

# Determinants of Closure of Local Construction Companies in Rwanda

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**Abstract:** *The objectives of Construction Companies are to be successful in their business by surviving in competitive Business Environment. However, the construction industry has unique characteristics making it different from others development sectors. The sector is fragmented, very sensitive to many determinants which results to high rate of Business Closure. Business failure, Collapse and Bankruptcy are common terms defines the status of the company closure. The ease in Entering the Construction market with limited financing resources results to many companies competing on limited market and exposing many to Business closure, Rwanda is no exception. The objectives of the research study aimed at identifying the determinants of business closure of Local construction companies in Rwanda and Investigating their severity. The severity was ranked in Likert scale and was assessed in respect to the view points of the contractors in both construction sectors and consultants' firms. And the study also looked at salvage measures to be taken in avoidance of failures. Benching marking the research, the literature review provided a framework in understanding the finding resulting to closure of the companies and some suitable determinants was grouped based on their relevancy in a group of sectors. Basing on those determinants, research instruments were developed and used in Data Collections within several firm's managers and other important stakeholders like Engineers and architectures. Subsequently, data was analyzed using descriptive method and identify their Severity index, rank correlations analysis and one sample test was applied to proof the relevance of the determinants identified. The Descriptive statistics and test of hypotheses confirmed the variables which were found in the literature. The adverse impact of closure of the company has great consequence on the Government GDP since the sector employ a good number of workers as it mostly affects individual income. The study was important for both Government Institutions, NGO's, Universities, Research Institutions and other stakeholders. The study results revealed that contract administration, finances, design variation and technology significantly influence closure of construction projects in Rwanda. Based on the study findings, the creation of effective and efficient construction management structures was necessary. The study suggests that when sourcing for a contractor to undertake a project, it is of paramount importance to vet them and confirm that they have capacity to undertake the project in question. The contractor should also show proof of competent and well-educated staff who have handled such projects to completion in the past. The contractor should also show proof of appropriate equipment or ability to rent.*

**Index Terms:** *Company closure, salvage, local contractors, Business Environment.*

**Revised Manuscript Received on May 22, 2019.**

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## I. INTRODUCTION

Throughout the world, the business environment within which construction organizations operate continues to change rapidly. Organizations failing to adapt and respond to the complexity of the new environment tend to experience survival problems [1]. With increasing higher users' requirements, environmental awareness and limited resources on one side, and high competition for construction business marketplace on the other side, contractors have to be capable of continuously improving their performance [2].

The construction industry is complex in its nature because it comprises large numbers of parties as owners (clients), contractors, consultants, stakeholders, and regulators. Despite this complexity, the industry plays a major role in the development and achievement of society's goals. It is one of the largest industries and contributes to about 10% of the gross national product (GNP) in industrialized countries [3]. Palestine is no exception; the local construction industry is one of the main economic engine sectors, supporting the Palestinian national economy. However, many local construction projects report poor performance due to many evidential project-specific causes such as: unavailability of materials; excessive amendments of design and drawings; poor coordination among participants, ineffective monitoring and feedback, and lack of project leadership skills [4]. The ever-important macro-level political and economic factors have also been related to poor projects performance [5]. The major focus for any construction company in this unpredictable competitive construction Environment is to ensure success by maintaining its presence and stability in the market. The easy in entry into the construction market results to large number of the companies competing on limited services and consequently exposing many of them to business failure [6].

## II. BACKGROUND

Normally starting up of the business is always associated with uncontrollable risks for which the entrepreneur has less control over it. The entrepreneur always expects a certain failure in due course of running the business due to unexpected certain factors. Despite professional market analysis on construction industry where risks, benefits, and competitiveness in the construction industry are analyzed yet uncertainty remains with the investor. The analysis made by Statistic Brain Research institute in USA has shown Finance Insurance and Real Estate being the best investment sector with failure rate at 58% and ranked Construction at 8th Position with failure rate of

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47% and the Information and Transportation, Communication and Utilities being the worse investment [7]. It was also noted in the report that most of business fails within few years of its registration and its failure rate recorded is at 50% within first two years. Among strongest reasons for failure as highlighted in the statistics of Brain institute of research are incompetence in business which stands at 46% and lack on managerial skill with 30%.

Rwanda Growth Domestic Products (GDPP) is mainly divided into Agriculture with 34.1%, Industry 15.1% and Services 50.3% as per RDB 2017 Report. Rwanda maintained its economic growth since 2014 with Growth Domestic Products (GDP) being at 7.5% from 4.7% in 2013. Today its economic growth in Sub Sahara Africa is being among 6 best countries for fast-growing economy in Africa. Rwanda Economic growth forecast is expected at 7% in the year 2019. Rwanda economic growth is mainly contributed by Tourism, Remittance from Diaspora and Agriculture production due to presence of good harvest [8]. Rwanda also has been Ranked Second Country in Africa for easy in doing business after Mauritius ranked 1st and consequently positioned number 49 and 56 respectively worldwide. This is as result from introducing many reforms in business policies including but not limited to online registration of company and tax payments subsidies for investors. The report on investment opportunity in real estates and construction, reported construction industry contributes to more than 7% to the national GDP and recorded a growth of 9.4 % (2013/2014) because of sustained expansion in private constructions and public works. Construction spending in this sector in the year 2015 was 546 M USD at growth of 10 % (2014/2015), and Real Estate spending in 2015 was 471 M USD with growth of 7 % (2014/2015) [9].

Rwanda Construction sector is unpredictable and vibrant but mainly affected by economic system and political environment which fluctuate overtime. And of history, Rwanda construction sector before genocide was very weak and contracts award was based on ethnicity not based on any form of procurement process. There was total lack of transparency in awarding the tender, and government used Royal Decree of 1959 and the order of the king of Belgium governing procurements of goods, works and transport which was regulated in 1971. Also, before 1994 Genocide, private sector was almost nonexistent, and projects were implemented by Government and few political affiliated companies. Therefore, construction industry is of recent resurrected sector and new in Rwanda and its sustainability is unpredictable. This requires high attention from all stakeholders to ensure it growth to the acceptable standards.

The country optimism of achieving most of its main objectives in alignment to the vision 2020 within shortest period results into local construction companies fails making tangible progress. In this research the main reasons to the failure of the local companies in the market was deeply researched and tentative determinants which lead to the failure like lack of Experience in managing multibillion projects or small projects, lack of proper mission and vision, and lack of skills and resources, lack of financial capacity, working under small margin profit, underestimating the cost of works, policy and working Environment and many others was researched and analyzed.

The research is intended to assess in the details the factors causes the failure of the companies for the last 10 years and establish monitoring indicators for which policy makers, governing board and bonding company used to insure no further failure in construction sector. The research also evaluates the rate of closure of the business and seek the best option for the local company to survive in the competitiveness world.

Early before companies used existed weak policy and re-registered their companies in different names to escape from blacklisted or bankrupt. Afterward Rwanda Procurement authority (RPPA) was well established, most of them were blacklisted and others closed business. Multiple registration left many projects uncompleted and contracts ended in litigation. At the same time Government, Banks, surety suffered big damages and some of the contractors went into exile in avoidance of legal proceedings related to contractual damages. Most of the local companies make their business registration without proper business plan to establish future sustainability of the industry. Lack of vision and mission without properly market analysis on current, future opportunities and all associated risks results to abrupt and closure of the business at the early years after registration.

Normally any investor feels more secure in investing in a country with stable economy where their money is more secure. Rwanda for the last 7 years has maintained its economic development and has been named as good place to invest. Rwanda being under developing country and cannot entirely finance its budget and thus creates fears for some investors to open its construction business despite good economic progress. The company insolvency or closure is the results of many factors which one cannot be treated in isolation. These factors need to be well analyzed at different times with change in Economic Environment and other dynamics happening in the country. The Company growth rate should also be monitored to ensure the mission of Private driven economy policy is maintained.

It was noted during world economic recession of 2008 to 2012, the Rwandan companies rippled effected of collapse of mortgage industry in USA resulting to closure of some financial institutions, construction companies including low turn up in construction registration permits within Rwanda Development Board. This period of world economic shock affected the already good trend made in construction industry in Rwanda and person Incomes. Rwandan GDP also dropped from 11.2% to 5.6% in the year 2008 to 2009 as per IMF World Economic Outlook, March 2009; Rwanda – MINECOFIN. It is therefore imperative to closely monitor the sector to ensure the incomes of individuals are maintained. The stakeholder persistence in construction industry are Owners or clients, Contractors and subcontractors with objective of ensuring cost effectiveness, high quality or specifications are respected and timely executed of the project [6]. The company failure is associated to these triangles and failure of either of them results into litigations, bankruptcy and asset lien.

### III. LITERATURE REVIEW

#### A. Construction Industry

Construction industry is considered one of the oldest industries organized on a project basis [10]. Well known examples are the Egyptian pyramids (3rd millennium B.C.) and the aqueducts carrying water to cities and industrial sites that were constructed in Rome in 312 B.C. [11]. One thing that is common to all these historic structures is the use of both human and material resources which are planned, organized, coordinated and controlled for the sole aim of realizing the projects. It also involves a complex structure of different trades and professionals working in harmony towards the realization of the projects.

The construction industry is of strategic importance to any nation due to the role it plays in the economy [12]. It is responsible for the provision of infrastructure and contributes to a country's gross domestic product [13]. The industry worldwide accounts for a sizeable proportion of a nation's economic activities and globally accounts for about 10% of the world economy [14] [15]. Approximately 70% of construction investment is accounted for in the USA, Western Europe, and Japan. The continent of Africa accounts for about 1%. Per capita investment in construction in the developed world is approximately \$2 500 per annum as against \$46 per annum in Africa [16].

The low level of construction investment in Africa and lack of human capital potential has created a huge infrastructural deficit and this account for the low socio-economic growth of the continent. The industry can be used for the socio-economic development of developing economies (Hamilton, 2006). This is because of its unique ability to facilitate development of a nation by providing directly for human needs, stimulating investment, and generating employment [17]. Hence, the construction industry is a sector that can assist the African continent to develop its economy as well as provide employment opportunity to its teeming population.

#### B. Early project closure

Early project closure can be influenced by several factors. In this study, independent variables were identified and aligned the dependent variable: timely completion of projects. Although timely completion of the project is one of the determinants of its success, it is important to manage each project based on its uniqueness [18]. Project success factors can be classified into managerial factors, efficient project planning and clarity of objectives. Kog & Loh, (2012) identify two stages within project lifecycle as the delivery and post-delivery stages. The delivery stage focuses on standard measures which involve "doing things right" while the post-delivery stage is the concern of the consumers and organization to ensure that things were done right. It is based on this approach that "getting things right" is perceived to be more significant compared to "doing things right". Zulu and Chileshe (2008) give a comprehensive framework which entails efficiency, impact on the team, impact on the client, organizational success and preparedness for the future [19].

#### C. Delay in construction projects

Many studies were carried out to assess the causes of delays in construction projects. A report published by the World Bank in 1984 has supported the fact, which I have raised in above paragraph too. It stated that most of the projects executed in many developing countries have faced difficulties due to three reasons, namely: 1) Unclear policy of the government 2) Lack of appropriate project design and, 3) Lack of institutional capabilities. The delay in public construction works has immensely affected the cost of the project. Sjoberg (2000) estimated that, a 14-18-month delay would generate an additional cost of \$261 million to \$344 million to state and local governments in USA. Ogunlana et al, (1996) studied the delays in building projects in Thailand, as an example of developing countries' economy. In which they found three types of prevailing problems i) problems of shortages, mainly supply of resource ii) problems caused by clients and consultants and iii) problems caused by incompetence of contractors.

Mansfield et al (1994) studied the causes of delay and cost overrun in construction projects in Nigeria. The findings of the study were financing and payment for completed works, poor contract management, changes in site conditions, shortage of material and improper construction planning. In 2002, Thomas and Ellis studied problem of delays in highway construction in Florida, USA. Out of many factors, most important causes found in research are i) construction work taking as business as usual, ii) lacking team accountability for timely project completion, iii) utilities are unidentified or incorrectly located iv) delays in relocation of utilities v) differing or unseen site vi) inadequate planning by contractor vii) design errors and omissions.

#### D. Conceptual Framework

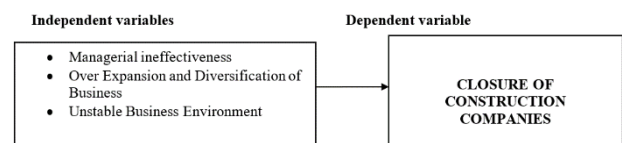


Figure1: Conceptual framework of the study

### IV. RESEARCH METHODOLOGY

Statistical population is the specific population from which information is desired (Lapin, 1993). According to Mugenda and Mugenda (2013), a population is a well-defined set of people, services, elements, event, and group of things or households that are being investigated. They further note that, population studied are more representative because everyone has equal chance to be included in the final sample that is drawn [20].

The study population was all construction companies and consultant's firms having similar grades as per Rwanda Public Procurement authority categories. Construction companies are currently divided into three categories Large, Medium and small depending on financial capacity which are mainly depends on the size of projects executed, acquired assets and size of credit line with the bank etc.





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These companies are all registered in Rwanda Development Board. Their construction performances can be found in either at the company Managing Directors or Clients they engage in contract executions. The researcher also dealt with well-known consultant's firms involve in supervisions of the construction companies. The main target in survey was involving Engineers, Managing Directors for the construction companies, Client Project Managers, consultants and Project Coordinators for single implementation units in different ministries. The above arrangement generated many companies randomly sampled during establishment of sample size which eventually represented the population. Nonetheless, a population size of 300 was used for the study and this comprised of 50 contractors, 125 consultants and 125 Public building professionals respectively.

A total of 132 questionnaires were distributed among the respondents resulting in the questionnaire being distributed in the order of: 36; 48; and 48; to contractors, consultants and public building professionals respectively, in the entire study area. Therefore, sample size was 132 companies with the rations as follows Category A: 36, Category B: 48, Category C: 48.

### V. RESEARCH RESULTS AND FINDINGS

Results indicated that 55.4% agreed that Lack of experience in contracts management was one of the managerial effectiveness that led to closure of construction companies in Rwanda. A total of 51.1% of the contractors involved in the research agreed that bad decisions in formulating company policy led to closure of construction companies in Rwanda. Majority of the respondents (53.2%) disagreed that Neglect and Negligence by the company owner(s) led to closure of construction companies in Rwanda. Adopting unsuitable procurement practices was supported by 54.3% of the respondents as a factor that led to closure of construction companies in Rwanda. This was followed by lack of control of the administrative approval system where majority 23.4% disagreed with the statement.

Contractors involved in this survey strongly disagreed with the lack of labour productivity and improvement as it scored a mean of 2.67. Frequent replacement of the key successful personnel had a mean of 2.65 and standard deviation of 1.48. The mean was very high at 2.65 and confirmed the strong evidence of the fact; the standard deviation at 1.45 to show the heterogeneity of responses. 32.9% of the respondents agreed that Centralized decision making improved and saved many companies from closing. Regarding inflation rate in the economy of the country 23.4% of the respondents disagreed with the statement.

Bad company structure which delays decision was ranked the highest cause of failure of construction companies with 54.1% strongly agreeing with the statement. Lack of using Project Management techniques also was a major cause of failure of construction companies with majority 55.4% fully agreeing. Assigning unqualified site engineers was down proofed by majority 31.9% who strongly disagreed with the statement. In addition, Internal company problems due to bad organization was supported by only a fraction of 23.8% who agreed with the statement. Minority of the respondents 14.9% strongly disagreed that Lack of using qualified consultants in

the key project areas led to closure of companies. Lack of adjusting to changes was also supported by 33.0% of the respondents who disagreed with the statement.

Lack of using efficient documentation system was highlighted as a cause of closure of construction companies with 29.2% of the respondents strongly agreeing. This is because Frauds was ranked highest cause of failure with 42.3% strongly agreeing that fraud caused many companies to close in Rwanda. 22.3% of the respondents agreed that there was Lack of commitment due to the nature of the contract leading to closure of construction companies.

*Framework to salvage the local contractors Business which tends to fail:*

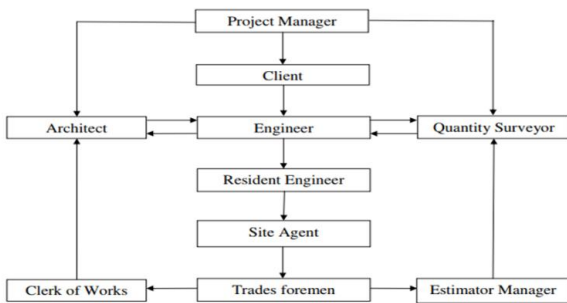
According to Neurol (2007) the first thing to know about integrative management is that it neither is nor includes just one thing. Instead, integrative management is a continually evolving, closed-loop management system. As such, it links strategic and operational plans in such a way that the long-term vision, as well as strategic, daily operational, financial and customer service goals and objectives work with and depend on each other. It's essentially a single cohesive management system that both defines where your business is going and determines how you will get there.

In construction contracts, proving who and what causes closure of construction companies is a critical aspect of resolving and mitigating on future delays. But waiting until after the losses have been incurred before addressing recovery by submitting a claim is reactive strategy and often leads to higher potential for loss among project stakeholders. The following strategies can help the project stakeholders remain aware of the potential for delay and disruption throughout the project planning and execution phases. The three significant factors thus; Materials availability, labor availability and clients' related factors would need strategically be addresses by the parties in the following ways: -

To mitigate closure of construction companies, there is need to have adequate research done on the availability of materials before the commencement of the works. The same applies for labor requirements and keeping of trained personnel in the process of execution of construction works is paramount. Independent and experienced project managers should be employed to deal with the client retarded problems. This will assist in mitigating the problems that have emerged as the most significant in the analysis of closure of construction companies thus; slow decision making by clients, insufficient labor force, changes by clients and consultants at the site; this is not limited to managerial ineffectiveness, financial determinants, business over expansion and diversification unstable business and political environment. With regard to finance, to avoid closure of construction companies, the clients should have adequate finance resource before the commencement of construction works so that contactors are paid promptly. As for technology, contractors should ensure that they have the latest machinery and train their staff on how to use them efficiently therefore saving time in the execution of the projects hence avoiding closure of construction companies.



It is also important that the following points are taken into account in mitigating closure of construction companies -: The contractor should know the scope of the works, analyze the critical path of the project, establish risk triggers as an early warning system and develop contemporaneous documents to quantify delay and productivity loss.



**Figure 2: Framework to salvage the local contractors Business which tends to fail**  
Source: Author, 2019

## VI. CONCLUSION

Construction industry is an important component of Rwanda's economic growth and development. Success of construction projects on time is therefore critical for country's economic growth. The aim of the study was to investigate the causes closure of construction projects in Rwanda and hence finding mitigating factors to the problem of failure. From the analyzed field data, some factors have been established as being influential to closure of construction companies in Rwanda. This study therefore contributes to the existing literature on closure of construction projects in Rwanda by highlighting the frequent and significant causes of closure of construction projects in Rwanda. The findings showed that materials, labour and client related factors (bureaucracy in client's organization), are significant in determining closure of construction companies in Rwanda. The findings are in line with a study by Msafiri (2015) who found the same variables to be significant determinants of project failure while investigating the factors causing delays in road construction projects.

In view of the stated findings and conclusions the study makes the following recommendations:

1. The authors recommended to develop human resources in the construction industry through proper and continuous training programs about construction projects performance. These programs can update participants' knowledge and can assist them to be more familiar with project management techniques and processes. Owners are encouraged to facilitate payment to contractors in order to overcome delay, disputes, and claims. All managerial levels should participate in sensitive and important decision-making. Continuous coordination and relationship between project participants are required through project life cycle for solving problems and developing project performance.

2. Consultants should be more interested in design cost by using multi-criteria analysis and choosing the most economical criteria in order to improve their performance and to increase owners' satisfaction. In addition, consultants are urged to facilitate and expedite orders delivered to contractors

to obtain better time performance and to minimize disputes and claims. Contractors should not increase the number of projects that cannot be performed successfully. In addition, contractors should consider political and business environment risks in their cost estimation for overcoming delay because of closures leading to materials shortages. There should be adequate contingency allowances in order to cover increases in material cost. Proper motivation and safety systems should be established for improving the productivity performance of construction projects in the Rwanda hence avoidance of closure of construction companies.

## ACKNOWLEDGEMENT

I would like to importantly thank the Almighty God for giving me good health and peace in my endeavors. This research was successful under combined effort of important persons in my life and may almighty God reward them power to keep supporting them in their doings. Secondly, I would like express profound gratitude Dr. T. Kivaa and Dr. G. Wanyona for great support in the selection of this project and for their advice and input in the preparation of this thesis. Without your support this work would not have come to a successful completion. Many thanks to the entire staff in the Jomo Kenyatta University of Agriculture and Technology Kigali Campus for their invaluable inputs during the entire period of study I thank the Institute of Engineers of Rwanda for making available all the registered construction companies in Rwanda and the workers on the selected sites for active participation in the study. The contribution by Dr Gwaya for his tireless guidance in every step of this research. Last but not least I thank my family especially my Wife and my two children Anorld Ngoga Gakuba and Dylia Ganza Gakuba for their comfort in this endeavor of my research and their evening interactions and humanity demonstrated as during both my studies and this research.

## REFERENCES

1. Lee, A.; Cooper, R.; Aouad, G. (2001). *A methodology for designing performance measures for the UK construction industry*. Salford University.
2. Samson, M.; Lema, N. M. (2005). *Development of construction contractor's performance measurement framework*. Department of Construction Technology and Management, University of Dar es Salaam, Tanzania
3. Navon, R. 2005. Automated project performance control of construction projects, *Automation in Construction* 14: 467-476.
4. UNRWA. (2006). *Projects completion reports*, UNRWA, Gaza.
5. UNRWA. (2007). *Projects completion reports*, UNRWA, Gaza.
6. Assaf, S., Hassanain, M. A. & Al-Zahrani, S., (2015). Causes of Contractors' Failure in Industrial Projects in Saudi Arabia. *Applied Sciences, Engineering and Technology* 9(3): 158-164.
7. Chai, S.C., Yusof A.M. (2013) Reclassifying Housing delivery Delay Classification. *International Journal of Business Management*, Vol. 8, No. 22, pp. 107-117.
8. Ahadzie, D. (2011). A Study of the Factors Affecting the Performance of Contractors Working on KMA Projects, *Journal of Local Government Studies*, Vol. 3 (1), pp. 50-65
9. Chilipunde, R. (2011). *Assessment of emerging contractors in Malawi*. (Unpublished BSc honors treatise). Port Elizabeth: Nelson Mandela Metropolitan University.
10. Lim, C.S. and Mohamad, M.Z. (1999) Criteria of Project Success: An Exploratory Reexamination. *International Journal of Project Management*, 17: pp. 243-248

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11. Mbachu, J.; Nkando, R. (2007). Factors constraining successful building project implementation in South Africa, *Construction Management and Economics* 25(1): 39–54
12. Gollenbeck, L. (2009). *Planning of Construction Projects: A Managerial Approach*. Siegen: Ph,D Thesis Universitat Siegen.
13. Ramanathan, C., Narayanan S., Idrus, A.B. (2012) Construction delays causing risks on time and Cost-a critical review, *Australasian Journal of Construction Economics and Building*, 12(1), pp. 37-57
14. Adindu, C. C. (2012). *Developing Templates for Project Costing in Nigeria: Basic Considerations*. 1st National Project Cost Reduction Summit. Abuja: QSRBN
15. Freeman, H. M. (2011). *A Review of the Performance of Botswana Citizen Building Contractors*. Nelson Mandela Metropolitan University: South Africa: MSc Thesis
16. Oglesby, C.H., Parker, H. W. & Howell, G. A. (2009) *Productivity Improvement in Construction*. MacGraw-Hill, New York.
17. Hamilton, D. (2006). Contract Staff Management Systems in the Construction Industry in Nigeria. *Pakistan Economic and Social Review*, XLIV (1): 1-18.
18. Ogwueleka, A. (2011). The Critical Success Facators Influencing Project Performance in Nigeria. *International Journal of Management Science and Engineering Management*, 6 (5): 343-349.
19. Zulu, S.; Chileshe, N. (2008). *The impact of service quality on project performance: a casestudy of building maintenance services in Zambia*, in Proc. of the 3rd Built Environment Conference, Association of Schools of Construction of Southern Africa, Cape Town, South Africa.
20. Mugenda, O.M., & Mugenda, A.G. (2013). *Research methods*. Nairobi: McMillan Publishers.

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