CREDIT RISK MANAGEMENT POLICIES AND DEBT COLLECTION
PERFORMANCE BY REGISTERED SECURITY COMPANIES IN KENYA

BY

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D58/CTY/PT/28843/2014

A THESIS SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN FINANCE OF KENYATTA UNIVERSITY

NOVEMBER, 2019
DECLARATION

This thesis is my original work and has not been presented for a degree in any other university. No part of this document should be reproduced without the express authority of the author or and Kenyatta University.

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DEDICATION

This research thesis is dedicated to my beloved wife Jamila and daughter, Kerril and sons, Kelly and Kendall for their encouragement and invaluable support throughout my study period.
ACKNOWLEDGEMENT

I am sincerely grateful to the Almighty God who enabled me to get the opportunity and granted me favor to accomplish this work. I would like to express my heartfelt gratitude to my supervisors, Dr. Lucy Wamugo and Dr. Fredrick Ndede for their continuous encouragement, support and academic advice during the drafting of this thesis report. My sincere gratitude to my wife, Jamila and children, Kerril, Kelly and Kendall for always being there for me at all times, for their prayers, time and support. My sincere appreciation goes to my mum, Lilian and late dad, Vincent who taught me the value of investing in education. Finally, I am deeply indebted to many others whom I have consulted in the course of preparing this research thesis. I thank you for your time and patience in providing me with the necessary information.
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OPERATIONAL DEFINITION OF TERMS

Credit Approval Policy: The prescribed process, criteria, guidelines and authority matrix that a registered security company observes before a business or an individual becomes eligible for a credit. Score on process, criteria, guidelines and authority matrix on a scale of 1 to 5 was used for assessment.

Credit Review Policy: The established guidelines and measures put in place in assessing a person's credit profile which is conducted periodically by a registered security company. Score on independence of the process, scope and frequency on a scale of 1 to 5 was used for assessment.

Credit Documentation Policy: This refers to established guidelines on legal review, safe custody and ease of retrieval of credit files by a given registered security company. Score of each on a scale of 1 to 5 was used for assessment.

Credit Limit Policy: Refers to established guidelines on maximum credit allowed, credit period and company limit setting and monitoring systems. Scores on guidelines on limit setting and monitoring systems on a scale of 1 to 5 was used for assessment.

Credit Risk Management Policies: Refers to credit approval, credit limit, credit scoring, credit documentation and credit review principles of managing credit risk adopted by the registered security companies.

Credit Risk Rating: The process of evaluating debtor’s portfolio in terms of default status and classification into current, overdue and bad debt categories.
Credit Scoring Policy: Systems and techniques used by registered security companies to assess a person's credit worthiness, used to arrive at a decision on whether to extend credit. Score on automation and segmentation of systems on a scale of 1 to 5 was used for assessment.

Inflation rate: Annualized percentage change in Consumer Price Index (CPI). Average annual inflation rate for each registered security company (from inception year to 2017).

Debt Collection Performance: The Days Sales Outstanding (DSO) for a registered security company. This is a measure of the average number of days it takes a company to collect payment after a sale has been made. As DSO decreases debt collection performance increases and vice versa.

# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<tr>
<td>KSIA</td>
<td>Kenya Security Industry Association</td>
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<td>MPT</td>
<td>Modern Portfolio Theory</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Commission for Science, Technology and Innovation</td>
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<tr>
<td>PSCs</td>
<td>Private Security Companies</td>
</tr>
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<td>PSIA</td>
<td>Protective Services Industry Association</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VAR</td>
<td>Value at Risk</td>
</tr>
<tr>
<td>PD</td>
<td>Probability of Default</td>
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<tr>
<td>LGD</td>
<td>Loss Given Default</td>
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<tr>
<td>EAD</td>
<td>Exposure At Default</td>
</tr>
<tr>
<td>KCB</td>
<td>Kenya Commercial Bank</td>
</tr>
<tr>
<td>SACCOs</td>
<td>Savings and Credit Cooperative Organizations</td>
</tr>
<tr>
<td>DSO</td>
<td>Days Sales Outstanding</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>EGLS</td>
<td>Estimated General Least Squares</td>
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ABSTRACT

Security has been and continues to be priority for both life and property world over. Due to the limitations of public security services the private sector has supplemented provision of security services. Overtime the registered security firms have come to rely more on establishments that acquire services purely on credit which often lead to due debts. This has led to large uncollected debts putting registered security firms into liquidity challenges. If such debts are not efficiently collected, the company’s operations are adversely affected. Hence, their sustainability and levels of development basically depend on high cash collections and recovery levels of their bad debts which have not been the case in this industry. A look in to a number of players in the registered security industry shows that debt collection management has not been efficient (KSIA, 2015). Therefore, various policies in credit management and implementation of the debt collection actions have unquestionable importance. This must be carried out constantly and with the consistency required. This study sought to assess the effect of credit risk management policies on debt collection performance by registered security companies in Kenya, in pursuit of offering solution to these challenges. The specific objectives of the study were to establish the effect of credit limit, credit approval, credit scoring, credit documentation and credit review policies on debt collection performance by registered security companies in Kenya. The study was grounded on the motive theory of credit, credit risk theory and anticipated income theory. The study used descriptive research design. A census of 38 registered security companies in Kenya was taken. The study used primary data obtained using structured questionnaires and secondary data collected using a secondary data template for complimentary purposes. The study employed multivariate regression model to determine the effect of credit risk management policies on debt collection performance by registered security companies in Kenya. The mediating effect of inflation rate was tested using the stepwise regression technique by employing the logic of Baron and Kenny (1986). The regression results indicated that the credit limit policy had a statistically insignificant positive association with Days Sales Outstanding (DSO), a measure of debt collection performance. The study revealed that credit documentation and review policies improve debt collection performance by registered security companies in Kenya. The study however found that of credit approval and scoring policies decreases debt collection performance. The study established that credit limit policy is insignificant to debt collection performance of the registered security companies in Kenya. The results of Sobel – Goodman mediation test indicated that inflation had no mediating effect on the relationship between credit risk management policies and debt collection performance by registered security companies in Kenya. The study recommends that managers of registered security companies should review their credit approval and scoring policies in order to improve debt collection performance. Further it recommended that the Government through recently established Private Security Regulatory Authority (PSRA) should come up with minimum documentation requirement for security services acquisition to help improve debt collection performance through complete documentation of credit transactions in the industry.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Credit can be applied by firms to increase sales volumes and thus profitability (Maina, Kinyariro, & Muturi, 2016). Credit is one of the many factors that can be used by a firm to influence demand for its products. However, it can lead to liquidity problems if not efficiently managed (Nthenge, 2013). Since it is impossible for any firm dealing with credit transactions to have a zero credit or default risk, techniques for ensuring that such credit transactions are not problematic are a prerequisite. Therefore, the concept of credit risk management cannot be overlooked by any economic enterprise engaged in credit irrespective of its business nature (Gatuhu, 2013).

Copeland, Weston and Shastri (2005) assert that the biggest disadvantage of credit sales is the potential credit and default risk exposures. According to the authors, these risks if not efficiently managed and assessed could lead to accumulation of bad debts which affect businesses adversely and in severity, may lead to insolvency and collapse. Pandey (2008); notes that credit management starts with sale and does not stop until the full and final payment has been received. In fact, a sale is technically not a sale until the money has been collected.

There are various policies that an organization should put in place to ensure that credit risk management is done effectively (Essendi, 2013). Some customers are slow payers while some are non-payers. Therefore, the implementation of laid down credit risk management policy effort
should aim at accelerating collections from slow payers and reducing bad debt losses (Kariuki, 2010). The most important aspect of controlling bad debts is adopting a formal credit risk management policy before a firm can even consider offering credit. Without this in place, a firm runs the risk of suffering a large number of late payments that could eventually put it out of business completely (Parsons, 2016).

1.1.1 Debt Collection Performance by Registered Security Companies

The security industry is among the fastest growing industries in Kenya (Catherine, 2012). The industry has been booming especially in the last decade with new players entering the market every now and then (Kaguru & Kepha, 2014). The major reasons for the rapid growth of this industry can be attributed to government failure to effectively regulate the industry, high crime rates and the inability of public security services to provide adequate protection (Tabo, 2013). Hunt (2007) emphasizes that for security firms to be sustainable and achieve increased growth and development, high recovery levels of their debt is a prerequisite. Therefore, policies to implement various debt collection actions and disciplines are crucial and ought to be conducted out constantly and in a consistent way as per the expectations of the credit portfolio analysis.

Security firms have fairly unique problems in the world of credit control as their services are mainly delivered off-site, either on a customer’s premises or on premises that the customer may be working from (Dempsey, 2010). Hughes (2014) identified the main factors which inhibit debt collection in this industry. These factors fall into two categories: internal and external. Internal factors include invoice delivery, quality of service and agreement to the service required.
External factors cover the ability of the customer to pay and their internal procedures which may impact on their ability to pay.

Hughes (2014) further highlights that if the initial account opening process or customer database is not accurately maintained, it will exacerbate problems in the collection of debts as they fall due. It is not just the correct name and status of a company (legal entity) that must be entered onto the database, but also the correct invoicing address. It is essential that the correct invoicing address for all customers is identified at the point of opening an account (Cunningham et al., 2011). Unfortunately, this does not always happen in many security firms (Van Buuren, 2009).

The level of service or extent to which the security firm has responsibility must be properly identified from the outset (Security Guards UK, 2014). Due to the different requirements of customers, it is essential that the service being provided is fully encapsulated in a properly drawn contract that all sides have signed up to. This is especially the case where the contract is of a substantial or complicated nature (Security Guards UK, 2014).

Any failure by the security company to fully confirm the service to be carried out can lead to serious disagreements and non-payment of invoices. Such disagreements can also lead to the loss of an important client and reputational damage to the service provider (Polevoy, 2014). An ongoing problem is the need to withdraw a service due to non-payment of invoices, or where there is a suspicion of insolvency. If this is not dealt with in a security company’s contract and it “pulls” the service, the firm may find itself open to a claim for breach of contract (Gounev, 2006). All of the above have an impact on the collectability of invoices affecting cash flow, bad
debt and reputation of private security firms. There are also a number of other factors such as correctly drawn up Terms and Conditions, the credit cycle, dunning letters and the importance of a dispute resolution system that can all improve a business ability to collect debt within the industry (Mikutu & Sabala, 2007).

A look in to a number of players in the registered security industry shows that debt collection and management has not been efficient resulting into huge amounts of delayed payments and bad debt (KSIA, 2015). The registered security industry recorded bad debts amounting to over 1.2 billion in 2015 an increase from 0.85 billion in 2014. The report also showed that there was reduced average monthly cash collection to 58.53% of total revenues in 2015 from an average monthly cash collection of 70.28% of total revenues in 2014. The costs of debt collections related to commissions paid to private debt collectors were also shown to have been on the rise ranging from 15% to 25% of the total revenues of registered security companies (Kenya Security Industry Association, 2016). This therefore, is an indication of inefficient debt collection in the various companies in the industry.

Below credit risk rating table for the last five years shows that the overdue and bad debt for the industry has been increasing from 20% and 6% in 2013 to 26% and 20% respectively. This is a clear indication that debt collection in the industry has been deteriorating over the years (KSIA, 2017).
Table 1.1: Credit Risk Rating In Registered Security Companies

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<tr>
<td>Debt Classification</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>54.0</td>
<td>61</td>
<td>65</td>
<td>70</td>
<td>74</td>
</tr>
<tr>
<td>Overdue</td>
<td>26.0</td>
<td>25</td>
<td>25</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Bad Debt</td>
<td>20.0</td>
<td>14</td>
<td>10</td>
<td>7</td>
<td>6</td>
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Source: KSIA (2017)

Days Sales Outstanding (DSO) is a measure of the average number of days that it takes a company to collect payment after a sale has been made. In security companies, DSO is often determined on a monthly basis and calculated by dividing the debtors outstanding during a given period by total credit sales during the same period, and multiplying the result by the number of days in the period measured. The DSO can be improved by optimizing the collection processing in a security company. Also, credit policies in registered security companies can be harmonized, which leaves less room for sales to give out lax payment schedules (Rhen, 2012).

1.1.2 Credit Risk Management Policies

There is need for effective credit policies to manage credit risk. Hence, in order to ensure a fairly healthy credit management program, with minimal expensive bad debts, and minimized credit risk, a company strives to establish an effective credit policy (Kwagara, 2006). Surprisingly, a few companies do not have any such policy and even more worrying, many of the companies with credit policies still fail to operate the policies so much so that the companies’ debts soar and seriously affect the companies’ very existence, in terms of profitability and a health cash flow (Otieno, 2016).
Credit policy is the general guideline governing the process of giving credit to the firm's customers. The policy sets the rules on who should get what credit, when, why and the repayment arrangements as well as necessary collaterals. The method of assessment and evaluation of risk of each prospective applicant are part of a credit policy (Gathuru, 2012). One of the major objectives of a company's credit policy is to minimize credit risk taken by the firm and minimize bad debts in the case of registered security firms. Firms usually consider many factors when setting up a credit policy (Saunders & Allen, 2010; Earnest & Young, 2017). However, the credit policy should be in line with the overall organizational strategy.

A sound credit risk management policy as part of a credit policy majorly spells out a sound, well-defined credit-granting criteria; a comprehensive risk measurement and evaluation approach; a detailed structure of limits, guidelines and other parameters used to govern risk taking; a strong management information system for controlling, monitoring and reporting risks; and an effective problem credit management process (Thonabauer & Nösslinger, 2004). For instance, credit approvals should be made in accordance with the institution’s written guidelines and granted by the appropriate level of management.

A sound system of credit limits and risk taking guidelines are an essential component of the credit risk management process. Credit risk management policy also calls for the establishment of an effective credit review system and addresses key elements of an effective credit review program (such as qualifications and independence of credit review personnel; frequency, scope, and depth of reviews; the review of findings and follow-up; work paper and report distribution) (Essendi, 2013).
A firm’s credit risk management policy may be lenient or stringent. In the case of a lenient policy, the firm gives credit liberally even to those whose credit worthiness is questionable. This leads to higher credit transactions and high profits assuming full collections of the debts owed (Kithinji, 2010). With the stringent credit risk management policy, credit is restricted to carefully determined customers through a thorough credit-granting system. This minimizes costs and losses from bad debts; however, it may reduce revenue earnings from credit profitability and cash flow (Mmbaka, 2016). Despite the fact that credit risk management policy was crucial for companies dealing with credit transactions, Dempsey (2010) makes a point of concern that a large number of registered security companies, nearly 60% did not have a formalized and established credit risk policy.

1.1.2.1 Credit Approval

Extending credit is the careful balance of limiting risk and maximizing profitability while maintaining a competitive edge in a complex, global marketplace (Negera, 2012). Negera posits that companies undertaking credit transactions go through a thorough process in approving credit to hit the balance. Credit approval is the process of deciding whether or not to extend credit to a particular customer. It involves two steps: gathering relevant information and determining credit worthiness (Ross, Westerfield & Jordan, 2009). Before extending any type of credit, companies offering trade credit assess the potential debtors based on their financial performance, credit ratings and debt exposure (Bonaya, 2013).

According to Nyawera (2013), credit approval is normally a complex system requiring the cautious evaluation of the financial standing of the prospective customer. However, the author
notes that when a customer needs trade credit, a time-consuming and complicated credit approval process might translate into lost business opportunities. Despite this fact, Cross and Strischek (2006) assert that most companies undertaking credit transactions are normally hampered by inefficient processes for corporate credit approval, leading to inevitable delays and customer dissatisfaction. These inefficiencies are linked to incompatible systems in the approval process which necessitates the need for automation of the processes.

The quality of the credit approval process from a risk perspective is determined by the best possible identification and evaluation of the credit risk resulting from a possible exposure. The credit risk can be distributed among the following risk components: Probability of default (PD), Loss given default (LGD) and Exposure at default (EAD) (Bluhm, Overbeck, & Wagner, 2003). Mkutu (2017) posits that registered security companies in Kenya have strived towards reducing debt collection challenges within their operations where over 30% of the large firms, for instance, G4S had adopted a rigorous credit approval process as one of their strategies in curbing defaults, managing to cut down default cases by more than 25%.

1.1.2.2 Credit Scoring

Credit scoring is one of the most important innovations generated by the credit-reporting industry whereby credit scores are primarily used by creditors to predict the specific level of risk that an individual consumer brings to a particular transaction (Johnson, 2006). Credit scores are calculated by applying advanced algorithms or statistical formulas to the information contained within a credit report at a particular moment in time (Haakon, 2003). By assigning statistical weights to certain types of data such as; outstanding debt-to-available credit ratios, number of
late payments and debt-to-income ratios, credit scoring models use mathematical algorithms to produce a simple three-digit numerical score (Wender & Harvey, 2006). Creditors then set their own levels above which a credit application will be approved and below which it will be rejected.

By providing a neutral, objective measurement for creditors to use in their own decision-making processes, credit scores help predict specific customer behaviors, such as likelihood of default or repayment (Turner, 2003). When a customer applies for credit extension, creditors can use credit scores to make faster, more consistent decisions. In addition, credit scores can be combined with decision-making technologies to automate the decision-making process, thereby eliminating much of the risk of human error and subjectivity (Hayashi & Stavins, 2012).

Limsombunchai, Gan, and Lee (2005) point out that a collection score is used to establish the probability that an existing client will repay his or her credit and can be used to tailor overdue collection tactics. Based on the Collection Score result, a creditor can group their clients by repayment willingness and then generate focused overdue collection strategies. For example, a client with a high likelihood of repayment may receive a reminder phone call if one day past due on a payment whereas a client with a low repayment probability may require an in-person visit. A collection score provides creditor’s staff responsible for recoveries with a clear focus and direction for their efforts, leading to increased efficiency and reduced expenses (Limsombunchai et al., 2005).
1.1.2.3 Credit Limits

According to Lamoureux (2014), credit limits are a threshold that a company (creditor) will allow its customers to owe at any one time without having to go back to review their credit file. They refer to the maximum amount that a firm is willing to risk in an account. Credit limits help the creditor in freeing up valuable time for other credit risk management tasks, speeding up the sale process, reducing risk and improving collection activity and efforts and they are account monitoring tools (So & Thomas, 2007). Turan, Ugur, and Barlas (2013) posit that credit limits are also known to lead to unsatisfied customers and therefore communicating credit limits to customers is fundamental.

Trade credit limits are the most common tool in credit management (Azariadis & Kaas, 2013). Over 85% of large firms use credit limit as a credit risk management principle and they typically assign credit limits to more than 80% of their customers. Azariadis and Kaas also cite a strong connection between credit limit policy and credit investigation expenses. Risk credit limits address changes in risk, default probability and other factors that are affected by the amount of credit granted (Mateos-Planas, 2013). Song (2017) posits that granting an optimum credit limit to customers plays a core role in increasing sales and reducing delinquencies. The author notes that specifically, it can be considered the ultimate goal of the limit policy to increase revenues by granting suitable limits to meet the demands of good customers.

1.1.2.4 Credit Documentation

Creditors can put themselves at a competitive advantage by properly documenting their credit extensions since by ensuring that credit documents have complete and accurate information and
appropriate language, the creditor can make collecting debts in cases of defaults much easier, faster, and less costly (Ziebell, 2015). Credit documentation includes the information and/or verifications used to analyze and support the credit decision and any subsequent servicing decision. Documentation needs will vary given the loan size, risk, and complexity. Documentation must provide adequate support for the decision made (CheHashim & Mahdzan, 2014).

Credit documentation is a pre-requisite for each phase of the credit cycle, credit application, credit approval, credit monitoring, and collateral valuation, and impairment recognition, foreclosure of impaired credits and realization of security (Mann, 2010). Credit files must be properly maintained with an appropriate system of indexing to facilitate quick review and follow up as and when need arises (Matanda, 2010).

According to Koivula (2015), documentation establishes a relationship between the creditor and the debtor and it forms a base for any legal action in the courts of law. The author further emphasizes that all contractual agreements with the debtors should be vetted by the banks legal adviser. Edwards (2007) highlights that credit applications whether approved or rejected must be properly kept and that copies of critical documents should be kept in credit files while retaining the originals in files kept in secure fire proof cabinets and should never be removed from the creditor’s premises. Within the registered security sector, Cunningham et al. (2011) and Van Buuren (2009) point out registered security firms are faced with increased cases of credit losses due to lack of proper documentation. Over 50% of these firms did not have an established way of documenting the credit transactions and safeguarding credit files was undertaken casually.
1.1.2.5 Credit Review

According to Credit Research Foundation Inc. Columbia (2009), lines of credit are based on information, assumptions, experiences, estimates, forecasts and economic conditions. Since all of these factors are subject to change, it is important for a well-organized credit system to provide for review of credit lines, and to identify the criteria that trigger such reviews. A well-organized credit policy should provide for a periodic review of all active files.

By having a sound and objective credit review program in place, an institution is in a far better position to proactively manage their respective portfolios in regards to risk and overall direction (Siqani & Sekiraca, 2016). The primary purpose of a credit review program is to objectively monitor and evaluate the quality and administration of a credit portfolio for senior management and the board of directors (Thonabauer & Nösslinger, 2014).

Credit review examines the compliance of sanctions and post sanction procedures laid down by the creditor (Akwaa-Sekyi, & Gené, 2016). The objectives of credit review are: improvement in the quality of credit portfolio, review sanction process and compliance status, feedback on regulatory compliances, credit risk assessment, picking up early warning signals and suggest remedial measures and recommending corrective action for improving credit quality, credit administration, skills of staff in credit department (Adukia, 2013). Oanda (2013) while assessing the challenges facing security firms in Kenya found that a large number of these companies over 80% had not established departments in the companies that solely dealt with audit of the credit issues in their operations and credit reviews were rarely conducted on a daily basis which led to high bad debts.
1.1.2.6 Inflation Rate

Inflation is an increase in the general price level of goods and services in the economy and not an increase in any specific product price (Tucker, 2007). When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of account within the economy. A chief measure of price inflation is the inflation rate which is the annualized percentage change in a general price index normally the consumer price index (CPI) over time.

In any economy, inflation is undesirable because of the specific economic costs associated with inflation (Brenda, 2012). When inflation is high, currency and noninterest-bearing checking accounts are undesirable because they are constantly declining in purchasing power. Debtors accounts in registered security companies, when inflation rages, the actual value of their recoveries are much less than it should actually be (Ludi and Ground, 2006). As the rate of inflation increases, the rate of debt repayment goes down. Inflation and credit default have a positive correlation. As inflation increases, credit default by borrowers also increases thereby lowering the rate of debt repayment (Brenda, 2012).

Inflation reflects a situation where the demand for goods and services exceeds their supply in the economy (Karl et al, 2002). Inflation causes many distortions in the economy. It hurts people who are retired and living on a fixed income. When overall prices rise these consumers cannot buy as much as they could previously. It also affects the repayment of debts and discourages savings due to the fact that the money is worth more presently than in the future. Inflation rate,
therefore in this study was considered as a mediator to the relationship between credit risk management policies and debt collection performance in registered security companies.

1.1.3 Credit Risk Management Policies and Debt Collection Performance

The most important aspect of controlling bad debts is adopting a formal credit risk management policy before a firm can even consider offering credit. Without this in place, a firm runs the risk of suffering a large number of late payments that could eventually put it out of business completely (Kwagara 2006). Credit policies might include credit-checking potential customers, giving customers a copy of the firm’s terms and conditions, adhering to strict credit limits even when the customers are asking for more, and sending out invoices as soon as work has been completed or a product sold (Stephen, 2008). Once a payment has been deemed to be late, the firm or its debt collection agency will start to contact the debtor by telephone, letter, fax or email to try to elicit payment. The tone of letters will become increasingly formal and assertive as time goes on, finishing with a Letter Before Action if it decides to take the matter further by going through the courts (Nyawera, 2013).

The primary purpose of a detailed credit risk management policy is to spell out every possible credit scenario, and provide an appropriate response. On the positive side, this gives employees a vast amount of information, which should make it easier for them to make decisions relating to any credit-related scenario that could come up. In addition, there should be uniformity across the entire organization when any issue arises relating to debt collections (Na Ranong & Phuenngam, 2009).
From a debt collection’s standpoint, the biggest benefit of having a written credit risk management policy that is adhered to by all departments within the company, is the ability to use the components of the policy to encourage payments and reduce the need for in-house debt collectors to step in (Ebenezer, 2002). For example, if a customer is not paying his debt, a debt collector can put a credit stop on any future orders or shipments. This is a very powerful tool, because if the customer is counting on receiving future shipments of products or services, and his business will be negatively affected by a pause in the pipeline, this will encourage the customer to make the payment (Thonabauer & Nösslinger, 2014). Also, if the sales department enforces the credit stop, additional pressure will be put on the customer to pay because not only is the customer negatively affected, but also the salesman’s commissions (Kaplan, 2017). Kitonga (2016) argues that the credit risk management policy along with good internal communication between the sales force and the in-house debt collector should encourage customers to stay current on their invoices.

Although extension of credit as stated by Gill et al. (2010) should only be on the basis of customers’ creditworthiness, firms that use a lenient credit risk management policy tend to give credit to customers on very liberal terms and standards (Krueger, 2005). As stated by Gitau et al. (2014), the purpose of credit risk management is to ensure that debts are recovered early enough before they become uncollectible and a loss to the business. According to Pandey (2008), average collection period determines the speed of payment by customers and delayed payment is a potential ground for bad debts which have a negative effect on a firm’s financial performance. Many firms establish a credit period for their customers and offer discounts to encourage early payments in order to avoid bad debt cases.
Gitau et al (2014) assert that a creditor should use litigation as a last resort to collect a debt that is bad and when there is a major breakdown in the repayment agreement resulting in undue delays and legal action is required to effect collection. Finally, a debt may be written off when the creditor feels that it is uncollectable. It is honorable to write off a bad debt from the books of accounts to give a true and fair view of the firm’s financial position.

1.1.4 Registered Security Companies in Kenya

In Kenya, the rise in crime and the growth of the registered security sector are intimately connected to the decline of state capacities and services that began in the late 1980s and continued throughout the 1990s (Abrahamsen & Williams, 2005). Registered security in Kenya entails the different forms of security provided by individuals, companies, and other organizations to a client at a fee as opposed to public security which is a public good provided by the state (Safer World, 2008).

Kenya Security Industry Association (KSIA) is an association of bigger companies; currently it has membership of 38 companies. Its main aim is to establish and maintain quality standards and good practices in the industry and to provide a central forum to discuss common issues and represent the industry’s interests. KSIA also provide a central organization for liaison with government, police, emergency services and other organizations. On the other hand, PSIA is an association of medium to smaller private companies. The association was founded in direct response to the new minimum wage requirement. PSIA argues that the minimum wage would make security available only to the wealthy and also that it would force a number of smaller security companies out of business (Tabo, 2013).
The registered security industry is one of the fastest growing sectors of the economy and significant employer in Kenya. Even though it is much more visible in urban centers than it is in rural, the industry is well spread countrywide. Registered security companies offer a range of services including; guarding, alarm response, courier, fire, asset tracking, cash service and recently added ambulance services. (Wairagu et al., 2004). Although the importance of registered security companies in Kenya is increasingly receiving recognition as playing an important role in fostering conditions conducive to development, investment and growth, the sector confronts a number of difficult challenges in the operation of the registered companies. Notable among the problems is the ever increasing uncollectable debt leaving the firms to operate under very limiting conditions due to poor cash flow (Kaguru & Ombu, 2014).

1.2 Statement of the Problem

Security services are important for protection of life as well as security of property. These services are provided for by both public and private establishments. Whether by public or private establishments, availability is critical (Safer World, 2008). For private firms, security services are largely provided on credit. Despite the important contribution of the private sector in the provision of security services the firms are faced with a number of problems. Notable among the problems is the ever increasing uncollectable debt leaving the firms to operate under very limiting conditions due to poor cash flow. For routine operation security firms are forced to obtain overdrafts from banks which are costly. The increasing debts and poor cash flow has also made the firms to rely on debt collectors which increase operational costs making it difficult for the firms to acquire both the human and physical resources required (Kenya Security Industry Association, 2016).
Escalation of bad debts negates the principles of credit purchases and sales which is profit maximization. As observed by Bravad (2010), challenges of credit risk arising from account receivables must be confronted in order for the registered security firms to be profitable. In case this position continues, there is a likelihood of the firms closing, which will result into loss of jobs and breakdown of security services as well as reduced wealth creation.

Granting credit facilities is largely a policy issue. Gill et al (2010), observed that credit facilities should be based on customer credit worthiness to minimize level of default. According to Krueger (2005), Security firms are lenient in granting credit to even those whose credit worthiness is doubtful. High uncollected overdue debts amongst the registered security companies can be linked to credit risk management policies of the companies.

Studies conducted in the banking sector have not comprehensively highlighted the effect of credit risk management policies on debt collection. For instance, the study conducted by Turan, Ugur, and Barlas (2013) argues that a credit card limit policy as part of credit risk management policy can be used to prevent high debts in the banking sector but does not specify how this is achieved. The studies by Bonaya (2013) and Nyasaka (2017) also give a general conclusion that credit approval policy guidelines affect non-performing loans in the banks but do not show how this is achieved. The studies also concentrate more on the components of the credit approval policy but do not provide a clear link between the policy and debt collection in the bank.

A number of studies have been carried out on credit risk management including Atrill (2006), Lamberson (2005), Waweru (2013) and Sushma & Bhupesh (2011). But none of the studies have
examined the relationship between credit risk management policies and debt collection performance by registered security companies in Kenya. These are the gaps this study aims to fulfil.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The purpose of this study was to assess the effect of credit risk management policies on debt collection performance by registered security companies in Kenya.

1.3.2 Specific Objectives of the Study

The specific objectives of the study were;

i. To identify the effect of credit approval policy on debt collection performance by registered security companies in Kenya.

ii. To determine the effect of credit scoring policy on debt collection performance by registered security companies in Kenya.

iii. To find out the effect of credit limits policy on debt collection performance by registered security companies in Kenya.

iv. To identify the effect of credit documentation policy on debt collection performance by registered security companies in Kenya.

v. To find out the effect of credit review policy on debt collection performance by registered security companies in Kenya.
vi. To determine the mediating effect of inflation on the relationship between credit risk management policies and debt collection performance of registered security companies in Kenya

1.4 Research Hypotheses

The following hypotheses were tested in this study;

H₀₁: Credit approval policy does not have significant effect on debt collection performance by registered security companies in Kenya.

H₀₂: Credit scoring policy does not have significant effect on debt collection performance by registered security companies in Kenya.

H₀₃: Credit limit policy does not have significant effect on debt collection performance by registered security companies in Kenya.

H₀₄: Credit documentation policy does not have significant effect on debt collection performance by registered security companies in Kenya.

H₀₅: Credit review policy does not have significant effect on debt collection performance by registered security companies in Kenya.

H₀₆: Inflation does not have significant mediating effect on the relationship between credit risk management policies and debt collection performance of registered security companies in Kenya.

1.5 Significance of the Study

The study was useful in highlighting the level of efficiency in debt collection among registered security companies. The study also established that registered security companies have credit risk management policies and their effectiveness on debt collection performance.
The study findings will be beneficial to the management of registered security companies and other entities involved in delivering goods or services on credit. This also formed a basis for highlighting the weaknesses in the existing approaches used in managing credits in the firms.

This research will also be instrumental in assisting the Government and Kenya Security Industry Association (KSIA) who may use the recommendations to enact policies and regulations aimed at improving debt collection management practices in registered security companies. This will limit the spread of credit default within the industry and reduce high cost associated with bad debt. The study will be useful in expanding the body of knowledge on the relationship between credit risk management policies and debt collection performance especially in non-financial institutions such as the registered security companies.

1.6 Scope of the Study

The study limited itself to the assessment of the effect of credit risk management policies on debt collection performance by registered security companies in Kenya. It concentrated on the effect of credit limits, credit approval, credit scoring, credit documentation and credit review policies on debt collection performance by registered security companies. There are many private security companies in Kenya but this study limited itself to the registered security companies as at 2013. The study data was for the period 2013 to 2017. The choice of this study period was motivated by the fact that KSIA data collection systems for the industry were not fully in existence prior to the year 2013.
1.7 Organization of the study

The study was structured as follows: the foregoing chapter one provides the research background, research objectives, significance of the study and scope. Chapter two presents literature review on the effects of credit risk management policies on debt collection performance in registered security companies. The chapter outlines the theories guiding the study, empirical studies related to the study topic and the conceptual framework of the study. Chapter three deals with the methodology that was employed in the study and outlines; research paradigm, research design, target population and sampling techniques, data collection methods and procedures, pilot testing as well as the data analysis plan. Chapter four of the study covered empirical results, interpretation and discussion of the results. And lastly in chapter five the summary of the study, conclusions and recommendations are presented.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study explored the literature that shows the effect of credit risk management policies on debt collection performance. This chapter provides the theoretical foundation of the study and reviews selected conceptual and empirical literature relating to the key variables with the aim of highlighting the research study gaps. Each of the empirical study is critiqued and the knowledge gap highlighted. The conceptual framework showing the link between the study variables is also presented.

2.2 Theoretical Literature Review

The theoretical review aims at giving the meaning of a word in terms of theories of a specific discipline. It will contribute to a better understanding of the concept and help in assuming both knowledge and acceptance of theories that relate to credit risk management policy and debt collection. The theories underpinning this study are; the motive theory of credit, credit risk theory, the portfolio theory to credit risk management and the anticipated income theory.

2.2.1 Motive Theory of Credit

This theory was proposed by Schwartz (1974) and views trade credit from supplier firm's motives for offering trade credit which is classified as financial, operational and commercial. Schwartz (1974) developed the financial motive for the use of trade credit. He suggests that when credit is tight, financially stable firms will increasingly offer more trade credit to maintain
their relations with smaller customers, who are “rationed” from direct credit market participation (Emery, 1984).

Financial motive predicts a positive connection between extending trade credit and firm size according to which, creditworthy firms should extend trade credit to less creditworthy firms (Emery, 1984; Mian & Smith, 1992; Schwartz, 1974). According to the financial motive of trade credit, we expect a greater effect of trade credit on a firm profitability for the subsample of larger firms (Mian & Smith, 1992). Emery (1984) argues that suppliers may extend credit if the implicit rate of return earned on receivables exceeds that of other investments. Petersen and Rajan (1997) and Atanasova (2007) show that implicit returns earned from trade credit are typically large, relative to feasible opportunity costs. The financial motive for trade credit implies that larger, more financially secure producers will offer trade credit to their smaller customers.

Large firms extend trade credit to their customers in order to secure repeat sales and to build long-term relationships. However, from the standpoint of commercial motive, smaller firms that have worse reputations need to use more trade credit in order to guarantee their products (Long et al., 1993), which contradicts the predictions of financial motive for trade credit. From this perspective, a higher effect of trade credit on firm profitability for smaller firms might be expected. Emery (1987) focuses on trade credit as an operational tool, addressing the role of uncertain product demand in a firm's operating decisions. As demand fluctuates, sellers face two alternatives: either they can allow the selling price to fluctuate so that the market always clears, or they can vary production to match demand. Either option is quite costly. If price varies, potential buyers face extremely high costs of information search. If production varies, sellers
face extremely high production costs. Trade credit could help to smooth irregular demand through stimulating sales by relaxing trade credit terms in slack demand periods (Emery 1984, 1988; Nadiri, 1969). The operational motive predicts that firms with variable demand extend significantly more trade credit than firms with stable demand. Long et al. (1993) find empirical evidence that is consistent with this view.

From a commercial perspective, Nadiri (1969) argues that availability of alternative payment terms can expand the firm’s market share by increasing product demand. According to the commercial motive, trade credit improves product marketability by facilitating firm’s sales. So, for firms with less market share (less market power) trade credit should prove more beneficial, as these firms have stronger incentives to increase sales (Hill et al., 2010). Hill et al. (2010) find that the profitability of receivables is a decreasing function of market share. However, market pressures might force small business with no market power to offer normal industry credit terms, regardless of its possible negative impact on profitability. This theory is relevant to this study since it helps in highlighting the reasons as to why private security firms expose themselves to credit risk by choosing to offer their services on credit.

2.2.2 Credit Risk Theory

This theory was advanced by Melton in 1974. The credit risk theory states that investors risk of loss, financial or otherwise, arise from a borrower who does not pay his or her dues as agreed in the contractual terms. Accounts receivable are credit in the provision of goods or services to a person or entity on agreed terms and conditions where payments are to be made later with or
without interest. When the debtor does not pay on due date, the lender is exposed to credit risk which may in turn lead to default and bad debts (Nyunja, 2011).

Although people have been facing credit risk ever since early ages, credit risk has not been widely studied until recent 30 years. Early literature (before 1974) on credit uses traditional actuarial methods of credit risk, whose major difficulty lies in their complete dependence on historical data. Up to now, there are three quantitative approaches of analyzing credit risk: structural approach, reduced form appraisal and incomplete information approach (Crosbie et al, 2003). Melton (1974) introduced the credit risk theory otherwise called the structural theory which is said the default event derives from a firm’s asset evolution modeled by a diffusion process with constant parameters. Such models are commonly defined “structural model “and based on variables related to a specific issuer (Longstaff & Schwartz, 1995). In this study the researcher will adopt the structural theory in which the credit risk management policies components will represent variables related to credit risk of security companies.

2.2.3 The Anticipated Income Theory

Anticipated income theory was established in 1945 by H. V. Prochnow. The anticipated income theory argues that an entity can maintain its liquidity if credit repayments are scheduled on the basis of the anticipated income of the borrower rather than the use made of the funds or collateral offered. Thus, in extending credit, this theory suggests that creditors should rely on debtors’ income and its coverage of debt-service requirements (Harker & Satvros, 1998). This coverage is determined on the basis of inclusive cash-flow projections, which ordinarily provide a reliable indication of the liquidity of the credit extended. Hence, the future cash-flows of the borrower,
rather than the nature of particular transactions being financed, assures the self-liquidating character of credit extended because it will determine a borrower’s overall ability to meet interest and principal payments as they fall due. This theory further argues that if the debtor’s anticipated income is estimated correctly, the credit will have a flow of funds that can be used to meet other credit demands.

This theory highlights the need for revising guidelines in extending credit to ensure that the future earnings potential of debtor is determined. It also highlights the need for rigorous credit approval and credit scoring to ensure that adequate and reliable information about the capacity of a debtor is assessed before extending credit to them. This would help improve the debt collection performance of security firms.

2.3 Empirical Literature Review

This section presents a critical review of empirical research relating to credit risk management policy and debt collection. Based on the review, the research gap will be identified for the purpose of contextualizing the study.

2.3.1 Credit Approval policy and Debt Collection Performance

Nyasaka (2017) investigated the relationship between credit risk management practices and non-performing loans in Kenyan Commercial Banks using a case study of KCB Group Limited. The study adopted a descriptive research method. It was found that for banks to minimize the level of non-performing loans, credit unions ought to have in place written guidelines on credit approval
process, approval authorities of individuals or committees as well as decision basis or criteria. The study made a general observation that an established credit approval policy minimizes non-performing loans but did not specify how this is achieved. The study concentrated more on the components of the credit approval policy but did not provide a clear link between the policy and debt levels in the bank. The context of the study is also different from that of this study and since banks and security firms operate in different business environments, the findings obtained in the banking industry may not reflect the situation in the private security firms.

Danjuma, Kola, Magaji, and Kumshe (2016) investigated the relationship between credit risk management and customer satisfaction in tier-one deposits money banks using evidence from Nigeria. The study adopted a descriptive survey research design. It was found that adherence to credit approval process by banks led to reduction of bad debts. The study recommended strengthening of the credit approval procedures of banks through generation of accurate and reliable credit information. Through credit approval, the study noted that banks reduced or eliminated the granting of loans to customers who had no capacity to repay and already had non-performing loans in other banks. The context of the study is in the banking industry in Nigeria which is different from that of this study which focuses on the private security industry and therefore, the findings may not be generalizable to fit the scenario in the private security industry.

Bonaya (2013) examined the effects of credit risk management practices on non-performing loans in all the commercial banks in Kenya. The study used descriptive research design. The study investigated the extent to which various facets of credit-approval affected the performance
of the bank. The study discovered that monitoring of borrowers, credit approval guidelines and clear established process affected the level of non-performing loans among commercial banks in Kenya. The study findings further showed that a clear established process for approving new credits and extending the existing credits were crucial in managing credit risks in banks. The study only gave a general conclusion that credit approval policy guidelines affects non-performing loans in the banks but does not specify how this is achieved. The study was conducted in the context of the banking industry and the findings obtained may not be the same as those obtained in the private security firms which are non-financial institutions since they operate in different business environments.

Hagos (2010) evaluated the performance of credit management of Wegagen bank in Tigray Region as compared to National Banks requirements in comparison with its credit policy and procedures. The study adopted a descriptive research design where a case study was conducted. The study found that all loans and advances were recommended or approved by the loan committee both at branch and at head office as per the discretions provided and that the individual steps in the credit approval process and their implementation had a considerable impact on the risks associated with credit approval. The study only focused on the components and implementation of the credit approval policy in the bank but did not link it to debt collection which is the focus of this study. The context of the study is the banking sector whose operating environment is different from that of private security firms in Kenya and therefore the findings may not be generalized to fit the private security industry. The study also used a case study design while this study is based on a survey.
2.3.2 Credit Scoring Policy and Debt Collection Performance

Nyasaka (2017) sought to determine the relationship between credit risk management practices and non-performing loans in Kenyan commercial banks using a case study of KCB Group Limited. The study adopted a descriptive research design. The study found that the quality of the credit scoring could be verified by analyzing ex-post observed credit losses per score and that credit scores were often segmented into homogeneous pools. The study pointed out that credit scoring was crucial in measuring the risk that a customer would not fulfil their financial obligations and run into payment arrears which eventually lead to a loss. The study focused on the banking industry which operates differently from the registered security industry and therefore the findings obtained in the banking sector may not be generalizable in the private security industry. It did not clearly show how credit scoring affects debt collection actions taken by the firm.

Opiyo (2014) examined credit scoring and the role of credit reference bureaus in Kenya. A descriptive survey design was applied. The study found that it was easier using credit scoring to predict the probability of repayment and that credit scoring was important in debt collection since it assisted in debt collection prioritization, account management and loan servicing. The study also found that credit scoring models for collection decisions assisted firms in selecting optimal debt collections. Therefore, credit scoring models that decided when actions should be taken on the accounts of delinquents and which debt collection techniques might be more appropriate and successful were resourceful in the debt collection exercise. The study highlighted the importance of credit bureaus who could be contracted by firms which is not part of the objectives of this study.
Bhardwaj and Senguptayz (2011) investigated the relationship between credit scoring and loan default in the US. A panel data regression analysis was conducted. The results demonstrated an increasing trend of reliance on credit scoring not only as a measure of credit risk but also as a means to offset other riskier attributes of the origination. This reliance led to deterioration in loan performance pointing to the possible manipulation that might increase the credit scores of borrowers without any real improvements in their creditworthiness. Therefore, the study concluded that credit score manipulation affected default rates. Even though the study linked credit scoring to loan performance, it didn’t show how credit scoring can be used in recovering the debts arising from the default cases. The study did not discuss credit scoring from the policy point of view which is the focus of this study and the context is the banking industry which is different from that of this study.

Kargi (2011) examined the effect of credit risk on the performance of Nigeria banks. The study employed a descriptive research design where a survey of the Nigerian banks was conducted. The study found that credit scoring was associated with reduced bad debt losses and guided the prioritization of debt collection activities. The study highlighted that when approving new customers, all of the necessary factors involved in the credit decision process were received and scored. High-risk customers were identified as exceptions and reviewed by a credit analyst. Customers on the verge of bankruptcy were not approved because of missed information or incorrect analysis. In addition, credit scores enabled the credit executive to have different debt collection strategies for low risk, medium risk and high risk customers. When credit risk scores were coupled with amounts owed, collection activity was prioritized. The study focused on the
banking industry in Nigeria which is different from the context of this study which focuses on the private security industry in Kenya and therefore, findings may not be generalizable.

2.3.3 Credit Limit policy and Debt Collection Performance

Sangwayire (2016) examined the effect of credit risk management mechanisms on financial performance of microfinance banks using a case study of the Urwego Opportunity Bank in Rwanda. A descriptive case study design was used. The study found that the banks applied credit limits as an approach to mitigating the exposure to credit risk emanating from new clients that had no collateral, standardized loan terms, zero tolerance to delinquency and group-based lending. The study findings also highlighted that credit limits depended on credit history and consistency of the client’s income. The study focused on the contents of a credit limit policy and the aspects considered in setting up a credit limit but do not link this to debt collection which is the focus of this study. The context of the study is on the banking industry.

Turan, Ugur, and Barlas (2013) investigated the dynamics of consumerism and persistent personal debts as a result of extensive use of credit cards under the influence of advertising. A system dynamics simulation model related to consumption behavior of middle-income people in Turkey under the influence of advertising was constructed. It was found that in the long run, credit card limit could act as effective policy in preventing very high debts even though it could affect client satisfaction. The study noted that a credit card limit policy could be used to prevent high debts but does not specify how this is achieved. The context of the study is the banking industry in Turkey while this study focuses on security firms in Kenya which are non-financial institutions hence the scenarios may be different.
The Credit Research Foundation Inc. (2009) conducted a survey on the current trends in the practice of credit review policies and limits for good account in Columbia. The study established that for consistency purposes, many credit organizations made use of a prescribed policy on credit limits which defined the levels of authority for setting credit limits, the designated personnel responsible for the assignment of credit limits, the circumstances that prompted a customer review and the guidelines for the assignment of credit limits. A customer's credit limit was based among others their ability to pay debts. The study does not clearly elaborate how the good account which is low debt is achieved through the prescribed policy. It only highlights the contents of the policy but does not show how such a policy affects the level of debt, its effect on debt collection actions. The context of the study is Columbia and the findings may not apply in the Kenyan case due to contextual issues.

Soman and Cheema (2002) assessed the effect of credit on spending decisions in the United States focusing specifically on the role of credit limit and credibility. The assessment was based on a longitudinal study. The study highlighted that the growing credit card debt emanating from escalating credit limits raised the need for consumer education and credit card regulation issues. The study emphasized that credit limits needed to reflect future earning potential of customers and to achieve this, elaborate methods for setting credit limits were required. The research also highlighted the necessity of policy measures to control the seemingly indiscriminate increases in credit limits. Even though this study highlights the need for an established policy on credit limits, it is in the context of consumer credit within the banking industry in the United States and does not show how this affects debt collection in cases of default. Therefore, both contextual and conceptual gaps are clearly shown.
Ebenezer (2002) investigated credit management and debt collection in commercial banks in Nigeria. The research design employed for this research was exploratory research method. The study findings indicated that a bank’s customer credit limits helped in preventing the extension of credit beyond a point at which the probability of default was considered unacceptable. The study findings also showed that banks used instruments such as bank references, trade references and financial statements in setting up credit limits. Once the credit limits had been set, established measures for monitoring both the individual customer’s credit limit and the company’s total credit line were required so that corrective steps could be taken from time to time. The study focuses on the banking industry in Nigeria and therefore the findings obtained may not be generalizable to fit the Kenyan private security industry. The study also applies a different methodology from that of this study which is a descriptive survey design.

2.3.4 Credit Documentation policy and Debt Collection Performance

Durrani (2017) conducted a study on sound credit risk management. The study was based on a literature review of existing banking documents. The study highlighted that proper assessment of credit risk, loan monitoring and delinquency control begin with well documented member files. Maintaining orderly and adequately documented loan files was an important element of credit risk management. Proper documentation provided major benefits namely; it constituted evidence of the terms and conditions of a member's indebtedness; it created valid security which could be realized if it was in compliance with legal requirements; it provided an audit trail of the loan decision (e.g. that the loan was authorized in accordance with policy and good lending judgment); it allowed easy and efficient follow up of problem situations (e.g. skip tracing) or routine member inquiries; it established a member's credit history for future lending decisions.
The study applied a different methodology from that of this study and the concentration is on the banking sector which is different from this study.

Matanda (2010) examined the effect of 7Cs credit appraisal model on the level of non-performing advances of commercial banks in Kenya. A cross sectional survey was conducted. The study highlighted that credit documentation was a pre-requisite for each phase of the credit cycle, credit application, credit approval, credit monitoring, collateral valuation, impairment recognition, foreclosure of impaired loans and realization of security. The study emphasized that credit files ought to be properly maintained with an appropriate system of indexing to facilitate quick review and follow up as and when need arises. Documentation established a relationship between the bank and the borrower and it formed a base for any legal action in the courts of law. Contextual gap exists since the study limited itself to the banking industry while this study focuses on the private security sector in Kenya.

Mannion (2013) conducted a study on the importance of documenting unsecured credit sales from the litigation perspective based on a literature review. The study showed that selling goods on credit was inherently risky business. It highlighted that apart from having a personal guaranty, maintaining proper documents was of utmost importance. The most important documents to maintain for every credit transaction were invoices and proofs of delivery (for both the goods and the invoices). The proofs of delivery ought to be signed or acknowledged by a representative of the debtor. The study showed that in order to recover a debt through litigation, the unsecured trade creditor would normally be suing for "breach of contract." The study emphasized that lack of proper documentation could turn what should be a simple collection action into a litigation
nightmare involving protracted discovery and possibly even a trial. The study focused on credit documentation only on cases where litigation is undertaken and ignored its importance in other areas of debt collection. The study applied a different methodology from that which is adopted in this study.

Muthee (2010) investigated the relationship between credit risk management and profitability within the commercial banks in Kenya. The study used a descriptive research design. The findings showed that the objective of proper documentation in credit risk management was to serve as primary evidence in any dispute between the bank and the borrower. The documentation could also be used in enforcing the bank’s right to recover the loan amount together with interest thereon, in the event of all other resources proving to be of no avail, through a court of law as the final resort. Hence, utmost care was taken by the branch in execution of documents to ensure that they were free from any flaw or defect and was legally perfect and enforceable. The study highlighted the importance of credit documentation only when litigation is used in debt collection and therefore ignored other aspects of debt collection which require that proper documentation of credit files is conducted. The focus was also on the banking sector and therefore ignored other non-financial institutions such as registered security companies which also have credit transactions.

2.3.5 Credit Review policy and Debt Collection Performance

Siqani and Sekiraca (2016) assessed the impact of the internal audit in reducing credit risk in commercial banks in Kosovo. The study made use of descriptive survey research design. The results of the survey showed that each commercial bank operating in Kosovo had the relevant departments of internal audit which regularly undertook the process of controlling in order to
reduce credit risk. It highlighted that internal audit provided alternatives for solving the problems and in helping the institution in achieving its objectives as planned, as well as recommendations for improvement and further development. The study only discussed the importance of credit reviews in credit risk management which is a different objective from that of this study which linked credit review policies to debt collection. The study was limited to the banking industry which is a different focus from that of this study which focuses on the registered security companies in Kenya.

Salim (2016) sought to determine the effect of external auditor's report on the credit decision for Yemeni Banks where a descriptive research design was employed. The results of the study showed that auditor's report was considered as one of the important sources for credit officers in making their credit decision. Based on the conclusions of the study, the researchers recommended that the banks needed to increase their reliance on the various types of audit reports in making credit decisions and pay more attention to disclosure and accounting policies qualifications. The study also recommended that the Yemen Association of the Certified Public Accountants should encourage the auditors to be very careful when expressing their opinions about the financial statements in order to avoid misleading decision makers. The study had a different objective from that of this study. It linked external auditor's reports to credit decision which was whether or not to extend credit while this study sought to link the report to how the exercise of debt collection is conducted within the registered security industry in Kenya.

Thonabauer and Nösslinger (2014) explored the guidelines on credit risk management particularly credit approval process and credit risk management in commercial banks in Vienna,
Austria. The study highlighted that it was crucial for banks to establish a system of regular independent credit and compliance audits. These audits needed to be performed by independent parties. The study noted that credit audits enabled banks to take early measures to protect their loans. The study generally discussed the components of the credit review policy in credit risk management and did not show how such a policy can be used in improving debt collection in the banks which is the focus of this study but in the context of registered security companies in Kenya.

Minh (2013) examined the link between credit risk management and bad debt controlling using a case of ANZ Vietnam. The study was qualitative in nature where interviews with the ANZ Vietnam’s employees were conducted. The study findings highlighted the need for management to maintain a written loan review policy that was reviewed and approved at least annually by the board of directors. It was found that the loan review process was instrumental in debt collection since it aided the prompt identification of loans with potential credit weaknesses that could jeopardize repayment. The study focused on the banking industry in Vienna while the context of this study is the private security firms in Kenya and therefore, the findings may not be generalizable. The study also used a qualitative research approach while this study is based on quantitative research where a survey is conducted as opposed to a case study.
### 2.4 Summary of Literature and Knowledge Gap

#### Table 2.1 Literature Review

<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Topic</th>
<th>Finding</th>
<th>Research Gap</th>
<th>How the current study seeks to fill the gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soman and Cheema (2002)</td>
<td>Effect of credit on spending decisions in the United States.</td>
<td>The growing credit card debt, especially due to the influence of escalating credit limits had heightened the need to address consumer education and credit card regulation issues through crafting necessary policy guidelines.</td>
<td>Even though this study highlights the need for an established policy on credit limits, it is in the context of consumer credit within the banking industry in the United States and does not show how this affects debt collection in cases of default. Both contextual and conceptual gaps.</td>
<td>The study linked credit limit policy as part of credit risk management policy to debt collection performance in the context of registered security companies in Kenya.</td>
</tr>
<tr>
<td>Turan, Ugur, and Barlas (2013)</td>
<td>Dynamics of consumerism and persistent personal debts as a result of extensive use of credit cards under the influence of advertising.</td>
<td>Restricted maximum credit card limit could be an effective policy to prevent high debts but, in the long run, the policy might result in more ‘unsatisfied’ people.</td>
<td>The study notes that a credit card limit policy can be used to prevent high debts but does not specify how this is achieved. The context is the banking industry in Turkey.</td>
<td>The study showed in depth how credit limit guidelines can be used to enhance debt collection performance in the context of registered security companies in Kenya.</td>
</tr>
<tr>
<td>Sangwayire (2016)</td>
<td>Effect of credit risk management mechanisms on financial performance of microfinance banks; A case of Urwego Opportunity Bank in Rwanda.</td>
<td>Microfinance banks like applied certain conventional risk management approaches such as loan limits to mitigate credit risk.</td>
<td>The study focuses on the contents of a credit limit policy and the aspects considered in setting up a credit limit but does not link this to debt collection which is the focus of this study hence a conceptual gap. The study also displays a contextual and methodology gap.</td>
<td>The study showed the link between credit limit policy measures and debt collection performance by registered security companies in Kenya.</td>
</tr>
<tr>
<td>Bonaya (2013)</td>
<td>Effects of credit risk management practices on non-performing loans in commercial</td>
<td>Monitoring of borrowers, credit approval guidelines and clear established process affected the level of non-performing loans/bad debts in the banks but does not specify</td>
<td>The study only gives a general conclusion that credit approval policy guidelines affects non-performing loans/bad debts in the banks but does not specify</td>
<td>The study showed how credit approval policy guidelines influence debt</td>
</tr>
<tr>
<td>Study Reference</td>
<td>Analysis</td>
<td>Context</td>
<td>Findings</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------------------------------------------</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Danjuma, Kola, Magaji, and Kumshe (2016)</td>
<td>Credit risk management and customer satisfaction in tier-one deposits money banks in Nigeria.</td>
<td>Adherence to credit appraisal process by banks led to reduction incidence of bad debts.</td>
<td>The context of the study is in the banking industry in Nigeria which is different from that of this study which focuses on the private security industry and therefore, the findings may not be generalizable to fit the scenario in the private security industry.</td>
<td></td>
</tr>
<tr>
<td>Nyasaka (2017)</td>
<td>Credit risk management practices and non-performing loans in Kenyan Commercial Banks: A case study of KCB Group Limited.</td>
<td>For banks to minimize the level of non-performing loans, credit unions ought to have in place written guidelines on credit approval process, approval authorities of individuals or committees as well as decision basis.</td>
<td>The study makes a general observation that an established credit approval policy minimizes non-performing loans but does not specify how this is achieved. The study concentrates more on the components of the credit approval policy but does not provide a clear link between the policy and debt levels in the bank.</td>
<td></td>
</tr>
<tr>
<td>Bhardwaj and Sengupta (2011)</td>
<td>Credit scoring and loan default in the US.</td>
<td>Credit score manipulation affected default rates.</td>
<td>The study assessed credit scoring from a policy point of view and how it can be used to improve debt collection performance by registered security companies in Kenya.</td>
<td></td>
</tr>
<tr>
<td>Kargi (2011)</td>
<td>Effect of credit risk on the performance of Nigeria banks.</td>
<td>Credit scoring was associated with reduced bad debt losses and guided the prioritization of debt collection</td>
<td>The study focuses on the banking industry in Nigeria which is different from the context of this study which focuses on the private security industry.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>The study focused on the effect credit scoring on debt collection.</td>
<td></td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
<td>Study Focus</td>
<td>Findings</td>
<td></td>
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<tr>
<td>-------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Matanda</td>
<td>Effect of 7Cs credit appraisal model on the level of non-performing</td>
<td>Credit files ought to be properly maintained with an appropriate system of indexing to facilitate quick review and follow up as and when need arises.</td>
<td>Contextual gap exists since the study limits itself to the banking industry while this study focuses on the private security sector in Kenya. The study revealed the effect of credit documentation policy on debt collection performance by registered security companies in Kenya.</td>
<td></td>
</tr>
<tr>
<td>Durrani</td>
<td>Sound Credit Risk Management.</td>
<td>Proper assessment of credit risk, loan monitoring and delinquency control begins with well documented member files.</td>
<td>The study applies a different methodology from that of this study and the concentration is on the banking sector which is different from this study. The study revealed the effect of credit documentation policy on debt collection performance by registered security companies in Kenya by adopting a descriptive survey design.</td>
<td></td>
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<tr>
<td>(2017)</td>
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</tr>
<tr>
<td>Muthee</td>
<td>Credit risk management and profitability within the commercial banks</td>
<td>The objective of proper documentation in credit risk management was to serve as primary evidence in any dispute between the bank and the borrower and for enforcing the bank’s right to recover the loan amount together with interest thereon, in the event of all other resources proving to be of no avail, through a court of law as the final resort.</td>
<td>The study highlights the importance of credit documentation only when litigation is used in debt collection and therefore ignores other aspects of debt collection which require that proper documentation of credit files is conducted. The study assessed how credit documentation policy affects the entire debt collection performance exercise by the registered security companies in Kenya.</td>
<td></td>
</tr>
<tr>
<td>Siqani and</td>
<td>Impact of the Internal audit provided</td>
<td>The study only discusses the</td>
<td>The study</td>
<td></td>
</tr>
<tr>
<td>Sekiraca (2016)</td>
<td>internal audit in reducing credit risk in commercial banks in Kosovo.</td>
<td>alternatives for solving the problems and in helping the institution in achieving its objectives as planned, as well as recommendations for improvement and further development.</td>
<td>importance of credit reviews in credit risk management which is a different objective from that of this study which intends to link credit review policies to debt collection.</td>
<td>showed how credit review policy measures affect debt collection performance by the registered security companies in Kenya.</td>
</tr>
</tbody>
</table>

Source: Author (2019)
2.5 Conceptual Framework

Independent Variables

Credit Limit
- Limit authorization
- Setting and monitoring
- Credit period

Credit Approval
- Criteria and process
- Guidelines
- Authority matrix

Credit Scoring
- Systems and techniques
- Segmentation
- Automation

Credit Documentation
- Safe custody
- Legal advisor
- Ease of retrieval

Credit Review
- Independence
- Scope and frequency
- Review of findings

Dependent Variable

Debt Collection Performance
- Days Sales Outstanding (DSO)

Mediating Variable

Inflation Rate

Figure 2.1: Conceptual Framework
Source: Author (2019)
In this research, the conceptual framework shows the effect of credit risk management policies on debt collection performance by registered security companies in Kenya. The dependent variable is debt collection performance by registered security companies. The level of debt collection is perceived to be affected by the credit risk management policies in these companies therefore forming the independent variables. The aspects of credit risk management policies namely credit limits, credit approval, credit scoring, credit documentation and credit review policies are therefore perceived to affect debt collection and thus they are the predictor variables in this study. The proxy for debt collection performance will be Days Sales Outstanding. Pike and Cheng (2001) in their study titled Credit Management: An Examination of Policy Choices, Practices and Late Payment in UK Companies, used a survey to find out that the most common performance measure used by firms to measure their credit collection performance was the days sales outstanding ratio. Their results confirmed that over eighty four percent of the firms involved in the study used this measure.

Credit limit in this study pertains to the existence of a written prescribed policy for credit limits, existence of elaborate methods for setting and monitoring credit limits, clarity and uniformity of the policy guidelines for credit limits and existence of policy for informing consumers on procedures for setting credits which are thought to influence debt collection in these companies. Credit approval policy on the other hand comprises of the established credit approval process, established credit approval guidelines and procedures, established criteria for credit approval and credit approval authority or committee which are expected to have an effect on debt collection. In this study, credit scoring is viewed as the existence of formalized credit scoring systems and techniques, segmentation of credit scores and the level of automation of credit scoring.
Credit documentation policy in this study implies the existence of systems and procedures for maintaining documented credit files, vetting of all credit documents by a legal advisor, review of documentation of credit files and personnel authorized to access credit files. The proxy for credit review in this study is the existence of a written credit review policy, the qualifications and independence of credit review personnel, the frequency, scope (number of credit lines reviewed), and depth (comprehensiveness) of reviews, the review of findings and follow-up as well as documentation and report distribution. All these are expected to have an effect on debt collection performance by registered security companies in Kenya.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes how the research was carried out in order to achieve the stated objectives. It presents the research philosophy, research design, empirical model, target population, sampling design, data collection instruments, data collection procedures, data analysis and diagnostic tests.

3.2 Research Philosophy

According to Remenyi, Williams, Money and Swartz (2005), the research methodology and philosophy applied in the study must be stated in order to convince others of the credibility of the research. Two major research philosophies have been identified in the Western tradition of science, namely positivist (scientific) and interpretivist (anti-positivist) (Pather & Remenyi, 2005). Based on this concept and nature of different research philosophies, the study will adopt a positivistic epistemology.

According to Bryman and Bell (2007), positivism is an epistemological position which studies social reality and beyond by employing natural sciences’ methods. The objective of this study is to assess the effect of credit risk management policy on debt collection in private security companies in Kenya. Under the positivistic philosophical approach, the study will set up the hypotheses on the basis of the existing relevant theories. These hypotheses will then be tested and confirmed or disproved by quantitative and statistical methods in order to accomplish the
research objectives. Remenyi et al. (2005) claimed that the final result of such research can be applicable through the positivist approach. The results of this study will be applicable for emerging and the underdeveloped markets.

3.3 Research Design

This study adopted a descriptive survey design. A descriptive design is usually concerned with describing a population with respect to important variables with the major emphasis being establishing the relationship between the variables. The major purpose of descriptive research design is description of the state of affairs as they exist at present (Mugenda & Mugenda, 2008). Descriptive design will be used because it focuses on complex analysis to bring out the correlation of variables. Causal relationship helps the researcher to establish how one variable affects changes in another. This focuses on understanding, explaining, predicting and controlling relationships between variables.

The assertion is consistent with Olusola et al. (2013) who explained that a descriptive design is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals and is appropriate as it answers research questions of who, what, where, when and how is the problem. Therefore, since this research design allows one to establish the causal relationship between variables, it was useful in explaining how credit risk management policies affect debt collection performance by registered security companies in Kenya. It was also useful in giving a picture of the situation on the ground in terms of credit risk management policies in these companies and how such policies affect debt.
3.4 Empirical Model

The study used a multiple linear regression model in showing the link between credit risk management policies and debt collection performance by registered security companies in Kenya. The regression model used was of the form:

\[ Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \varepsilon_i \]  

(3.1)

Where:

\[ Y_i = \text{Debt Collection Performance in Registered Security Company } i \]

\[ \beta_0 = \text{Constant Term} \]

\[ \beta_1, \beta_2 \text{ and } \beta_3, \beta_4, \beta_5 = \text{Beta coefficients} \]

\[ X_1 = \text{Credit Limit Policy} \]

\[ X_2 = \text{Credit Approval Policy} \]

\[ X_3 = \text{Credit Scoring Policy} \]

\[ X_4 = \text{Credit Documentation Policy} \]

\[ X_5 = \text{Credit Review Policy} \]

\[ \varepsilon = \text{Error term} \]

\[ i = \text{denotes the observation (registered security company), where } i = 1, 2, 3, \ldots, 38. \]

To determine the mediating effect of inflation on the relationship between credit risk management policies and debt collection performance, equations 3.2 and 3.3 are specified as follows:

\[ Y = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta M + \varepsilon_i \]  

(3.2)
\[ M = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \epsilon_i \]  

(3.3)

Where: \( M = \) mediating variable = inflation

3.5 Operationalization and Measurement of Variables

Table 3.1 contains a list of the various study variables, their operational definitions, and the measurements used to estimate these variables. In regard to researcher use of multiple regression model, which assumes interval data with ordinal likert-type scale items, a review of the literature on this topic, Simon and Goes (2013) asserts that, for many statistical tests, rather severe departures from interval data do not seem to affect Type I and Type II errors dramatically if 5 or 7 point scale is used. The researcher has used a 5 point likert-type scale and the measures adopted have been used and validated by other researchers.

Table 3.1 Operationalization and Measurement of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Operationalization</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Collection Performance</td>
<td>Dependent Variable</td>
<td>• Days Sales Outstanding (DSO)</td>
<td>• (Debtors outstanding/average monthly revenue)*30 Days</td>
</tr>
<tr>
<td>Credit Limit Policy</td>
<td>Independent Variable</td>
<td>• Existence of a prescribed policy on credit limits authorization</td>
<td>• Score on credit limits authorization on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Existence of elaborate methods for setting and monitoring credit limits</td>
<td>• Score on setting and monitoring credit limits on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Credit days information to customers</td>
<td>• Score on credit days information on a scale of 1 to 5</td>
</tr>
<tr>
<td>Credit Approval Policy</td>
<td>Independent Variable</td>
<td>• Compliance with the set guidelines and procedures</td>
<td>• Score on credit approval guidelines and procedures on a scale of 1 to 5</td>
</tr>
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<td>-----------------------</td>
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<td>--------------------------------------------------</td>
<td>-------------------------------------------------</td>
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<tr>
<td></td>
<td></td>
<td>• Mitigation of exposure to credit risk</td>
<td>• Score on credit risk mitigation on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Established criteria for credit approval</td>
<td>• Score on credit approval criteria on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Existence of credit approval authority matrix</td>
<td>• Score on credit approval authorization matrix on a scale of 1 to 5</td>
</tr>
<tr>
<td>Credit Scoring Policy</td>
<td>Independent Variable</td>
<td>• Existence of a formal credit scoring policy</td>
<td>• Score on existence of credit scoring policy on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Efficiency in controlling credit risk</td>
<td>• Score on credit risk control efficiency on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Segmentation of credit scores per service line</td>
<td>• Score on credit scoring segmentation on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Automation of credit scoring</td>
<td>• Score on credit scoring automation on a scale of 1 to 5</td>
</tr>
<tr>
<td>Credit Documentation Policy</td>
<td>Independent Variable</td>
<td>• Existence of policy for credit documentation and ease of retrieval</td>
<td>• Score on existence of credit documentation policy on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Vetting of all credit documents by a legal advisor</td>
<td>• Score on legal advisory on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Regular review of documentation of credit files by internal auditor</td>
<td>• Score on review by internal auditor on a scale of 1 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Credit losses due to incomplete credit documentation</td>
<td>• Score on credit losses due to documentation on a scale of 1 to 5</td>
</tr>
<tr>
<td>Credit Review Policy</td>
<td>Independent Variable</td>
<td>• Existence of a written credit review policy</td>
<td>• Score on existence of credit review policy on a scale of 1 to 5</td>
</tr>
</tbody>
</table>
51

3.6 Target Population

The study targeted all the 38 security companies registered with the Kenya Security Industry Association who had fulfilled all characteristics and legally accepted by the association (KSIA) as at 2017. The respondents were the credit managers. The choice of the respondents was strategic since they are actively involved in the credit management and debt collection affairs of the companies and therefore, they were more resourceful in providing the required information.

3.7 Sampling Design

Given that the number of registered security companies registered with KSIA is small, census was conducted. Sigdel (2011) says that a census takes account of the entire population to bring out accurate results. A census is carried out by asking the total population of the study to respond to questionnaires provided the numbers are small. For instance, the registered security companies in Kenya as at 2013 are 38 thus a census can be carried out since coming up with a sample from 38 people would produce results which are not conclusive.

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<table>
<thead>
<tr>
<th>Inflation Rate</th>
<th>Mediating Variable</th>
<th>Inflation rate = Annualized percentage change in Consumer Price Index</th>
<th>Average inflation rate since inception year to 2017 as per KNBS (2017).</th>
</tr>
</thead>
</table>

Source: Author (2019)
3.8 Data Collection Instrument

This study used primary data that was collected using structured questionnaires. The questionnaire was divided into various sections that capture themes under this study as per the research objectives. The questionnaire compromised straightforward and easy to comprehend questions which enabled respondents to take a short time to complete. Semi-structured questionnaires are usually in an immediate usable form and are easy to analyze and interpret (Kothari, 2006). The questionnaire was made up of both open and closed ended questions as provided at Appendix II.

3.9 Data Collection Procedure

The researcher obtained a letter of introduction from Kenyatta University and research permit from the National Commission for Science, Technology and Innovation (NACOSTI) of Ministry of Education to allay any suspicion and elicit serious responses thus increasing validity of the results. First, the locations of the firms selected for observation were identified. The respondents were briefed on the purpose and importance of the study. As agreed at the briefing session the questionnaires were dropped at the locations and later picked at the time agreed between the researcher and respondents. To enable the respondents to take the least possible time, questions were framed in a straightforward and easy to comprehend way.

3.9.1 Reliability of the Instrument

Reliability is the degree to which an assessment instrument consistently measures what it is intended to measure to provide stable and consistent results (Sekaran & Bougie, 2016). The questionnaire was developed with the help from senior members of academic staff prior to using the
instrument to collect data. The comments and suggestions from the experts were incorporated as suggested by Saunders et al. (2009).

### 3.9.2 Validity of the Instrument

Validity refers to the extent to which a test measures what it is supposed to measure. It defines the strength of the final results and whether they can be considered to accurately describe the real status of a phenomenon. According to Guest, MacQueen and Namey (2012), an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorize.

This study used both construct validity and content validity. For construct validity, the questionnaire was divided into several sections to ensure that each section captures information for a specific objective, and also ensure that the same closely ties to the conceptual framework for the study. To ensure content validity, the questionnaire was subjected to thorough examination by two credit managers, who were randomly selected and were not part of the main study as well as the supervisor of the research. The two credit managers and the project supervisor were asked to evaluate the questions in the questionnaire for relevance and whether they were meaningful, clear, loaded of offensive. On the basis of the evaluation, the instrument was adjusted appropriately before subjecting it to the final data collection exercise.
3.9.3 Pilot Testing

According to Blumberg, Cooper and Schindler (2014), a pilot test is a small scale kind of research project which collects data from respondents similar to that which will be used in a future survey. The pilot testing assists to avoid problems of answering questions by respondents, recording data as well as establishing content validity. According to Mugenda and Mugenda (2003) a pre-test should range from 1-10% of the actual sample size. In this study, a pilot study was undertaken on 10% of the sample population.

Four questionnaires were administered to individuals working in credit departments in registered security companies and who were not part of the main study. The study used Cronbach alpha as a coefficient of internal consistency. Reliability is expressed in the form of correlation coefficient with values ranging from 0.00 representing low reliability to 1.00 representing perfect reliability. Adopting the Cronbach’s alpha the pilot result showed a value of 0.614 which was considered adequate. A minimum alpha value of 0.6 is considered acceptable in research while a value of 0.9 is considered excellent (Cronbach, 1994). Using SPSS the computed Cronbach alpha for all the variables of this study was 0.831 which is much higher than the pilot result of 0.614. This implied that the findings of the study were reliable and valid.

3.10 Data Analysis

Zikmund et al. (2010), define data analysis as the application of reasoning to understand the data which has been gathered so as to determine consistent patterns and summarizing the relevant details revealed in the investigation. After both quantitative and qualitative data were obtained through questionnaires, it was prepared for analysis by editing, handling null responses, coding
and categorizing. Statistical package for social sciences (SPSS) computer software was used for data analysis. The choice of SPSS over other statistical software is that it is user friendly.

The idea that Likert scales which combine the summated effects of multiple Likert-type items has become widely accepted as resulting in quantitative interval scale scores (Brown, 2011). The use of composite scores based on multiple items can provide more stable ratings and measures of more complex phenomena than can individual item respondents (Willits, Theodori and Luloff, 2016). Consequently, composite score for the Likert-type scale was adopted in this study.

Both descriptive and inferential statistics were generated. Descriptive statistics enables a researcher to describe and compare variables numerically (Saunders et al., 2016). The specific descriptive statistics included measures of central tendency (i.e. mean, mode, median), percentages, frequencies and measures of dispersion (i.e. standard deviation or variance and coefficient of variation). Inferential analysis includes various tests of significance for testing hypotheses in order to determine the validity of data in making conclusions (Kothari, 2008). Inferential statistics generated were multiple linear regression model and analysis of variance (ANOVA). The regression analysis was crucial in showing the causal relationship between the variables in order to establish the extent to which credit risk management policies affected debt collection performance by the registered security companies under study. The P-values were measured at 0.05 level of significance.
3.11 Diagnostics Tests

Testing of assumptions is important in research studies that utilize multiple regressions. Violations of assumptions may result in biased estimates of relationships, over or under confident estimates of the regression coefficients. This may further lead to biased standard errors and untrustworthy confidence interval and significance tests. This study conducted tests for normality, linearity and multicollinearity which are discussed in this section.

3.11.1 Normality

Regression assumes that variables have normal distributions. Non-normally distributed variables or highly skewed or kurtotic variables, variables with substantial outliers can distort relationships and significance tests. Multiple regressions require that the predictor and response variables be normally distributed. Thus it is assumed that errors are normally distributed for any combination of values on the predictor variables. Thus the assumption of normality is useful because if it holds true, the researchers can make inferences about the regression parameters in the population of study that a sample was drawn from even if the sample is relatively small. The normality of data was tested using the Kolmogorov-Smirnov test. The rule of the thumb is that the null-hypothesis of a normal distribution should not be rejected when the Kolmogorov-Smirnov p-values for the study variables are greater than 0.05 (Simon & Goes, 2013). In cases where the distribution of the disturbance term was found to deviate from normality, the researcher used a more conservative p value (.01 rather than .05) for conducting significance tests and constructing confidence intervals.
3.11.2 Multicollinearity

This test was carried out to establish whether there is a high inter-correlations correlation among the independent variables. Presence of multicollinearity implies that some of the variables can be considered redundant and it also becomes difficult to determine the importance of a given predictor. This is because the effects of the predictors are difficult to predict with precision due to the correlations among them. It also increases the variances of the regression coefficients and the greater these variances are the more unstable the prediction equation will be. Multicollinearity of the data was tested using Pearson correlation coefficients. The rule of the thumb is that a correlation coefficient of more than 0.8 indicates serious multicollinearity (Gujarati, 2003). The assumption for multicollinearity states that, when the VIF value lies between 1 and 10, then there is no multicollinearity. In cases where multicollinearity was detected, the researcher corrected by dropping one or more variables found to be highly correlated with the other predictors.

3.11.3 Linearity

This test was conducted to determine if the relationship between independent and the dependent variable was linear or not. This is crucial because standard multiple regression can only accurately estimate the relationship between dependent and independent variables if the relationships are linear in nature. Because there are many instances in the social sciences in which non-linear relationships occur, it is essential to examine assumptions for non-linearity. In this study, the linearity test was used in establishing whether the relationship between predictor and the outcome variable is linear. If the p-value for the deviation from linearity >0.05, then the relationship between the independent variables is deemed to be linearly dependent (Cooper &
Schindler, 2008). Incase non-linearity is detected; scatter plots were used to check for outliers and remove to resolve the violation.

### 3.11.4 Heteroskedasticity

Heteroskedasticity is an assumption of multiple linear regression models that needs to be tested for in the data and properly accounted for if present. Specifically, the multiple linear regression model assumes that the error term is homoskedastic, that is, it has constant variance. If the error variance is not constant, then there is heteroskedasticity in the data. Running a regression model without accounting for heteroskedasticity would lead to unbiased parameter estimates but the invalid standard errors. In this thesis, the level of heteroskedasticity was tested for using the Likelihood Ratio (LR) test proposed by Poi and Wiggins (2001). The null hypothesis of this test was that the error variance is homoskedastic. If the null hypothesis were to be rejected and a conclusion made that heteroskedasticity is present in the study data, then this would be accounted for by running an EGLS (Estimated Generalized Least Squares) model.
CHAPTER FOUR

EMPIRICAL RESULTS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents data analysis, empirical results, interpretation and discussions. The results are presented in form of tables and narrations. This chapter has been organized on the basis of research objectives and study hypotheses.

4.2 Response Rate

The study was based on questionnaires dispatched to Credit Managers in the registered security companies. The number of questionnaires sent to the respondents was for the entire population size of 38. Table 4.1 below indicates the response.

Table 4.1: Response rate

<table>
<thead>
<tr>
<th>Population</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>35</td>
<td>92%</td>
</tr>
</tbody>
</table>

Source: Author (2019)

Out of the 38 questionnaires sent out, a total 35 were returned. This translated to a response rate was 92 percent. The high rate of response was attributed to the small population size, personal involvement of the researcher and the tremendous efforts made by the research assistants. Response rate is an important component of a study. It gives an indication of the quality of research findings as well as the level of reliability that could be placed on the results. Whereas some previous studies indicated that high response rate yielded accurate results, others are not in agreement. A study by (Rear & Parker, 1997) indicated that higher response rates assured more accurate survey results. The findings by Rear and Parker (1997) contradicted an earlier finding
by Visse et al., (1996) which showed that even surveys with lower response rates yielded more accurate results.

Atsiaya (2013) observed that a response rate of 50 percent is adequate for analysis and reporting, 60 percent is good and 70 percent or more being rated as very good. Holbrook et al. (2005) assessed the effects of lower response rates and found that surveys with much lower response rates were only minimally less accurate although a lower response rate may lead to a non-response bias. The contradiction shows that response rates are only informative and do not necessarily differentiate between accurate and inaccurate data. For this study, there was need for high response rate given that registered security companies are diverse in their nature of operation.

### 4.3 Descriptive Results

Table 4.2 Presents the descriptive results for the data used in the regression analysis.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Observation</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Collection Performance</td>
<td>35</td>
<td>82.55</td>
<td>20.998</td>
<td>50</td>
<td>111</td>
</tr>
<tr>
<td>Credit Limit</td>
<td>35</td>
<td>3.6500</td>
<td>1.05927</td>
<td>1.50</td>
<td>5.00</td>
</tr>
<tr>
<td>Credit Approval</td>
<td>35</td>
<td>3.7500</td>
<td>.70970</td>
<td>2.50</td>
<td>5.00</td>
</tr>
<tr>
<td>Credit Scoring</td>
<td>35</td>
<td>3.2357</td>
<td>.72239</td>
<td>2.00</td>
<td>4.25</td>
</tr>
<tr>
<td>Credit Documentation</td>
<td>35</td>
<td>3.4500</td>
<td>.49557</td>
<td>2.75</td>
<td>4.25</td>
</tr>
<tr>
<td>Credit Review</td>
<td>35</td>
<td>3.2714</td>
<td>.99516</td>
<td>1.50</td>
<td>5.00</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>35</td>
<td>6.50</td>
<td>.700</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: Author (2019)

Table 4.2 above indicated the mean value of Debt collection performance as measured by DSO for 35 observations was 82.55 with a standard deviation of 20.998 and minimum and maximum
values of 50 and 111 respectively. The debt collection performance of 82.55 is way above the credit days offered by 77% of the registered security companies. This indicates that most of the companies were having overdue amount uncollected for more than the accepted credit days contrary to company credit risk management policy. However, some companies were able to convert their credit sales into cash in 50 days whereas others were so lenient on their policy to an extent that they could only collect debt in 111 days.

Effects of credit risk management policies (credit limit, credit approval, credit scoring, credit documentation, credit review) on debt collection performance by the registered security companies were determined through the study. A five point likert scale (Ranging from strongly agree (5) to strongly disagree (1)) was used to evaluate the information. Table 4.9 above indicates that credit approval policy is the most effective credit risk management policy with a mean of 3.7500. This was followed by credit limit policy, credit documentation, credit review and credit scoring with a mean of 3.6500, 3.4500, 3.2714, 3.2357 respectively. This reflects that the credit scoring is not highly practiced in the industry. Hence, had least effects on debt collection performance of a given registered security company.

Table 4.2 further indicates that some companies had credit limit, credit approval, credit scoring, credit review policies with a minimum rating of 1.50, 2.50, 2.00 and 1.50. This means that credit risk management policies were not being implementent by these companies. Hence, had no effect on debt collection performance. Others had maximum ratings of 5.00, 5.00, 4.25, 4.25, 5.00 for credit limit, credit approval, credit scoring, credit documentation and credit review policies respectively. However, all the 35 registered security companies surveyed agreed that credit documentation affects debt collection performance with minimum rating of 2.75 and
maximum rating of 4.2. Therefore, based on this study one could conclude that credit documentation policy affects debt collection performance in all the registered security companies.

The researcher sought to study the average inflation rates during years of operation for each of the registered company. Table 4.2 indicates that the average inflation rate based on operations period for the registered companies was 6.5 with standard deviation of 0.700, minimum 6 and maximum 8. This reflects that the inflation was fairly constant for each of the company and as a mediating variable might have not had much effect on dependent variable, debt collection performance during the study period. However, a few companies could have started operations during high inflation period around 2007/2008 when post elections violence was experienced in the country leading to inflation rates as high as 8.

4.4 Diagnostic Test Results

This section presents the results of the following diagnostic tests: test of normality test, multicollinearity test, homoscedasticity test and linearity test.

4.4.1 Normality Test Results

Table 4.3 Test of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Debt Collection Performance</td>
<td>.160</td>
<td>35</td>
</tr>
<tr>
<td>Credit Limit</td>
<td>.195</td>
<td>35</td>
</tr>
<tr>
<td>Credit Approval</td>
<td>.131</td>
<td>35</td>
</tr>
<tr>
<td>Credit Scoring</td>
<td>.162</td>
<td>35</td>
</tr>
<tr>
<td>Credit Documentation</td>
<td>.200</td>
<td>35</td>
</tr>
<tr>
<td>Credit Review</td>
<td>.134</td>
<td>35</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.235</td>
<td>35</td>
</tr>
</tbody>
</table>

Source: Author (2019)
Regression assumes that variables have normal distributions. Non-normally distributed variables can distort the relationships. Normality test results using Kolmogorov-Smirnov, for debt collection performance, credit limit, credit approval, credit documentation, credit review and inflation were significant at 0.01 level of significance. All the variables in the model were normally distributed and therefore, couldn’t distort the relationship between the independent and dependent variables.

4.4.2 Multicollinearity Test Results

Table 4.4 Test of Multicollinearity

<table>
<thead>
<tr>
<th>Variables</th>
<th>Credit Limit Policy</th>
<th>Credit Approval Policy</th>
<th>Credit Scoring Policy</th>
<th>Credit Documentation Policy</th>
<th>Credit Review Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Limit Policy</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Approval Policy</td>
<td>.220</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Scoring Policy</td>
<td>.622**</td>
<td>.143</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Documentation Policy</td>
<td>-.416*</td>
<td>.167</td>
<td>-.064</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Credit Review Policy</td>
<td>.725**</td>
<td>.156</td>
<td>.703**</td>
<td>-.367*</td>
<td>1</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.762**</td>
<td>.419*</td>
<td>.616**</td>
<td>-.436**</td>
<td>.729**</td>
</tr>
</tbody>
</table>

Source: Author (2019)

Multicollinearity test was carried out to establish whether there is a high inter-correlations correlation among independent variables. Presence of multicollinearity implies that the effects of a given predictor cannot be predicted with precision. As presented in table 4.4, the study used a correlation matrix to test for multicollinearity. The predictor variables used in the study were credit limit, credit approval, credit scoring, credit documentation, credit review policies and inflation rate. The results indicate that the correlation coefficients for all variables were less than 0.8 implying that the study data did not exhibit severe multicollinearity as recommended by (Gujarati, 2003; Cooper & Schindler, 2008). Therefore, the effects of the predictors variables were determined with accuracy and precision in the regression model.
### 4.4.3 Linearity Test Results

#### Table 4.5 Test of Linearity

<table>
<thead>
<tr>
<th>Debt Collection Performance* Credit Limit Policy</th>
<th>Between Groups (Combined)</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td></td>
<td>11682.110</td>
<td>7</td>
<td>1668.873</td>
<td>13.619</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>4564.376</td>
<td>1</td>
<td>4564.376</td>
<td>37.248</td>
<td>.000</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>7117.734</td>
<td>6</td>
<td>1186.289</td>
<td>9.681</td>
<td>.052</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>3308.617</td>
<td>27</td>
<td>122.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Collection Performance* Credit Approval Policy Between Groups (Combined)</td>
<td></td>
<td>11232.167</td>
<td>6</td>
<td>1872.028</td>
<td>13.946</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>1068.969</td>
<td>1</td>
<td>1068.969</td>
<td>7.963</td>
<td>.009</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>10163.198</td>
<td>5</td>
<td>2032.640</td>
<td>15.142</td>
<td>.088</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>3308.617</td>
<td>27</td>
<td>122.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Collection Performance* Credit Scoring Policy Between Groups (Combined)</td>
<td></td>
<td>12262.002</td>
<td>8</td>
<td>1532.750</td>
<td>14.604</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>4161.429</td>
<td>1</td>
<td>4161.429</td>
<td>39.651</td>
<td>.000</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>8100.573</td>
<td>7</td>
<td>1157.225</td>
<td>11.026</td>
<td>.092</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>2728.725</td>
<td>26</td>
<td>104.951</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Collection Performance* Credit Documentation Policy Between Groups (Combined)</td>
<td></td>
<td>11220.427</td>
<td>5</td>
<td>2244.085</td>
<td>17.261</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>2438.034</td>
<td>1</td>
<td>2438.034</td>
<td>18.753</td>
<td>.000</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>8782.393</td>
<td>4</td>
<td>2195.959</td>
<td>16.888</td>
<td>.051</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>3770.300</td>
<td>29</td>
<td>130.010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Collection Performance* Credit Review Policy Between Groups (Combined)</td>
<td></td>
<td>10934.167</td>
<td>8</td>
<td>1366.771</td>
<td>8.760</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>3785.806</td>
<td>1</td>
<td>3785.806</td>
<td>24.265</td>
<td>.000</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>7148.361</td>
<td>7</td>
<td>1021.959</td>
<td>6.545</td>
<td>.068</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>4056.560</td>
<td>26</td>
<td>156.022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Collection Performance* Inflation Rate Between Groups (Combined)</td>
<td></td>
<td>10399.399</td>
<td>4</td>
<td>2599.850</td>
<td>16.988</td>
<td>.000</td>
</tr>
<tr>
<td>Linearity</td>
<td></td>
<td>5911.739</td>
<td>1</td>
<td>5911.739</td>
<td>38.628</td>
<td>.000</td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td></td>
<td>4487.660</td>
<td>3</td>
<td>1495.887</td>
<td>9.774</td>
<td>.074</td>
</tr>
<tr>
<td>Within Groups</td>
<td></td>
<td>4591.328</td>
<td>30</td>
<td>153.044</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author (2019)
The test was conducted to determine if the relationship between independent and dependent variables was linear. This is crucial because multiple regression can only accurately estimate the relationship between independent and dependent variables if the relationships are linear in nature. As indicated in Table 4.5, the test for linearity had a significance values smaller than 0.01, indicating that there was a linear relationship between the credit risk management policies (credit limit, credit approval, credit scoring, credit documentation, credit review and Debt collection performance. There was also a significant linear relationship between inflation rate and Debt collection performance with p-value less than 0.01. The tables further indicates that there was insignificant non-linear relationship between the predictor variables and the dependent variable with p-value greater than 0.05. Therefore, the regression model was able to accurately predict the relationship between the independent and dependent variables.

4.4.4 Heteroskedasticity Test Results

Table 4.6 Test of Heteroskedasticity

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>Degrees of Freedom</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>66.897</td>
<td>34</td>
<td>0.716</td>
</tr>
</tbody>
</table>

Source: Author (2019)

The study tested for the level of heteroskedasticity using the Likelihood Ratio (LR) as shown in table 4.6. The null hypothesis of this test was that the error variance was homoskedastic. The likelihood-ratio test produced a chi-square value of 66.897 with a p-value of 0.716. The chi-square value was statistically insignificant at 5 percent level and hence we fail to reject the null hypothesis of constant variance to signify the existence of homoskedasticity in the study data as recommended by Poi and Wiggins (2001).
4.5 Regression Results

In performing the regression analysis between the dependent variable (Debt collection performance) and independent variables (credit limit, credit approval, credit scoring, credit documentation, credit review), the coefficient of determination, analysis of variance (ANOVA) and regression coefficients were determined. The coefficient of determination explains the extent to which changes in the dependent variable can be explained by change in independent variables. This is shown in Table 4.7 below.

Table 4.7: Regression Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.797&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.635</td>
<td>.572</td>
<td>13.739</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Credit Review, Credit Approval, Credit Documentation, Credit Limit, Credit Scoring Policies

The correlation coefficient was 0.797 which shows that there is a strong relationship between credit limit, credit approval, credit scoring, credit documentation, credit review policies and DSO. The value obtained for coefficient of determination was 0.635 and the value of adjusted R<sup>2</sup> was 0.572. This means that 63.5% of DSO (debt collection performance) is determined by credit risk management policies. The 36.5% is contributed by other factors which are not included in this model.

Table 4.8: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>9516.552</td>
<td>5</td>
<td>1903.310</td>
<td>10.083</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>5474.175</td>
<td>29</td>
<td>188.765</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14990.727</td>
<td>34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Days Sales Outstanding (DSO)

b. Predictors: (Constant), Credit Review, Credit Approval, Credit Documentation, Credit Limit, Credit Scoring Policies

Source: Author (2019)
The ANOVA model was employed in testing the significant of the model further. The outcome analysis revealed that the P-value was .000 which is less than 0.05 which implies that the model was significant. It means that credit management policies significantly affects debt collection performance as measured by DSO.

Table 4.9: Regression Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>102.417</td>
<td>24.889</td>
<td>4.115</td>
</tr>
<tr>
<td></td>
<td>Credit Limit Policy</td>
<td>.510</td>
<td>1.572</td>
<td>.103</td>
</tr>
<tr>
<td></td>
<td>Credit Approval Policy</td>
<td>2.774</td>
<td>.930</td>
<td>.375</td>
</tr>
<tr>
<td></td>
<td>Credit Scoring Policy</td>
<td>11.767</td>
<td>2.654</td>
<td>1.619</td>
</tr>
<tr>
<td></td>
<td>Credit Documentation Policy</td>
<td>-8.916</td>
<td>1.913</td>
<td>-.842</td>
</tr>
<tr>
<td></td>
<td>Credit Review Policy</td>
<td>-7.502</td>
<td>2.362</td>
<td>-1.422</td>
</tr>
</tbody>
</table>

Source: Author (2019)

Based on the regression model above, credit approval, credit scoring, credit documentation and credit review policies had p-values of 0.006, 0.000, 0.000 and 0.004 respectively and were all statistically significant at 0.05 level of significance. This means that credit approval, credit scoring, credit documentation and credit review policies implementation had a significant impact on performance of debt collection in registered private security companies. However, credit limit policy had a p-value of 0.748 implying that its effects on debt collection performance was statistically insignificant at 0.05 level of significance.

4.5.1 Credit Approval Policy and Debt Collection Performance

The first objective was to identify the effect of credit approval policy on debt collection performance by registered security companies in Kenya. The regression results shown in table 4.9 indicate that credit approval policy is significant at 5 percent level. The coefficient of credit
approval is 2.774 and significant with a p-value of 0.006 which is less than 0.05 which is the level of significance for this study. The results indicate that there was a significant positive relationship between credit approval policy and debt collection performance. However, a positive relationship between credit approval policy and debt collection performance as measured by DSO, leads to increase in number of days it takes to collect debt and low debt collection performance. These results are consistent with those done by Nyasaka (2017) who found a positive relationship between credit approval and loan performance. However, his measurement of loan performance was direct to the level of non-performing loans. In this case, debt collection performance is measured by the days sales outstanding which decreases as debt collection performance improves.

The violation of credit approval guidelines in the industry due to stiff competition posed by the influx of un-registered private security companies. Not taking cognisance of credit approval policy in making credit approval decisions, could have compromised credit approval policy, making it work against the initial objective of improving debt collection performance. Therefore, the null hypothesis which states that credit approval policy does not have significant effect on debt collection performance by registered security companies in Kenya is rejected.

4.5.2 Credit Scoring Policy and Debt Collection Performance

The second objective was to determine the effect of credit scoring policy on debt collection performance by registered security companies in Kenya. The regression results shown in table 4.9 indicate that credit scoring policy is significant at 5 percent level. The coefficient of credit scoring is 11.767 and significant with a p-value of 0.000 which is less than 0.05. The results indicate that there was a significant positive relationship between credit scoring policy and debt
collection performance. However, a positive relationship between credit scoring policy and debt collection performance as measured by DSO, leads to increase in number of days it takes to collect debt and low debt collection performance. These results are consistent with those done by Mukami (2017) who found a positive relationship between risk identification through credit scoring and loan default rates. Therefore, the null hypothesis which states that credit scoring policy does not have significant effect on debt collection performance by registered security companies in Kenya is rejected.

4.5.3 Credit Limit Policy and Debt Collection Performance

The third objective was to find out the effect of credit limit policy on debt collection performance by registered security companies in Kenya. The regression results shown in table 4.9 indicate that credit limit policy is insignificant at 5 percent level. The coefficient of credit limit policy is 0.510 and insignificant with a p-value of 0.748 which is greater than 0.05. The results indicate that there was a significant positive relationship between credit limit policy and debt collection performance. However, a positive relationship between credit limit policy and debt collection performance as measured by DSO, leads to increase in number of days it takes to collect debt and low debt collection performance.

These results are inconsistent with those done by So and Thomas (2007) who concluded that credit limits help the creditor in freeing up valuable time for other credit risk management tasks, speeding up the sale process, reducing risk and improving collection activity (So & Thomas, 2007). However, Turan, Ugur, and Barlas (2013) posit that credit limits are also known to lead to unsatisfied customers and therefore failure to communicating credit limits to customers may lead to low debt
collection performance as a result of disputes. This could be the case being supported by these results where non-communication of credit limits to customers in registered security companies leads to credit default. Therefore, we fail to reject the null hypothesis which states that credit limit policy does not have significant effect on debt collection performance by registered security companies in Kenya based on the above p-value of 0.748.

4.5.4 Credit Documentation Policy and Debt Collection Performance

The fourth objective was to identify the effect of credit documentation policy on debt collection performance by registered security companies in Kenya. The regression results shown in table 4.9 indicate that credit documentation policy is significant at 5 percent level. The coefficient of credit documentation policy is -8.916 and significant with a p-value of 0.000 which is less than 0.05. The results indicate that there was a significant negative relationship between credit documentation policy and debt collection performance. However, a negative relationship between credit approval policy and debt collection performance as measured by DSO, leads to decrease in number of days it takes to collect debt and high debt collection performance. These results support those by Ziebell (2015) who concluded that Creditors can put themselves at a competitive advantage by properly documenting their credit extensions. He further states that with complete documentation the creditor can make collecting debts in cases of defaults much easier, faster, and less costly. Therefore, the null hypothesis which states that credit documentation policy does not have significant effect on debt collection performance by registered security companies in Kenya is rejected.
4.5.5 Credit Review Policy and Debt Collection Performance

The fifth objective was to find out the effect of credit review policy on debt collection performance by registered security companies in Kenya. The regression results shown in table 4.9 indicate that credit review policy is significant at 5 percent level. The coefficient of credit review policy is -7.502 and significant with a p-value of 0.004 which is less than 0.05. The results indicate that there was a significant negative relationship between credit review policy and debt collection performance. However, a negative relationship between credit review policy and debt collection performance as measured by DSO, leads to decrease in number of days it takes to collect debt and high debt collection performance. This further, indicates that credit review policy significantly improves debt collection performance of registered security companies in Kenya.

These results support those by Siqani & Sekiraca, (2016) who concluded that by having a sound and objective credit review program in place, an institution is in a far better position to proactively manage their respective portfolios in regards to credit risk and overall direction. Therefore, the null hypothesis which states that credit review policy does not significantly affect debt collection performance in registered security companies in Kenya is rejected.

4.6 Test of mediating effects (Inflation rate)

In this study, the researcher sought to determine the mediating effect of inflation rate on the relationship between the credit risk management policies and debt collection performance. By specifying a model with inflation as the dependent variable, the study tested whether credit limit, credit approval, credit scoring, credit documentation and credit review policies have statistical significant relationships with inflation rate. The regression results are presented in table 4.10.
Table 4.10 Regression of mediator (Inflation rate) and independent variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>5.268</td>
</tr>
<tr>
<td></td>
<td>Credit Limit Policy</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td>Credit Approval Policy</td>
<td>.093</td>
</tr>
<tr>
<td></td>
<td>Credit Scoring Policy</td>
<td>.077</td>
</tr>
<tr>
<td></td>
<td>Credit Documentation Policy</td>
<td>-.130</td>
</tr>
<tr>
<td></td>
<td>Credit Review Policy</td>
<td>.004</td>
</tr>
</tbody>
</table>

Source: Author (2019)

The results presented in Table 4.10 reveal that the relationship between credit limit and inflation rate is not statistically significant at 5 percent level. The coefficient of credit limit is 0.040 and the p-value of 0.393 is greater than 0.05 critical value. The results presented in Table 4.10 also reveal that credit approval has a positive and statistically significant relationship with inflation rate at 1 percent level. The p-value is 0.002 which is less than 0.05. The results presented in Table 4.9 further indicate that credit scoring has positive but insignificant relationship with inflation at 5 percent level. The p-value of 0.332 is greater than 0.05. The results additionally indicate that credit documentation has a negative and significant relationship with inflation rate at 5 percent level. The p-values of 0.027 is less than 0.05. The results for credit review has a positive relationship but insignificant with inflation at 5 percent level. The p-value of 0.953 is greater than 0.05.

The researcher supplemented this result by conducting tests to determine whether inflation rate predicts debt collection performance and whether credit limit, credit approval, credit scoring, credit documentation and credit review policies significantly determine debt collection performance. The results for testing for this relationship are presented in table 4.11 below.
Table 4.11 Regression of mediator with independent variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>66.063</td>
<td>41.433</td>
<td>1.594</td>
<td>.122</td>
</tr>
<tr>
<td>Credit Limit Policy</td>
<td>.234</td>
<td>1.587</td>
<td>.047</td>
<td>.147</td>
</tr>
<tr>
<td>Credit Approval Policy</td>
<td>2.130</td>
<td>1.098</td>
<td>.288</td>
<td>1.940</td>
</tr>
<tr>
<td>Credit Scoring Policy</td>
<td>11.236</td>
<td>2.689</td>
<td>1.546</td>
<td>4.178</td>
</tr>
<tr>
<td>Credit Documentation Policy</td>
<td>-8.016</td>
<td>2.076</td>
<td>-.757</td>
<td>-3.862</td>
</tr>
<tr>
<td>Credit Review Policy</td>
<td>-7.531</td>
<td>2.354</td>
<td>-1.428</td>
<td>-3.199</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>6.900</td>
<td>6.299</td>
<td>.230</td>
<td>1.095</td>
</tr>
</tbody>
</table>

Source: Author (2019)

The results in table 4.11 indicate that inflation rate had a statistically insignificant influence on debt collection performance as measured by DSO.

Table 4.12 Sobel – Goodman Mediation Test

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Statistics</th>
<th>Std. Error</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sobel</td>
<td>1.08297259</td>
<td>33.56428424</td>
<td>0.27882059</td>
</tr>
<tr>
<td>Aroian</td>
<td>1.07292336</td>
<td>33.87865452</td>
<td>0.2833055</td>
</tr>
<tr>
<td>Goodman</td>
<td>1.09330959</td>
<td>33.24694153</td>
<td>0.27425789</td>
</tr>
</tbody>
</table>

Source: Author (2019)

The sixth objective was to determine the mediating effect of inflation on the relationship between credit risk management policies and debt collection performance of registered security companies in Kenya. The study used the Sobel-Goodman mediation test to further ascertain whether there is any mediation effect. The results of these tests are presented in table 4.12 which presents the Sobel-Goodman mediation test where the standard errors were calculated based on Bootstrap with case resampling for each variable as proposed by Shrout and Bolger (2002). As
alluded to before, the study tested whether inflation rate influences debt collection performance as measured by DSO directly or indirectly through either credit limit, credit approval, credit scoring, credit documentation, credit review policies.

The test statistic for the Sobel test is 1.08297259, with an associated p-value of 0.28. The fact that the observed p-value does not fall below the established alpha level of .05 indicates that the association between the independent variables and the dependent variable is not influenced significantly by the inclusion of the mediator (inflation rate) in the model. Based on the results that account for bootstrapped standard errors, the Sobel-Goodman mediation test suggests that inflation rate does not influence credit limit, credit approval, credit scoring, credit documentation and credit review. Therefore, the study failed to reject the hypothesis that inflation does not mediate the relationship between credit risk management policies and debt collection performance by registered security companies in Kenya.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the study, it also presents the conclusions drawn, the policy implications and recommendations made and suggested areas for further research.

5.2 Summary of the study

The failure of credit risk management in the registered security industry where debtors accounts for more than 60% of total assets has resulted in increased days sales outstanding (DSO). This has led to reduced recycling of funds which has, in turn, affected both operations and profitability of the security companies (KSIA, 2016). Baveld (2012), asserts that trade credit promotes sales as it allows customers to examine product quality before paying for it. A concept that is largely applicable among registered security companies. However, striking a balance between sales growth and debt collection performance has been faced with challenges.

The study was carried out to assess the effect of credit risk management policies on debt collection. Descriptive research design was used to carry out the study. A census of 38 registered security companies by KSIA, was taken. Data of the companies covering 2013 to 2017 was used in the analysis. The general objective of the study was to assess the effect of credit risk management policies on debt collection performance by registered security companies in Kenya. The findings of the study were therefore based on the specific objectives of the study and the hypotheses tested.
The first objective of the study was to identify the effect of credit approval policy on debt collection performance by registered security companies in Kenya. Using regression technique, the study established that there was a significant positive relationship between credit approval policy and debt collection performance. It was apparent that credit approval policy, decreases debt collection performance of the registered security companies.

The second objective of the study was to determine the effect of credit scoring policy on debt collection performance by registered security companies in Kenya. Using regression technique, the study established that there was a significant positive relationship between credit scoring policy and debt collection performance. The results showed that credit scoring policy, decreases debt collection performance of the registered security companies.

The third objective of the study was to establish the effect of credit limits policy on debt collection performance by registered security companies in Kenya. Using regression technique, the study established that there was an insignificant positive relationship credit limit policy and debt collection performance. It was established that credit limit policy do not significantly affect debt collection performance of the registered security companies.

The fourth objective of the study was to explore the effect of credit documentation policy on debt collection performance by registered security companies in Kenya. Using regression technique, the study established that there was a significant negative relationship between credit documentation policy and debt collection performance. It was established that credit documentation increases debt collection performance of the registered security companies.
The fifth objective of the study was to find out the effect of credit review policy on debt collection performance by registered security companies in Kenya. Using regression technique, the study established that there was a significant negative relationship between credit review policy and debt collection performance. It was established that credit review policy implementation increases the debt collection performance of the registered security companies.

The sixth objective of the study was to determine the mediating effect of inflation on the relationship between credit risk management policies (credit approval, credit scoring, credit limit, credit documentation and credit review policies) and debt collection performance of registered security companies in Kenya. Using the Sobel-Goodman test established that inflation did not mediate the relationship between credit risk management policies and debt collection performance of registered security companies in Kenya. The results further established that inflation has no significant effect on debt collection performance of registered security companies in Kenya. During high inflation rates one expects increased demand for goods and services on credit as the prices goes up. However, the study findings contradicts motive theory of credit which suggests that when credit is tight, financially stable firms will increasingly offer more trade credit to maintain their relations with smaller customers, who are “rationed” from direct credit market participation.

5.3 Conclusions

Based on the findings, several conclusions were made. On objective one it was concluded that credit approval policy negatively affects debt collection performance. On objective two, the study confirmed that credit scoring policy improves debt collection performance. However, on
objective three, the study concluded that credit limit policy does not affect debt collection performance. On objective three, the study concluded that credit documentation improves debt collection performance. The study also arrived at conclusion that credit review policy enhances debt collection performance. It can therefore, be hypothesize that there is a relationship between credit risk management policies (credit approval policy, credit scoring policy, credit documentation policy and credit review policy) and debt collection performance.

The study finally concluded that inflation rate do not mediate the relationship between credit risk management policies and debt collection performance.

5.4 Recommendation for practice and policy

The results of this study have significant policy implications at the firm and industry levels. Firstly, this study found out that debt collection performance declines as a result of credit approval and scoring policies. The study therefore recommends that credit managers should review their credit approval and scoring policies to enhance debt collection performance. This study further recommends that the government should regulate the financial operations of registered security companies through various monetary and fiscal policies in order to improve debt collection performance of the industry.

Secondly, this study found out that debt collection performance increases as credit documentation and review policies implementation level increases. The study therefore recommends that credit managers in this sector should put more focus on improving credit transactions documentation as well as debt review programs. This study further recommends that
the government through recently established private security regulatory authority (PSRA) should come up with minimum documentation requirement for security services acquisition.

Thirdly, this study found out that credit limit policy does not have impact on debt collection performance. This means the industry players do not consistently implement credit limit policy. The study therefore recommends that credit managers in this sector should put more focus on improving implementation of credit limit policies to bring the ever increasing overdue debt in their respective companies within acceptable levels. This study further recommends that the government through recently established private security regulatory authority (PSRA) should come up with minimum liquidity ratios to ensure uniform credit risk management practice across the industry.

Finally, the findings that inflation does not mediate the relationship between credit risk management policies and debt collection performance. The study consequently recommends that managers of registered security companies should make credit management practices in relation to credit risk management policies. Specifically credit risk management practices should be made in relation to credit approval, credit scoring, credit documentation and credit review policies.

**5.5 Limitations of the study**

The study encountered two main limitations. First, the private security industry has only a small number of registered security companies making the size of the study population rather small. To ensure meaningful statistical analysis, secondary data were used to increase the quantity and
quality of the data available for analysis. Secondly, being the first study on credit risk management policies and debt collection performance in the security industry getting information was equally a challenge. However, the effects were mitigated by obtaining appointments with the credit managers to explain the purpose of data collection in prior.

5.6 Areas for Further Research

In the course of literature review and analysis, internal factors of credit operations such as invoice delivery, quality of service, agreement to service required and external factor of customer ability to pay were encountered. These factors could also be playing part in debt collection performance. The study therefore recommends that further research be conducted in the following areas:

1. Relationship between internal factors of credit operations and debt collection.

2. The effect of customer ability to pay on debt collection performance.

3. A similar study to be done in the entire private security industry in Kenya using a different methodology.
REFERENCES


Chakraborty, A. (2011). The importance of being known: Relationship banking and credit limits. Accounting and Finance Faculty Publication Series. 4.


Cross, R., & Strischek, D. (2006). Reengineering the credit approval process: Reengineering can be used to improve productivity and reduce inefficiencies. Journal of Lending and Credit Risk Management, 78, 19-34.


Tang, Y. (2014). Trade credit and profitability in small and medium enterprises (Bachelor's thesis).


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APPENDICES

Appendix I: Introduction Letter

Chief Executive Office
P.O Box .................
Nairobi.

Dear Sir/Madam,

RE: ACADEMIC RESEARCH PROJECT

I am a Master of Science student at the Kenyatta University. I wish to conduct a research entitled “Credit Risk Management Policies and Debt Collection Performance by Registered Security Companies in Kenya”. A questionnaire has been designed and will be used to gather relevant information to address the research objectives of the study. The purpose of writing to you is to request for permission to collect information on this important subject from randomly selected members of staff.

Please note that the study will be conducted as an academic research and the information provided will be treated in strict confidence. Strict ethical principles will be observed to ensure confidentiality and the study outcomes and reports will not include reference to any individuals.

Your acceptance will be highly appreciated.

Yours Sincerely

Ernest Otieno Opiyo
Appendix II: Questionnaire

This questionnaire is aimed at collecting data on “Credit Risk Management Policies and Debt Collection Performance by Registered Security Companies in Kenya” for a Master of Science thesis. The data will be used for academic purpose only, and will be treated with strict confidentiality. You are requested to participate in the study by providing answers to the items in the sections as indicated.

INSTRUCTIONS

Kindly fill your response in the space provided or tick (√) as appropriate. All the information provided here will be considered private and confidential for the purpose of this research ONLY.

SECTION A: PERSONAL INFORMATION

1. Name of the security company (Optional)…………………………………………

2. Number of years the security company has been operating?
   a. Less than 5years [ ] b. 5 to 10years [ ] c. Over 10years [ ]

3. Type of security services offered by the company?

4. Current designation in the security company?
   a. Credit Manager [ ]
   b. Financial Controller [ ]
   c. Finance Manager [ ]
   d. Finance Director [ ]

5. Years of working in the security company?
   a. Less than 5years [ ] b. 5 to 10years [ ] c. Over 10years [ ]
6. Highest academic qualification
   a. College level  [   ]
   b. Undergraduate level  [   ]
   c. Masters level  [   ]
   d. PhD level  [   ]

SECTION B: CREDIT LIMIT POLICY

7. Does the company possess a prescribed policy on credit limit?
   a. Yes  [   ]
   b. No  [   ]

8. If yes in 7, to what extent do the following facets of credit limit policy apply to your security company?

<table>
<thead>
<tr>
<th>Facets of Credit Limit</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>Great extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit Authorization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting &amp; Monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Which of the following credit period do you offer your credit customers?
   a. 30 Days  [   ]
   b. 60 Days  [   ]
   c. 90 Days  [   ]
   d. Over 90 Days  [   ]
10. What is your level of agreement with the following statements that relate to credit limit policy? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The credit limit policy guidelines are clear and understood by all employees in the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The policy guidelines for credit limit are uniformly applied to all credit lines in the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is elaborate methods of setting and monitoring customers credit limits in the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company informs customers on procedures for setting up credit limits on application</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Please briefly comment on the implementation of credit limit policy at the security company
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

SECTION C: CREDIT APPROVAL POLICY

12. Does the company possess a prescribed policy on credit approval?
   a. Yes [ ]
   b. No [ ]

13. If yes in 12, to what extent do the following facets of credit approval policy apply to your security company?

<table>
<thead>
<tr>
<th>Facets of Credit Approval</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>Great extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria &amp; Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authority Matrix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. What is your level of agreement with the following statements that relate to credit approval policy? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company complies with the set guidelines and procedures contained in the credit approval policy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The credit approval process efficiently mitigate exposure to credit risk in the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company always follow credit approval matrix for each credit application</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company prudent credit practice requires that persons empowered with the credit approval authority should not also have the customer relationship responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Please briefly comment on the implementation of credit approval policy at the security company

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

SECTION D: CREDIT SCORING POLICY

16. Does the company have a formalized credit scoring policy?
   a. Yes [ ]
   b. No [ ]

17. If yes in 16, to what extent do the following facets of credit scoring policy apply to your security company?

<table>
<thead>
<tr>
<th>Facets of Credit Scoring</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>Great extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems &amp; Technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segmentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
18. What is your level of agreement with the following statements that relate to credit scoring policy? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company credit scoring techniques have been efficient in controlling credit risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company credit scoring policy has been done as per service line segment based on different credit risk parameters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company credit scoring processes are automated and are errors proof</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company credit scoring system has never been manipulated in favour of certain clients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. Please briefly comment on the implementation of credit scoring policy at the security company.

________________________________________________________________________

________________________________________________________________________

SECTION E: CREDIT DOCUMENTATION POLICY

20. Does the company have policy based systems and procedures for maintaining documented credit files?

   a. Yes [ ]
   b. No [ ]

21. If yes in 20, to what extent do the following facets of credit documentation policy apply to your security company?

<table>
<thead>
<tr>
<th>Facets of Credit Documentation</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>Great extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Files</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal Advisior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of Retrieval</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
22. Please briefly comment on the implementation of credit documentation policy at the security company.

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

23. What is your level of agreement with the following statements that relate to credit documentation policy? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company credit documents are always vetted by legal advisor as part of documentation procedure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company credit documents are regularly reviewed by internal auditors in order to ascertain their enforceability from time to time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit files are always kept in well secured environment with no access to unauthorised personnel</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>The company has incurred credit losses due to incomplete credit documentation in some instances in the past</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

SECTION F: CREDIT REVIEW

24. Does the company have a written credit review policy?
   a. Yes [ ] b. No [ ]

25. If yes in 24, to what extent do the following facets of credit review policy apply to your security company?

<table>
<thead>
<tr>
<th>Facets of Credit Review</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>Great extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope &amp; Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review of Findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
26. What is your level of agreement with the following statements that relate to credit review policy? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debtors rating assigned at the time credit was initially granted are periodically reviewed by the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company credit review personnel are independent from management interference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit review are carried out in all credit lines and frequently to identify any emerging portfolio exposure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The management normally review findings from credit review and follow up measures for timely decision making for risk mitigation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

27. Please briefly comment on the implementation of credit review policy at the security company
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

SECTION G: DEBT COLLECTION PERFORMANCE IN REGISTERED SECURITY COMPANIES IN KENYA

28. Kindly indicate the company Days Sales Outstanding (DSO) for the last five years.

<table>
<thead>
<tr>
<th>Days Sales Outstanding (DSO)</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
</table>

29. Indicate the company’s annual bad debt as a percentage of outstanding debtors for the last five years.

<table>
<thead>
<tr>
<th>Annual bad debt as a percentage of outstanding debtors</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
</table>

30. Indicate the total commissions as a percentage of your average monthly revenues (if any) paid to external debt collectors in the past five years.
<table>
<thead>
<tr>
<th>Total commissions as a percentage of your average monthly revenues</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

31. On average, what percentage of your credit sales do you collect in cash, annually?
   a. Less than 50% [ ]
   b. Between 50%-70% [ ]
   c. Between 70% - 90% [ ]
   d. 90% and above [ ]

32. What percentage of your total sales is credit sales on annual average?
   a. Less than 50% [ ]
   b. Between 50%-70% [ ]
   c. Between 70% - 90% [ ]
   d. 90% and above [ ]
### Appendix III: List of Registered Security Companies and Inflation Rates

<table>
<thead>
<tr>
<th>S/N</th>
<th>Security Company</th>
<th>Average Inflation Since Inception (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ismax Security Limited – Zanziba road south B 0733 155 512</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>AKKAD Systems - Masinde Muliro University building-Muindi mbingu-0722520906</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Collindale Security - Kampala Road, Industrial Area 0714 334 400</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Bob Morgan Services Limited - Polo Cottage Jamhuri Road off Ngong Road 722 806 076</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Ultimate Security Ltd - Along Ngong Road, Next to St. Austin’s DT Dobie, Opposite the Telkom Kenya Grounds 722725310</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>G4S Security Services Kenya Limited</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Instarect - Langata North Road, near Mamba Villag 721 975 179</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>KK Security – Wstlands School Ln Off Karuna Close 730 622 000</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Magnum Allied Systems Ltd - No 29 South B, Zanzibar Rd 728 393361</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>Pinkerton's - Jamuhuri Crescent , NO. J4 Off Kabarnet Road, Off Ngong Road 0713-892900</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>Riley Services Limited - Riley House 37 Masaba Road, Lower Hill 722 716 581</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>Securex Agencies Kenya Ltd - 9RIVERSIDE RIVERSIDE DRIVE 711 069 999</td>
<td>6</td>
</tr>
<tr>
<td>13</td>
<td>Security Group Of Companies Ltd - Mombasa Road opposite St.James hospital 020 - 531276</td>
<td>7</td>
</tr>
<tr>
<td>14</td>
<td>Watchdog Alert - 020883294</td>
<td>8</td>
</tr>
<tr>
<td>15</td>
<td>Total Security Surveillance Limited - Muchai Drive, off Ngong Road 722 203 303</td>
<td>7</td>
</tr>
<tr>
<td>16</td>
<td>Radar Security Limited - Radar House, Argwings</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Fidelity Security Services - Lenana Road 020-2720304</td>
<td>6</td>
</tr>
<tr>
<td>18</td>
<td>Corporate Security - General Mathenge Drive, Ring Road, Parklands 0786 280786</td>
<td>7</td>
</tr>
<tr>
<td>19</td>
<td>Cobra Security - Cobra Security House, Ngong Road 0703 100991</td>
<td>8</td>
</tr>
<tr>
<td>20</td>
<td>Crest Security Services 723 920 528, 0773 905 995</td>
<td>8</td>
</tr>
<tr>
<td>21</td>
<td>Brinks Security Services - Brinks House, Othaya Rd, Lavington 020386241</td>
<td>6</td>
</tr>
<tr>
<td>22</td>
<td>Cybertrace - K Security Nairobi Office, School Lane, Westlands 725 311 033</td>
<td>7</td>
</tr>
<tr>
<td>23</td>
<td>Texas Alarms 722 866 339, 720347766</td>
<td>7</td>
</tr>
<tr>
<td>24</td>
<td>Northwood Services - 0725 558444,</td>
<td>6</td>
</tr>
<tr>
<td>25</td>
<td>Nine One One Group Limited - 2nd Floor Clifton Park, Mombasa Rd 0777222911</td>
<td>8</td>
</tr>
<tr>
<td>26</td>
<td>Absolute Security Ltd - Golf Course, Mbaruk Road 0726-599699</td>
<td>7</td>
</tr>
<tr>
<td>27</td>
<td>Infama Ltd 0709 852 000, 1st Floor, Heritan House, Old Mombasa road</td>
<td>6</td>
</tr>
<tr>
<td>28</td>
<td>Bedrock Security Services Ltd - Tom Mboya Drive, Milimani, Kisumu, 0723 727101</td>
<td>7</td>
</tr>
<tr>
<td>29</td>
<td>Saladin Kenya Ltd - Marula Lane The Manor House, Marula Manor, Nairobi 715 050 669</td>
<td>6</td>
</tr>
<tr>
<td>30</td>
<td>Envag Associates - Karen Plains Arcade, 3rd Flr, Karen Rd 0202392316</td>
<td>6</td>
</tr>
<tr>
<td>31</td>
<td>Babs Security Group - Babs Centre Waiyaki Way Next to CCK 0722552304</td>
<td>7</td>
</tr>
<tr>
<td>32</td>
<td>Twenty Four Secure Security Company - Jamhuri Park, 24 House, Mnazi Avenue 700 666777</td>
<td>8</td>
</tr>
<tr>
<td>33</td>
<td>P. G. Security Ltd - P. G. Building , Mpesi Lane, Westlands 0724 442777</td>
<td>7</td>
</tr>
<tr>
<td>34</td>
<td>FSI Worldwide - CB2 Blixen Court along Lower</td>
<td>6</td>
</tr>
<tr>
<td>No.</td>
<td>Company</td>
<td>Address</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>35</td>
<td>Tandu Security</td>
<td>Ole Ndume Road, Kilimani, 720 347766</td>
</tr>
<tr>
<td>36</td>
<td>On the Mark Security</td>
<td>No 3 (1018) Masaba Road, Next to NIC House, 720 112 342</td>
</tr>
<tr>
<td>37</td>
<td>Homeland Security</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Apache Group</td>
<td>RM #55, 2nd Floor, Duplex Apartments, Lower Hill Road, Upper Hill, <a href="mailto:info@apachegroupltd.co.ke">info@apachegroupltd.co.ke</a></td>
</tr>
</tbody>
</table>

(KSIA&KNBS, 2017)
Internal Memo

FROM: Dean, Graduate School

TO: Mr. Ernest Otieno Opiyo
C/o Department of Accounting & Finance

DATE: 20th September, 2018

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting on 19th September, 2018, approved your Research Proposal for the M.Sc. Degree entitled, “Credit Risk Management Policies and Debt Collection Performance by Registered Security Companies in Kenya.”

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

HARRIET ISABORE
FOR: DEAN, GRADUATE SCHOOL

CC: Chairman, Accounting & Finance Department

Supervisors:

1. Dr. Lucy Wamugo
   C/o Department of Accounting & Finance
   Kenyatta University

2. Dr. Fredrick Ndede
   C/o Department of Accounting & Finance
   Kenyatta University
Appendix V: Research authorization from National Council for Science, Technology and Innovation

Ref. No. NACOSTI/P/18/89752/25934

Date: 17th October, 2018

Ernest Otieno Opiyo
Kenyatta University
P.O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Credit risk management policies and debt collection performance by registered security companies in Kenya” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for the period ending 16th October, 2019.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.
Appendix VI: Research permit from National Council for Science, Technology and Innovation