossouw, J. 2009. South African Reserve bank History, Functions and institutional structure. Pretoria.
- SA Consumer Credit Index. 2018. *Transunion*.  
<https://www.transunion.co.za/resource/transunion-za/doc/campaign/CCI/INT-af-18-265801-cci-q2-2018/TU-CCI-Report-Q2-2018.pdf>  
 [18 November 2018].
- Saunders, M.N.K. 2009. Understanding research philosophies approaches. University of Birmingham: UK.
- Saurina, G. & Jimenez, G. 2002. Paper presented at the Basel Committee/Banca d'Italia, Italy, 20-21 March 2003.
- Schwarz, A. 2011. Measuring, Monitoring and Forecasting of Consumer Credit Default Risk. Germany: Schumpeter.
- Schwartz, A. J. 2002. Asset price inflation and monetary policy. Paper presented at the International Atlantic Economic Society Meeting, Washington D. C., 11 October 2002.
- Smith, J. 2017. Interview with the researcher on 16 June 2017, Cape Town.  
 South African Banking Sector Overview. 2014. The Banking Association of South Africa.  
<https://www.banking.org.za>  
 [16 June 2018].
- South Africa. National Treasury of the Republic of South Africa. 2008 *Policy change and economic growth*. Pretoria: Government Printer.
- Steyn, E., De Beer, A.S., Steyn, T.F.J. & Schreiner, W.N. 2004. Enron and Saambou Bank in South Africa: a case study of insufficient relationship management. *Public Relation Review*: 75-86, March.
- Stiglitz, J. E. & Weiss, A. 1981. Credit Rationing in Market with Imperfect Information. *The American Economic Review*. 393-410, June.
- Strauss, A. & Corbin, J. 2010. Basics of qualitative research: Techniques and procedures for developing grounded theory. *Basics of Qualitative Research*, 36(2):358, Fall.
- The Citizen. 2017. *Banks face R60bn claim for selling defaulters' homes too cheaply*.

<https://citizen.co.za/news/south-africa/1615422/bank-face-r6-billion-claim-for-selling-defaulters-homes/>  
[18 January 2019].

Then National Credit Act, 2015. *All you need to know about the National Credit Act as a consumer volume 1:2007*.

<https://www.ncr.org.za/documents/pages/ENGLISH.pdf>  
[23 May 2019].

Verick, S. & Islam, I. 2010. *The great recession of 2008-2009: Causes, consequences and policy responses*. Griffith: Griffith University.

Van Wyk, B. n.d *Research design and methods Part 1*. Cape Town: UWC.

Van Zyl, E. 2010. Bank overcharging black home owners. *Weekend Argus*: 21 November 2010.

Vassalou, M. & Xing, Y. 2002. *Default risk in equity returns*. Columbia: Columbia University.

Vlok, D. 2017. Interview with the researcher on the 16 May 2017, Cape Town.

Vojtek, M. & Kocenda, E. 2011. *Default predictors in retail credit scoring: evidence from Czech Bank data*. Michigan: University of Michigan.

Weiss, L.A. 1990. Bankruptcy Resolution: Direct Costs and Violation of Priority of Claims. *Journal of Finance Economics*. 285-314, July.

Williams, C. H. 2017. Interview with the researcher on 6 June 2017, Cape Town.

Wentzel, A. 2015. *Financial Literacy in South Africa*. Reviewed in: *International Handbook of Financial Literacy*, 329-339, March.

Zabia, A. 2019. *Managing Default Risk*.

[www.bis.org](http://www.bis.org)  
[7 August 2019].

## 7 Appendices

### 7.1 Questionnaire



Cape Peninsula  
University of Technology

Annexure A

Research Questionnaire

The cost of credit default in the vehicle finance industry in South Africa

*You have been selected to respond to questions contained in this questionnaire. Your responses would be written and verbal to contribute to the on-going investigation of the cost of credit default in vehicle finance industry. The written responses would be obtained by filling out this questionnaire in detail as much as possible and the verbal would be done through personal interview (recorded) to validate the written response.*

*Please note that this study is in fulfilment of the requirement for the Master Degree in Cost and Management Accounting at the Cape Peninsula University of Technology and responses received would be used for the stated purpose of academic research only and treated in strict professional confidence.*

*Thank you for your responses and participation in this study.*

Nomaphelo Soga  
M Tech: Cost and Management Accounting  
CPUT

### **(CREDIT MANAGERS/SANCTIONERS)**

1. What factors do you consider when approving vehicle finance application?

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2. What factors do you consider when declining vehicle finance applications?

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3. In your view are there costs of credit defaults to the bank?

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4. In your view are there costs involved to the client for financing a vehicle?

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# Cape Peninsula University of Technology

## Annexure B Research Questionnaire

### The cost of credit default in the vehicle finance industry in South Africa

You have been selected to respond to questions contained in this questionnaire. Your responses would be written and verbal to contribute to the on-going investigation of the cost of credit default in vehicle finance industry. The written responses would be obtained by filling out this questionnaire in detail as much as possible and the verbal would be done through personal interview (recorded) to validate the written response.

Please note that this study is in fulfilment of the requirement for the Master Degree in Cost and Management Accounting at the Cape Peninsula University of Technology and responses received would be used for the stated purpose of academic research only and treated in strict professional confidence.

Thank you for your responses and participation in this study.

Nomaphelo Soga  
M Tech: Cost and Management Accounting  
CPUT

### (BANK CUSTOMERS)

B.1 Do you have or had vehicle finance with the bank?

YES

NO

B.2 Please tick the appropriate block

Single	
Married	
Widower	
Widow	
Divorced	

B.3 Gender

MALE

FEMALE

B.4 Your age group

20-29

30-39

40-49

50+

B.5 Your income bracket

R6 000-  
R10 000

R11 000-  
R20 000

R21 000-  
R30 000

R31 000-  
R40 000

R41000 +

On a scale rating from where 1= highly likely, 2 = likely, 3=unlikely 4 =very unlikely and 5 = not at all.

<b>B.6 What do you think is the effect to customers when vehicle is repossessed by the bank?</b>		Highly Likely	Likely	Unlikely	Very unlikely	Not at all
6.1	Loss of confidence in the bank	1	2	3	4	5
6.2	Bank listing customer on ITC (credit bureau)	1	2	3	4	5
6.3	Legal and administrative costs associated with repossessions.	1	2	3	4	5
6.4	Psychological problems	1	2	3	4	5
6.5	Other, insert.....	1	2	3	4	5

<b>B.7 How likely does the change in economic circumstances below causes credit default on vehicle finance?</b>		Highly Likely	Likely	Unlikely	Very unlikely	Not at all
7.1	Increase in interest rates	1	2	3	4	5
7.2	Increase in petrol price	1	2	3	4	5
7.3	Increase in food prices	1	2	3	4	5
7.4	Loss of employment	1	2	3	4	5
7.5	Recession	1	2	3	4	5
7.6	Other, insert.....	1	2	3	4	5

<b>B.8 What is the cost to a customer for financing a vehicle?</b>		Highly Likely	Likely	Unlikely	Very unlikely	Not at all
8.1	New financial commitment	1	2	3	4	5
8.2	Maintenance/insurance	1	2	3	4	5
8.3	Interest rates could go up resulting in a higher installment	1	2	3	4	5
8.4	Costs of petrol	1	2	3	4	5
8.5	Other, insert.....	1	2	3	4	5



**THANK YOU FOR YOU CO-OPERATION**