EFFECTS OF CHILDHOOD CAPABILITY DEPRIVATION ON ACADEMIC PERFORMANCE: A CASE OF PRIMARY SCHOOL PUPILS IN RHONDA SLUMS, NAKURU SUB-COUNTY KENYA

BY

NANCY ATIENO KASERA

Dissertation Submitted in Partial Fulfilment of the Requirements for the Award of Masters in Development Studies (Children and Youth Development Option) to St. Paul's University Kenya

SEPTEMBER 2019

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Supervisors

Dr. Peter Koome

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SEPTEMBER 2019

DECLARATION AND APPROVAL

This dissertation is a product of my own work. It is not work done in collaboration and it has not been presented previously to any institution. I agree that this dissertation may be available for reference and photocopying, at the discretion of St. Paul's University.

Signature of Student…… Date ……..

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APPROVAL:

This dissertation has been presented for examination purpose with our approval as the University student's supervisors.

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Signature…… Date ……

Department of Development Studies, St. Paul's University

DEDICATION

I dedicate this work to my parents Mr. and Mrs. Kasera for their moral and financial support during the entire research project period. You have been a source of strength and inspiration that has seen me come this far.

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First, I am most grateful to the Almighty God for the good health during the time of studies as well as when writing the research proposal.

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ABSTRACT

Childhood capabilities refer to a range of options that a child has that determine the kind of life he or she lives. Approximately 19.5% of the global children population lives in state of capabilities deprivation while in Kenya, childhood capabilities deprivation rate stands at 45% of the total children population. This study sought to examine the effect of childhood capability deprivation on the academic performance of primary school pupils in Rhonda slums. The specific objectives of the study were to examine the effect of health deprivation, household socioeconomic status (SES), and nutritional deprivation on the academic performance of primary school pupils in Rhonda slums. The study was guided by Amartya Sens Capability Approach of Development and Maslow Hierarchy of Needs. It utilized the descriptive survey design where it targeted a population 3276 individuals comprising of 3204 pupils and 72 teachers in six primary schools in Rhonda slums. From this population, a sample of 90 pupils was selected using the random sampling technique and 7 teachers were selected using purposive sampling. Semi-structured questionnaires were used to collect quantitative data from pupils while semi-structured interview guides were used to collect qualitative data from teachers. Quantitative data was analysed using descriptive and inferential statistics while qualitative data was analysed using thematic technique. Results showed that on health deprivation, access to preventive care ($t=3.232$, $p=.002$) and school absenteeism due to illness ($t=1.996$, $p=.044$) were the main factors affecting the academic performance of pupils in Rhonda slums. Regarding household SES, findings revealed that possession of durable household assets such as house and land, father occupation, and mother occupation had a statistically significant effect on pupils' academic performance. About effect of nutrition deprivation, the study found that only the quality of meals taken by the pupils ($t= 3.196$, $p= .013$) had a statistically significant influence on their academic performance. Number of meals per day and access to nutrition information had no significant effect on academic performance. The study recommends the development and implementation of interventions aimed at improving access to preventive care, reducing school absenteeism due to illness, increasing acquisition of durable household assets, and improving quality of meals. The study also recommends the development and implementation of social protection programmes targeting households with parents who are unemployed or underemployed.

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LIST OF ABBREVIATION AND ACRONYMS

FAO:	Food and Agriculture Organization
KDHS:	Kenya Demographic and Health Survey
MOEST:	Ministry of Education Science and Technology
NACOSTI:	National Commission of Science and Technology
SES:	Socioeconomic Status
SPSS:	Statistical Package for Social Sciences
UK:	United Kingdom
UNICEF:	United Nations International Children's Emergency Fund
USA:	United States of America
WHO:	World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Chapter Overview

This chapter discusses issues that motivated the research on the subject of childhood capability deprivation and its influence of academic performance. Particularly, the chapter presents the background of the study, statement of the problem, objectives, research questions, justification, scope, limitation, and assumptions of the study.

1.2 Background of the Study

The term capability has become popular in the field of development. According to Underwood, Valeo, & Wood, (2012) capabilities refer to actions or states of being that are valued by an individual. Capabilities may be potential or realized with each individual having a unique set of capabilities. In the context of children, capabilities refer the ability of young persons to help themselves, shape their own lives, and live a dignified life (Peleng, 2013). Bigeri and Anich (2009) defined capabilities as the opportunities that an individual has to influence the life he or she may live. According to Hart and Brando (2018), capabilities can therefore be understood as 'the range of options a person has in deciding what kind of life to lead', which 'represent the various combinations of functioning (being and doing) that the person can achieve', and as such constitutes one's freedom

Nussbaum and Dixon (2012) defines capability as those entities that enable people to execute their human functions. Capabilities should therefore be understood as 'what people are actually able to do and to be. Despite the tendency to overlook children in that regard, children too should be seen as entitled to exercise their agency and capabilities. Nussbaum and Dixon (2012) suggests a list of ten capabilities that she qualifies as concrete, universal, inseparable and essential to the realization of human development. The ten capabilities are: life, bodily health and integrity, freedom of movement, sense, imagination and thought, emotions, practical reason, affiliation with friends and other species, play, and control over one's environment. Anich (2009) identified another set of 14 capabilities that a child should have during his or her life. These capabilities include life and physical health, love and care, mental well-being, bodily integrity and safety, social relations, participation/ information, education, freedom from economic and non-economic

exploitation, shelter and environment, leisure activities, respect, religion and identity, time autonomy, and mobility.

Capability leads to optimal functioning and flourishing of an individual. On the other hand, capability deprivation has dire consequences for human lives. It leads physical, social, and psychological problems for the child. Biggeri, Trani, and Mauro (2010) broke down capability deprivation into 10 dimensions: heath deprivation, material deprivation, food security, care and love, social inclusion, freedom from economic exploitation, access to schooling, autonomy, and mobility. The UK Department for Education proposed eight dimensions of capability deprivation: income and material deprivation, wordlessness, unmanageable debt, poor housing, parental skill level, access to quality education, family stability, and parental health deprivation (Dickerson & Popli, 2015).

Childhood capability deprivation is an endemic problem in all parts of the world. According to the World Bank (2016), there are 385 million children living in abject poverty globally. It was noted that children are disproportionately affected by deprivation as they constitute 50% of the individuals living in poverty despite them being 33.3% of the general population. They also suffer the most from deprivation as it affects the development of their bodies and minds. According to Newhouse, Becerra, & Evans (2016), the global prevalence of child deprivation stood at 17% in 2016 which was greater than the global rate for adults. Prevalence of capability deprivation was highest among the 5-9 year old at 21.5% followed by 0-4 years old at 21%.

In the United States, childhood deprivation is a pressing social concern with an estimated 15.5 million children (21.1% of the total children population) living in families with incomes that are below the poverty line (McCarty, 2016). This situation makes children the largest segment of poor people in the United States. Rates are highest among young children under the age of 3 years standing at 25%. In the UK, it is estimated that 4.1 million children were living in a state of deprivation in 2018 with this figure translating to deprivation rate 30% (Bulman, 2018). Children living with single parents accounted for two-thirds of all children living in a state capability deprivation. According to the Trade Union Congress (2018), the problem of child

poverty in UK has been exacerbated by government's decision to cut in-work benefits and restrict public sector pay.

The problem of child poverty in more pronounced in the developing countries particularly sub-Saharan Africa. In developing countries, one in every five children lives in the extreme poverty (defined as deprivation of one or more basic human need) while in sub-Sahara Africa prevalence stands at one in every two children (World Bank, 2016). This figure translates to about 207 million children living in poverty. Gordon, Nandy, Pantazis, Pemberton, and Townsend (2009) further estimates that 37% of children in sub-Sahara Africa are living in absolute poverty defined as deprivation of two or more basic human needs. Poverty rates are higher among rural children with rates for absolute poverty rising to 70%. Shelter was found to be the most prevalent form of deprivation with 34% of the children living in substandard dwellings (Gordon et al., 2009). Other prevalence forms of deprivations include sanitation (31%), information (25%), water (20%), food (15%), and health (15%).

According to UNICEF (2014), Kenya is one of the most unequal countries in sub-Sahara Africa where an estimated 42% of the population lives below the poverty line. To many people, access to basic services such as, health care, education, clean water and sanitation is a luxury. Large segments of the population, including the burgeoning urban poor, are highly vulnerable to climatic, economic and social shocks. As such, progress on the Millennium Development Goals, especially in regards to social security, is mixed. According to the Kenya National Bureau of Statistics (2016), there were 9.5 million children who were deprived of three or more basic needs in 2016. This figure translates to a childhood deprivation rate of 45%. Deprivation rate were higher in the rural areas (56%) as compared to urban areas (19%). Childhood deprivation also varied by county with Nairobi recording the lowest rate of 7% and Turkana having the highest rate of 85%.

Childhood capability deprivation has damaging impacts on almost all aspects of family life and out-comes for children. According to McCarty (2016), capability deprivation limits the chances of educational attainment, and at the same time, educational attainment is one of the prime mechanisms for escaping poverty. According to Dreyer, Chung, Szilagyi, and Wong (2016), childhood deprivation is an attack on society's human capital as it impairs the physical health of children, create

developmental problems, increase risk for life altering events such as teenage pregnancies, and exposes children to food insecurities. All these factors have a negative effect on the child educational outcomes. Through multiple studies, Rowan et al., (2004) demonstrated that student and school deprivation adversely affected student achievement. This study therefore sought to examine the effect of childhood capacity deprivation on academic performance of primary school pupils in Rhonda slums.

1.3 Statement of the Problem

Childhood capability deprivation is major challenge in the modern society. Globally, an estimated 385 million children are deprived of basic necessities representing 19.5% of the total children population (World Bank, 2016). The situation in Kenya is worse as childhood deprivation rates stands at 45% of the total children population (Kenya National Bureau of Statistics, 2017). Childhood capability deprivation presents a chronic problem for children and families, and that may interfere with successful adjustment to developmental tasks, including school achievement.

Childhood deprivation not only affects the child's future but also drags down the society. Children are often viewed as unfinished products and the childhood period as a journey towards a person's destination (Peleg, 2013). Childhood experiences set the stage for an individual's lifetime experiences because this is the period that forms the foundation of an individual development, both physiologically and psychologically. The capabilities that a person enjoys during adulthood are a direct function of the conditions that he or she experienced during childhood. Therefore, addressing childhood capability deprivation is critical to solving deprivation among all members of the society.

Children raised in low-income families are at risk for academic and social problems as well as poor health and well-being, which can in turn undermine educational achievement. It has been well documented that beginning as early as the second year of life, there is an association between deprivation and children's development and academic performance. This study therefore sought to examine the effects of childhood capability deprivation on academic performance of primary school pupils in Rhonda slums in Nakuru County, Kenya

1.4 Objectives

1.4.1 General objective

The general objective of the study was to investigate the effects of childhood capability deprivation on the academic performance of primary school pupils in Rhonda slum, Kenya.

1.4.2 Specific Research Objectives

i. To examine the effects of health deprivation on academic performance of primary school pupils at Rhonda Slums Nakuru sub county.
ii. To determine the effects of household socioeconomic status on academic performance of primary school pupils at Rhonda Slums Nakuru sub county.
iii. To assess the effects of nutrition deprivation on academic performance of primary school pupils at Rhonda Slums Nakuru sub county.

1.5 Research Questions

i. What are the effects of health deprivation on academic performance of primary school pupils at Rhonda Slums Nakuru Sub County?
ii. What are the effects of household socioeconomic status on academic performance of primary school pupils at Rhonda Slums Nakuru Sub County?
iii. What are the effects of nutrition deprivation on academic performance of primary school pupils at Rhonda Slums Nakuru Sub County?

1.6 Justification of the Study

The study will be of benefit to primary school pupils in the study area and other highly deprived areas in the country, policy makers, social services providers, and researchers. The study will benefit primary school pupils in Rhonda slums and other low socioeconomic areas as it has generated knowledge regarding aspects of childhood capability deprivation that have a significant effect on academic performance. This knowledge will assist in the development of interventions aimed at addressing the effect of childhood capability deprivation on the pupils' education thus resulting in better educational outcomes for these children. Improved educational outcome will improve their chances of improving their standard of living.

The knowledge generated will also be of significance to policy makers both at the county and national government as it will guide the development of policies aimed at alleviating childhood deprivation and improving academic performance for children. Particularly, the study has pointed out childhood capability deprivations that have the most significant impact on children education thus enabling the development of targeted rather than general/ universal policies.

By determining the childhood capabilities deprivation that are persistent in the study area and that has the greatest impact on children academic performance, the study will guide social service providers when it comes to designing social welfare programs. The knowledge will enable these providers to determine which area to focus on (health, socioeconomic, or nutrition) in order to have the most meaningful impact on the community.

The study will also benefit researchers in the field of community development and education among others as it has added to existing theories and empirical literature regarding the influence of childhood capabilities on educational outcome. The study will also support research on the subject of childhood capability deprivation as it has recommended areas for further research.

1.7 The Scope of the Study

This study focused on examining the effect of childhood capabilities on the academic performance of primary school pupils. Although many dimensions of childhood capability deprivation were identified in literature, this study focused on three dimensions: health, household socioeconomic status (SES), and nutritional capabilities. The focus on these three dimensions is informed by Gordon et al., (2009) study where it was found that these are the most prevalence dimensions of childhood deprivation in sub-Sahara Africa. The study was limited to primary school pupils living and attending schools in Rhonda Slums. It was conducted between March and May 2019.

1.8 Limitation of the Study

The study was limited by several factors. The first is the reliance on data reported by teachers and pupils to assess childhood capabilities, academic performance, and the relationship between the two. Although the survey approach was a fast and cost

effective approach of collecting data, it exposed the study to errors associated with respondents' inability and unwillingness to provide accurate and honest information. The study tried to overcome this limitation by guaranteeing high levels of anonymity and privacy to the respondents so as to encourage honesty.

Another limitation emanated from the cross-sectional nature of this study, in that data was collected at only a single point in time. Although this approach of data collection was necessary due to time and resource limitations, it could only provide a snapshot of the situation within the study area with respect childhood capability and academic performance. It could not provide an account of how these capabilities have evolved over time as well as how academic performance of the pupils have changed in line with changing capabilities.

1.9 Delimitation of the Study

The current study limited its focus on three forms: health deprivation, household socioeconomic status, and nutritional deprivation. Although it sought to determine the effect of childhood deprivation on the academic performance of primary school pupils in general, data collected was limited to Class 8 pupils because it was presumed that pupils at this grade were in the best position to appropriate respond to the questions in the data collection instrument. In addition, it was assumed that pupils in class 8 had stayed in slums longer and thus examining their performance would provide a more accurate verdict regard how slum life and the deprivations that come with it influenced academic performance.

1.10 Assumptions of the Study

The study assumed that the methodology used was able to elicit accurate information regarding the childhood capability of primary school pupils within the study area. It was essential to understand these capabilities in order to assess their effect on academic performance.

The study also assumed that the methods used were able to accurately bring out the academic performance of primary school pupils in Rhonda slums. Academic performance was the dependent variable of the study and the accuracy of information regarding this variable was critical to the validity of findings and conclusion.

Finally, the study assumed that the sampling procedures used provided a sample that was a true representation of the population of primary school pupils in Rhonda slum. The representativeness of the population was essential in supporting the generalization of findings from the sample to the population.

1.11 Definitions of Key Terms

Academic performance: Progress made in terms of realizing learning and development goals measured in terms acquisition of knowledge and skills, grades, attendance, and grade transition.

Childhood capabilities: A range of options a person has in deciding what kind of life to lead

Heath Deprivation: Condition characterized by limited access to health services (Gordon *et al.*, 2009). In this study it was measured access to preventive care, sickness incidents, and school absenteeism due to illness

Household SES: A measure of the combined social and economic wellbeing of a household (Gordon *et al.*, 2009). In this study, household SES was measured in terms of durable assets, father's occupation, and mother's occupation.

Nutritional deprivation: Condition characterized by limited access to quality nutrition (Gordon et al., 2009). In this study, it was measured in terms number of meals per day, quality of meals (balanced diet), and access to nutritional information.

1.12 Chapter Summary

This chapter has discussed the background of the study, problem statement, objectives of the study, research questions, significance of the study, scope of the study, and

assumptions of the study. From the chapter, it is evident that childhood capability deprivation is a major problem around the globe. An estimated 385 million children are deprived of basic necessities representing 19.5% of the total children population. Childhood capability deprivation affects all aspects of a child development including cognitive and intellectual development. It is on this light that this study sought to examine the effect of childhood capabilities on the academic performance of primary school pupils with a specific focus on Rhonda slums.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter gives the theoretical basis on which the study was structured, an assessment of current literature regarding the relationship between childhood poverty and educational outcomes, and the conceptual framework for the research.

2.2 Theoretical Review

A theory is a substantiated explanation of some aspects that occur in social or natural world (Johnson & Christensen, 2014). Theories are important in research as they help the investigator to make predictions regarding the research phenomenon, know what data to look for, and understand how to analyse and interpret the data. The study was guided by Amatyr Sens Capability Approach of Development and Abraham Maslow Hierarchy of Need.

2.2.1 Amartya Sens Capability Approach of Development

Amatyr Sens Capability Approach of Development is a theory for human development that conceptualizes the concept of development as freedom (Peleg, 2013). It is an antithesis of the traditional approach of development that equates human development to economic development. It is founded on the rationale that the traditional approach of development presents a narrow conceptualization of human life. It is blind to qualitative issues such as social exclusion and human dignity. The capability approach of development posits that economic growth and material wealth is just a means to an end (Schmidt, 2013). The end-goal of the development process should be to enable individuals to live meaningful, dignified, and quality lives.

The theory recognizes that although economic wellbeing and material wealth are essential in improving a person's quality of life, they are not sufficient (Dang, 2014). Even if a person has material resources, he may have low quality of life if the society does not provide basic amenities such as healthcare services, nutrition, security, and shelter. The capability approach suggest that instead of the development approach focusing on delivering the means (material resources), it should focus on delivering the end-goal itself by giving people the combination of capabilities that they require

to live a good life (Schmidt, 2013). Such capabilities include capability for health, nutrition, shelter, and security among others.

The capability approach also asserts that people should not be viewed as homogenous or as having equal opportunities when designing development programmes (Dang, 2014). Effective development should recognize differences in opportunities that exist between different groups of people such as women, persons with disability, children, the elderly, and the youth. For instance, even with the same material resources, a person with disability will have a lower quality of life because he or she spends most of the resources on medications (Schmidt, 2013). Children also have their unique needs and requirements for them to live a dignified life and thus development programmes targeting children should not use an all-size-fit-all approach. Instead, the programmes should consider the unique features of the children such as gender, disability, religion, and social status.

This theory was relevant to the current study as it provided a framework for assessing how childhood capabilities influence the academic performance of primary school pupils in Rhonda slums. According to the theory, each individual and community has capabilities that matters most to them. It stresses that rather than assessing the effect of the general economic condition of primary school pupils in Rhonda, the study should pinpoint the specific capabilities that have the most significant impact on academic performance. Identifying specific capability areas will enable the development of targeted and more specific interventions for improving the academic performance of the children in this area and other slam areas in the country.

2.2.2 Abraham Maslow Hierarchy of Needs

Abraham Maslow developed the Hierarchy of Needs theory in 1943 with the view of explaining what motivate human actions (Kaur, 2013). The theory contends that motivation is mainly a function of human needs. People' actions are mainly motivated by the desire to achieve certain needs. Maslow's theory went further to propose that human needs can be arranged in a hierarchical structure, from the basic needs to the most advanced needs (Caraccio, 2017). It classified human needs into five hierarchical categories.

At the bottom of the hierarchy are physiological needs, which refer to requirements that individuals need to maintain physical wellbeing such as food, water, sleep, warmth, and medicine (Burleson & Thoron, 2015). Maslow theory suggests that meeting the physiological need is often the first priority for all humans. Once these needs are met, an individual begins to pursue the second tier needs that the theory refers to as safety and security needs. Once these second tier needs are met, an individual then begin to pursue third tier needs referred to as belongingness and love needs (Caraccio, 2017). The priorities for individuals in the third tier level usually entails developing intimate relationships and friendship with other members of the community.

When the belongingness and love needs are fulfilled, an individual begin to pursue the fourth tier needs known as esteem needs. The priority for individuals at this level is usually to create feeling of prestige and accomplishment (Kaur, 2013). Once the fourth tier needs are realized, an individual moves to the final tier known self-actualization needs. The priority for individuals at the actualization level is to achieve growth and full potential. Maslow theory considers the first four tiers (psychological, safety, belongingness and love, and esteem needs) as deficiency needs. This term is used because a person does not feel anything when the needs are met, but become anxious when they are not met (Burleson & Thoron, 2015). The fifth tier needs are considered as growth needs as they do not emanate from a lack of them but from a desire to grow as a person.

Although Maslow Hierarchy of Need is largely used in organizational psychology to explain motivation level of employees, it was relevant to the current study as it provided a framework for explaining the learning motivation of primary school pupils at Rhonda slum. Learning can be considered a growth need as it focuses on improving the potential of an individual (Caraccio, 2017). In the academic set up, learning is often exemplified in the pupils' academic performance and is largely a function of pupils' motivation to learn. According to Maslow theory, a pupil cannot develop the motivation to learn if the deficiency needs have not been met. A pupil can only develop the desire to learn when the physiological and psychological needs such as food, water, shelter, and security have been met. The belongingness and love, and esteem needs must also be met for the child to start pursuing growth needs.

2.3 Empirical Literature Review

Empirical literature refers to written work that is based on original research such as experiment, surveys, observations, and case studies (Johnson & Christensen, 2014). This section assesses empirical literature related to the subject of child capability deprivation and its influence on children academic performance.

2.3.1 Academic Performance

Education is critical to the optimal development of a child. Individuals without proper education encounter hardships such as illiteracy, unemployment, low wages, and low self-esteem (Abbott, 2012). Academic performance is one of the realistic measures of children's educational achievement and successful learning. The term refers to metrics assigned to show what the learner has achieved vis-à-vis the goals of the academic curriculum (Umamaheswari & Divyaa, 2015). It tells whether the student has attained the learning objectives and developed the desired skills and competencies.

There are different measures of academic performance. The most widely utilized is the assessment/ grading system (Chiekem, 2015). This system entails subjecting the students to different types of assessments such as continuous assessment tests and standardized examinations in order to generate valuable information about the learning process. Although the grading system has been lauded for providing objective and easy measures of performance, it is widely criticized for not capturing the actual skills and knowledge gained by the students. For instance, Ziegler and Montplaisir (2014) argue that while a written science examination may be effective in assessing a students' ability to remember concepts, it may not be effective in examining his or her ability to apply the concepts. The grading system has also been faulted for encouraging unethical practices such as drilling and cheating (Chiekem, 2015). A section of education scholars advocate for alternative measures of performance such as the use of portfolio and formative assessment formats.

In the Kenyan primary school setting, the main measure of academic performance is through examinations/ grading system (Kasembeli & Gathara, 2014). Midterms and final examinations are the most common system used to evaluate students' academic performance within the basic education setup. These examinations often comprise of

multiple choice questions. Continuous Assessment Tests (CATs) are also common methods of assessment. Classroom assessment methods such as open questions, observation, and assignments are also common in Kenyan primary schools but are rarely incorporated into students grades (Kipkorir, 2009). Examinations are mainly written but some subjects incorporate elements of practical examinations that assess students' ability to apply concept learnt in class. At the end of the eight- year period, the students are subjected to a national examination where their scores are graded. Numerous factors affect the academic performance of children. One of these factors is childhood capability deprivation

2.3.2 Capability Deprivation and Academic Performance

The association between deprivation and children's development and academic performance has been well documented, beginning as early as the second year of life and extending through elementary and high school (Peckham, 2017). When these deprivations occur during preschool years, they can have long-lasting consequences by affecting a child readiness to take part in and profit from early learning experiences. Readiness for school on entry to kindergarten sets the trajectory for future success (Pekdogan & Akgul, 2017). School readiness is critical to later academic achievement because differences on school entry have long-term consequences.

Bierman, Torres, Domotrovich, Welsh, and Gest (2009) found that most American students who start school significantly behind their peers can never close the readiness gap. Rather, the gap tends to widen as they move through school. School readiness has been shown to be predictive of virtually every educational benchmark including achievement test scores, grade retention, special education placement, and school dropout (Isaacs, 2012). The consequences of early school failure are increased likelihood of truancy, drop out, and unhealthy or delinquent behaviours. Between 30 and 40% of children entering kindergarten in the United States are estimated to not be ready for school.

Deprivation influences children's education and development by increasing risk factors and limiting protective factors and opportunities for stimulation and enrichment. For example, children in low-income families are at increased risk for

both under nutrition and being overweight, often associated with food insecurity (Bernerjee & Lamb, 2016). Deprivation also subject children to environments that do not support learning as well as limit children access to the support that they need to excel in their education.

Evidence suggests that many of the effects of deprivation on children are influenced by families' behaviour. Low-income families often have limited education, reducing their ability to provide a responsive stimulating environment for their children (Raffo, Dyson, Gunter, Hall, Jones, and Kalambouka, 2017). In addition, low-income families tend to use harsh parenting styles that are based on parental control, rather than reciprocal, interactive styles that promote emotional development and social competence (Bernerjee & Lamb, 2016). Being read to in the first few years of life contributes to the development of phonemic awareness and comprehension skills.

2.3.3 Health Deprivation and Academic Performance

Health services deprivation one of the main indicators of child capability deprivation. It is a condition characterized by limited access to health services including curative, preventive, and health education services (Gordon *et al.,* 2009). Health deprivation as indicator for child capability deprivation was illustrated in the study by Wickham Anwar, Barr, Law, and Robinson (2016), where it was found that children living in poverty in the UK were more likely to die in the first year of life, be born prematurely, be bottle-fed, suffer from asthma, and breathe second hand smoke. A study by Milliano and Plavgo (2014) revealed that 56% of children in sub-Saharan African were experiencing health services deprivation. Health has a major implication on the survival and development of children.

In their study, Yourkavitch *et al.* (2018) examined child health inequality across 27 selected sub-Saharan African countries. Five indicators were used to measure access to health including exclusive breastfeeding, immunization (measles, diphtheria, pertussis, and tetanus), and care seeking behaviour, stunting, and under-5 mortality. Results showed that there were significant disparities within and across the 27 countries in relation to the five health indicators. Several factors were found to have contributed to the health disparities including distance to healthcare facilities, socioeconomic characteristics of regions, and climatic conditions. Yourkavitch *et al.*

(2018) recommended the development of health policies that reach everyone and have uniform effect on all subpopulations. The study also recommended development of policies that specifically target underserved populations.

The relationship between health service deprivation and educational outcome has been explored in a number of studies. Miller, Lundy, Maguire, and McEvoy (2008) examined the associated between the wellbeing of primary school pupils in Northern Island and their educational attainment. Results showed that there was a statistically significant and positive association between the pupils' physical wellbeing and performance in mathematics. No significant association was found between physical wellbeing and performance in English (Miller *et al.*, 2008). The study recommended the development of interventions that will reduce disparities in access to health services by the primary school pupils. A study by Action for Children (2016) also found that good development in a child early years has a positive association with better outcomes later in life including higher education attainment

In another study, Sturdy, Bremner, Harper, Mayhew, Eldridge….and Griffiths (2012) found that children in the UK suffering from Asthma performed poorly in national school examinations as compared to children not suffering from the illness. The study also established that children from low socioeconomic backgrounds were more at risk of developing this condition. The effect of asthma on academic performance was also more pronounced among children from poor families. The stud recommended the development of policies for improving educational attainment among pupils with deprived health status. Caird, Kavanagh, Oliver, Oliver, O'Mara, Stansfield and Thomas (2011) also found that there is weak negative association between obesity and education attainment among children and young adults. The study found that individuals with higher body mass index had lower educational attainment. Although the study did not directly measure access to health services, high rate of obesity is a good indication of deprivation to health information and preventative health.

The study by Johansen (2015) found that the prevalence of sickness among Norwegian school going children was 24%. Sickness presence among the student affected their learning by reducing the students' motivation level and causing absenteeism. The issue of school absenteeism among children with health challenges was also documented in the study by Meng, Babey and Wolstein (2012), who found

that asthma contributed to the loss of 14.4 million school days in the USA in 2008. Children with asthma from low SES families were disproportionately affected by the absenteeism as findings showed that they had a higher probability of missing school due to their illness. Younger students were also more likely to miss school due to asthma. The study by Meng *et al.* (2012) was however conducted in the United States and only assessed the effect of a single illness on school absenteeism. The current study sought to investigate the effect of health deprivation in general on pupils' academic performance.

2.3.4 Household Socioeconomic Status and Educational Outcomes

Household socioeconomic status (SES) is another dimension of childhood capability. Household SES is a combined measure of the social and economic wellbeing of a household (Christensen, Schieve, Devine, & Botsch, 2014). It is commonly associated with several factors including household income, parental education, and parental occupation. Studies have shown that there is a strong association between household SES and children educational performance and attainment, which children from low socioeconomic households exhibiting low achievement than children from advantaged households (Barnerjee & Lamb, 2016).

One of the household SES factors that have an influence on pupils' academic performance is parent occupation. The study by Leppel, Williams, and Waldauer (2011) found that children who had a parent in professional or executive occupation performed better than those whose parents were informal occupation. The effect was greater when the parent in the professional occupation is the father. Similar findings were also made by Usaini and Abubakar (2015) in their study involving 377 secondary school students in Malaysia. Results showed that students whose parents were in the formal employment had better academic performance than those whose parents were working in the informal sector. The explanation given was that parents in formal employment had higher income that enabled them to provide better resources as well as higher levels of education that enables them to meaningful engage their children on educational matters.

Another household SES factor that has been found to affect children education outcomes is household assets. The study by Curely, Ssewamala, and Han (2010)

found that household asset ownership was directly associated with children education outcomes. Household asset was also directly correlated with the health and physical wellbeing of family members. Curely *et al.* (2010) posited the health and physical wellbeing may mediate the relationship between household asset ownership and education outcomes. This relationship can also be mediated by housing quality especially when the asset being considered is home ownership. Weiss, Yeo, Irish, and Zhan (2009) found that children whose households owned a house had higher education attainment than those whose families did not own a house. In addition, the study by Ansong, Chowa, and Sherraden (2015) found that the effect of household asset on the academic performance in children in Ghana was mediated by academic expectations. Results showed that students from wealthy households had higher academic expectations than children from low wealth families.

A difference household SES variable that has been found to have an impact on children academic performance is the parents' education level. Tekin (2011) found that the parents' level of education influences his or her involvement in the child's education by affecting parental efficacy. Parental efficacy refers to the parent belief that the can make effective contribution to the child development in this case related to academic issues. The study established that parents with low level of education tend to have low parental efficacy hence they are less likely to be actively involved in the children's education. Suleman (2012) also found that fathers' and mothers' education level were significantly and positively associated with elementary school pupils' academic performance in Pakistan.

In Kenya, Kamau (2013) found that parent education had a positive and statistically significant association with the academic performance of secondary school students. The mother's level of education had the stronger correlation with students' academic performance than fathers' level of education. Kamau (2013) also found that there was a statistically significant relationship between family financial status including family income and the academic performance of the students. Students from high income families recorded better academic performance that students from low income families. Although this study highlights the relationship between family socioeconomic status and academic performance, it was not conducted among

primary school pupils in informal settlements thus findings may not reflect the dynamics faced by pupils in Rhonda slums.

In another study, Kerubo (2017) found that there was a positive and statistically significant relationship between the parents' level of education and the academic performance of students. The effect of parent education level of academic performance was attributed to several mediating factors including family size and parental involvement education. Findings of the study showed that parents with low level of education were more likely to have large families, which limited the amount of resources available to provide quality education to the children. The study also established that parents with low levels of education were less involved in the children's education leading to poor academic performs. Although the study by Kerubo (2017) captures that relationship between parents' education and children academic performance, it was conducted among secondary school students in Taveta Sub-County. The findings may thus not reflect the situation in Rhonda Slums as this is an urban informal settlement area hence parent education patterns may be different. Similarly, the present study focused on primary school pupils as opposed to secondary school students.

According to Neubourg, Borghans, Coppens, & Jansen (2018) the relationship between household SES and children academic performance is complex and multifactorial. One of the mediating factors that explain this relationship is the level of cognitive stimulation and enrichment that a child receives at home. This mediating effect was observed in the study by Larson, Russ, Bergen, Lynn, Olson, and Halfon (2015) that examined how SES affects the reading and math ability in a sample of 6,600 US children. Results showed that children from low SES households had few books at home, were less likely to use computers at home, and had less parent reading. The children also had less supportive parent interaction, low expectation to earn a college degree, and less likelihoods of attending preschool. The study by Larson *et al.* (2015) was however conducted in the context of the USA and thus may not reflect the existing situation in Kenya due to socioeconomic and cultural differences between the two countries.

In another study, Kiritsis (2015) found that household SES had significant effect on adolescents' academic self-concept in a sample of 1,344 Greek secondary school

students. Specifically, results showed that academic self-concept was statistically and positively associated with the father education level, mother education level, mother's occupation, father's, family income, and family wealth. Kiritsis (2015) defined education self-concept as the adolescent beliefs regarding own ability to achieve academic goals. Academic self-concept is a strong predictor of academic performance. This study however focused on secondary school pupils and hence might not reflect the situation among primary pupils as children at this age are less sensitive to their environment conditions. The study was also conducted in Greece where the social, economic, and cultural environment is different and thus may not reflect the situation in Kenya.

Parenting style is another factor that mediates the relationship between household SES and children academic performance. This mediating role was demonstrated in the study by Chen, Kong, Gao, and Mo (2018), that examined the association between family SES and children readability in a sample of 2294 grade 9 students from 11 schools in Beijing and Guangzhou in China. Findings revealed that parents in low socioeconomic households were more likely to be in odd occupations that are characterized by long working hours. Some of the parents in low SES household held multiple jobs in order to make ends meet. These occupational demands affected the parents' level of involvement in their children's lives and education, as well as, their relationship with their children (Chen *et al.,* 2018). Parents with low education level also exhibited low involvement in the children's education. These parenting factors led to low reading abilities among the children. This study was however conducted in the Chinese context and thus findings may not reflect the situation in Kenya.

The study by Shah and Anwar (2014) also observed that parents' occupation can also affect children education by affecting the amount of time available for the parent to engage in their children educational activities. This implies that even though the parent occupation might be high paying, it may have a negative impact of children educational outcomes if it is too demanding leaving the parent with little time to be involved in their children education. This finding has a major implication to the current study as single parents are the only parents in their households. When their occupation is too demanding, the children are left with no parents to assist them in educational matters.

The relationship between household SES and children academic performance is also mediated by the physical conditions at home. In their systematic literature review, Barnerjee and Lamb (2015) found that household SES is closely associated with family resources such as finances, shelter, sanitation facilities, food, and health. Households with low SES are less likely to provide adequate finances, quality shelter and sanitation facilities, and quality food and health services. They are also less likely to provide educational resources such as books and stationaries. These physical conditions have a negative implication on the child's academic performance. Bangiriana, John, Idro, and Boivin (2009) also found that children from high SES household had higher nutritional scores, which was positively associated with better visual spatial processing of information. The study used a prospective longitudinal design where a cohort of 89 Ugandan children aged between 5 and 12 years were follow-up for a period of 24 months.

2.3.3 Nutrition Deprivation and Academic Performance

Nutrition deprivation is also an important dimension of child capability deprivation. The term refers to a condition characterized by limited access to quality nutrition measured in terms number of meals, quality of meals (balanced diet), age appropriate weight, and access to clean drinking water (Gordon *et al.*, 2009). Nutritional deficiency remains a significant global problem. According to the Food and Agriculture Organization (2011), 850 million people were suffering from undernourishment in the period 2006- 2008. This problem is more pronounced in developing countries. According to Neumann (2013), an estimated 183 million children in developing nations are underweight-for-age, 67 million are underweight-for-height (wasted), and 226 million are low height-for-age (stunted).

A study by Kandala, Madungu, Emina, Nzita, and Cappucio (2011) conducted in the Democratic Republic of Congo (DRC) revealed that nutritional deprivation was spatially structured where high levels of deprivation were observed in the rural areas than in urban areas. Nutritional deprivation was also higher in conflict prone areas, areas where mining was the main economic activity, and ironically areas with high food production due to the economic benefit of selling food as opposed to consuming it. In Mauritius, Appadoo, Pratap, and Ruggoo (2013) found that school children in economically disadvantaged areas were being given the wrong type and proportion of

food. Results revealed that as result of the poor nutritional practices, 37% of the children were underweight, 4% were overweight, and 3% were obese. The study recommended the development of nutrition education programmes that specifically target children and parents in poor neighbourhoods.

In Kenya, Mwaniki and Makokha (2013) examine nutritional status of primary school pupils in Dagorretti Sub-county of Nairobi County. Results revealed that 24.5% of the primary school pupils in the area were stunted, 14.9% were underweight and 9.7% were wasted. Incidents of stunting and underweight were higher among boys than girls while incidents of wasting were higher among girls. About 45.2% of the children consumed meals comprising of more than four food groups. Mutisya, Kandala, Ngware and Kabiru (2015) examined food insecurity and malnutrition among children aged between 6 and 23 months in resource-poor urban settings in Kenya. Results showed that the prevalence of stunting in this population was 49% and that stunting was significantly associated with food insecurity and wealth status of the family. The study recommended the development of social protection policies to reduce the high rate of malnutrition in the urban informal settlements. Mutisya *et al.* (2015) study is close to the current research as it examined nutrition deprivation in urban informal settlements. However, the study focused on infants between 6 and 23 months rather than primary school children and thus could not link nutrition deficiency to educational outcomes.

The link between nutritional deprivation and children academic outcome has been captured in a number of studies. In a study examining nutritional deficiency in China, Hannum, Liu, and Frongillo (2014) found that children who experienced greater food insecurity had lower literacy scores than those who did not experience food insecurity. The study concluded that nutritional deprivation may be an important mechanism for transmitting education disadvantage among poor children. The study by Burrows, Whatnall, Patterson, and Hutchesson (2017) found that there was a positive and significant association between diet and academic performance including access to regular meals, breakfast intake, and meeting recommendation on fruit intake. The study explained that the consumption of regular meals help to deliver nutrients and energy that the brain needs to develop and process cognitive function. Breakfast consumption was found to increase uptake of nutrients by the body. The

study by Burrows *et al.* (2017) was however conducted among college students and thus may not reflect the effect of nutrition deprivation among primary school pupils. The study was also conducted in the United States and thus may not reflect the Kenyan situation with respect to nutritional deprivation.

In a different study, Prado and Dewey (2014) found that various forms of nutritional deficiency such as severe acute malnutrition, iodine deficiency, iron deficiency, and chronic under-nutrition during infancy impair brain development. Although the study did not examine impact of nutritional deficiency on educational outcomes, impaired brain development is bound to have an effect on the child educational outcome. This study also showed that apart from access to nutrition, the quality of the meals that a child gets also influences his or her intellectual development. Prado and Dewey (2014) recommended the implementation of policies aimed at addressing nutrition deficiency such as school feeding programs and provision of fortified food supplements to poor families.

In another study, Murphy (2010) found that nutrition has an effect on academic achievement and behaviour of children but the extent and duration of the effect was not clear. It was also found that the quality of diet in early years of a child before he or she get into formal education has an impact on later school attainment. This finding stressed the need to develop nutrition intervention that target children at early years before they join school. Murphy (2010) also found that intervention for improving school food and the dining environment have a positive effect on pupils' alertness, ability in classroom, and behaviour. Littlecott, Moore, Moore and Lyons (2016) examine the relationship between breakfast consumed by 9-11 year old children and education outcome over study period of 18 months. Results revealed that there was a significant relationship between the breakfast consumption pattern and pupils' performance in standardized assessment tests even after controlling factors such as gender and school meal. The study recommended the development of interventions that promote breakfast consumption among school children.

2.4 Conceptual Framework

A conceptual framework is graphical representation of the study variable and the hypothesized relationship between them. The conceptual framework for the current study is presented in Figure 2.1.

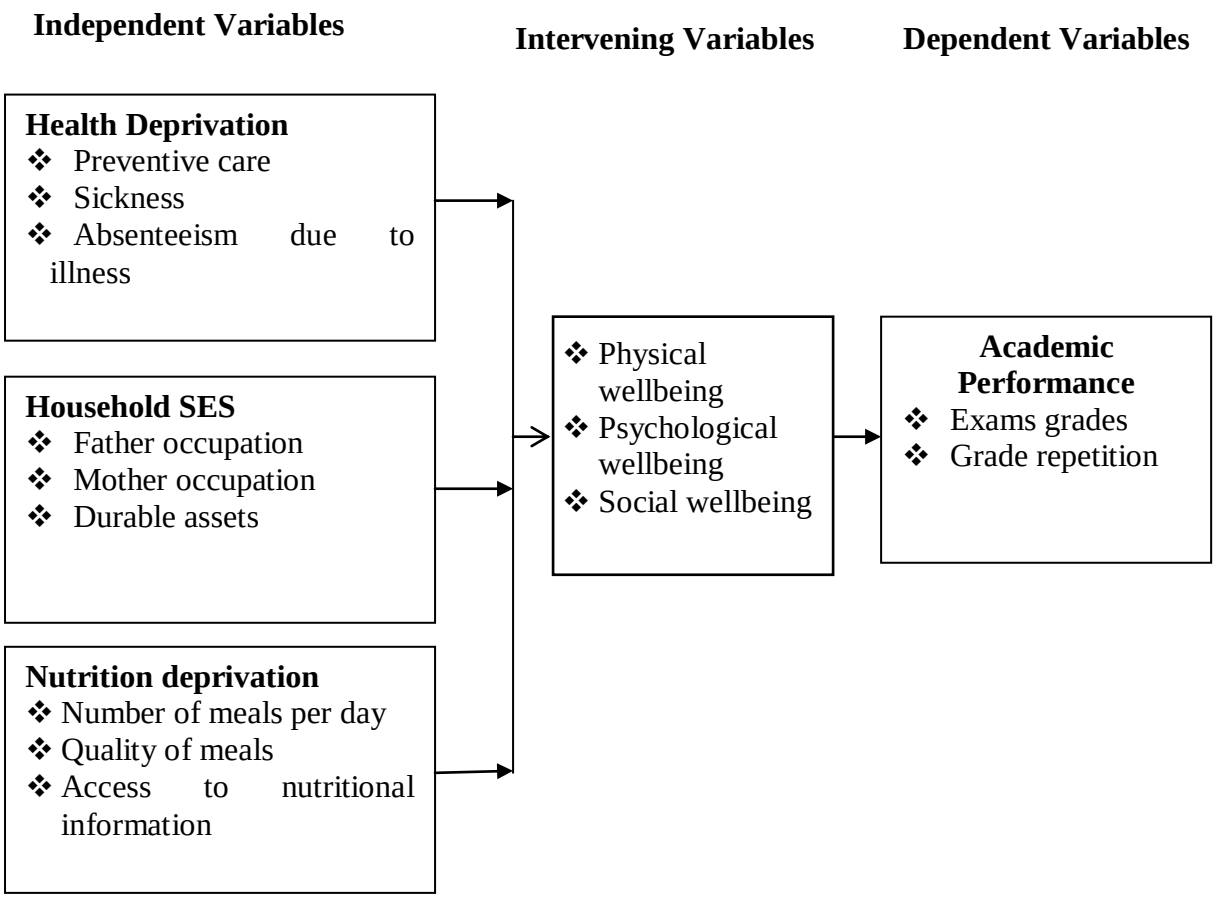


Figure 2.1: Conceptual Framework

From Figure 2.1, the study had three independent variables related to childhood capability deprivation: health deprivation, household socioeconomic status, and nutrition deprivation. Health deprivation was assessed in terms of the pupils' access to preventive care, number of times they have fallen sick in the previous school term, and number of day there were absent due to illness in the previous school term. Household socioeconomic status was assessed in terms of parent occupation, parent education, and durable assets. Nutrition was measured in terms of number of meals per day, quality of meals, access to clean drinking water, and access to nutritional information. The study presumed that the three childhood capabilities influence pupils' academic performance by affecting their physical, psychological, and social wellbeing. Academic performance was assessed in terms of exams and grade repetition.

2.5 Summary and Gaps

This chapter has examined theoretical and empirical literature related to the subject of childhood capability and academic performance. One of the theories that are relevant to this research issue is Amartya Sens Capability Approach, which asserts that a child wellbeing is dependent its ability to marshal the capabilities it needs to live a good life. Children living in slum areas may experience capability deprivation thus limiting the capacity to achieve their potential including in academics.

Another theory that was found to be relevant to this study was Albert Maslow Hierarchy of Needs. This theory suggests that people actions are motivated by needs that can be arranged in hierarchical order. Education that formed focus of the study fall under self-actualization needs, which is at the top of the hierarchy. The theory asserts that a child cannot develop the motivation to pursue education goals if all the other levels of needs such as physical needs, safety, belonging, and self-esteem have not been met.

Quite a number of empirical studies have examined the relationship between children living condition and pupils' academic performance. However, most of these studies have approached the issue from the traditional approach of development that focuses on economic aspects. Few studies have followed the human development approach that focuses on the broader aspect of development that also include children access to basic issues such as health services and nutrition. This study sought to fill this gap by examining the effects of childhood capabilities on the academic performance of primary school pupils in Rhonda slums.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methods and procedures used to address the research questions. It covers research design, target population, sample size and sampling techniques, research instruments, data collection procedure, data analysis, and ethical considerations.

3.2 Research Design

To meet objectives and answer research questions of the study, the study used the descriptive survey research design. This design focused on examining the variables of interest (childhood capability deprivation and children education outcome) without manipulating them in any way (Johnson & Christensen, 2014). Instead, the design focused on questioning individuals who are exposed to the variables in order to get information regarding the variables. This design was selected because the researcher had no control over the study variables and thus they could only be examined as they existed in the study setting without manipulating them.

3.3 Study Site

The study was conducted in primary schools located in Rhonda slums in Nakuru West Sub-County, Nakuru County, Kenya. Rhonda is one of the largest informal settlements in Nakuru County with an estimated human population of 70,000 people (Nakuru County Government, 2018). Being an informal settlement, this study provided the best setting for investigating the various forms of childhood capability deprivation and their effect of pupils' academic performance. The area has six primary schools namely Mwariki, Muslim, Kaptembwa, Heshima, Komen, and Eileen Ngochoch.

3.4 Target Population

The research study targeted a total of 3276 individuals comprising of 3204 pupils and 72 teachers in six primary schools located in Rhonda slum. These individuals were targeted because they are in direct contact with the research issue and thus were best placed to provide information regarding the study variables. Pupils were in the best position to provide accurate and informed opinion regarding their capabilities and the

various forms of deprivation experienced in their day-to-day life. They were also in the best position to provide information regarding their academic performance. On the other hand, teachers were in the best position to provide informed and in-depth information regarding the relationship between childhood capability deprivation and the pupils' academic performance.

3.5 Sample Size Determination

The appropriate sample size for the study was determined using the Taro Yamane sample size formulae:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= sample size

N= target population (3276)

e= margin of error (10% or 0.1)

$$n = \frac{\mathbf{3276}}{1 + \mathbf{3276}(\mathbf{10})^2} \qquad n = 97.03$$

Using the formulae, the appropriate sample size for the study was determined as 97 respondents. The respondents were selected from the two groups that formed the target population as shown in Table 3.1.

Table 3.1: Sampling Plan

Category	Population	Sample Size
Pupils	3204	90
Teachers	72	7
Total	3276	97

Source: Author (2019)

3.6 Sampling Techniques

All the six primary schools within the study area were involved in the study. From each school, 15 grade 8 pupils were selected using the random sampling technique.

The focus on grade 8 pupils was informed by the need to have pupils who are in almost similar education level so as to facilitate appropriate comparison of academic performance. It was also informed by the fact that these are the pupils who are more likely to be informed of most issues that are of interest to the study such as family income. Two teachers were selected from Heshima primary school because it had the highest population of teachers while one teacher was selected from each of the remaining five schools using purposive sampling. The teacher who had the longest stay at each school was selected. This criterion was based on the assumption that teachers with the longest stay were more likely to have more information regarding the overall performance of pupils, their capabilities, and the relationship between the two.

3.7 Data Collection Tools

Two data collection tools were used: (1) questionnaire for pupils and (2) interview guide for teachers. The questionnaire for pupils contained both closed and open ended questions. It was divided into three main sections: section A containing demographic questions, section B containing questions relating to pupil educational outcomes, and section C containing questions related to childhood capabilities. The interview guide for teachers contained only open-ended questions. The instruments were developed following the literature review that helped identify the indicators and constructs that other others have used to assess academic performance, health deprivation, household socioeconomic status, and nutritional deprivation.

3.8 Pre-Testing of Research Tools

The research tool was pilot tested in one primary school in the adjacent Kaptembwa slums to assess the validity and reliability of the research tools. This was in line with Oso and Onen (2016) who recommended that pre-testing be conducted outside the area of study to ensure that the experience obtained by the pilot study participants does not bias the results of the main study. The pilot study involved 10 respondents comprising of 9 pupils and one teacher.

3.8.1 Validity of the Research Instrument

The validity of the instruments was examined by seeking expert opinion from research supervisors at the School of Social Sciences of St. Paul's University. The

researchers sought the supervisors views regarding the appropriateness, clarity, and suitability of the questions in measuring what the study intend to measure. The supervisors gave various recommendations including the need to simply the language used in the questionnaire in order to make it comprehensible to primary school pupils. The recommendation by the supervisors helped to boost the validity of the instrument.

Validity was also assessed by analysing the pre-test data so as to establish the instruments ability to elicit information that is relevant, complete, and clear. Several discoveries were made that were able to improve the validity of the instruments. First, it was noted that most pupils left the question on family income answered because they could not provide this information. The researcher then replaced the income indicator with durable assets in the household SES sections making it easy for the pupils to answer. The pupils were also unable to answer the question on parents' education level, which was another indicator that was used to measure household SES. This question was thus removed.

3.8.2 Reliability of the Research Instrument

According to Johnson and Christensen (2014), reliability is the extent to which the data collection instrument can yield consistent results. For questionnaire, reliability is largely determined by the clarity of questions such that they are understood in the same way when presented to the respondent. The reliability of the research instruments was assessed using the test retest method during the pilot study. This method entailed collected data from the same respondents in an interval of one week and then checking the consistency of the responses provided by each participant. It was established that most of the questions in the questionnaire were reliable.

3.9 Data Collection Procedures

The researcher first obtained a research approval letter from the Postgraduate School at St. Paul University and then used it to obtain a research permit from the National Commission of Science and Technology (NACOSTI). Research approval was also obtained from the Director of Education Office, Nakuru County. Once the necessary approvals were obtained, the researcher approached the heads of the six primary schools, informed them about the study, and requested for permission to conduct the study in their institutions. With the assistance of teachers, the researcher then selected

the 15 students from each school and personally administered the questionnaire to each pupil. The researcher-administered approach was preferred so as to address the difficulties that some of the pupils had in interpreting the questions. The researcher also conducted the interviews with the selected teachers in person.

3.10 Data Analysis

The study used both quantitative and qualitative method data analysis. Quantitative data that was collected using questionnaires was coded and entered into the SPSS software. The data was analysed using both descriptive and inferential statistics. Descriptive statistics focused on describing the current situations regarding childhood capability deprivation and the pupils' academic performance within the study area (Johnson & Christensen, 2014). Descriptive statistics that were used include frequencies, percentages, and means.

Inferential statistics focused on assessing the relationship between the three dimension of childhood capability deprivation and the pupils' academic performance. The independent sample t-test and analysis of variances (ANOVA) were used to conduct the inferential analysis. These tests are used to compare whether the difference in means between groups are statistically significant (Oso and Onen, 2016). These tests were used because the main dependent variable (pupils' grade in previous terms' exam) was continuous while most of the independent variables were categorical. The independent sample t-test was used where the independent variable had only two categories while ANOVA was used where the independent variable had more than two categories.

Qualitative data collected using the open-ended questions and interview guide was analysed using the thematic technique. For each of the interviewee, the responses were noted down in a transcript. The researcher then went through each transcript identifying themes that are relevant to each research objectives. The themes collected from all the transcripts on each of objective were then synthesized to identify patterns. The data was then reported in text and supported by illustrative quotes.

3.11 Ethical Consideration

The researcher obtained research approval from all the relevant bodies including Postgraduate School at St. Paul University, NACOSTI, Director of Education in Nakuru County, and headteachers of the primary schools.

The researcher also obtained informed consent from respondents. Participants were duly informed of the purpose of the research and asked for their consent prior to their participation in the study. Respondents were informed that participation in the study is voluntary.

Adequate measures were taken to protect the confidentiality of respondents including excluding personal information such as names, employment number, and registration numbers during data collection. Pseudonyms were used when reporting qualitative data so as to protect the identity of the respondents.

Finally, high levels of integrity and accuracy were strictly adhered to in the collection, analysis, interpretation, and reporting of the study findings. Ethics pertaining to academic writing and publishing were followed.

3.12 Chapter Summary

This chapter has discussed the research design, target population, sample size and sampling procedures, research instruments, data collection procedures, data analysis and presentation, and ethical considerations. From the chapter, the study used the descriptive survey design and targeted parents and teachers in four primary schools in Rhonda slums. Questionnaires were used to collected quantitative data from parents while interview guides were used to collected qualitative data from teachers. Quantitative data was analysed using descriptive and inferential statistics while qualitative data was analysed using the thematic technique.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTEPRETATION

4.1 Introduction

This chapter gives the data analysis, presentation, and interpretation. It comprises of the response rate, respondents background information, academic performance of primary school pupils in Rhonda Slums, effect of health deprivation on academic performance, effect of household SES on academic performance, and effect of nutrition deprivation on academic performance.

4.2 Response Rate

All the 97 individuals who were targeted were able to complete the study include 90 pupils and 7 teachers. This figure translates to a response rate of 100%. The high response rate is attributed to the fact that the questionnaires and interview guides were administered by the researcher on the spot rather leaving the questionnaires to be collected on a different data. The high response rate was attributed to the easy accessibility of the target population.

4.3 Respondents Background Information

This section assesses the respondents' background information in terms of gender and age. According to Oso and Onen (2016), the personal characteristics of respondents have a major influence on their views and opinion and thus the need to assess this information when analysing survey data.

4.3.1 Gender of the Respondents

Information regarding gender of the respondents was important in establishing the representativeness of the data. It was important to ensure that the study adequately capture the view of both male and female pupils as well as teachers. Data regarding the gender of the respondents is presented in Figure 4.1.

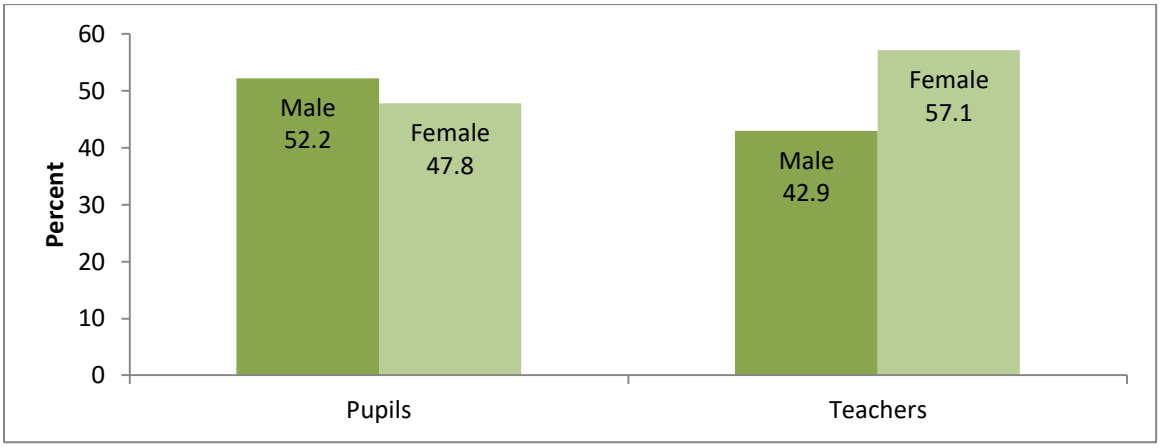


Figure 4.1: Distribution of Respondents by Gender
Source: Field Data

From Figure 4.1, it is quite clear that there were more male pupils in the sample constituting 52.2% of all respondents as opposed to a female representation of 47.8%. This gender representation is consistent with the gender composition of primary school pupils in the country. In the 2018 KCPE examinations, boys comprised 50.1% of all candidates while girls accounted for the remaining 49.9% (Ngari, 2018). These findings suggest that the sample was a close representation of the general population of primary school pupils in the country.

On the other hand, there were more female teachers (57.1%) in the sample than male teachers (42.9). This gender distribution is constituent with the gender composition of primary school teaching workforce in Kenya. The 2017 Economic Survey found that women accounted for 51.6% of the primary school teaching workforce (Kenya National Bureau of Statistics, 2017). Combat (2014) also found that women accounted for 60% of the teaching workforce in urban public primary schools. This trend is not unique to Kenya as Baltzidis (2018) observed that female representation in primary teaching workforce was as high as 70% in European countries. The attributed this disparity to the stereotype that teaching especially at the early childhood and primary level is a feminine profession.

4.3.1 Age of the Respondents

Age of respondents is another characteristic that is important in understanding the views of the respondents. Figure 4.2 presents the age distribution of the pupils who participated in the study.

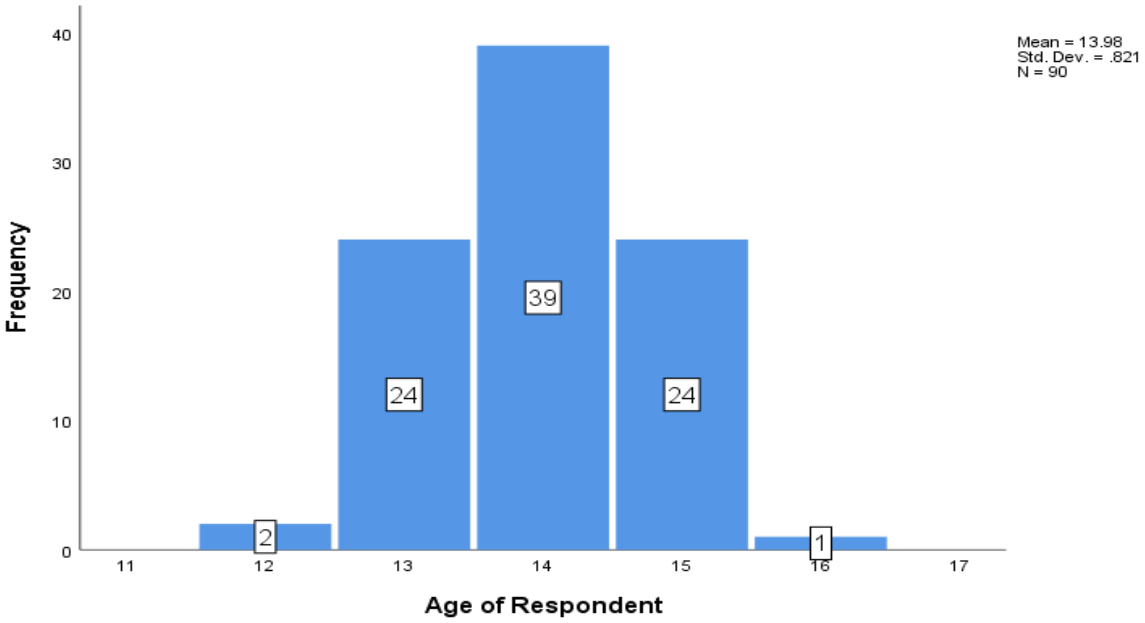


Figure 4.2: Age Distribution of Pupils who participated in the Study
Source: Field Data

From Figure 4.2, it is evident that many of the pupils (39 out of 90) were 14 years old, 24 (26.7%) were 15 years and a similar number was 13 years old. Two pupils (2.2%) were 132 years old while one pupil (1.1%) was 16 years old. This distribution is expected as the Ministry of Education Science and Technology (MOEST) policy defines the appropriate age for joining primary school to be 7 years (MOEST, 2014). This implies that pupils who go through primary education without repeating any grade or dropping out at some point get to the eight grades when they are 14 years old. A few pupils might have started primary education at early age as policies on school starting age were not strictly enforced in the past. Table 4.1 presents a summary of the age of teachers who participated in the study.

Table 4.1: Age Statistics for Teachers who participated in the Study

Statistic	Value
n	7
Mean	54.36
Minimum	49
Maximum	57

Source: Field Data

From Table 4.1, the average age of teachers who were interviewed was 54.36 years. The teachers were at an advance age because the sampling strategy targeted teachers

who had the longest length of stay in their current schools. The youngest interviewee was 49 years while the oldest was 57 years.

4.4 Academic Performance of Primary School Pupils in Rhonda Slums

Academic performance of primary school pupils in Rhonda slums was the dependent variable of the study. It was measured using two indicators: (1) pupil's grade in the previous term, and (2) grade repetition.

4.4.1 Pupils Grade in the Previous Term

According to Kasembeli and Gathara (2014), the examination grading is the main system of assessing academic performance in the Kenyan primary school setting. To assess this aspect, the sampled pupils were asked to state the total marks that the obtained in the previous term examinations. Results are presented in Table 4.2

Table 4.2: Statistics for Pupils Grades in the Previous School Term

Statistic	Value
n	90
Mean	304.94
Minimum	171
Maximum	472

Source: Field Data

From Table 4.2, the average grade for sampled pupils in the previous term was 304.94 marks out of 500. This score is higher than the national average score of 250 marks in the 2018 KCPE examination (MOEST, 2018) suggesting that on average primary school pupils in Rhonda slums have better academic performance than the average pupils in the country. Good performance on the part of primary school pupils was also supported by the qualitative data collected during the interview. Mary (not her real name) expressed that:

> *Pupils' performance has significant improved in the last few years. The reason is improvement in school infrastructure and other learning resources such as classrooms, lighting, libraries, and books. This has helped in improving the learning process for the pupils in the area, (Mary, Interview, 2019).*

Margaret also expressed that:

Pupils' performance has improved in recent years. It seems that pupils in the area have developed more interest in learning and have increased their commitment to academic work, (Margaret, Interview, 2019).

The pupil with the lowest grade had 171 marks while the highest had 472 marks. The difference between the mean grade pupils mean Examination grades are an important indicator of academic performance as they show the knowledge gained by the pupils from what was taught. In addition, examination grades at primary level determine the kind of secondary school that the pupil will join and consequently the quality of secondary education that he or she will receive.

4.4.2 Grade Repetition

Another indicator that was used to measure academic performance is grade repetition. This is where a pupil is remained in the same grade as he or she was in previous year due to failure in the previous years' examination. The sampled pupils were asked to indicate whether they have ever repeated any grade in the course of the primary education. Results are summarized in Figure 4.3.

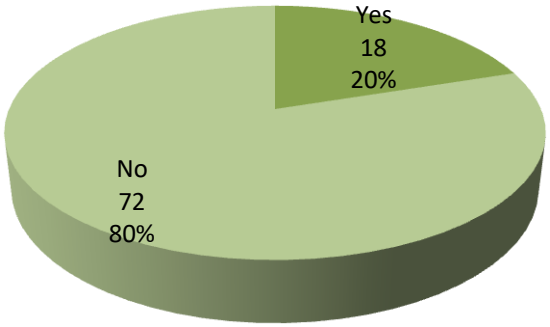


Figure 4.3: Whether Pupils has repeated any Grade
Source: Field Data

From Table 4.3, it is apparent that the majority of the sampled pupils (80%) had not repeated any grade in primary school. The grade repetition rate in the primary schools in Rhonda slums thus stands at 20%. This rate is higher than the national average which according to MOEST (2014) ranged between 2% and 7.8%. The MOEST statistic is however different from what is has been computed in the current study.

The MOEST rate indicates the proportion of pupils in a particular grade that get to proceed to the next grade. On the other hand, the 20% obtained in the current study represent the proportion of pupils at the 8th grade who have ever repeated a grade in their 8-years in primary schools. This difference explains the higher grade repetition rate obtained in the current study. To further understand the grade repetition issue, pupils who reported to have repeated a grade were asked to state the grade that they had repeated. Results are summarized in Figure 4.4.

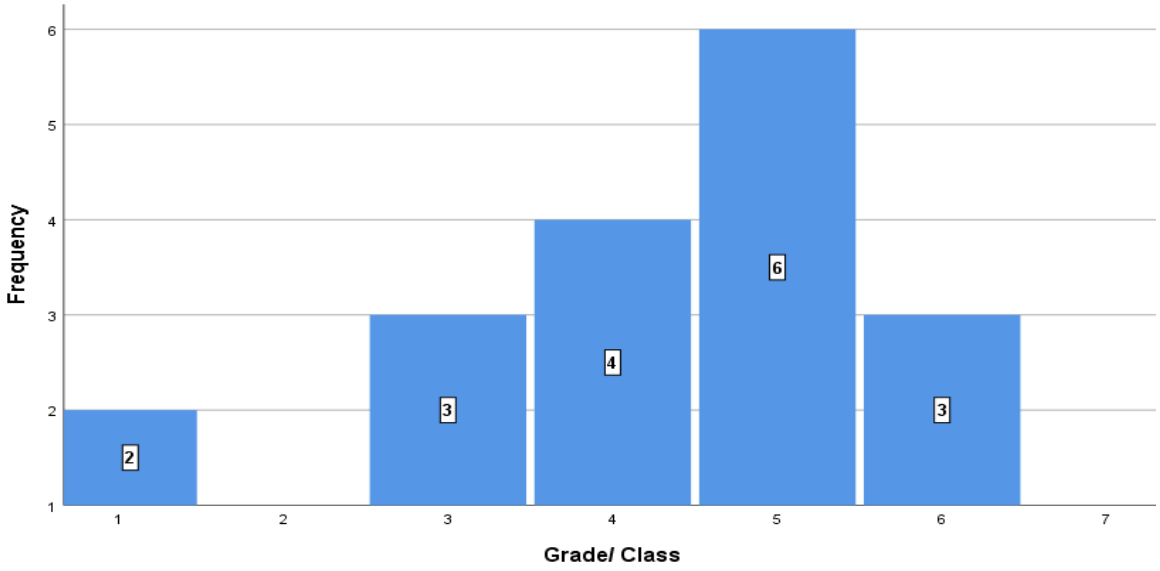


Figure 4.4: Grade the Pupils had Repeated
Source: Field Data

From Figure 4.4, six out of the 18 pupils (33.3%) who reported to have repeated a grade said that the grade repetition took place in the 5th grade. Four out of the 18 pupils (22.2%) said that repetition took place in the 4th grade, 3 pupils (16.7%) said that repetition took place in the 3td grade while another 3 said that the repetition took place in the 3rd grade. Two pupils had repeated the 1st grade of primary school.

4.5 Effects of Health Deprivation on Academic Performance

The first objective of the study was to examine the effect of health deprivation on academic performance of primary school pupils in Rhonda slums. Health deprivation was measured using three indicators: access to preventive care, sickness, and school absenteeism due to illness.

4.5.1 Access to Preventative Care and Academic Performance

The World Health Organization (WHO) (2009) recommends that children in their first year of life visit a physician at least six times, at least three times during their second years, and annually after the third year for preventative care. The annual preventative health check-ups provide the chance to monitor the child's growth as well as detect and address health anomalies at the earliest point. To assess this issue, respondents were asked to indicate whether they attend health check-ups on a regular basis. Results are summarized in Figure 4.5.

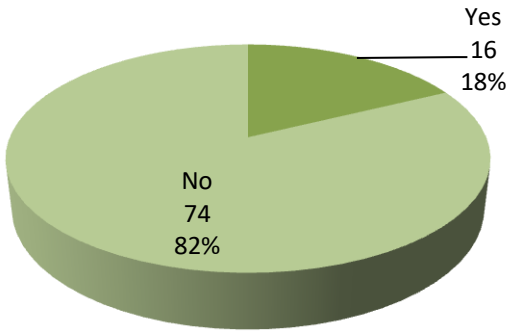


Figure 4.5: Whether Respondents attends Regular Health Check-ups
Source: Field Data

From Figure 4.5, it is evident that the majority of the primary school pupils in Rhonda slums (82%) do not attend regular health check-ups. This finding is consistent the study by Peters, Garg, Bloom, Walker, Brieger, and Rahman (2009) who found that despite major improvement in healthcare within the developing countries, a substantial proportion of the population in these countries have limited access to health care. The study found many residents in the developing countries rarely seek health services unless they are seriously ill. It is a common practice for people to purchase medication over the counter whenever they have a minor health problem. This finding was also supported by the qualitative data collected during the interview with selected teachers. James narrated that:

> *Most of these pupils come from very humble background; things like health check-ups a luxury to them. Most individuals in this*

area only go to the hospital when they are serious sick, (James, Interview, 2019).

To examine the effect of access to preventative healthcare, the mean grades of pupils who reported that they attend health check-ups on a regular basis was compared with the mean grade of pupils who do not go for the check-up using the independent sample t-test. Results are presented in Table 4.3.

Table 4.3: Difference in Mean Grade of Pupils who go for Check-up versus those who do not

Category	N	Mean Grade	Mean Difference	DF	t	Sig.
No Check-up	74	294.5	58.75	88	3.232	.002
Attend Check-up	16	353.4				
Total	**90**	**304.94**				

Source: Field Data

From Table 4.3, it is apparent that pupils who attend health check-ups on a regular basis had a higher mean grade (mean= 353.4) than those who are deprived of this service (mean= 294.5). The independent sample t-test showed that the difference in mean grade of the two groups of pupils is statistically significant (t=3.232, p= .002). This means that deprivation of preventive health services has a statistically significant effect on pupils' academic performance with pupils who are deprived of preventive health services likely to record low academic performance.

4.5.2 Sickness and Academic Performance

The second indicator that was used to measure health services deprivation was sickness. The study assumed that pupils who do not have adequate access to health care are likely to fall sick more often than those who have adequate access. To evaluate this issue, pupils were asked to indicate whether they had fallen sick in the prevailing school term. Their responses are summarized in Figure 4.6.

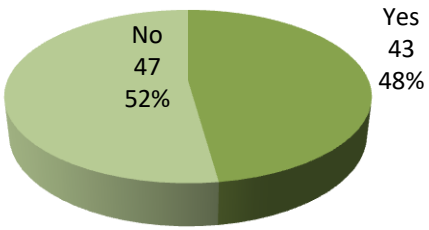


Figure 4.6: Whether Pupils had fallen sick during the academic term
Source: Field Data

From Figure 4.6, it emerges that nearly half of the pupils (48%) had fallen sick at some point during the academic term. This proportion is higher than the prevalence recorded in developed countries. The study by Johansen (2015) found that the rate of sickness presence in Norwegian schools was 24%. Interviewed teachers also confirmed that there were high incidences of pupils fall sick within their schools. Jane recounted that:

> *"The number of pupils who fall sick is very high. Every week, we get tens of cases where pupils fail to turn up due to illnesses such as flu, stomach problems, and headaches among others," (Jane, Interview, 2019).*

To further assess sickness incidences among primary school pupils in Rhonda slums, the pupils who reported falling sick during the academic term were asked to state the number of times that they have fallen ill. Table 4.4 summarizes this information.

Table 4.4: Statistics on Number of Times that the Pupils had Fallen Ill

Statistic	Value
n	42
Mean	1.95
Minimum	1
Maximum	6

Source: Field Data

From Table 4.4, it is clear that the pupils fell sick for an average of 2 times within the academic term. Some pupils fell ill just once while there were some who became sick

as many as six times. During the interview, one of the teachers also expressed concern regarding the cases of illness among pupils.

> *There are high cases of illnesses in the community. Some pupils fall sick for even three to four times in a term. This affects their learning as a time they have to remain at home, (Mark, Interview, 2019).*

To examine the effect of sickness on academic performance, the mean grade of pupils who reported falling sick during the academic term was compared with that of pupils who did not fall sick using the independent sample t-test. Results are presented in Table 4.5.

Table 4.5: Mean Grade Difference between Pupils who fell sick and those who did not

Category	N	Mean Grade	Mean Difference	DF	t	Sig.
Fell Sick	43	301.36	7.499	88	0.510	.611
Did not Fall Sick	47	308.86				
Total	**90**	**304.94**				

Source: Field Data

As Table 4.5 illustrates, pupils who did not fall sick during the academic term had a higher mean grade (mean= 308.86) than those who fell sick (mean= 301.36). The independent sample t-test however showed that the difference in mean grades of the two groups of pupils was not statistically significant (t= 0.51, p= .611). This implies that sickness does not have a significant effect on the academic performance of primary school pupils in Rhonda slum. The findings imply that pupils who fell sick had more or less the same academic performance as those who did not fall sick.

The finding is not consistent with Sturdy *et al.,* (2012) who found that children in the UK suffering from Asthma performed poorly in national school examinations as compared to children not suffering from the illness. The study also established that children from low socioeconomic backgrounds were more at risk of developing this condition. The insignificant effect of sickness observed in the current study may be attributed to the fact that the study did not require pupils to specify the kind of illness

that they had suffered from. It is probable that most of the pupils who reported falling ill during the term had suffered from manageable illnesses such as common cold rather than serious conditions like asthma.

4.5.3 Absenteeism due to Illness and Academic Performance

The final indicator that was used to measure health deprivation was school absenteeism due to illness. The study aimed to use this indicator to eliminate cases where pupils were suffering from manageable illness and thus assess the effect of serious illness on academic performance. In line with aim, pupils were asked to indicate whether they had missed any school day during the prevailing term due to illness. Results are presented in Figure 4.7.

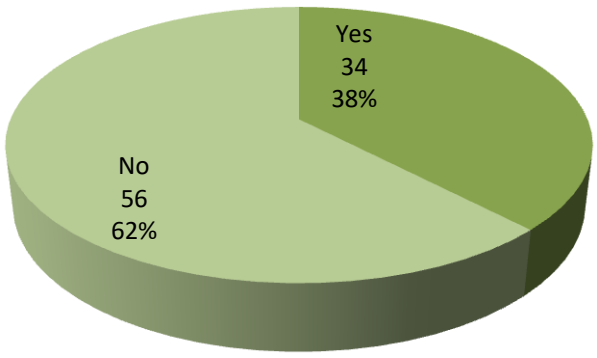


Figure 4.7: Whether Respondent has missed a School Day due to Illness
Source: Field Data

As shown in Figure 4.7, about 38% of the pupils said that they missed at least one school day during the prevailing academic term due to illness. To further explore the issue of school absenteeism due to sickness, the pupils who reported being absent were asked to state the number of days that they were absent due to illness during the academic term. This information is summarized in Table 4.6.

Table 4.6: Statistics on School Absenteeism due to Illness

Statistic	Value
n	34
Mean	3.63
Minimum	1
Maximum	9

Source: Field Data

From Table 4.6, primary school pupils in Rhonda slums lost an average of 3.63 days in the term due to illness. The number of days the pupils were absent during term ranged from 1 day to 9 days. To determine the effect of sick absence on the pupils' academic performance, the mean grade of pupils who missed at least a day in the term due to illness was compared to those who did not have any sickness absence using the independent sample t-test. Results are presented in Table 4.7.

Table 4.7: Mean Grade Difference of Pupils with Sickness Absence and those with No Sickness Absence

Category	N	Mean Grade	Mean Difference	DF	t	Sig.
Had Sickness Absence	34	289.21	25.294	88	1.996	.044
No Sickness absence	56	314.50				
Total	**90**	**304.94**				

Source: Field Data

As Table 4.7 shows, pupils who had a sickness absence during the academic term had low average grades (mean= 289.21) than those who did not have any sickness absence (mean= 314.50). The independent sample t-test showed that the difference in mean grades of the two groups of pupils was statistically significant (t= 1.996, p= .044). This implies that sicknesses absence has a significant effect on pupils' academic performance with pupils who miss school due to sickness being more likely to record poor academic performance.

4.6 Effects of Household SES on Academic Performance

The second objective of the study was to examine the effect of household SES on the academic performance of primary school pupils in Rhonda Slums. Three household SES factors were examined namely household assets, father occupation, and mother occupation.

4.6.1 Household Assets and Academic Performance

According to Curley, Ssewamala, and Han (2010), ownership of household assets reflects a household's ability to maintain security during periods of economic distress. Literature suggest that children from households with greater asset ownership are more likely to enrol to school, remain in school, and record better academic performance than their counterparts from households with little assets. Consequently, the current study sought to establish the ownership of various assets including land, a house, a vehicle, microwave oven, refrigerator, and television in the respondents' households. Results are presented in Figure 4.8.

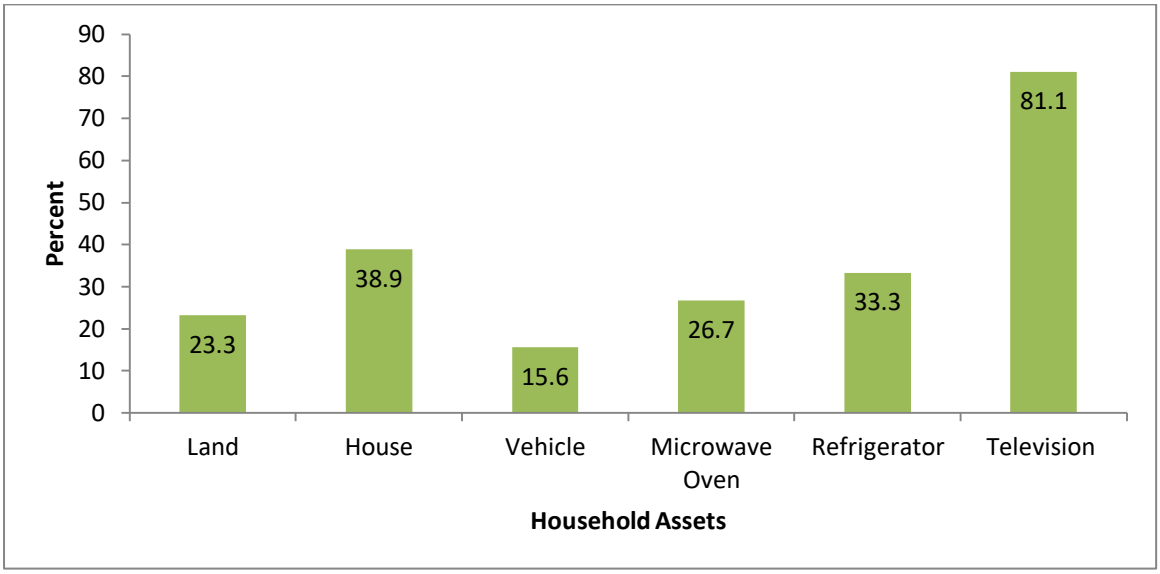


Figure 4.8: Percentage of Households that owned various Assets
Source: Field Data

As Figure 4.8 displays, 23.3% of the pupils reported that their own land in their family. This proportion is below the national percentage of households in urban area that owned land (24.4%) in the 2014 Kenya Demographic and Health Survey (KDHS) (Kenya National Bureau of Statistics, 2015). About 38.9% of the pupils reported that their family owned a house. This proportion is higher than the national proportion of 25.5%. About 15.6% of the pupils said that their households owned a vehicle, which was on the high side when compared to a national proportion of 7.2% for urban households. In addition, 26.7%, 33.3%, and 81.1% of the pupils reported that their households owned a microwave, a refrigerator, and a television respectively. These proportions are also higher than the national proportion of urban households where

the KDHS found that 7.2%, 12.7%, and 56% of the urban households owned a microwave oven, refrigerator, and television respectively. The relationship between ownership of each of the household assets and pupils academic performance is explored in Table 4.8

Table 4.8: Effect of Ownership of various Assets on Academic Performance

Asset	Category	Mean Grade	Mean Difference	t	df	p
Land	No	294.75	43.675	2.609	88	.011
	Yes	338.43				
A house	No	288.75	45.94	2.864	88	.006
	Yes	334.69				
A vehicle	No	294.20	69.088	3.656	88	.000
	Yes	363.29				
Microwave oven	No	287.14	66.780	4.446	88	.000
	Yes	353.92				
Refrigerator	No	292.73	36.633	2.223	88	.031
	Yes	329.37				
Television	No	282.12	28.143	1.518	88	.133
	Yes	310.26				

Source: Field Data

As presented in Table 4.8, the household assets had p-values that were less than 0.05 apart from television. This implies that the difference in mean grades of pupils whose households owned these assets and those who's household did not own the assets were statistically significant. These findings lead to the conclusion that ownership of land, a house, a vehicle, microwave, and refrigerator has a statistically significant effect on the academic performance of primary school pupils in Rhonda slums. This finding is consistent with earlier studies such as Curely *et al.* (2010) who found that household asset ownership was directly associated with children education outcomes. It is also consistent with the study by Weiss *et al.* (2009), who found that children whose households owned a house had higher education attainment than those whose families did not own a house.

From the mean difference figures, it appears that vehicle ownership has the strongest effect on pupils' academic performance. The difference between the mean grades of pupils whose household owned a vehicle and those whose household did not own a vehicle was 69.088, the highest among the six assets under consideration. This finding suggests that vehicle ownership has the strongest effect on academic performance, followed by microwave ownership and then house ownership. As Ansong *et al.* (2015) explained, the ownership of these assets does not in itself translate to improved academic performance. These assets are mainly indicators of the family's economic wellbeing including the ability to provide education resources such as books, stationary, and computers. This rationale may explain why television does not have a significant effect on academic performance among pupils in Rhonda slums. The widespread ownership of television had minimized the value of this asset as a status symbol.

According to Ansong *et al.* (2015), ownership of these assets also contributes to improved academic performance by increasing the academic expectation of pupils. Children who are raised in household that own these assets tend to have greater motivation to maintain similar lifestyle or upgrade to higher living standard and thus tend to have greater academic expectations. Curely *et al.* (2010) also noted that ownership of some of the household assets affect some other factors that have a direct impact of education such as the health and safety of the pupil.

4.6.2 Father Occupation and Academic Performance

The second household SES factor that was assessed was father's occupation level. Pupils were presented with a list of occupation and asked to select the option that best describes their father's occupation. Results are presented in Figure 4.9.

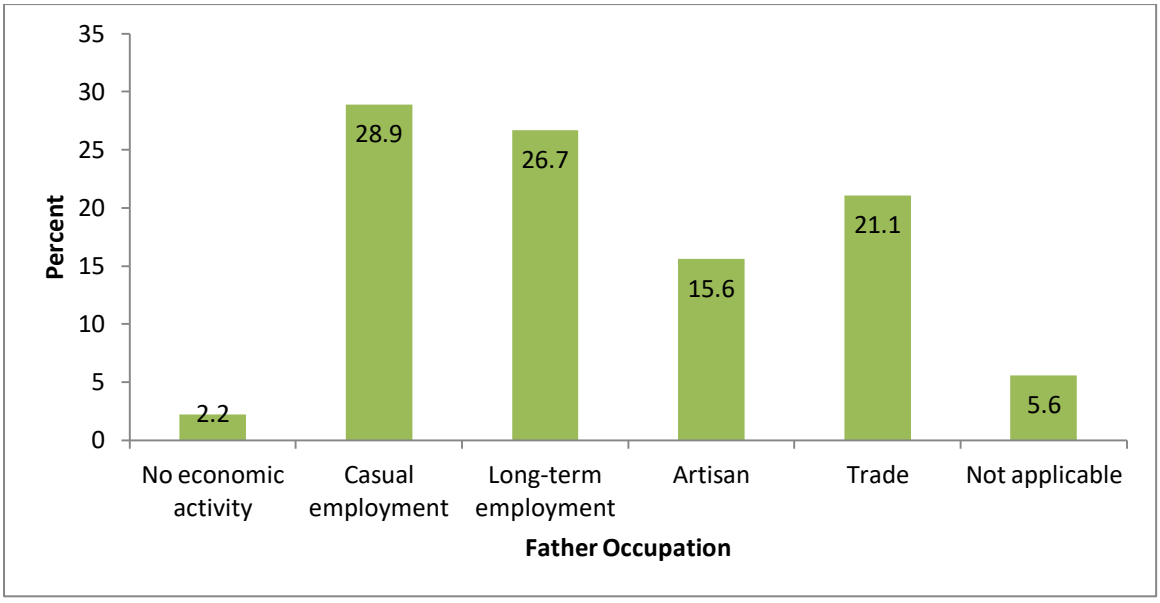


Figure 4.9: Distribution of Respondents by Father's Occupation
Source: Field Data

From Figure 4.9, it is evident that the largest segment of the pupils had their father working in casual employment where they were employed on temporary basis and mainly paid at the end of the day or the week. This finding was reinforced by qualitative data where majority of the interviewees asserted that most of their pupils' parents earned a living through performing menial jobs. Ruth detailed that:

> *"Most of the parents in this school are manual laborers. They survive by doing small menial work such as working in construction sites and working as loaders in the neighboring industrial area," (Ruth, Interview, 2019).*

About 26.7% reported that their fathers were in long-term employment, 21.1% said their fathers were in trade, while 15.6% said that their fathers were artisan. About 2.2% of the respondents indicated that their fathers were not engaged in any economic activity at the time while 5.6% said that this question was not applicable to them because their fathers were not present. The relationship between father occupation and pupil academic performance as measured by the previous term's examination grade was assessed using the analysis of variance (ANOVA) method. Results are presented in Table 4.9

Table 4.9: ANOVA in Mean Grade across Pupils with Different Father Occupation

Occupation	N	Mean Grade	df	f	sig
No economic activity	2	295.00	5 (between group)	2.212	.041
Casual employment	26	303.00	84(within group)		
Long-term employment	24	337.71	89 (Total		
Artisan	14	287.79			
Trade	19	319.63			
Not applicable	5	246.80			

Source: Field Data

As Table 4.9 illustrates, pupils whose fathers were in long-term employment had the highest mean grade of 337. This finding suggests that having father full-time employment has a positive effect on pupils' academic performance. The study by Kabiru (2018) found that workers employed on long-term basis had higher salaries; enjoyed benefits such as health insurance, retirement, and paid leaves; had greater access to credit facilities, and had fair working conditions including optimal work hours. These features of long-term employment could explain the positive effect that this form of employment has on pupils academic performance. The finding is also consistent with the study by Leppel *et al.* (2011) who found that children who had a parent in professional or executive occupations performed better than those whose parents were informal occupation. The effect was greater when the parent in the professional occupation is the father. The finding is also consistent with the study by Usaini and Abubakar (2015) who found that students whose parents were in the formal employment had better academic performance than those whose parents were working in the informal sector. The explanation given was that parents in formal employment had higher income that enabled them to provide better resources. These parents also had higher levels of education that enables them to meaningful engage their children on educational matters. This explanation is reinforced by the interview data, where one of the teachers explained that:

> *Parents' occupation affects pupils' academic performance by affecting the family's income. Pupils whose parents have 'good jobs' tend to have greater access to education resources such as books, pens, pencils, and many others, (Ruth, Interview, 2019).*

Pupils who indicated that this question was not applicable to them had the lowest mean grade of 246.8. These pupils were mainly from single parent families and thus could not report on fathers' occupation. This finding suggests that fathers' absence could have a negative effect on pupils' performance. This effect can be attributed to the fact that father's absence leads low household income and wealth as only one parent is working, as well as, assigns burdening parental responsibility to the mother resulting in poor parent-child relationship. This position is supported in the study by Lange, Dronkers and Wolbers (2014) where it was found that schools with high concentration of children from single-parent household recorded poor academic achievement among all students. It was observed that these schools were typified by lower social capital marked by lower parental involvement in their children's education as well as low socioeconomic status marked by unavailability of books, desks, classes, and other essential materials.

Those whose fathers had no economic activities had the second lowest mean score of 295. Pupils whose fathers were in casual employment, the largest group in the sample, had a mean grade of 303. Although not the lowest, the mean grade for this group was below the average for the entire sample of 304 marks suggesting that father's casual employment has a negative effect on academic performance. As Kabiru (2018) explained, causal employment in Kenya is often characterized by low, irregular, and unsecure income. People in casual employment are also less likely to receive benefits such as health insurance and social security benefits. The ANOVA test showed that the differences in mean grade observed between pupils with different father occupation is statistically significant ($F=2.212$, $p= .041$). This finding leads to the conclusion that father occupation has a statistically significant effect on academic performance of primary school pupils in Rhonda slums.

This finding is consistent with the study by Kiritsis (2015) who found that the academic self-concept in a sample of 1,344 Greek secondary school students was statistically and positively associated with the father's occupation. Education self-concept was defined as the adolescent beliefs regarding own ability to achieve academic goals. Academic self-concept is a strong predictor of academic performance. The study suggests that one of the pathways through which father occupation affects pupils academic performance is by shaping the pupils beliefs

regarding own academic abilities and potential. The study by Chen *et al.* (2018) suggest that another pathway through which father occupation can influence pupils academic performance is by shaping the parenting style as well as parent-child relationship. Findings revealed that parents in odd occupations usually work for long working hours or even hold several job and thus find little time to spend with their children.

4.6.3 Mother Occupation and Academic Performance

The final household SES factor that was analysed was mother's occupation. Pupils were also presented with a list of occupation and asked to pick the option that best describes their mothers' main occupation. Their responses are summarized in Figure 4.10.

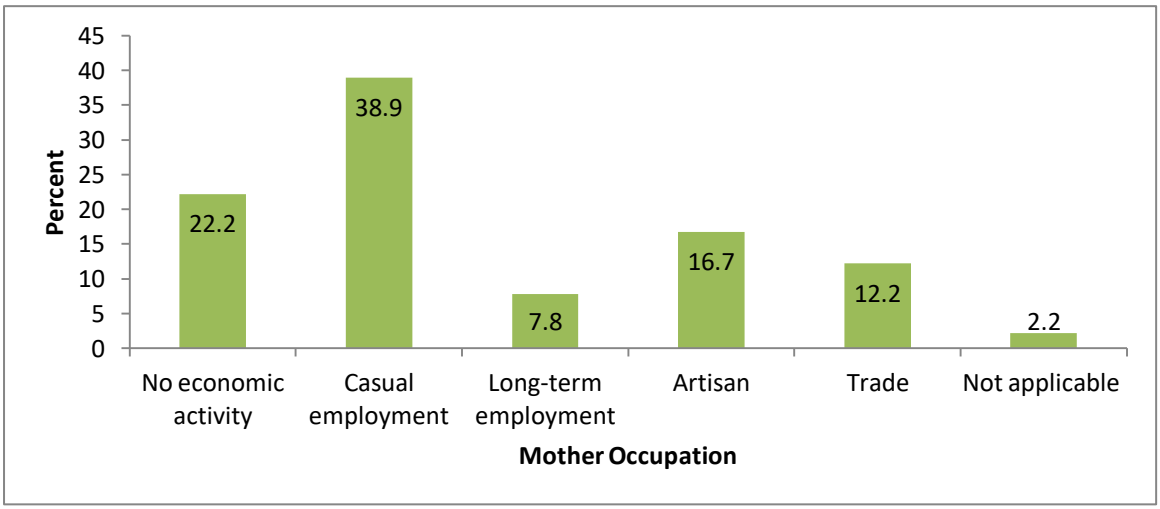


Figure 4.10: Distribution of Respondents by Mother's Occupation
Source: Field Data

From Table 4.10, it clear that the majority of the pupils (38.9%) had their mothers' working in casual employment. There was also a sizeable portion of the sampled pupils (22.2%) whose mothers were not engaged in any economic activity. From these findings, it is evident that the proportion of mothers who were unemployed was a lot higher than the proportion of fathers who were unemployed (2.2% presented in Figure 4.9). About 16.7% of the pupils reported that their mothers were involved in artisan activities such as dress-making, weaving, and jewellery.

Only 12.2 % of the pupils said that the mothers were trade as opposed to 21.1% for the fathers. Similarly, a smaller percentage of the pupils (7.8%) said that their mothers were in full-time employed when compared to 26.7% of the pupils who said that their fathers were in full-time employment. These findings suggest that women in Rhonda slums are disproportionately affected by unemployment. About 2.2% of the pupils indicate that this question was not applicable to them because their mothers were not presented. The ANOVA method was used to explore the effect of mothers' occupation on pupils' academic performance. Results are presented in Table 4.10.

Table 4.10: ANOVA in Mean Grade across Pupils with different Mother Occupation

Occupation	N	Mean Grade	df	f	sig
No economic activity	20	288.40	5 (between group)	2.279	.037
Casual employment	35	298.83	84(within group)		
Long-term employment	7	364.50	89 (Total		
Artisan	15	299.50			
Trade	11	315.73			
Not applicable	2	352.57			

Source: Field Data

As shown in Table 4.10, pupils who mothers were in long-term employment had the highest mean grade of 364.5. The effect of mother long-term employment can be explained by the same factors observed in the effect of fathers' long-term employment including higher income and wealth, better work condition including flexible work hours that improve mother involvement in child's education, and insurance benefit that improves child access to health. Pupils who reported that this question was not applicable to them because their mothers were not present had the second highest mean grade of 352.57. This finding warrants further investigations.

Pupils who mothers had no economic activities had the lowest mean grade of 288.40. This finding implies that mother's unemployment has a negative effect on the academic performance of primary school pupils. Pupils who mothers were in casual employment (mean grade= 298.83) and artisan work (mean grade = 299.50) had mean grades that were below the average for the entire sample suggesting that these occupations have a negative effect on the academic performance of primary school pupils. Pupils whose mother were in trade (mean= 315.73) had a mean grade that was higher than the average mean grade for the sample suggesting that mothers'

engagement in trade has a positive effect on academic performance of primary school pupils. This effect can be explained by the flexibility of this occupation that allows mothers to be more involved in their children's education. It can also be explained by income.

The ANOVA showed that the difference in mean grade observed across the group of pupil with different mother occupation were statistically significant (F= 2.279, p= .037). This finding leads to the conclusion that mother's occupation has a statistically significant effect on the academic performance of primary school pupils in Rhonda slums.

4.7 Effects of Nutrition Deprivation on Academic Performance

The final objective of the study was to examine the effects of nutrition deprivation on academic performance of primary school pupils in Rhonda slums. Indicators that were used to measure nutrition deprivation were number of meals per day, quality of meals, and access to nutritional information.

4.7.1 Number of Meals and Academic Performance

To assess this indicator, pupils were asked to state the number of meals that the usually get on a normal day. Results are summarized in Figure 4.11.

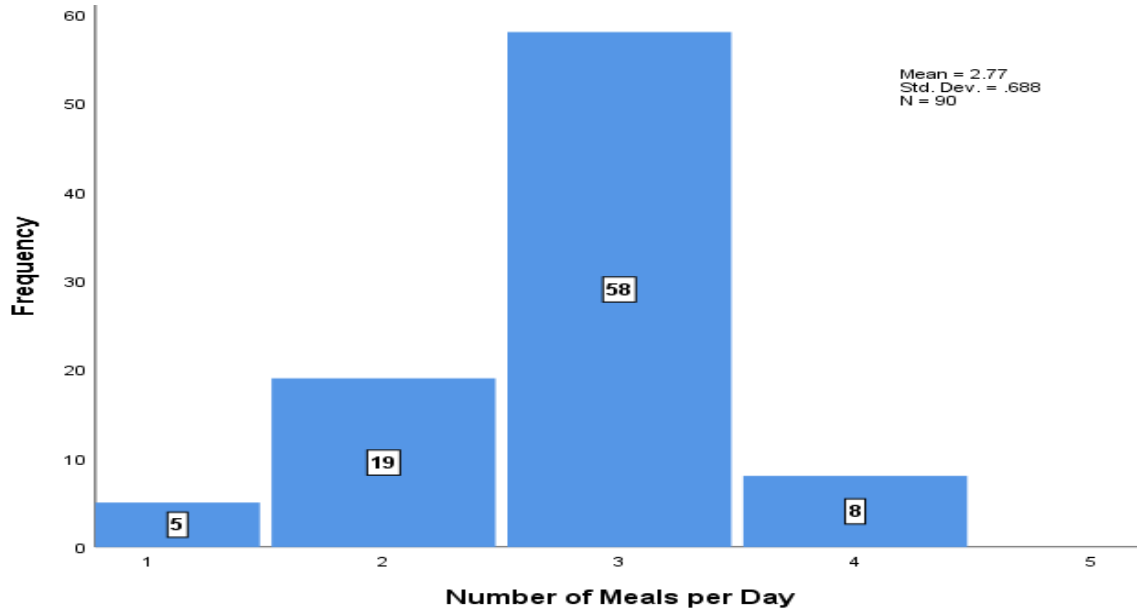


Figure 4.11: Distribution of Pupils by Number of Meals per Day
Source: Field Data

From Figure 4.11, it is evident that the majority of the sampled pupils (58 out of 90) get three meals per day. The average number of meals for the entire sample was 2.77 per day, which rounds-off to 3 meals, which is the minimum accepted daily meal frequency by the Food and Agriculture Organization (FAO) (Alasfooer, Rajab, & Al-Rassasi, 2017). Nineteen out of 90 pupils (21.1%) get two meals per day while 5 pupils representing 5.6% of the sample get only one meal per day. This finding implies that 26.7% of primary school pupils in Rhonda slums get less than the recommended minimum of 3 meals a day. This means that 26.7% of the pupils suffer from nutritional deprivation. To assess the effect of number of meals per day, the data was recorded into two categories: (1) pupils who get less than 3 meals per day, and (2) those who get three or more meals. The mean grade of pupils in these two groups was compared using the independent sample t-test. Results are presented in Table 4.11.

Table 4.11: Effects of Number of Meals on Academic Performance

Category	**N**	**Mean Grade**	**Mean Difference**	**DF**	**t**	**Sig.**
Less than 3 meals	24	287.17	24.242	88	1.996	.143
3 meals and above	66	311.41				
Total	**90**	**304.94**				

Source: Field Data

As Table 4.11 illustrates, pupils who get less than 3 meals per day had lower mean grade of 287.17 as compared to 311.41 for pupils who reported getting 3 meals and above per day. The independent sample t-test however showed that the difference in mean grade between the two groups of pupils is not statistically significant (t=1.996, p= .143). This finding led to the conclusion that number of meals per day does not have a statistically significant effect on the academic performance of pupils in Rhonda slums.

This finding is not consistent with earlier studies such as Hannum *et al.* (2014) who found that Chinese children who experienced greater food insecurity had lower literacy scores than those who did not experience food insecurity. The study concluded that food insecurity may be an important mechanism for transmitting education disadvantage among poor children. The findings are also not congruent with Burrows *et al.* (2017) who found that regular meal consumption and breakfast

intake was positively associated with the academic performance. The inconsistency between current findings and those recorded in literature may be attributed to the fact that there are no major differences in the number of meals accessed by primary school pupils in Rhonda per day. About 73.3% of the pupils indicated that they get at least three meals per day suggesting that food insecurity is not a major problem in the area.

4.7.2 Quality of Meals and Academic Performance

The second factor that was used to assess nutritional deprivation was the quality of meals that the pupils get on a normal day. To assess this issue, pupils were asked to list the type of foods that they get on a typical day. This information is summarized in Figure 4.12.

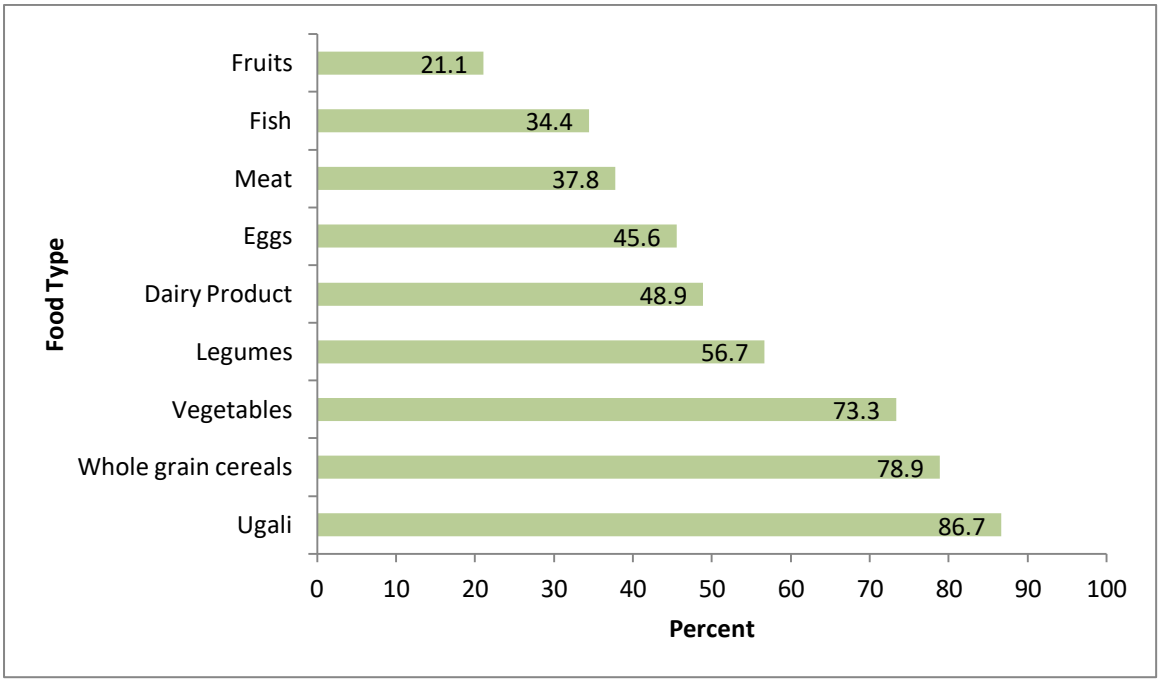


Figure 4.12: Foods consumed by Sampled Pupils on a Typical Day
Source: Field Data

From Figure 4.12, it is clear that ugali is the most commonly consumed food type with 86.7% of the respondents indicating consuming this food on regular basis. About 78.9% of the pupils reported consuming whole grain cereals such as maize and rice. This can be attributed to the school feeding programme, which mainly comprises who grain meals particularly maize and beans. Vegetables such mainly sukuma wiki and cabbages are also consumed by a significant portion of pupils (73.3%). About 56.7%

of the pupils reported consuming legumes such as bean and peas on a regular basis. According to Alasfooer *et al.* (2017), legumes offer an affordable source of proteins for most of the low income households. These findings were reinforced by the interview data where one of the teachers narrated that:

> *"Ugali is the staple food in most of the pupils homes where it usually taken by sukuma wiki (kales). Omena is also a popular meal in the area. The pupils also get to eat githeri (mixture of maize and beans) at school as part of the school feeding programme," (Jane, 2019).*

Only 21.1% of the pupils reported consuming fruits on a regular basis, which is highly recommended by the FAO (Alasfooer *et al.*, 2017). This implies that over 79.9% of the pupils do not have regular in-take of fruits. Less than 50% of the pupils reported consuming animal and sea foods such as milk, eggs, and fish; which are essential sources of protein. To further assess the quality of meals that the pupils consume, the sampled pupils were asked to indicate whether they get a balanced diet at least once a day. Resulted are presented in Figure 4.13.

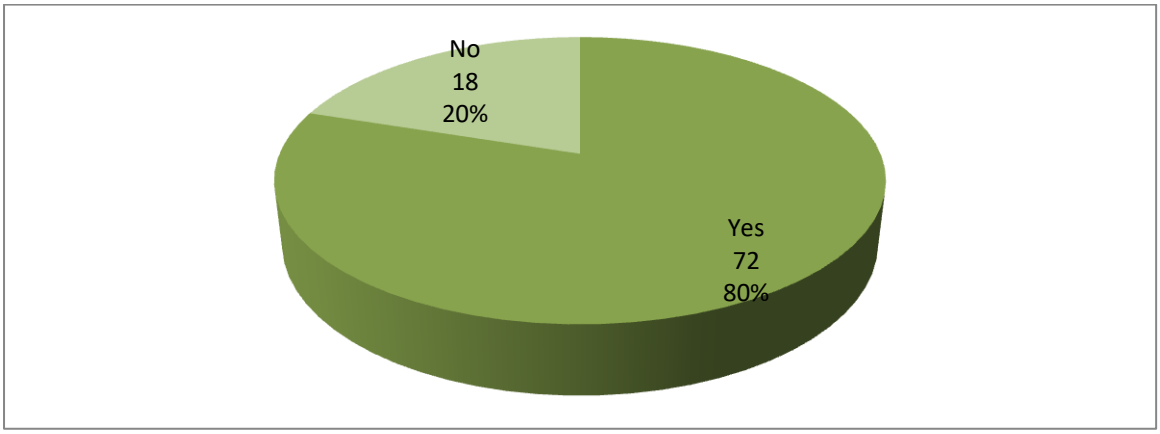


Figure 4.13: Distribution of Respondents by Access to Balanced Diet
Source: Field Data

As Figure 4.13 exemplifies, 80% of the pupils reported that they get a balanced diet at least once a day while 20% do not. To assess the effect of quality of meal on academic performance, the mean grade of pupils who reported getting a balanced at

least once a day was compared with the mean grade of those of who do not using the independent sample t-test. Results are presented in Table 4.12.

Table 4.12: Effects of Quality of Meals on Academic Performance

Category	N	Mean Grade	Mean Difference	DF	t	Sig.
No access to Balanced Diet	18	277.32	40.492	88	3.196	.013
Access to Balanced Diet	72	317.81				
Total	**90**	**304.94**				

Source: Field Data

As Table 4.12 illustrates, pupils who reported getting a balanced diet at least once a day had a higher mean grade of 317.81 as compared to a mean grade of 277.32 for pupils who did not have daily access to a balanced diet. The independent sample t-test showed that the mean grade differences observed between the two groups of pupils is statistically significant (t= 3.196, p= .013). This finding led to the conclusion that quality of meals has a significant effect on the academic performance of primary school pupils in Ronda slums. Pupils who get high quality meals are more likely to perform better academically than those who do not get high quality meals.

4.7.3 Access to Nutrition Information and Academic Performance

The final indicator that was used to measure nutrition deprivation was the pupils' access to nutrition information. To assess this issue, pupils were asked to indicate whether they have ever learnt about nutrition. Results are presented in Figure 4.14.

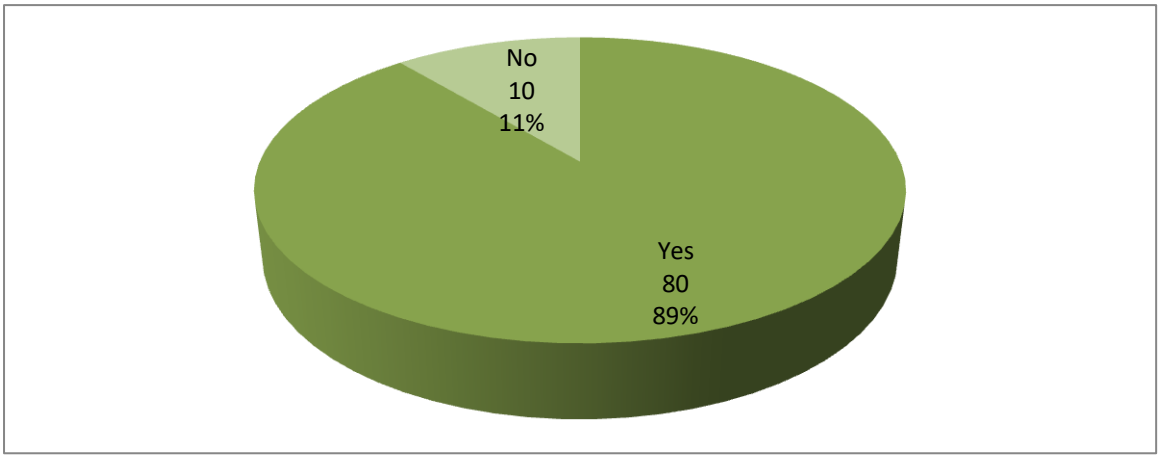


Figure 4.14: Distribution of Respondents by Access to Nutrition Information
Source: Field Data

As Figure 4.14 displays, 89% of the pupils said that they had learnt something about nutrition while 11% said that they have never been engaged in this area. When asked to indicate what they had learnt about nutrition, the majority of the pupils said that they had learnt about balanced diet including what it entails and its importance in a person health. To assess the effect of access to nutrition information on pupils academic performance, the mean grade of pupils who have access to nutrition information was compared to that of pupils who did not have access using the independent sample t-test. Results are presented in Table 4.13.

Table 4.13: Effects of Access to Nutrition Information on Academic Performance

Access to Nutrition Information	N	Mean Grade	Mean Difference	DF	t	Sig.
Yes	80	302.90	24.7	88	1.063	.291
No	10	326.20				
Total	**90**	**304.94**				

Source: Field Data

As Table 4.13 shows, pupils who had no access to nutrition information had a higher mean grade of 326.20 as compared to 302.90 for those who had access to nutrition information. The independent sample t-test however showed that the mean grade difference observed between the two groups of pupils was not statistically significant (t=1.063, p= .291). This implies that access to nutrition information does not have a statistically significant effect on academic performance of primary school pupils in Rhonda slums.

This finding is not consistent with the study by Taras (2015) who found that the level of nutritional knowledge among students was positively associated with the quality of diet that the student consumed and consequently their academic performance. The study by Taras (2015) was notably different from the current study as it was conducted among university students who have greater autonomy and resources to determine their own diets when compared to primary school pupils who were the target for the present study. In the context of primary school pupils, nutritional knowledge may have an effect when it is assessed at the parent level rather than pupils' level as the pupil have little say on the kind of diet that they receive. It is also probable that nutritional knowledge does not have an effect on performance because

most families in Rhonda slums do not have the resources to implement the knowledge they have on diet.

4.8 Chapter Summary

This chapter contained the data analysis, presentation, and interpretation. From the chapter, it is apparent the academic performance of primary school pupils in Rhonda slums is above national average as the sampled pupils had a mean grade of 304.94 as compared to a national average of 250 in the 2018 KCPE. Results showed that in the health deprivation domain, access to preventive care and absence due to sickness, have a statistically significant effect on pupils academic performance. On household SES, household assets, father occupation, and mother occupation had a statistically significant effect on the pupils' academic performance. Regarding nutrition deprivation, only the quality of meal had a statistically significant effect on pupils' academic performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This study sought to investigate the effect of childhood capability deprivation on academic performance of primary school pupils. This chapter presents a summary of the studies key findings, conclusions of the study, recommendations, and areas for further research.

5.2 Summary of Key Findings

The specific objectives of the study were to examine the effect of health deprivation, household SES, and nutrition deprivation on pupils' academic performance. Data was collected from a sample of 90 grade 8 pupils and 7 teachers from six primary schools in Rhonda slums using questionnaires and semi-structured interviews. The following are the key findings of the study.

5.2.1 Effects of Health Deprivation on Academic Performance

Health deprivation was measured using three indicators namely access to preventive care, sickness, and absenteeism due to sickness. Descriptive analysis showed that 82% of the primary school pupils do not have access to preventive care marked by failure to go for health check-up on a regular basis as recommended by the WHO. Qualitative findings revealed that due to the poor SES of most pupils, preventive health check-ups are viewed as a luxury rather than a necessity. The independent sample t-test showed that access to preventive care has a statistically significant effect ($t=3.232$, $p= .002$) on academic performance with pupils who are deprived this access being likely to record low academic performance. Descriptive analysis also showed that nearly half (48%) of the pupils fell ill at least once during the prevailing school terms indicating high incidences of sickness among the pupils. However, the independent sample t-test showed that sickness does not have a statistically significant effect on pupils academic performance ($t= 0.51$, $p= .611$). Descriptive findings also showed that 38% of the pupils missed at least one school day during the term due to illness. This finding was also confirmed by the qualitative data with the interviewed teachers confirming high level of absenteeism due to illness. The independent sample t-test showed that absenteeism due to sickness has a statistically significant effect (t=

1.996, p= .044) on academic performance with pupils who lose school days due to illness being more likely to record poor academic performance.

5.2.2 Effects of Household SES on Academic Performance

Household SES was measured using three indicators namely possession of durable household assets, father occupation, and mother occupation. Descriptive findings showed that the majority of the pupils' households (81.1%) owned a television set, 38.9% owned a house, 33.3% owned a refrigerator, 26.7% owned a microwave oven, 23.3% owned land, and 15.6% owned a vehicle. The independent sample t-test showed that possession of a house, refrigerator, microwave oven, land, and vehicle had a statistically significant and positive effect on pupils' academic performance. Only possession of television was found not to have a statistically significant effect on academic performance. Descriptive findings also showed that the largest sections of the pupils fathers (29.8%) as well as the largest section of the pupils' mothers (38.9%) were in casual employment. There was also a high level of mother unemployment among the pupils (22.2%). The ANOVA test showed that both father's occupation (F=2.212, p= .041) and mother's occupation (F= 2.279, p= .037) had a statistically significant effect on academic performance with pupils whose parents were not employed or in casual employment likely to record poor academic performance.

5.2.3 Effects of Nutrition Deprivation on Academic Performance

Nutrition deprivation was measured using three indicators namely number of meals per day, quality of meals, and access to nutrition information. Descriptive findings show that 26.7% of primary school pupils in Rhonda slums do not get at least three meals per day, which is the minimum recommended meal frequency by FAO. The independent sample t-test however showed that number of meals per day does not have a statistically significant effect on the pupils' academic performance (t=1.996, p= .143). Regarding quality of meals, descriptive and qualitative findings showed that ugali, whole grain cereals, vegetables (mainly kales) and legumes are the most commonly consumed meals by primary school pupils in Rhonda slums. Findings also showed that 20% of the pupils do not get a balanced diet at least once a day. The independent sample t-test showed that quality of meal has a statistically significant effect (t= 3.196, p= .013) on academic performance with pupils who do not get quality meals being more likely to exhibit low academic performance. Relating to

nutrition information, findings showed that 89% of the primary school pupils have access to nutrition information mainly regarding balanced diet including what it entails and its importance to a person's health. The independent sample t-test showed that access to nutrition information does not have a statistically significant effect (t=1.063, p= .291) on pupils' academic performance.

5.3 Conclusions of the Study

On health deprivation, the study concludes that inadequate access to preventive healthcare as well as school absenteeism due to illness, have a statistically significant effect on academic performance of primary school pupils. Pupils who do not attend regular health check-up, and those who miss school days due to illness were more likely to record low academic performance. Sickness in itself does not have a significant effect on academic performance unless it leads to school absenteeism.

Regarding household SES, the study concludes that possession of durable household assets, father's occupation, and mother occupation have a statistically significant effect on academic performance of primary school pupils. It was found that the three SES variables influence the financial stability of the family and thus shape the quality of education for the children.

About nutrition deprivation, the study concludes that only the quality of meals that the pupils take have a statistically significant effect on their academic performance. The number of meals per day and access to nutrition information had not significant effect on academic performance. This implies that there are no major differences among the pupils when it comes to number of meals per day and access to nutrition information. The main differentiating factor is the quality of meals.

5.4 Recommendation of the Study

Regarding health deprivation, the study recommends the development and implementation of interventions that will increase access to preventative healthcare by primary school pupils in informal settlements and other highly deprived areas. Education programmes may help create awareness regarding the importance of attending regular health check-ups. The government should also find strategy for increasing enrolment into the national hospital insurance fund (NHIF) by households living in highly deprived areas in order to increase their access to preventive and

curative health. This will also help to address high incidences of sickness and school absenteeism due to illness. Programmes that take preventative healthcare services closer to the primary school pupils such as mobile screening for diseases such as diabetes may help increase access to preventive health as well as reduce incidence of illness.

On household SES, the study recommends the development and implementation of interventions that help households in the highly deprived areas to acquire household assets. Interventions such as saving and investment schemes, credit schemes, and income generating projects may help achieve this end. The study also recommends the development of social protection programmes for households where parents are unemployed or have low income. This will help alleviate the negative effect of father's and mother's occupation on pupils' academic performance. A housing programme that seeks to increase home ownership in the highly deprived area might also help to improve the academic performance of pupils from these areas.

Regarding nutrition deprivation, the study recommends the development and implementation of interventions aimed at improving the quality of meals taken by the primary school pupils. One of the interventions that may make a lot of difference is enriching the school feeding programme to ensure that it covers a wide range of meals. Reintroduction of free milk programme for primary school pupils in highly deprived areas might also help improve the quality of meals and consequently the academic performance of these pupils.

5.5 Areas for Further Research

The current study was limited to primary school pupils in Rhonda slums. Future studies should consider replicating this study in other informal settlements and highly deprived areas so as to support generalization of findings. Future studies should also consider expanding this study to also examine the effect of childhood deprivation on the academic performance of secondary school students.

The present study was also limited to three areas deprivation: health, household SES, and nutrition deprivation. Future studies should investigate how other forms of deprivation such as shelter deprivation, information deprivation, love and care

deprivation, leisure activity deprivation, mobility deprivation, and safety deprivation affect the academic performance of primary school pupils.

The study established that there are high incidences of sickness in the study area, which affects academic performance when the cause school absenteeism. Future studies should explore the common illnesses that pupils in these areas suffer from so as to generate evidence that will guide the development of targeted interventions for addressing these illnesses.

Current findings suggest that pupils' access to nutritional information does not have a statistically significant effect on academic performance despite literature suggesting the existence of this effect. Future studies should consider examine the effect of parent nutritional knowledge on pupils academic performance as at the primary level, pupils mainly dependents on adult decisions when it comes to nutritional issues.

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APPENDICES

Appendix A: Introduction Letter

Nancy Kasera

P.O Box

Nakuru

0721 612 313

Dear respondents,

I wish to invite you to participate in a survey that constitutes part of my masters of Developmental studies at St. Paul university Nakuru campus. The survey is about **EFFECTS OF CHILDHOOD CAPABILITY DEPRIVATION ON ACADEMIC PERFORMANCE OF PRIMARY SCHOOL PUPILS**. The questionnaires will take not more than 10 minutes of your precious time and is completely voluntary.

I assure you complete anonymity and confidentiality of the information you will give since this is purely an academic research. I would request you to answer the questions with atmost honesty to help this research establish to a high degree of accuracy from the results of the case study. The response will be used for analysis only.

In case of any question do not hesitate to contact my supervisors Dr. Koome and Dr. Gesimba.

Thank you for your gesture of co-operation and assistance.

Yours Sincerely,

Nancy Kasera.

Appendix B: Questionnaire for Pupils

My name is Nancy Kasera, a student at St Paul's University. I am conducting a research on EFFECT OF CHILDHOOD CAPABILITY DEPRIVATION ON ACADEMIC PERFORMANCE. This questionnaire is for the determination of the research only; the gathered information shall be preserved with outmost confidentially. Please answer all questions provided as honestly as possible, to the best of your knowledge. Circle the response that best suits your view….

Questionnaire No: _____

No.	Filters and Questions	Coding Categories	Codes
Background Section			
01	Gender	Male ……	1
		Female ……..	2
02	What is your age		
03	Type of school	Private ……	1
		Public……...	2
Child Academic Performance			
04	How many marks did you score in last term's examination?	I scored out of	
05 (a)	Have you repeated any class	Yes…… …….	1
		No …….	2
b	If yes in 5 (a), which class did you repeat		
Health Services Deprivation			
6 (a)	Do you attend health check-up on a regular basis?	Yes …….	1
		No……...	2
b	If yes in 6 (a), how many times do you go for checkups in years		
7 (a)	Have for fallen ill this academic term?	Yes ……...	1
		No ……	2
b	If yes in 7 (a) above, how many times have you fallen ill during this academic term?		
8 (a)	Have you missed any school day in this academic term because of illness?	Yes…….……..	1
		No ……..	2

b	If yes in 8 (a) above, how many days have you missed in this academic term because of illness		
Household Socioeconomic Status			
9	Please state whether you own the following in your household (circle all that apply)	Land A house A vehicle Microwave oven Refrigerator Television	
10	What is the main occupation of your father?	No economic activity……..……. Casual employment.…… Long-term employment …….. Artisan (tailor, mason) …… Trade …… Not applicable …….	1 2 3 4 5 6
11	What is the main occupation of your mother?	No economic activity……..……. Casual employment.…… Long-term employment …….. Artisan (tailor, mason) …… Trade …… Not applicable …….	1 2 3 4 5 6
Nutrition Deprivation			
12 (a)	How many meals do you get on a normal day?		
(b)	Please describe the type of foods that you eat on a regular day		
13	Do you get a balanced diet at least once a day?	Yes …… No ……	1 2
14 (a)	Do you have access to clean drinking water at your home?	Yes ……..…….. No……..……	1 2
b	Where do you get drinking water for use in your home	Tap in the home.……. Shared tap ……. Tap away from home……. Other (please specify)	1 2 3

15 (a)	Have you ever learnt about nutrition in school	Yes …… No …….	1 2
(b)	If yes in 15 (a) above, what did you learn?		

Appendix C: Interview Guide for Teachers

1. Gender of respondent?

Male [ ] Female [ ]

2. Age of respondent?

3. Number of years working in the teaching profession?

4. Number of years teaching in the current school?

Children Academic Performance

5. How would you describe the academic performance of most of the children in your class?

6. How has the socioeconomic condition of the children affected their academic performance?

Health Services Deprivation

7. Does the pupil in your class have adequate access to health services? Please elaborate

8. How often do pupils fell ill in your class in a given term?

9. How does access to health services influence the education outcome of these pupils?

Household socioeconomic status

11. What are the most common occupations of parents of most of the pupils in your school?

12. In your opinion, how does parents' occupation affect pupils' academic performance?

Nutrition deprivation

13. How would you describe the type of nutrition that the majority of the pupils in your class have access to?

14. How does nutrition influence the education outcomes of these pupils?

Appendix D: Research Authorization Letter from St. Paul's University

ST. PAUL'S UNIVERSITY

Private Bag 00217 LIMURU, KENYA
Email: postgraduatestudies@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
Mobile: +254 (0) 728-669000
(0) 728-062420
(0) 736-424440

BOARD OF POSTGRADUATE STUDIES

National Commission for Science, Technology and Innovation
Off Waiyaki Way, Upper Kabete
P.O Box 30623, 00100
Nairobi, KENYA.

Dear Sir/Madam,

RE: KASERA NANCY ATIENO- MDSNKR210215

This is to confirm that the above named is a final year student of St. Paul's University registered for Master of Development Studies.

The final year consists of a major research work leading to a dissertation comprising 20,000 words. The student's selected topic is:

EFFECTS OF CHILDHOOD CAPABILITY ON ACADEMIC PERFORMANCE A CASE OF PRIMARY SCHOOL PUPILS, KIONDA SLUMS NAKURU WEST SUB-COUNTY.

The research will take place in NAKURU County from March 2019 to May 2019.

Kindly grant the student the required permit.

Yours Faithfully,

Dr. Sammy Githuku
Director, Postgraduate Studies

BOARD OF POSTGRADUATE STUDIES ST. PAUL'S UNIVERSITY 28 FEB 2019 KENYA TEL: 020 - 2020505 / 2020510 P.O PRIVATE BAG - 00217, LIMURU.

Appendix E: NACOSTI Authorization Letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/86441/28684**

Date: **14th March, 2019**

Nancy Atieno Kasera
St. Pauls University
P.O. Private Bag - 00217
LIMURU.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effect of childhood capability on academic performance the case of primary school pupils Rhonda Slums Nakuru West Sub County Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nakuru County** for the period ending **13th March, 2020.**

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

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

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nakuru County.

The County Director of Education
Nakuru County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

Appendix F: Authorization Letter from Ministry of Education

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING OF BASIC EDUCATION

Telegrams: "**EDUCATION**",
Telephone: **051-2216917**
When replying please quote
Email:cdenakurucounty@gmail.com
Ref.CDE/NKU/GEN/4/1/21 VOL.VIX/56

COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY
P. O. BOX 259,
NAKURU.

10th April, 2019

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION –NANCY ATIENO KASERA
PERMIT NO. NACOSTI/P/19/86441/28684

Reference is made to letter NACOSTI/P/19/86441/28684
dated 14th March, 2019

Authority is hereby granted to the above named to carry out research on "***Effect of childhood capability on academic performance the case of primary school pupils Rhonda Slums Nakuru West Sub-County, Kenya***" for a period ending ***13th March, 2020.***

Kindly accord her the necessary assistance.

For: COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY

G.N.KIMANI
FOR: COUNTY DIRECTOR OF EDUCATION
NAKURU

Copy to:

- St. Paul University
  P.O Private Bag - 00217
  LIMURU

Appendix G: Research Authorization Letter from County Commissioner Office

THE PRESIDENCY
MINISTRY OF INTERIOR AND
CO-ORDINATION OF NATIONAL GOVERNMENT

Telegram: "DISTRICTER" Nakuru
Telephone: Nakuru 051-2212515
When replying please quote

COUNTY COMMISSIONER
NAKURU COUNTY
P.O. BOX 81
NAKURU.

Ref No. CC. SR . EDU/12/1/2 VOL.IV/68

10th April, 2019

Deputy County Commissioner
NAKURU WEST SUB COUNTY

RESEARCH AUTHORIZATION – NANCY ATIENO KASERA

The above named student from St. Pauls University has been authorized to carry out research on "effect of childhood capability on academic performance the case of primary school pupils Rhonda Slums, Nakuru West Sub County, Nakuru County for a period ending 13th March, 2020

Please accord her all the necessary support to facilitate the success of her research

MARY. W. MWANGI
FOR COUNTY COMMISSIONER
NAKURU COUNTY