

**PAYMENT DELAYS AND FINANCIAL PERFORMANCE OF
CONSTRUCTION FIRMS IN VIHIGA COUNTY, KENYA**

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DECLARATION

I declare that this research project is my original work and has neither been published or submitted elsewhere for the award of a university degree, therefore it does not contain any written material or content published except for author references which have been duly acknowledged.

Signature.....

Date.....

BRENDA AJEMA KALEGERA

D61/6087/2017

This Research Project has been proffered for examination with my consent as the university Supervisor.

Signature.....

Date.....

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DEDICATION

I dedicate this thesis to my esteemed family, more specifically my daughter Frankie Scarlet Esperanza Denise and my son Franz Esperanz Easton Zinque. May this document stand as a symbol of my academic achievement made possible through tremendous personal support.

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ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variances
BQ	Bill of Quantities
CA	Current Assets
CL	Current Liabilities
CR	Current Ratio
GLM	General Linear Model
IMF	International Monetary Fund
KRA	Kenya Revenue Authority
KSHS	Kenya Shillings
MANOVA	Multiple Analysis of Variances
NP	Net Profit Margin
ROA	Return on Assets
SC	Supply Chain
SD	Standard Deviation
SME's	Small and Medium Enterprises
TOBSE	Test of Between- Subject Effects

ABSTRACT

The purpose of this study was to establish whether payment delays affected financial performance of construction firms in Vihiga County. The study employed cross sectional research design. Stratified simple random sampling and census survey designs were employed with a view of obtaining a sample size of 32 construction firms. The study relied on secondary data from financial reports. Data collected was screened then coded and finally entered into Statistical Package for Social Sciences, SPSS Version 25 and analyzed using both descriptive and inferential statistics using multivariate analysis. The findings were presented in tabular format, whereas explanation was in prose. The Findings were that there was no statistical significant effect between delayed payments and financial performance, probably other factors such as management style and strategies could have affected the two variables. The conclusion is that payment delays do not affect financial performance. Other recommendations include academicians and researchers to formulate a theory that well describes why there exist no effect between payment delays and financial performance. Finance managers of construction firms should institute strategies to mitigate payment delays as they can simultaneously affect other critical business operations apart from financial performance.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Payment Delays result into deterioration of any firms' financial performance. Efficient and timely payments to organizations is a significant factor leading to enhanced financial performance since the cash flow position of an organization determines its success or failure (Jiang, 2014;Hasmori, Ismail and Said 2012). Delayed payment can threaten the survival of any organization as it becomes difficult to budget without a clear cash flow projection, hence distorting all financial plans and expected revenue flow, suggesting that firms find it difficult to break even, eventually resulting into liquidation (Hamid, Zakaria, Badroldin, Raman and Mohandes, 2016). Prolonged payment delays create more cash flow problems that results into delays in completing projects (Abdul-Rahman, 2009).Cash flow is therefore the primary indicator of a business financial health (Nasser, 2013).Financial performance especially Small and Medium Enterprises (SME's) get adversely affected to the extent of reporting cash deficits due to late payments, making it difficult for them to cover for their expenses which creates a greater likelihood for further delayed payments in future leading to negative cash flow. Financial performance usually deteriorates due to payment delays, given the difficulties to access credit facilities, firms resort to cash reserves meant for non-operational purposes, distorting their future financial plans and investments further (Miller and Wongsaroj, 2017).Poor financial performance as a consequence of delayed payment results into bankruptcy and ultimately abandoned projects (Judi, Rashid and Alam, 2010).

This study is anchored on agency theory by Jensen and Meckling(1976) and Wreckers' theory of financial distress by Campbell, Hilscher and Szilagyi (2005).The

agency theory postulates how the project owner, as the principal, relates with the Contractor, as the agent being contracted in a specified contract, by delegating services to him, so as to construct infrastructural facilities on his behalf (Ceric, 2012; Eisenhardt, 1989). This theory seeks to address the conflict that might arise from the payment delays and how it might affect the contractor's financial position. On the other hand, Wreckers' theory of financial distress advances that, benefits that may arise out of financial distress to stakeholders do not necessarily attribute negative surplus returns of distressed firms, especially to firms which are less efficient. This theory attributes to the fact that payment delays under ideal conditions might result into financial distress, nevertheless, does not necessarily affect all stakeholders negatively, as some of them may benefit during times of bankruptcy proceedings (Kalckreuth, 2005).

The construction firms contribute to a wider spectrum of the country's economy by providing a multiplier effect to other industries through infrastructural activities and facilities. However, in as much as there are derived benefits from this construction firms, there are inherent problems which have been experienced by these firms such as payment delays. Although infrastructural spending has been increasing in the country over the years, inefficiencies as exhibited in project assessment, choosing, execution, procurement evaluation and matters pertaining to purchasing land in public investments restricted productivity gains from the development spending which in turn increased capital expenditures which were reportedly to have narrowed the fiscal space (Kenya Economic Update, 2017).

Most of the construction firms in Vihiga County have been forced out of business as others have become bankrupt, whereas others have had their properties auctioned by financiers, and worst of it, being that some firms have lost subsequent contracts from Vihiga clients due to non-performance, as a consequence of the delayed payment of their invoices (Auditor General's Special Report on Pending Bills of the County Government of Vihiga,2019).pending bills pose as the greatest economic policy challenge in Vihiga County, especially to suppliers and contractors, which is a potentially critical factor behind struggling SME's, many of which seek credit facilities to finance and expand their business operations (Vihiga County Fiscal Strategy Paper 2019).

1.1.1 Payment Delays

Payment delays according to Wuni, Boafu and Kumi (2017) refers to honouring payments at a later time other than the stipulated contract period. Diamond and Schiller (1993) defined payment delays as the difference between obligations due to suppliers and the government's ability to discharge these obligations in a timely fashion in a given financial year. Flynn and Pessoa (2014) defined payment delays from a public context as government liabilities accrued from goods, services and fixed assets supplied by suppliers. Anderson and Tripathi (2014) defined payment delays as original overdue payment together with any accrued interest or penalties. Hamid *et al* (2016) defined payment delays as late payment which occurs when a firm that has been receiving services or products fails to meet their obligations to pay their suppliers and creditors within the concurred contract terms. Whereas Checherita, Klemm and Viefers (2015) suggested that an arrear usually occurs once a payment that could have been made lapses past the month in which it would refer to. Gitman

(2009) defined accounts payables as a representation of the rate at which firms pay their suppliers. Basing on various scholars approaches, this study will interchangeably use late payments, pending bills, accounts payables and trade creditors to imply payment delays or arrears, where payment delays refers to failure by the client to pay providers of services, as per the legal contractual terms, as and when their obligations fall due, with penalties accrued from arrears, if any, in a timely fashion (Wuni *et al* 2017; Checherita *et al* 2015).

Payment delays according to Checherita, *et al* (2015) was indicated by an acceptable contractual payment period, as explained by the number of days the public contracts had delayed with respect to accounts payables overdue more than 90 days. Accounts payables can be viewed as a way of financing, however the longer time they take to be settled as per their due date, they become accrued liabilities which fall into arrears. Flynn and Pessoa (2014) opined that payments delays could arise out of a particular legal obligation or a specific contractual commitment to pay, whereas arrears are subsets of payables that remain unsettled past a clearly defined cut-off date for payment. Delays are experienced basing on the time frame, since various project contracts usually have different time schedules. Checherita *et al* (2015) measured payment delays using Bayesian Vector Auto Regression, and Moody's measure of distance to default, and further opined that offering services by firms with a view of receiving payment can be regarded as loan, which according to IMF guide 2006, recognizes loans to fall in arrears past 90 days, further to that, they opined difficulties in determining the exact value to be recognized as "acceptable" contractual payment period. Diamond and Schiller (1993) also supported the fact that obtaining accurate data on arrears was a difficult affair basing on the budgetary accounting system, as

arrears can accumulate for several years without being realized (Flynn and Pessoa, 2014). This study however adopted payment arrears as indicator for payment delays.

1.1.2 Financial Performance

Bhunia, Mukhuti, Sommath and Roy (2011) defined financial performance as the firm's total financial health over a specified period of time. Whereas Egbunike (2018) defined financial performance as the point where company's earnings surpasses expenses. Matar and Eneizan (2018) described financial performance as the ability with which a firm can work and successfully obtain a certain profit level which is measured for a particular duration through evaluation with respect to cash and fund flow of the firm, as well as the usage of funds, and how best they yield results with potency and efficiency, vital for optimal decision making by managers. However, different scholars such as Geffen (2012) measured financial performance, using accounting indicators such as Return on Assets (ROA), as a profitability measure. However, Matar and Eneizan (2018) measured financial performance using leverage, liquidity, Firm size, Revenue and Profits of the firms against ROA as the proxy for financial performance being the dependent variable. Poor financial performance according to Kwame (2011) results into financial difficulties, and in most cases end in bankruptcy (Baharin and Sentosa, 2013). Nevertheless, Carton and Hofer (2010) opined that there was no consensus concerning the best, or even subtle measures of financial performance as there is no existing study that has successfully proposed and empirically tested a generalizable multidimensional model of organizational financial performance constructs and their appropriate measures. Ratio analysis becomes important to assess a firm's performance. Profitability according to Schonbohm (2013) is measured using ratios such as gross profit margin, net profit margin (NP),

whereas liquidity is measured using current ratio (CR) and working capital whereas solvency/leverage is measured using debt asset ratio and interest coverage ratio. Matar and Eneizan (2018) measured financial performance using leverage, liquidity, Firm size, Revenue and Profits of the firms.

Assessing financial performance using ratios becomes subjective as it uses historical information (Schonbohm, 2013), implying that we might not get the current financial performance of the construction firms given the dynamics of that industry. This research adopted Matar and Eneizan (2018) financial performance measures as operationalized using profitability and liquidity ratios. Profitability was measured using NP whereas liquidity was measured using CR.

1.1.3 Delayed Payment and Financial Performance

Prolonged Payment delays elevate the expectations of reduced profits and incomes, and hence reduction in consumption and expenditure (Diamond and Schiller, 1993). Therefore, payment delays affects contractor's financial performance, posing cash flow problems thus resulting into domino effects on the entire Supply Chain (SC) (Miller and Wongsaroj, 2017; Ansah, 2011; Kwame, 2011; Lip, 2005), as insolvency of one party along the contractual payment chain has a spill over effects on the entire SC (Odenigbo, 2018). Similarly, payment delays in the long run result into greater financial implications especially on the projects' budget (Okeyo, Rambo and Odundo, 2015). Studies have also shown that when suppliers anticipate delay in payments, they charge higher prices to cover for the refinancing costs (Checherita *et al*, 2015; Flynn and Pessoa, 2014 and Diamond and Schiller, 1993). However, Checherita *et al*, (2015) argued that extended delays in public payments can influence private sector liquidity and profits and eventually growth. However, Achode and Rotich (2016) countered

their argument by positing that an increase in accounts payables as trade credit enhances the performance of companies through increased profitability. In the same vein, Gitman (2009) postulated accounts payables to be the major sources of secured short term financing. In contrast, a study by Kraus and Litzberger (1973) indicated that an increased level of accounts payables increased bankruptcy, financial distress and agency costs. Whereas, a study by Nwakaego and Ikechukwu (2016) revealed that an increase in accounts payable did not have any significant influence on profitability. Checherita *et al* (2015) on the other hand argued out that discharging invoices only moves liquidity across firms, however doesn't affect the composite private sector liquidity. Judi *et al* (2010) however argued that delayed payments could lead to bankruptcies and liquidation.

1.1.4 Construction Firms in Vihiga County

Construction firms in Vihiga play a significant role in developing the county's economy through providing infrastructure as well as all forms of social facilities. Within the county, we have various construction firms categorized under: Civil and building contractors and renovation works, routine maintenance of rural access roads construction, rehabilitation of dams, boreholes, dips, water springs and drainage as well as Installation and maintenance of street light services construction firms; (source, Vihiga county database).

Most of the construction firms in Vihiga County have been forced out of business as others have become bankrupt, whereas others have had their properties auctioned by financiers, and worst of it being that some firms have lost subsequent contracts from Vihiga due to non-performance, as a consequence of the delayed payment of their

invoices (Auditor Generals' Special Report on Pending Bills of the County Government of Vihiga, 2019).

It is in light of this happening that the researcher sought to conduct this research to establish why many contractors have been financially constrained to an extent that they cannot foot for their own expenses. It has been extreme to the extent that some firms have been barred by KRA from conducting their businesses due to failure to pay taxes, as a consequence of their clients delay in payments. Other contractors have successfully been locked out of subsequent tendering process as they lack tax compliance certificates, a mandatory criterion for eligibility to bid (Auditor General's Special Report on Pending Bills of the County Government of Vihiga, 2019).

1.2 Research Problem

According to Burkart and Ellingsen (2004) trade credit is a tool which enables the market exchange and has several advantages if it does not go beyond the grace period, in the similar school of thought was Miad and Smith (1992) and Meltzer (1960), who also sailed through the same argument, however, there exists a greater likelihood that uncontrolled trade credit that surpasses the stipulated period develops into delayed payments which affects the working capital of any firm and as a consequence, necessitates the creditor to exercise certain unpleasant economic moves. The most censorious and significant ones are a result of the fact that issues with accounts receivables are normally the justification for build-up of delayed payments and can eventually result into insolvency (Bojnec, 2002). A single party delaying payment along SC may impact on the entire SC of payment of another party and hence creates cash flow problems (Kwame 2011; Lip, 2003). Delayed payment issues usually become problematic to handle as there is no straightforward statistics on the effect of

payment delays on economic performance of a business (Cramer, 1972). Nonetheless, prompt payment is the engine behind superior financial performance of any firm. Scholars are still divided as to whether delayed payment significantly and negatively affects financial performance (Ansah, 2011; Kwame, 2011) or whether delayed payment does not significantly affect their financial performance (Checherita *et.al.* 2015; Flynn and Pessoa, 2014). Other groups of scholars however argue that out of anticipation of payment delays, firms will charge higher premiums to cover for the delays and as such don't suffer from payment externalities (Diamond and Schiller, 1993). Achode and Rotich (2016) opined that an increase in accounts payables as trade credit enhanced performance of firms which led to steady profit growth , however, the trade-off theory courtesy of Kraus and Litzenberger (1973) indicated that an increased level of accounts payables increased bankruptcy, agency and financial distress costs. Nevertheless, Nwakaego and Ikechukwu (2016) revealed that there was no significant effect of accounts payables on profitability.

Delayed payment to contractors has serious effect on quality and early completion of projects in the construction industry. Although there has been an effort to improve payments by the Clients in Vihiga, however, problems arising from payment issues are getting more severe as the days go by. Payment delays have being characterized by payment arrears, incomplete and stalled projects, contractors' assets seized by bank, which have further led to persistent legal actions in form of petitions, court orders and arbitrations as contractors seek to reinstate and maintain their financial performance. The local entrepreneurs who had delivered their services to their clients have suffered from tribulations, ridicule and pecuniary embarrassment as a consequence of pending bills which have resulted into slowdown in completing

projects, stalled projects, and prioritisation of new projects instead of completing the stalled ones, the pending bills have created more negative socio-economic impact (Senate order paper No.037). It is by virtue of this sequence of events and happenings, has made it a subject of interest to the researcher.

Checherita *et al* (2015) ascertained that delayed payments to SMEs resulted to declined profitability, liquidity problems and increased bankruptcy. Abdul-Rahman (2009) and Aibunu and Jagboro (2002) reviewed financial related causes of delayed payment from the project delivery perspective, whereas other studies embarked on causes and effects of delayed payments (Akali and Sakaja, 2018; Mwangi, 2016; Obodo and Obodo, 2016; Seboru, 2015; Ansah, 2011; Kwame, 2011 ; Assaf and Al-Hejji, 2005; Mezher and Tawil, 1998 and Mansfield, 1994), whereas other studies focussed only on financial performance (Bhunia *et al* 2016; Muna, 2015; Halim, Haniff, Junoh and Osman, 2014 and Woldesenebt, 2011), but from different contexts. However, according to the researcher's profound knowledge, no study had expressly related payment delays to financial performance, hence the current study sought to establish whether payment delays affected financial performance of construction firms in Vihiga County by answering the research question, do payment delays affect financial performance of construction firms in Vihiga County?

1.3 Research Objective

To establish whether payment delays affect financial performance of construction firms in Vihiga County.

1.4 Value of the Study

The study findings significantly contributed to theory and existing body of knowledge. This study might in future enrich the theoretical foundation of agency and financial distress theories in explaining the nature of such relationship if it ever existed, considering either leverage or efficiency ratios if measured on a longitudinal basis.

These study findings enabled researchers and academicians in identifying the knowledge gaps for future research in explaining the nature of the relationship between payment delays and financial performance on a longitudinal study basis, as well as develop a theory that might clearly explain the nature of such relationship if it might ever exist in the future.

The study findings assisted contractors to formulate and implement sound financial management strategies as mitigation measures of dealing with payment delays, not necessarily on financial performance, but for the entire business performance basing on the other balance score card items.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents review of the empirical literature along the theoretical and empirical lines on relationship between payment delays and financial performance, where variables will be reviewed and emerging research gaps identified.

2.2 Theoretical Foundation

This study is anchored on Agency theory (Jensen and Meckling 1976) and Wrecker's theory of financial distress (Kalckreuth, 2005), both of which explain the existence of the research problem. Agency problems result into agency costs of debt which become overwhelmed when the firm is distressed (Kalckreuth, 2005). The agency conflict in financially distressed firms explains what motivates the owners of the firms to work tirelessly and get influenced by the debt contract terms (Innes, 1990). The creditors being the residual owners usually create conflict when a firm approaches bankruptcy (Kalckreuth, 2005).

2.2.1 Agency Theory

Key proposers of creation of this theory were Jensen and Meckling (1976), where this theory postulates how the principal and agent relate in a specified contract, where both are self-interested and bounded rationally (Eisenhardt, 1989). This theory supposes how the principal and the agent relate in a specified contract, where the former contracts the latter to perform works on his behalf (Ceric, 2013; Laiho, 2011; Turner and Muller, 2004), which creates an agency conflict as a result of goal incongruence between the two parties (Arthurs and Busenitz, 2003), as a consequence of payment delays by the principal, to the contractors, who are the agents, who

therefore demand their payment with a view of sustaining their cash flows, in order to enhance their financial performance.

This agency problem created ultimately end up in deserted projects as a result of payment delays as contractors lack finances to support the projects on site. Agency conflicts also extend downwards the SC, cutting across the subcontractors, suppliers of raw materials and financiers due to payment delays and failure to repay the loans and interests when they fall due (Kwame, 2011;Laiho, 2011). Adverse selection is usually hidden at the beginning of the contract, associated with moral hazard due to information asymmetry and opportunistic behaviour between the parties to the contract, which end up as agency costs (Ceric, 2013; Eisenhardt, 1989;Perrow, 1986).Where agency cost of debts depends on the nature of monitoring costs borne by the owner which includes decreased profits, probability of bankruptcy and all other costs of enforcing contracts as well (Smith, 2011; Kim and Sorensen,1986).

This theory faced criticism from Perrow (1986) who rejected the assumption that parties always dislike work and that they selfishly maximize their own utility, Whereas Donaldson (1990) in his stewardship theory, assumed that both the principal and agents goals were aligned as well as viewed agents as good administrators and collaborators rather than being opportunistic with conflicts of interests (Shapiro, 2005). Arthurs and Busenitz (2003) however, critiqued how the theory viewed agents to be problematic, without considering either way round that principals could also be problematic in the contract.

2.2.2 Wrecker's Theory of Financial Distress

Key proposers of this theory were Campbell, Hilscher and Szilagyi (2005). Key postulation of Wreckers' theory of financial distress suggest that distressed firms equity ownerships usually underperform those of financially healthy firms and for those firms approaching bankruptcy, payment in kind to ownership prevails over any other form of return to equity (Kalckreuth, 2005). According to Altman (1968) as cited by Baimwera and Muriuki (2014), determinants of firms financial distress include liquidity, leverage, growth and profitability.

This theory informed this study by seeking to spell out the gains that may be derived out of financial distress to stakeholders, which do not at all times give rise to negatory excess returns of distressed inefficient firms (Kalckreuth, 2005). Campbel *et al* (2015) insisted that distressed firms underperformed financially healthy firms. However, motivation to drawback resources from the firm in the name of private benefits intensifies as the firms' approaches bankruptcy creating conflict with creditors and debtors, who in this context refers to the Contractors, their clients and suppliers. Financially distressed firms suffering from insolvency over a long time, seek legal distress when they anticipate that they are approaching bankruptcy as a consequence of breached credit terms (Outecheva, 2007). Deterioration and failure significantly affect profitability, whereas insolvency and default are embedded in the company's liquidity. Financial distress under legal bankruptcy attracts costs to lawyers, accountants, consultants as well as liquidated damages to the adversely affected parties in conflict.

The greatest problem in financial distress is to identify unfavorable processes beforehand so as to counter the response on a timely basis (Outecheva, 2007). However, Baimwera and Muriuki, 2014 and Campbel *et al*, 2005 argued out that

Benefits received out of distressed firms do not necessarily deplete the firms' resources.

2.3 Payment Delays and Financial Performance

This section focuses on empirical studies from global to regional to local.

A longitudinal study by Checherita *et al* (2015) found out that payment delays to private sector by the government led to a greater likelihood of bankruptcy and declined profits. Another study conducted by Abdul-Rahman (2009) on cash flow management with respect to project delays, found out that the major factor that contributed significantly to delayed project was difficulties in managing cash flow, coupled with inadequate resources, late payment, and the instability of the financial markets, caused majorly by client's inability to manage finances as well as the entire business, similarly, the clients strained while struggling to acquire loans from financiers, altogether combined with the contractors instable financial background, all which contributed to delays. Aibunu and Jagboro (2002) found out that the effects of construction delays on project delivery ranged from constant disagreement, adjudication, total project desertion, prevailing law suits, to time and budget overruns. A survey by Mezher and Tawil (1998) established that owners had serious financial issues which in turn impacted on project delay. Similarly, a survey by Assaf and Al-Hejji (2005) established that delay in paying contractors followed by severe cash problems during the construction process caused delays in large construction projects. Another Survey conducted by Mansfield (1994) sought to establish what caused delays in projects under construction and found out that failure by the client to finance and pay basing on completed works as well as inability to manage the contract efficiently, constantly changing site conditions, inadequate site materials as well as

inappropriate planning caused delays. In the same vein, Obodo and Obodo (2016) studied project delay causes and reviewed also the resultant effects and found out that contractors were faced with problems of deriving interim payments, hence resulting into financial difficulties which when summed up alongside other factors impacted greatly on project delays. On the same breadth, Odenigbo (2018) by using descriptive cross sectional study, sought to establish what caused delayed payments and the resultant effects thereof and found out that constant disagreements on valuation of works together with poor quality of works caused payment delays, whereas payment delays therefore resulted into delayed project progress in instances where project time was extended, ultimately leading to suspended works. Ansah (2011) on the other hand found out that payment delays caused financial hardships to construction firms to the extent of closure. Similarly, a survey by Kwame (2011) found out that delay in payment created stress to contractors, which eventually lead to conflicts, hence creating cash flow problems on all parties to the contract. A causal comparative design study by Okeyo *et al* (2015) found out that delayed payment to the contractors resulted into ripple effects downward the contractual hierarchy, ultimately impacting on the completion of the projects within the set time, budget and quality as a consequence of contractors' constrained cash flow. A cross sectional study by Akisinku and Ajayi (2016) delineated main causes of delayed payment to contractors on construction project delivery to be unrealistic cash flows, errors in claims, financial difficulties and dispute on valuation of works . On the same breadth, a survey by Seboru (2015) established causes of project delays to be influenced majorly by the clients' payment delays, followed by slow decision making, bureaucracy, amongst other causes which also amounted to delays. A descriptive survey by Akali and Sakaja (2018) found out that contractor's capacity to complete projects was dependent upon a

strong financial performance as indicated by profits. A study by Halim *et al* (2014) analyzed financial performance and found out that shortage of capital to finance projects, small profits, higher debt as well as reduced efficiency in asset management contributed to poor financial performance. A longitudinal study by Bhunia *et al* (2016) assessed the financial performance analysis using ratios of profitability, solvency, efficiency, liquidity, operating efficiency and financial stability and found out that ratios provided the best financial performance measures. Woldesenebt (2011) similarly carried out comparative studies on financial performance of banks using profitability, liquidity, solvency and efficiency ratios. An ex post facto study by Nwakaego and Ikechukwu (2016) revealed that there was no effect of accounts payables ratios on profitability.

2.4 Summary of Literature Review and Knowledge Gaps

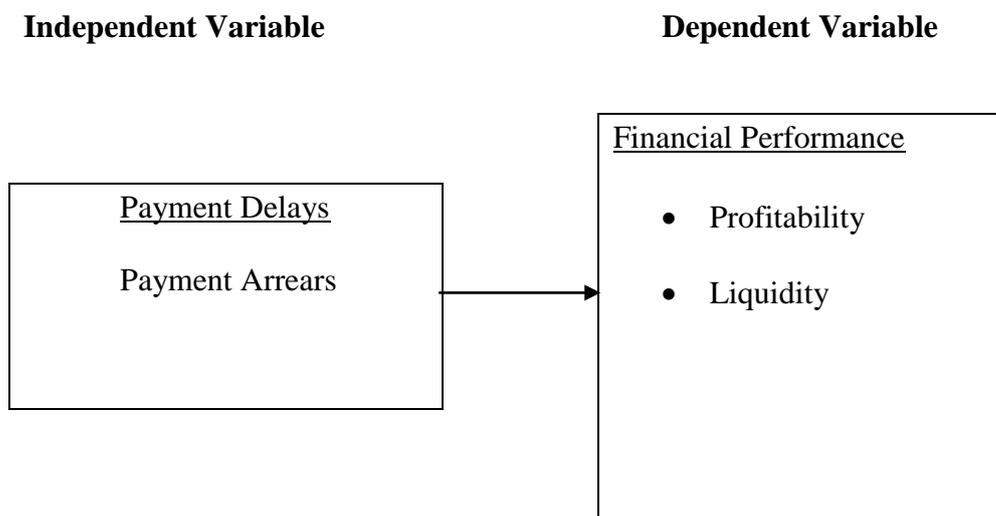
A study by Checherita *et al* (2015) on the payment discipline of governments to private sector, found out that payment delays led to a greater likelihood of bankruptcy, liquidity problems and declined profits. Abdul-Rahman (2009) reviewed financial related causes from the project delivery perspective, while Seboru (2015) reviewed the factors causing delays but from project delivery dimension, whereas other studies, embarked on causes and effects of delayed payments (Odenigbo, 2018; Obodo and Obodo, 2016; Okeyo *et al* ,2015; Ansah, 2011; Kwame, 2011; Assaf and Al-Hejji, 2005; Aibunu and Jagboro 2002; Mezher and Tawil 1998; Mansfield, 1994), with some studies in Kenya zeroing to road contractors (Akali and Sakaja, 2018; Mwangi, 2016; Seboru, 2015) whereas other studies focussed only on financial performance (Bhunia *et al* 2016; Muna, 2015; Halim *et al* 2014; Woldesenebt, 2011), With some studies relating accounts payables and financial performance (Nwakaego and Ikechukwu,2016).Some studies corroborated data analysis techniques such as

Bayesian vector Auto Regression (Checherita *et al* 2015), whereas others used Relative Importance Indices (Akisinku and Ajayi, 2016). Many studies had been carried out on payment delays to construction firms globally in different states for instance in Nigeria, Ghana, Malaysia, Lebanon, Saudi Arabia and many other states, whereas some studies had specifically studied road construction firms in particular. Whereas studies on financial performance had been carried out in different industries such as pharmaceutical, cement, manufacturing and financial institutions. Some studies had adopted purposive and snowball sampling techniques, whereas some studies had adopted random sampling technique. Some studies had used deductive methodological approaches, while other studies had adopted descriptive research designs, with some studies having employed descriptive cross sectional research designs. Similarly, some studies had used survey research design, whereas other studies had used longitudinal research design, whereas some studies employed case study sample survey, similarly other studies employed causal comparative design, whereas other studies adopted ex post facto research designs. Nevertheless, this study was conducted in Vihiga County and related payment delays and financial performance with a view of providing deeper insights into the current status quo. This study as well encompassed the adoption of cross sectional research design coupled with stratified simple random sampling and census survey sampling techniques on construction firms' quantitative data. No study has expressly studied payment delays and financial performance of construction firms, nonetheless impliedly, suggesting that there was paucity of research relating to payment delays and financial performance of construction firms in Vihiga. It is by virtue of this knowledge gap that the researcher sought to study payment delays and financial performance of construction firms in Vihiga County, Kenya.

2.5 Conceptual Framework

This conceptual framework describes the diagrammatic representation that visualizes how variables interrelate with each other. The independent variable being payment delays is indicated by payment arrears, whereas the dependent variable of the study being financial performance is indicated by Profitability (Net Profit Margin) and Liquidity (Current ratio). Thus, figure 2.1 shows the conceptual model of the relationship between payment delays and financial performance of construction firms in Vihiga County, based on the premiss that any change in the independent variable causes the dependent variable to change (Kothari, 2004).

Figure 2.1: Conceptual Model showing relationship between Payment Delays and Financial performance.



Source: (Researcher, 2019)

Figure 2.1: Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses research methodology which was employed in this study. It outlines the research design, target population, sample design and sample size, data collection and data analysis methods.

3.2 Research Design

The study adopted cross sectional research design, this design entails collecting data once and comparing it across the 32 construction firms, within a period of one year with a view of answering research question. This was in tandem with Kothari (2004) and Sekaran (2003). Cross sectional research design was effectively employed by Odenigbo (2018) while studying causes and effects of delayed payment on construction project delivery.

3.3 Target Population

Target population according to Mwangi (2016) is usually where the researcher desires to generalize outcomes from, and for purposes of this study, the target population was 40 Construction firms in Vihiga which the researcher generalized results from.

3.4 Sample Design and Sample Size

The study adopted stratified simple random sampling and census survey sampling designs, thus generating a sample size of 32 Construction firms. The stratified simple random sampling was employed on the sampling frame of 40 being all categories of construction firms except for the Installation and maintenance of street light services where census survey was employed. Stratified simple random sampling enables

subjects to be chosen such that the subgroups of the population get represented (Mugenda & Mugenda, 2003).

Table 3.1: Population and Sampling Method Adopted

STRATA-Category of Construction Firms	Population	Sampling Method	Sample Size
Civil and building contractors and renovation works	29	Stratified simple random sampling	23
Routine maintenance of rural access roads	5	Stratified simple random sampling	4
Rehabilitation of dams, boreholes, dips, water springs and drainage	5	Stratified simple random sampling	4
Installation and maintenance of street light services	1	Census Survey	1
TOTAL	40		32

Source :(Researcher, 2019)

3.5 Data Collection

Researcher collected secondary data from individual 32 Construction firms' Audited financial statements. Data on the Independent variable as indicated by payment arrears as well as data from the dependent variable as indicated by profitability and liquidity ratios was derived and calculated from individual Construction firm's financial statements. Data was captured using a secondary data capture form. (Appendix 3)

3.6 Data Analysis

The study encompassed the use of SPSS version 25, where descriptive statistics measures such as mean, standard deviation (SD), minimum and maximum were analysed and presented in tabular format. The study also employed inferential statistics using multivariate analysis of the General Linear Model (GLM) to explore the nexus between independent and dependent variable. Each individual dependent variable indicator (NP and CR) was examined under the variation of arrears. Descriptives and analyses were then presented in tabular format, whereas explanation was done in prose. Manova assumptions were duly tested and tried. Tests such as Box Test of Equality of Covariance Matrices, Modified Breusch-Pagan Test for Heteroskedascity of both the NP and CR under separate cases, Correlation analysis between NP and CR, whereas Post-Hoc tests using Turkey's Honest Significance test(HSD) and Bonferroni tests were carried out and have been attached as appendices with supporting testable assumptions.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter confers about explication and presentation of outcomes acquired from secondary data of the 32 construction firms in Vihiga. This study used audited financial statements from the 32 individual construction firms, where figures for current assets (CA), current liabilities (CL), net profit (NP) and sales values were derived from them. Descriptive statistics and inferential statistics using Multivariate analysis of GLM were used to discuss the study findings.

4.2 Descriptive Statistics

Descriptive statistics according to (Sekaran, 2003) quantitatively describes or summarizes information collected, where measures of central tendencies and dispersion such as maximum, minimum, means and standard deviation (SD) were derived from independent and dependent variable.

The information collected was considered significant for this study as it analyzed payment delays and financial performance of construction firms in Vihiga County.

Table 4.1 indicates information on the 32 construction firms for a period of 1 year. The 32 firms were selected because their financial reports were reliable as they had been duly audited and NCA registered as at the time of collecting data. The other remaining firms were not involved in the study since their data was not reliable since their financial statements had not been audited and not NCA registered for the period under study. The results for the year 2017 indicated the amount of arrears to have a minimum of Kshs. 57,998, a maximum of Kshs. 43,615,369, a mean of Kshs.5, 087,694 and a standard deviation (SD) of Kshs.7, 520,168. This implied that the average amount of arrears for the 32 Firms was Kshs. 5,087, 694, while the

amounts of arrears were spread by Kshs. 7, 520, 168 away from the mean, which explained how different firm arrears largely deviated from each other. The results also indicated Current Ratio (CR) to have a minimum of 0.00, a maximum of 8.49:1, a mean of 2.63:1 and an SD of 2.43:1. This implied that the average firms' CR was 2.63:1, with a deviation of 2.43% from the mean, 2.43% was a very small deviation from the mean which simply implied that most of the firms CR tended to approach the mean at a closer range. Most of the firms were operating their CR, slightly above the acceptable industry average CR of 2:1, suggesting that they were in a better liquidity position, slightly higher than the industry average, suggesting that they had outright ability to settle off their short term debts with their current assets. Similarly, results for Net Profit Margin (NP) indicated a minimum represented by a net loss of 1.42%, a maximum of 79.51%, a mean of 18.32%, an SD of 15.9%. The firms' average NP was 18.32% of the Sales made and an average NP deviation of 15.89% of their sales. This therefore implied that most of the firms made an average NP of 18.32% from sales made, which was way above the industry average of 10%, however, most of the firms NP varied greatly from their average mean by 18.32%. The high NP margin suggested that the firms' were better placed to settle off their costs from the revenues received from other accounts receivables not necessary from those who delayed their payments.

Table 4.1 Descriptive Statistics for Amount of Arrears, Class of Arrears, Current Ratio and Net Profit Margin Statistics

		Amount of arrears in millions	Class of arrears	Current Ratio	Net profit margin
N	Valid	32	32	32	32
	Missing	0	0	0	0
Mean		5087694.28	2.5625	2.630525	.183150
Std. Deviation		7520168.359	1.47970	2.4316922	.1589724
Minimum		57998	1.00	.0000	-.0142
Maximum		43615369	6.00	8.4930	.7951

Source: SPSS Research Data (2019)

4.3. Inferential Statistics

4.3.1 Multivariate Analysis

Multivariate analysis was relevant for this study, as it had 2 dependent Variable indicators which were continuous, as well as independent variable which was categorical in nature. This therefore determined whether there were any differences between independent group on the two dependent variable indicators. This analysis therefore suited this cross-sectional study effectively as it comprised of 2 dependent variable indicators (NP and CL) which were ratios hence continuous data. Whereas the independent variable was presented in separate cases as either nominal or ordinal, hence categorical data. While Testing for the assumptions of Multivariate analysis, Box's M test was used to test for the equality of covariance matrices, modified Breusch-Pagan test was used to test for heteroskedascity of the dependent variable

indicators, Pearson Correlation Analysis was employed to test for multicollinearity between dependent variable indicators, Post Hoc tests comprising of Turkey's Honest Significant Test(HSD) and Bonferroni tests were used to test for any significant differences between class of arrears and NP and between class of arrears and CR.

Table 4.2: Multivariate Tests for Net Profit and Current Ratio by Classes of Arrears

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Squared	Eta Noncent. Parameter	Observed Power ^d
Intercept	Pillai's Trace	.668	25.197 ^b	2.000	25.000	.000	.668	50.394	1.000
	Wilks' Lambda	.332	25.197 ^b	2.000	25.000	.000	.668	50.394	1.000
	Hotelling's Trace	2.016	25.197 ^b	2.000	25.000	.000	.668	50.394	1.000
	Roy's Largest Root	2.016	25.197 ^b	2.000	25.000	.000	.668	50.394	1.000
Class	Pillai's Trace	.387	1.248	10.000	52.000	.284	.194	12.480	.571
	Wilks' Lambda	.642	1.238 ^b	10.000	50.000	.291	.198	12.381	.564
	Hotelling's Trace	.511	1.225	10.000	48.000	.299	.203	12.254	.555
	Roy's Largest Root	.394	2.048 ^c	5.000	26.000	.105	.283	10.239	.585

Source: SPSS Research Data (2019)

a. Design: Intercept + Class

b. Exact statistics

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

Table 4.2 presents the MANOVA results. The Wilks Lambda criteria revealed no significant difference in means of class of arrears with respect to NP and CR, Wilks lambda =.642, $F(10, 50) = 1.238$, $p = .291$. Multivariate partial Eta = .198. $P > 0.05$. The significant value of 1.238 was greater than the set alpha value of 0.05, indicating that they do not contribute to the model as there was no between group dispersion between their means, which implied that there was no statistical significance of either NP or CR when compared on arrears in different classes.

Table 4.3: Univariate ANOVA Summary Table of Class of Arrear with Net Profit and Current Ratio

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Squared	Eta	Noncent. Parameter	Observed Power ^c
Corrected Model	Net profit margin	.163 ^a	5	.033	1.361	.271	.207		6.806	.402
	Current Ratio	34.078 ^b	5	6.816	1.187	.342	.186		5.937	.352
Intercept	Net profit margin	.547	1	.547	22.922	.000	.469		22.922	.996
	Current Ratio	146.914	1	146.914	25.597	.000	.496		25.597	.998
Class	Net profit margin	.163	5	.033	1.361	.271	.207		6.806	.402
	Current Ratio	34.078	5	6.816	1.187	.342	.186		5.937	.352
Error	Net profit margin	.621	26	.024						
	Current Ratio	149.229	26	5.740						
Total	Net profit margin	1.857	32							
	Current Ratio	404.736	32							
Corrected Total	Net profit margin	.783	31							
	Current Ratio	183.307	31							

Source: SPSS Research Data (2019)

a. R Squared = .207 (Adjusted R Squared = .055)

b. R Squared = .186 (Adjusted R Squared = .029)

c. Computed using alpha = .05

Table 4.3 revealed one-way UNIANOVA results which indicated that the effects between class of arrears did not significantly vary with NP, $F(5, 26) = 1.361$, $p = .271$ since $p > 0.05$; Partial Eta squared was .207, which indicated that 20.7% of the variance associated with each of the main effects and error was accounted for by the NP, however, not very significant since $p > 0.05$. Similarly, the effect between class of arrears did not significantly vary with CR, $F(5, 26) = 1.187$, $p = .342$ since $p > 0.05$; partial Eta squared was .186, which indicated that 18.6% of the variance associated with each of the main effects and error was accounted for by the CR. Suggesting that the percentage variance in individual dependent variable indicators (NP and CR) could not be explained by differences in levels of the independent variable (Payment arrears classes), implying that these effects contributed more to the model. Examination of post hoc results revealed in Appendix 1, further revealed no statistical difference between class of arrears and NP and between class of arrears and CR.

The effects between Class of arrears did not significantly affect NP since $F(1.361) = .271$ since $p > 0.05$, similarly, effects between class of arrears did not significantly affect CR since $F(1.187) = .342$ since $p > 0.05$. Suggesting that the percent variance in individual dependent variable indicators (NP and CR) could not be explained by differences in levels of the independent variable (Payment arrears classes), implying that these effects contributed more to the model.

Table 4.4: Tests of Between-Subjects Effects between Amount of arrears and Net Profit

Tests of Between-Subjects Effects

Dependent Variable: Net profit margin

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Eta
Corrected Model	.004 ^a	1	.004	.166	.687	.006	
Intercept	.794	1	.794	30.569	.000	.505	
Amount	.004	1	.004	.166	.687	.006	
Error	.779	30	.026				
Total	1.857	32					
Corrected Total	.783	31					

Source: SPSS Research Data (2019)

R Squared = .006 (Adjusted R Squared = -.028)

As shown in table 4.4, Tests of Between-Subjects (TOBSE) Effects of Uni Anova of the GLM between independent variable (Amount of Payment arrears) and the NP indicated a partial Eta squared of 6% with an adjusted partial Eta squared of -2.8%. This implied that amount of payment arrears in the model explains a .6% change in NP which is not statistically significant, while the other 99.4% change could be explained better by other variables if they could have been fitted in the model. As shown in table 4.4, TOBSE analyzed data was used to generate inferences, which indicated F statistics, $F(1,30)=.166, p=.687$, implying that the main small effect sizes of

payment arrears was not statistically significant, since $p > 0.05$. (According to Richardson, 2011), small effect sizes range from .0099 and below).

Table 4.5: Parameter Estimates of Arrears and Net Profit

Parameter Estimates

Dependent Variable: Net profit margin

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	.191	.035	5.529	.000	.121	.262	.505
Amount	-1.569E-9	3.849E-9	-.408	.687	-9.429E-9	6.292E-9	.006

Source: SPSS Research Data (2019)

Table 4.5 indicates an intercept value when the NP was set to 0. Thus the intercept was equivalent to the mean NP. The NP coefficient was the predicted increase in NP for a unit increase in arrears. Since the Amount of arrears value of 1 were those amounts of arrears, this coefficient represented the change in the estimated NP for those construction firms compared to those without payment arrears. -1.569E-9 value was the difference between the two means, suggesting that adding it to the constant provided the mean of arrears. Taking the total population of construction firms, significance level was not of vital importance however if by chance the conceptualization of the current situation could have prevailed as though it was from sampling of hypothetical population, the p-value of .687 would indicate that very lower likelihood that the coefficient was likely to result from the probability of choosing the random samples from the hypothetical populations with same means. p value of parameter estimates are similar to those of F test of between subject test of amount of arrears and NP. The F value was the square of the Z value. The standard

error of .035 represented the difference between the population mean and the sample mean which was very small. It implied the estimated standard deviations of residuals, which suggested that approximate .035 were predicted errors for residuals, which was very small, implying that the predictions were accurate as possible. The lower bound was .121 whereas the upper bound was .262. This was derived by taking into account the mean of the sample population which was a point estimate of the mean of the entire population, which ideally could not be the same as the entire population mean, hence requiring an interval estimate to approximate the population mean, which was a given amount either added or subtracted from the sample mean, creating a margin of error in order to obtain a lower and an upper bound for the interval estimate, hence a confidence interval for the entire population mean, which therefore suggested that we were confident that the mean of the entire population was between the lower and upper bounds of the confidence interval.

Table 4.6: Tests of Between-Subjects Effects between Amount of Arrears and Current Ratio

Tests of Between-Subjects Effects

Dependent Variable: Current Ratio

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6.837 ^a	1	6.837	1.162	.290	.037
Intercept	188.898	1	188.898	32.113	.000	.517
Amount	6.837	1	6.837	1.162	.290	.037
Error	176.470	30	5.882			
Total	404.736	32				
Corrected Total	183.307	31				

Source: SPSS Research Data (2019)

a. R Squared = .037 (Adjusted R Squared = .005)

As shown in table 4.6 TOBSE of GLM between independent variable (Amount of Payment arrears) and the CR indicated a partial Eta squared of 3.7% with an adjusted partial Eta squared of 0.5%. This implied that amount of payment arrears in the model explained a 3.7 % change in CR, while the other 96.3 % change could be explained better by other variables when fitted in the model. As further shown in table 4.6 analysed data was used to generate inferences, indicating F statistics, $F(1,30)=1.162, p=.29$, implying that the medium effect sizes of payment arrears were not statistically significant, since $p>0.05$. (According to Richardson, 2011), medium effect sizes range above .0099 and below .0588).

Table 4.7: Parameter Estimates of Arrears and Current Ratio

Parameter Estimates

Dependent Variable: Current Ratio

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Squared	Eta
					Lower Bound	Upper Bound		
Intercept	2.948	.520	5.667	.000	1.886	4.011	.517	
Amount	-6.245E-8	5.793E-8	-1.078	.290	-1.807E-7	5.585E-8	.037	

Source: SPSS Research Data (2019)

Table 4.7 indicates an intercept value when the CR was set to 0. Thus the intercept was equivalent to the mean CR. The CR coefficient was the predicted increase in CR for a unit increase in arrears. Since the Amount of arrears value of 1 were those amounts of arrears, this coefficient represented the change in the estimated CR for those construction firms compared to those without payment arrears. -6.245E-8 value was the difference between the two means, suggesting that adding it to the constant provided the mean of arrears. Taking the total population of construction firms, significance level was not of vital importance however if by chance the conceptualization of the current situation could have prevailed as though it was from sampling of hypothetical population, the p-value of .290 would indicate that very lower likelihood that the coefficient was likely to result from the probability of choosing the random samples from the hypothetical populations with same means. p value of parameter estimates are similar to those of F test of between subject test of amount of arrears and CR. The F value was the square of the Z value. The standard error of 5.793E-8 represented the difference between the population mean and the sample mean which was very small. It implied the estimated standard deviations of

residuals, which suggested that approximate $5.793E-8$ were predicted errors for residuals, which was very small, implying that the predictions were accurate as possible. The lower bound was 1.886 whereas the upper bound was .4.011. This was derived by taking into account the sample mean which was a point estimate of the population mean, which ideally could not be the same as the population mean, hence requiring an interval estimate to approximate the population mean, which was a given amount either added or subtracted from the sample mean, creating a margin of error in order to obtain either a lower and an upper bound for the interval estimate, hence a confidence interval for the population mean, which therefore suggested that we were confident that the population mean was between the lower and upper bounds of the confidence interval.

4.4 Summary of Findings and Results

Results from descriptive statistics clearly revealed that the construction firms Mean NP and mean CR were way above the industry average, which suggested that as far as the firms had payment arrears, their financial performance still levelled, which implied that payment delays had no significant effect on either NP or CR. Similarly, results from multivariate analysis indicated no statistical significant effects between payment arrears and financial performance. These findings are inconsistent with Achode and Rotich (2016) who found out that an increase in accounts payables as trade credit enhanced performance of companies through increased profitability. In the same vein, this study findings are inconsistent with Flynn and Pessoa (2014) and Diamond and Schiller (1993) who found out that prolonged public payment delays to private sector negatively affected their liquidity and profits and in the long run growth got affected. Nonetheless, this findings are in tandem with Checherita *et al* (2015) who found out that paying a bill only moved liquidity across firms, but did not affect

combined private sector liquidity implying that whether payment arrears are made or not, there exists no effect between payments and liquidity. This study findings are also in tandem with Nwakaego and Ikechukwu (2016) who also revealed that there was no effect of accounts payables on profitability. Similarly, this study findings coincide with Cramer (1972) who posited that delayed payment issues usually become problematic to handle as there was no straightforward statistics on the effect of payment delays on economic performance of a firm. Maybe other measures could have given different results, since according to Carton and Hofer (2010) they were of the opinion that there was no concurrence concerning the best or even subtle measures of financial performance, as there have been no existing study that had successfully proposed and empirically tested a generalizable multidimensional model of organizational financial performance constructs and their appropriate measures. Similarly, as far as the results indicate no effect between the variables, probably in the long run, the effects might appear more significant, as it also becomes very difficult to detect whether firms are under financial distress, since according to Outecheva, (2007) who supposed that the most trickiest bit about financial distress is to detect unfavourable processes beforehand so as to gain more time for response. Similarly, the effect of overpricing to cover for premiums on interest expenses according to Diamond and Schiller (1993) could have probably created effects which cancelled each other, since the action of overpricing to earn more income, cancelled the effect of increased expenses such as loan interest expenses. Which basically indicated that no effect existed between payment delays and Financial Performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses key findings, conclusions and recommendations made thereto. Conclusions and recommendations inferred were centered towards addressing the study objective. The researcher had intended to determine whether payment delays affected financial performance of construction firms in Vihiga County.

5.2 Summary of Findings

The study objective was to determine whether payment delays affected financial performance of construction firms in Vihiga County. The objective was successfully achieved by obtaining data from the year 2017 audited financial statements of the 32 individual construction firms. From the study findings, Descriptive statistics revealed that there was no effect between payment arrears on either NP or CR. Similarly, inferential statistics using Multivariate Tests for NP and CR with classes of arrears revealed no statistical significant difference between means of Payment Arrears with NP and CR. Similarly, univariate ANOVA analysis revealed that there existed no statistical significant differences between classes of arrears with NP and CR under separate cases. Whereas Tests of Between-Subjects Effects between Amount of arrears with NP and CR indicated no effects between those variables. This study findings were therefore in tandem with Nwakaego and Ikechukwu (2016) who posited that an increase in accounts payable did not have any influence on profitability. The study findings concurred with Checherita *et al* (2015) who found out that paying a bill only moved liquidity across firms, but did not affect composite private sector liquidity implying that whether payment arrears are made or not, there exists no effect between

payments and liquidity, probably there existed other factors such as management styles and strategies which could have affected the variables. Therefore, payment delays do not affect financial performance.

5.3 Conclusion

The findings revealed that there was no effect between payment delays and financial performance. Payment delays therefore do not affect NP or CR as there is no statistical significant association between them, this study findings are in line with Cramer (1972) who alluded to the fact that delayed payment issues usually become problematic to handle as there was no straightforward statistics on the effect of payment delays on economic performance of a firm.

5.4 Recommendations

The study findings are highly recommended to contribute to the formation of a new theory that will explain which factor significantly affects financial performance, since payment delays do not affect performance, maybe other factors such as management style and strategies could have affected financial performance, or alternatively, maybe other sufficient financial performance measures which the researcher was not aware of could have been employed to test whether a relationship existed as carton and Hofer (1972) still doubts if the subtle measures ever existed. The study findings further recommends that maybe in the long run a relationship might be testable and generalizable using longitudinal studies. The study findings should enable the financial managers to formulate and implement sound financial management to assess factors which are more likely to affect their financial performance as well as consider how payment delays affect other business operations and performance.

5.5 Limitations of the Study

The researcher's data was restricted to those construction firms whose financial statements had been duly audited and were NCA registered. The researcher was confined to 32 construction firms and omitted eight (8) firms' data since they had significant outliers which could have influenced the end results of the study. The researcher was also limited to only 2 classes of ratios, profitability and liquidity as measures of financial performance.

5.6 Suggestions for Further Research

In regard to this study finding, the researcher recommends that a further research be done longitudinally so as to assess the effect of payment delays and financial performance. The researcher recommends that a similar study be carried out, however using either leverage ratios or efficiency ratios. Further to that, the researcher recommends that similar research be carried out in different industries so as to have a better generalization.

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APPENDICES

Appendix 1: Tests of MANOVA Assumptions

Box Test of Equality of Covariance Matrices

Box's Test of Equality of Covariance Matrices ^a	
Box's M	18.471
F	1.580
df1	9
df2	459.974
Sig.	.118

Tests the null hypothesis that the observed covariance matrices of the dependent variable indicators are equal across groups.

- a. Design: Intercept +Class

(Source: SPSS Research Data (2019))

Modified Breusch-Pagan Test for Heteroskedascity of Net Profit Margin

Modified Breusch-Pagan Test for Heteroskedasticity^{a,b,c}

Chi-Square	Df	Sig.
.103	1	.749

Source: SPSS Research Data (2019)

- a. Dependent variable: Net profit margin
 b. Predicted values from design: Intercept + Amount

Modified Breusch-Pagan Test for Heteroskedasticity for Current Ratio

Modified Breusch-Pagan Test for Heteroskedasticity^{a,b,c}

Chi-Square	Df	Sig.
.241	1	.624

Source: SPSS

Research Data

(2019)

- Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variable.
- Predicted values from design: Intercept + Amount

Correlation Analysis between NP and CR

Correlations

		Net profit margin	Current Ratio
Net profit margin	Pearson Correlation	1	.036
	Sig. (2-tailed)		.847
	N	32	32
Current Ratio	Pearson Correlation	.036	1
	Sig. (2-tailed)	.847	
	N	32	32

*Correlation is significant at the 0.05 level (2-tailed)

Post Hoc Test between Classes of Arrears in NP and CR

Multiple Comparisons

Dependent Variable		(I) Class of arrear	(J) Class of arrear	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Net profit margin	Tukey HSD	Extremely low	Low	-.139144	.0728484	.419	-.362968	.084679
			Medium	-.104121	.0778782	.762	-.343398	.135157
			High	.048689	.1030232	.997	-.267845	.365223
			Very High	-.074028	.1208054	.989	-.445197	.297141
			Extremely High	.050322	.1208054	.998	-.320847	.421491
		Low	Extremely low	.139144	.0728484	.419	-.084679	.362968
			Medium	.035024	.0778782	.997	-.204254	.274301
			High	.187833	.1030232	.469	-.128701	.504368
			Very High	.065117	.1208054	.994	-.306053	.436286
			Extremely High	.189467	.1208054	.625	-.181703	.560636
		Medium	Extremely low	.104121	.0778782	.762	-.135157	.343398
			Low	-.035024	.0778782	.997	-.274301	.204254
			High	.152810	.1066392	.707	-.174834	.480454
			Very High	.030093	.1239035	1.000	-.350595	.410781

		Extremely High	.154443	.1239035	.810	-.226245	.535131
	High	Extremely low	-.048689	.1030232	.997	-.365223	.267845
		Low	-.187833	.1030232	.469	-.504368	.128701
		Medium	-.152810	.1066392	.707	-.480454	.174834
		Very High	-.122717	.1410703	.950	-.556149	.310716
		Extremely High	.001633	.1410703	1.000	-.431799	.435066
	Very High	Extremely low	.074028	.1208054	.989	-.297141	.445197
		Low	-.065117	.1208054	.994	-.436286	.306053
		Medium	-.030093	.1239035	1.000	-.410781	.350595
		High	.122717	.1410703	.950	-.310716	.556149
		Extremely High	.124350	.1545348	.964	-.350451	.599151
	Extremely High	Extremely low	-.050322	.1208054	.998	-.421491	.320847
	High	Low	-.189467	.1208054	.625	-.560636	.181703
		Medium	-.154443	.1239035	.810	-.535131	.226245
		High	-.001633	.1410703	1.000	-.435066	.431799
		Very High	-.124350	.1545348	.964	-.599151	.350451
Bonferroni	Extremely low	Low	-.139144	.0728484	1.000	-.374540	.096251
		Medium	-.104121	.0778782	1.000	-.355769	.147528

	High	.048689	.1030232	1.000	-.284211	.381589
	Very High	-.074028	.1208054	1.000	-.464388	.316332
	Extremely	.050322	.1208054	1.000	-.340038	.440682
	High					
Low	Extremely	.139144	.0728484	1.000	-.096251	.374540
	low					
	Medium	.035024	.0778782	1.000	-.216625	.286673
	High	.187833	.1030232	1.000	-.145067	.520733
	Very High	.065117	.1208054	1.000	-.325243	.455476
	Extremely	.189467	.1208054	1.000	-.200893	.579826
	High					
Medium	Extremely	.104121	.0778782	1.000	-.147528	.355769
	low					
	Low	-.035024	.0778782	1.000	-.286673	.216625
	High	.152810	.1066392	1.000	-.191775	.497394
	Very High	.030093	.1239035	1.000	-.370278	.430464
	Extremely	.154443	.1239035	1.000	-.245928	.554814
	High					
High	Extremely	-.048689	.1030232	1.000	-.381589	.284211
	low					
	Low	-.187833	.1030232	1.000	-.520733	.145067
	Medium	-.152810	.1066392	1.000	-.497394	.191775
	Very High	-.122717	.1410703	1.000	-.578559	.333125

		Extremely High		.001633	.1410703	1.000	-.454209	.457475
	Very High	Extremely low		.074028	.1208054	1.000	-.316332	.464388
		Low		-.065117	.1208054	1.000	-.455476	.325243
		Medium		-.030093	.1239035	1.000	-.430464	.370278
		High		.122717	.1410703	1.000	-.333125	.578559
		Extremely High		.124350	.1545348	1.000	-.375000	.623700
	Extremely High	Extremely low		-.050322	.1208054	1.000	-.440682	.340038
		Low		-.189467	.1208054	1.000	-.579826	.200893
		Medium		-.154443	.1239035	1.000	-.554814	.245928
		High		-.001633	.1410703	1.000	-.457475	.454209
		Very High		-.124350	.1545348	1.000	-.623700	.375000
Current Ratio	Tukey HSD	Extremely low	Low	-.146978	1.1293629	1.000	-3.616894	3.322939
			Medium	-.261319	1.2073397	1.000	-3.970816	3.448178
			High	1.316400	1.5971603	.960	-3.590803	6.223603
			Very High	-3.204333	1.8728365	.537	-8.958539	2.549872
			Extremely High	1.969617	1.8728365	.896	-3.784589	7.723822
	Low	Extremely low		.146978	1.1293629	1.000	-3.322939	3.616894

	Medium	-.114341	1.2073397	1.000	-3.823838	3.595156
	High	1.463378	1.5971603	.939	-3.443825	6.370581
	Very High	-	1.8728365	.586	-8.811561	2.696850
		3.057356				
	Extremely High	2.116594	1.8728365	.864	-3.637611	7.870800
Medium	Extremely low	.261319	1.2073397	1.000	-3.448178	3.970816
	Low	.114341	1.2073397	1.000	-3.595156	3.823838
	High	1.577719	1.6532180	.928	-3.501719	6.657157
	Very High	-	1.9208657	.648	-8.844788	2.958759
		2.943014				
	Extremely High	2.230936	1.9208657	.851	-3.670838	8.132709
High	Extremely low	-	1.5971603	.960	-6.223603	3.590803
	Low	1.316400				
		-	1.5971603	.939	-6.370581	3.443825
		1.463378				
	Medium	-	1.6532180	.928	-6.657157	3.501719
		1.577719				
	Very High	-	2.1870018	.334	-11.240198	2.198731
		4.520733				
	Extremely High	.653217	2.1870018	1.000	-6.066248	7.372681

	Very High	Extremely low	3.204333	1.8728365	.537	-2.549872	8.958539	
		Low	3.057356	1.8728365	.586	-2.696850	8.811561	
		Medium	2.943014	1.9208657	.648	-2.958759	8.844788	
		High	4.520733	2.1870018	.334	-2.198731	11.240198	
		Extremely High	5.173950	2.3957405	.290	-2.186855	12.534755	
	Extremely High	Extremely low	-	1.8728365	.896	-7.723822	3.784589	
		Low	1.969617	-	1.8728365	.864	-7.870800	3.637611
		Medium	2.116594	-	1.9208657	.851	-8.132709	3.670838
		High	2.230936	-	2.1870018	1.000	-7.372681	6.066248
		Very High	-	2.3957405	.290	-12.534755	2.186855	
			5.173950					
Bonferroni	Extremely low	Low	-1.46978	1.1293629	1.000	-3.796300	3.502344	
		Medium	-2.61319	1.2073397	1.000	-4.162608	3.639970	
		High	1.316400	1.5971603	1.000	-3.844521	6.477321	
		Very High	-	1.8728365	1.000	-9.256049	2.847382	
		Extremely High	3.204333	-	-	-	-	-
			1.969617	1.8728365	1.000	-4.082099	8.021332	

Low	Extremely low	.146978	1.1293629	1.000	-3.502344	3.796300
	Medium	-.114341	1.2073397	1.000	-4.015630	3.786948
	High	1.463378	1.5971603	1.000	-3.697543	6.624298
	Very High	- 3.057356	1.8728365	1.000	-9.109071	2.994360
	Extremely High	2.116594	1.8728365	1.000	-3.935121	8.168310
Medium	Extremely low	.261319	1.2073397	1.000	-3.639970	4.162608
	Low	.114341	1.2073397	1.000	-3.786948	4.015630
	High	1.577719	1.6532180	1.000	-3.764341	6.919779
	Very High	- 2.943014	1.9208657	1.000	-9.149927	3.263899
	Extremely High	2.230936	1.9208657	1.000	-3.975977	8.437849
High	Extremely low	- 1.316400	1.5971603	1.000	-6.477321	3.844521
	Low	- 1.463378	1.5971603	1.000	-6.624298	3.697543
	Medium	- 1.577719	1.6532180	1.000	-6.919779	3.764341
	Very High	- 4.520733	2.1870018	.732	-11.587615	2.546148

	Extremely High	.653217	2.1870018	1.000	-6.413665	7.720098
Very High	Extremely low	3.204333	1.8728365	1.000	-2.847382	9.256049
	Low	3.057356	1.8728365	1.000	-2.994360	9.109071
	Medium	2.943014	1.9208657	1.000	-3.263899	9.149927
	High	4.520733	2.1870018	.732	-2.546148	11.587615
	Extremely High	5.173950	2.3957405	.603	-2.567431	12.915331
Extremely High	Extremely low	-	1.8728365	1.000	-8.021332	4.082099
	Low	1.969617				
	Low	-	1.8728365	1.000	-8.168310	3.935121
		2.116594				
	Medium	-	1.9208657	1.000	-8.437849	3.975977
		2.230936				
	High	-.653217	2.1870018	1.000	-7.720098	6.413665
	Very High	-	2.3957405	.603	-12.915331	2.567431
		5.173950				

Source: SPSS Research Data (2019)

Based on observed means.

The error term is Mean Square (Error) = 5.740.

TESTING MANOVA ASSUMPTIONS

Box's M test of equality of covariance matrices, measured using Box's M test statistic which was transformed to an F statistic with df1 and df2 degrees of freedom. Wilks Lambda revealed that the observed covariance of the dependent variable indicator (NP and CR) matrices were equal as indicated by, $F(9,459.974) = 1.580$, $p = .118$, $p > 0.05$, indicating that the assumptions were met and that the model results were robust thus statistically significant since the vector of the dependent variable indicators followed a multivariate normal distribution, and the variance covariance matrices were equal across the cells formed by the between subjects effects. Hence model result was robust to support MANOVA assumption of equality of covariance matrices of the dependent variables.

Modified Breusch Pagan Test for Heteroskedascity performed for Classes of arrears and NP indicated that there was no presence of heteroskedascity since $p > 0.05$, thus the sample size had no chi square distribution between Classes of Payment arrears and NP indicating no association. Chi square distribution could not possibly be found to exist since classes of arrears was ordinal data, whereas NP was ratio data which ideally violates assumptions of chi square. Thus implying that MANOVA assumption of no heteroskedascity was duly met.

Modified Breusch Pagan Test for Heteroskedascity performed for classes of arrears and CR indicated that there was no presence of heteroskedascity since $p > 0.05$, thus the sample size has no chi square distribution between Classes of Payment arrears and CR, indicating no association. Chi square distribution could not possibly be found to exist since classes of arrears was ordinal data, whereas NP was ratio data which ideally violates assumptions of chi square. Thus implying that MANOVA assumption of no heteroskedascity was duly met.

Correlation analysis on relationship between N.P and C.R was carried out to ascertain to what extent the N.P and C.R. across the construction firms in Vihiga County related to each other. Findings indicated r squared of 0.036, suggesting no linear correlation between NP and CR, which ideally was not statistically significant since $p=.847$, which is greater than p value of 0.05, $p>0.05$. Thus implying that the assumption of no multicollinearity in MANOVA was duly met.

Post Hoc Test carried out between classes of arrears on NP and CR and corroborated with Turkey HSD test and Bonferroni tests as follow ups from MANOVA were tested to determine whether there were significant differences between the means of Classes of arrears and NP and CR on separate cases, however there was no statistically significant differences in those group means. Turkey HSD and Bonferroni tests were further used as follow up tests to test the Robustness of ANOVA and whether results were different from ANOVA. Since there were no significant differences, this simply implied that the variances were all equal across the groups, thus suggesting that the assumption of equal variances was met, hence implying that MANOVA assumption was duly met in this study.

Appendix 2: List of Construction Firms in Vihiga County

A. PROVISION OF CIVIL AND BUILDING CONTRACTORS

RENOVATION WORKS

1. Beneda Enterprises.
2. Deslico Enterprises.
3. Donder Company Ltd.
4. Embogo Con.
5. Eagle Icon
6. Fingo Enterprises
7. Gango Ent.
8. Golden Crest Agencies Ltd
9. Jaza Enterprises building and constructors Ltd.
10. Jofes Company ltd.
11. Kenry Construction Company Ltd.
12. Keluva Gen.
13. Lango Glassmart.
14. Lobiack Ltd.
15. Masinget Construction Company Ltd.
16. Mazobi Enterprises Ltd.
17. Mian Contractors Ltd.
18. Milee Engineering and Construction Company Limited.
19. Muvo Suppliers
20. Novatech Ltd.
21. Omenda Construction Company Ltd.
22. One Care Company Ltd.
23. Pelica Care Ltd.
24. Practical Innovations.
25. Reliacom Solutions Ltd.
26. Tencons Building Ltd.
27. Vission Contractors Ltd.
28. Wamco Engineering Ltd.
29. Wekobe

B. PROVISION OF ROUTINE MAINTENANCE OF RURAL ACCESS

ROADS

- 30. Lenana Engineering Ltd.
- 31. Mama Emaron Company Ltd.
- 32. Norb Agencies Ltd.
- 33. Ruqma Holdings
- 34. Silicon Valley Construction.

**C. PROVISION OF CONSTRUCTION, REHABILITATION OF DAMS,
BOREHOLES, DIPS, WATER SPRINGS AND DRAINAGE**

- 35. Brimaric.
- 36. Finetops Enterprises Ltd.
- 37. Thamsin Enterprises Ltd.
- 38. To Your Rescue Services.
- 39. Western School

**D. PROVISION OF INSTALLATION AND MAINTENANCE OF STREET
LIGHT SERVICES**

- 40. Farwest Ltd.

Appendix 3: Secondary Data Capture Schedule

Construction Firms in Vihiga County		Payment Arrears in Shillings million	Financial Performance	
	Name		Profitability(NP)	Liquidity(CR)
A	PROVISION OF CIVIL AND BUILDING CONTRACTORS RENOVATION WORKS			
1.	Beneda Ent.			
2.	Deslico			
3.	Donder Co.Ltd			
4.	Embogo const.			
5.	Eagle Icon			
6.	Fingo Ent			
7.	Gango Ent.			
8.	Golden Crest			
9.	Jaza Ent. Co.			
10.	Jofes Company			
11.	Kenry Con.Ltd			
12.	Keluva Gen.			
13.	Lango			
14.	Lobiac Ltd			
15.	Masinget Ent.			
16.	Mazobi Ent.			
17.	Mian Ent.			
18.	Milee Ent.			

19.	Muvo Supplies			
20.	Novatech Ltd.			
21.	Omenda Cons.			
22.	One Care			
23.	Pelica Care			
24.	Practical Innovation.			
25.	Reliacom			
26.	Tencons Ltd.			
27.	Vission Const.			
28.	Wamco Eng.			
29.	Wekobe Ent.			
B.	PROVISION OF ROUTINE MAINTENANCE OF RURAL ACCESS ROADS			
30.	Lenana Eng.			
31.	Mama Emaron			
32.	Norb Agencies			
33.	Ruqma Holdings			
34.	Silicon Valley			
C.	PROVISION OF CONSTRUCTION, REHABILITATION OF DAMS, BOREHOLES, DIPS, WATER SPRINGS AND DRAINAGE			
35.	Brimaric			
36.	Finetops			
37.	Thamsin			

38.	To your Rescue			
39.	Western School			
D.	PROVISION OF INSTALLATION AND MAINTENANCE OF STREET LIGHT SERVICES			
40.	Farwest Ltd			

Appendix 4: Study Variable Data

Construction Firms in Vihiga County		Payment Arrears in Shillings million	Financial Performance	
	Name		Profitability(NP)	Liquidity(CR)
A	PROVISION OF CIVIL AND BUILDING CONTRACTORS RENOVATION WORKS			
1.	Beneda Ent.	3,166,653	0.3516	0.5352
2.	Deslico	3,827,772	0.0846	4.5224
3.	Donder Co.Ltd	447,628	0.2816	1.4355
4.	Eagle Icon	1,947,866	0.0516	3.8748
5.	Fingo Ent	8,413,564	0.2125	3.0916
6.	Golden Crest	43,615,369	0.1429	0.4525
7.	Jaza Enterp.Co.	4,908,795	0.0012	0.0318
8.	Jofes Company	6,323,009	0.1441	2.1863
9.	Kenry Con.Ltd	1,000,000	0.1659	3.0449
10.	Lango	1,980,000	0.0008	0.8534
11.	Lobiac Ltd	2,806,889	0.0950	1.1576
12.	Masinget Ent.	2,845,752	0.2611	4.5517
13.	Mazobi Ent.Ltd	948,763	0.1027	0.1894
14.	Mian Ent.	1,724,684	0.2137	8.4930
15.	Milee Enterp.	3,905,348	0.3489	1.0567
16.	Omenda Con.	3,673,944	0.7951	0.7625
17.	One Care	998,840	0.1075	0.7625
18.	Pelica Care Ltd	4,275,417	0.2102	1.4540

19.	Practical Innovation.	1,508,996	0.1820	1.0889
20.	Reliacom	3,471,639	0.3592	3.4817
21.	Tencons Con Lt	3,654,685	0.0141	2.9945
22.	Vission Const.	8,844,196	0.1842	8.4736
23.	Wamco Eng.	4,921,101	0.0131	0.6662
B.	PROVISION OF ROUTINE MAINTENANCE OF RURAL ACCESS ROADS			
24.	Lenana Eng. Ltd.	6,824,716	0.0970	0.8737
25.	Mama Emaron	2,860,180	0.1379	5.1836
26.	Norb Agencies	2,156,389	0.2786	5.9588
27.	Silicon Valley	4,761,155	0.3045	5.5271
C.	PROVISION OF CONSTRUCTION, REHABILITATION OF DAMS, BOREHOLES, DIPS, WATER SPRINGS AND DRAINAGE			
28.	Brimaric	5,570,149	0.2833	0.7180
29.	Finetops	11,523,906	0.0051	0.7648
30.	Thamsin	5,526,632	0.3023	0.000
31.	To your rescue	57,998	0.1437	6.4687
D.	PROVISION OF INSTALLATION AND MAINTENANCE OF STREET LIGHT SERVICES			
32.	Farwest Ltd	7,598,103	-0.014255	0.7256

Construction Firms in Vihiga County		Payment Arrears in Shillings million	Financial Performance	
	Name		Profitability(NP)	Liquidity(CR)
A	PROVISION OF CIVIL AND BUILDING CONTRACTORS RENOVATION WORKS			
1.	Beneda Ent.	3,166,653	0.3516	0.5352
2.	Deslico	3,827,772	0.0846	4.5224
3.	Donder Co.Ltd	447,628	0.2816	1.4355
4.	Embogo Con.	5,811,161	0.1494	10.7416
5.	Eagle Icon	1,947,866	0.0516	3.8748
6.	Fingo Ent	8,413,564	0.2125	3.0916
7.	Gango Enterp.	6,824,716	0.1524	2.5771
8.	Golden Crest	43,615,369	0.1429	0.4525
9.	Jaza Ent. Co.	4,908,795	0.0012	0.0318
10.	Jofes Company	6,323,009	0.1441	2.1863
11.	Kenry Con.Ltd	1,000,000	0.1659	3.0449
12.	Keluva Gen.	2,584,978	0.1923	36.59
13.	Lango	1,980,000	0.0008	0.8534
14.	Lobiac Ltd	2,806,889	0.0950	1.1576
15.	Masinget Ent.	2,845,752	0.2611	4.5517
16.	Mazobi Ent.	948,763	0.1027	0.1894
17.	Mian Ent.	1,724,684	0.2137	8.4930
18.	Milee Ent.	3,905,348	0.3489	1.0567

19.	Muvo Suppliers	1,345,998	0.0861	13.3673
20.	Novatech Ltd	4,396,317	0.3261	31.4533
21.	Omenda Con.	3,673,944	0.7951	0.7625
22.	One Care	998,840	0.1075	0.7625
23.	Pelica Care	4,275,417	0.2102	1.4540
24.	Practical Innovation.	1,508,996	0.1820	1.0889
25.	Reliacom	3,471,639	0.3592	3.4817
26.	Tencons Ltd.	3,654,685	0.0141	2.9945
27.	Vission Const.	8,844,196	0.1842	8.4736
28.	Wamco Eng.	4,921,101	0.0131	0.6662
29.	Wekobe Ent.	2,122,256	0.0090	21.0922
B.	PROVISION OF ROUTINE MAINTENANCE OF RURAL ACCESS ROADS			
30.	Lenana Eng.	6,824,716	0.0970	0.8737
31.	Mama Emaron	2,860,180	0.1379	5.1836
32.	Norb Agencies	2,156,389	0.2786	5.9588
33.	Ruqma Holding	2,056,514	0.1458	28.1803
34.	Silicon Valley	4,761,155	0.3045	5.5271
C.	PROVISION OF CONSTRUCTION, REHABILITATION OF DAMS, BOREHOLES, DIPS, WATER SPRINGS AND DRAINAGE			
35.	Brimaric	5,570,149	0.2833	0.7180
36.	Finetops	11,523,906	0.0051	0.7648
37.	Thamsin	5,526,632	0.3023	0.000

38.	To your rescue	57,998	0.1437	6.4687
39.	Western Sch. S	1,627,180	0.0377	88.20
D.	PROVISION OF INSTALLATION AND MAINTENANCE OF STREET LIGHT SERVICES			
40.	Farwest Ltd	7,598,103	-0.014255	0.7256