PRE-SCHOOLING AND ACADEMIC PERFORMANCE OF LOWER PRIMARY SCHOOL PUPILS IN ZAMBEZI DISTRICT, ZAMBIA.

By

CHIZAWU KEPSON

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Declaration

I, **CHIZAWU KEPSON** do hereby declare that this dissertation represents my own authentic work and that it has not previously been submitted anywhere else. All works cited in this dissertation have been acknowledged at the references page.

Chizawu Kepson.

Sign……....Date: .....

Certificate of Approval

This dissertation by Chizawu Kepson is approved as a partial fulfillment of the requirements for the award of Masters' Degree in Child and Adolescent Psychology.

Examiners:

Signed.....Date: .....

Signed .....Date:.....

Signed .....Date:.....

Abstract

The primary objective of this study was to investigate the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils in Zambezi district, Zambia. The study also assessed whether socio-economic status (SES) of parents, pupils gender (sex), age and parent-child interactive behavior were related to academic performance of pre-schooled and non pre-schooled lower primary school pupils in Numeracy and Literacy. This study employed a quantitative cross sectional design to investigate the relationship between pre-schooling and academic performance of lower primary school pupils in Numeracy and Literacy. The sample size was 240 participants (120 pupils and 120 parents and guardians).

This study used Multivariate Stepwise Binary Logistic Regression to analyze the data. The above statistic was used in order to investigate the relationship between pre-schooling and explore whether parents SES, pupils' gender (sex), age and parent-child interactive behavior influenced the relationship between pre-schooling and academic performance of pre-schooled and non pre-schooled lower primary school pupils.

The results indicate that there is a relationship between pre-schooling and performance in Literacy and Numeracy in Grade One and Two. This relationship was statistically significant at $p< 0.05$. The results also showed that age was related to academic performance. Older pupils performed better than younger pupils. This result was significant at $p< 0.05$. However, it was shown that there is no significant relationship between socio-economic status of parents, sex, parent-child interactive behavior and academic performance of pupils in Literacy and Numeracy. In conclusion, the study has shown that pre-schooling and age are related to academic performance of pre-schooled lower primary school pupils in Literacy and Numeracy, but SES of parents, sex and parent-child interactive behavior are not related to academic performance of the children in the rural setting of Zambezi where this study was conducted.

The study's recommendations are that the Ministry of Education to scale up the implementation of pre-schools in government schools. This may provide easy access to pre-school education especially in rural areas where pre-schools are very few if any. Parents of children in rural Zambia should actively be encouraged to take their children to pre-school before they start Grade One, since results of this study show that pre-schooling is related to academic performance of lower primary school pupils.

Key words: Pre-schooling, academic performance, socio-economic status, gender (sex), Zambezi.

Dedication

I dedicate this work to my beloved wife Njolomba Nancy, my sons Kebby, Patrick and Caleb, daughters Lanis and Thelma who endured lots of vexation and discomfort while I was away to pursue this Masters degree.

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To all I say may the Almighty God richly bless you.

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List of Abbreviations

ATS	African Traditional Society
ANOVA	Analysis of Variance
DEBS	District Education Board Secretary
ECCDE	Early Childhood, Care, Development and Education
ECD	Early Childhood and Development
ECE	Early Childhood Education
ECEC	Early Childhood Education and Care
CRC	Convention on the Rights of the Child
EFA	Education for All
GER	Gross Enrolment Ratio
HSIS	Head Start Impact Studies
LPA	Lusaka Pre-school Association
NIF	National Implementation Framework
NGO	Non Governmental Organization
NPA	Non Preschool Attendants
MRC	Madrasa Resource Centre
OECD	Organization for Economic Co-operation and Development
PA	Pre-school Attendants
PPP	Perry Pre-school Project
PEP	Pre-school Education Project
SSA	Sub Sahara Africa

SES	Socio-Economic Status
SNDP	Sixth National Development Plan
TEEP	Turkish Early Enrichment Project
UNICEF	United Nations International Children's Fund
UNESCO	United Nation Educational, Scientific and Cultural Organization
USA	United States of America

CHAPTER ONE

1.0 INTRODUCTION

This chapter presents the background to the study, statement of the problem, purpose of the study, research questions, hypotheses, general objective, specific objectives, significance of the study, theoretical framework, limitations of the study, operational definitions and ethical considerations.

1.1 Background to the study

Pre-schooling is one of the sub areas under Early Childhood Care, Education and Development (MOE, 2006). The influence of early childhood enrichment programs on academic performance and long term general life effects has received considerable attention in the field of early childhood and parent education. Early Child Development (ECD) education has gained momentum in the recent past in Africa.

Several factors have led to an increase in the importance of Pre-school Education programs in Africa. Dramatic socio-cultural change is changing traditional patterns of child care (Njenga & Kabiru, 2001). According to Kipkorir (1993) subsistence economies are losing viability, mobility and settlement patterns are reducing the role of extended family members in child care, and enhanced schooling opportunities for children has diminished older siblings' involvement in traditional socially distributed child-care systems. Alternative arrangements for child care have become necessary, and communities are increasingly looking to pre-schools as a realistic option.

Schooling is now perceived broadly as the ultimate solution for socio-economic problems facing families and communities. Pre-school programs have gained great importance in their own right; even among poor and uneducated families, there is growing conviction that children exposed to such programs have a better chance of succeeding in school (Hyde and Kabiru, 2006). Similarly, Serpell (2011) asserts that the call for increased public investment in ECD as a strategic contribution to sustainable national development rests on a number of premises including, that early childhood is a period of human life in which the quality of development is likely to have significant long-term consequences for society, and that specifiable types of intervention can reliably influence the quality of development in early childhood in a positive direction.

Early childhood education programs all over the world seem to be treated with utmost concern due to their profound contribution to children's social, emotional and cognitive development. This is so because the early education children receive in their early years of life form pivotal foundations to later learning and subsequent productive adjustment in society. It is established that early childhood is the building block years in which children learn psychomotor skills such as walking, language, writing and numeracy (Gordon and Browne, 2004).

Barnett (1996) noted that it is generally acceptable that pre-school attendance improves cognitive performance, achievement and academic success as evidenced by reduced rates of grade repetition, special education placement, and high school graduation as compared to pupils who do not attend pre-school prior to enrolment to primary school. Pre-school education is found to produce academic achievement.

In addition, it has been shown through research that cost–benefit analysis on economic returns from providing pre-school education to children in poverty exceeds the costs. A meta–analysis on thirty eight studies conducted by Barnett that estimated effects of early childhood education programs before age five found lasting effects of ECE on achievement, school success and economic consequences. Pre-school produces substantial benefits through educational cost-savings and indirect benefits as a result of increased productivity and social responsibilities (Barnett, 1996).

Studies have consistently demonstrated the positive outcomes of early childhood programs not only the significant social gains, but also in economic terms. Research conducted in other parts of the world (Nepal-India) has revealed that 95% of children who went through ECD centres went on to primary school, compared to 75% of those who had not. Children from ECD centers were seven times less likely to repeat grade one, and were projected to be more than twice likely to complete primary school within five years. A separate study in Nepal found that ECD programs dramatically improved boy-girl ratios in primary school A study in Brazil also found that girls from poor backgrounds who attended pre-school were twice likely to survive to the fifth year, and three times likely to reach the eighth year, than girls who had not. Another study in Brazil found that grade completion rates increased from 2% to 40% as a result of a community based ECD programs (Gertsch, 2009).

According to The African Report on Child Well Being (2011), the following are some of the significant gains attained in investing in early child education:

(i) Children do better in school and go on to earn higher incomes than children without early education

(ii) Children have increased levels of enrolment and retention in primary and secondary schools, alongside improved behavior and better academic performance

(iii) ECD programs encourage and facilitate social interaction that helps promote cognitive development leading to higher scores on intellectual aptitude tests than those who do not participate in ECD

(iv) A cost benefit analysis in a US study indicated savings of $US7 for every dollar spent for a child at the initial period of investment.

Basically, the importance of pre-school lies in its power to develop the child and broaden the range of learning experiences, consequently leaving the learner confident, eager and enthusiastic and ready to start formal primary education.

Children's early environments have a profound impact on brain development, literally sculpting the way a child's brain develops. Neuro-scientific research documents that a baby is born with billions of brain cells, and as the brain develops through learning, these cells form physical connections through neural pathways called synapses. Piaget's theory of cognitive development has been linked to other psychologists such as Grantham Mc-Gregor et al. (2007), Engle et al. (2007) and Thomson and Nelson (2001). Grantham-McGregor et al note that the first five years of life are crucial in cognitive development. Research done in the field of neurological foundations of behavioral development in early childhood indicates that there is a critical and sensitive period of brain development (Grantham Mc-Gregor et al. 2007, Engle et al., 2007). Studies in neuroscience reveal that different windows of sensitivity and plasticity for different skills open up during the critical and sensitive period of brain development (Thomson and Nelson, 2001). During this critical and sensitive period receptive language and speech production, higher cognitive functions, seeing and hearing are expected to maximize their development.

Some examples of the windows of opportunity that open up during the critical and sensitive period of brain development include the narrow window for biologically linked systems which is responsible for development of binocular vision and phoneme perception. The moderate and modified window is responsible for the development and acquisition of syntax of a second language while the capabilities that can improve across life time window is in charge of acquisition of vocabulary in a second language. It is also noted that some skills and competencies have a narrower window of plasticity than others (Thomson and Nelson, 2001).

In view of the above scientific empirical revelations of brain development, it is therefore important for stakeholders and policy makers to initiate early intervention during the critical and sensitive brain development of a child. Engle etal. (2007) noted that the most effective early child development programs should provide direct learning experiences to the child and the family. Early intervention programs should be tailored to integrate family support, health, nutrition, educational systems and services. It is worth noting here that intervention alone is not enough, but research is needed to determine the effectiveness of the intervention. Early childhood interventions such as pre-school need to be researched on in order to inform policy.

The early years are key to the development of children. It is during these critical early years when children acquire concepts, skills and attitudes that lay the foundation for their lifelong learning. Children during their early years acquire language, motor, problem solving skills and the love for learning as a result of exposure to pre-school education. Other benefits of pre-school education relate to increased economic productivity over a lifetime and better standards of living when the child becomes an adult. It is proven that intervening in the earliest years help to reduce social and economic disparities and gender inequalities (Barnett, 1996).

In Zambia, the provisions for the formation of early childhood education were made as far back as 1957. However, it was not until the beginning of the 21st century that programs of early childhood education received serious attention. This was partly influenced by the United Nations obligation that all countries around the world provide universal basic education by 2015, hence establishing early childhood institutions became a fundamental requirement for Zambia (Mwanza, 2011).

In view of the United Nations obligations and the philosophical principles of critical period (0-6 years) of child development stated above, the Ministry of education in Zambia realized that the benefits of ECE include reduction of educational wastage, strong gender implications and impact on school achievement. The above realization is in line with the belief that children who attend pre-school are better equipped for the demands of school, reduction in repeat cases and reduced gender disparities since fair and equitable start is provided to both girls and boys (Ministry of Education, 2010).

The Government of the Republic of Zambia attaches great importance to the sector of ECE as indicated in most of the government policy documents such as the Sixth National Development Plan (SNDP), National Implementation Framework (NIF 2011-2015) of 2010 and the National Policy on Education for 1996.

Early childhood, Care, Development and Education (ECCDE) was a responsibility of the Ministry of Local Government and Housing in Zambia, was moved to the Ministry of Education in 2004. The Government Gazette of 2004, number 547 formally transferred the mandate of regulating ECCDE provision from Ministry of Local Government and Housing to the Ministry of Education, Science, Vocational Training and Early Education. The Ministry of Education provides education at various levels which range from pre-school, primary, secondary, tertiary and higher education (MOE, 1996).

However, the situational analysis of ECE in Zambia shows that the provision of pre-school education has largely remained underdeveloped and uncoordinated. The Ministry of Education has realized that there are a number of growing challenges in the care and development of children under the age of six in Zambia. Some of the challenges faced by Zambia in relation to early childhood education include funding constraints, access, inadequate classroom infrastructure, inadequate trained human resource, lack of common curriculum, and provision of quality services to the sector (Fink, Matafwali, Moucheraud and Zuikowski, 2010). UNESCO (2010) observed that early childhood care and education in Zambia has remained underdeveloped with only 17% of new graders having benefited from an ECE experience. The same few children under the age of six who access ECE are expected to graduate from pre-school and be enrolled in primary schools. In light of the many challenges and

growing gaps in this sector, the question remains, how do pupils that have been to the Zambian pre-schools perform academically when enrolled at lower primary school?

Ministry of Education (2005) confirms the commitment of government in the provision of education to its people by reiterating that the government recognizes education as a right for each individual and is a means of enhancing the well- being and quality of life for the entire society. The role of government is therefore, to support the social and economic well-being of all citizens in the society and ensure the achievement of good quality of life through provision of quality education. In view of the above position of the importance of education to the Zambian people, the government of the republic of Zambia is highly committed to the provision of education in order to achieve the envisioned reality.

In recent years, many studies have been done in the western world and Africa on early childhood education and care (Brooklyn Early Education Project, Chicago Longitudinal Study, HighScope Perry Pre-school, Abecedarian Project, Turkish Early Enrichment Project (TEEP)). A study done by Johnson and Rusker (2011) revealed that investing in early childhood education initiatives such as pre-school has long term positive life effects and that access to quality early childhood educational resources is a key engine to upward mobility.

In Zambia studies on early childhood education have also been done (Serpell and Jere-Folotiya, 2011, Matafwali and Munsaka, 2011). These studies done in Zambia have concentrated in the area of early care, development and education, none of the above studies revealed the relationship between pre-schooling and academic performance of lower primary school pupils. This study focused on the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils.

1.2 Statement of the problem

Research has shown that pre-schooling is one of the salient underlying factors that influences academic performance of pupils. While a number of other factors influence academic performance of pupils, some studies have not ruled out pre-schooling as a factor that influences academic performance. Duncan, Chantelle, Army and Magnuson (2007) in a study entitled school readiness found that pupils who attended pre-school acquired Math and Literacy skills which were stronger

predictors of later achievement. This is so because it is most likely that pupils who have literacy schools are able to use the same skills to perform activities in other subjects of the curriculum, hence enhancing their academic achievement. If a child is able to read and understand the concepts of a given subject, it is most likely that his or her academic performance will substantially improve.

In the Zambian society like any other Sub-Saharan countries, the concept of pre-schooling has not been explored adequately. Despite the Ministry of Education taking over the responsibility of Early Childhood Care Development and Education from the Ministry of Local Government and Housing and realizing that normative data about ECE is either scanty or altogether missing, nothing much has been done to redress the situation (MOE, 2006). Despite recent greater emphasis on ECE in Government policy statements and introduction of pre-schools in some government primary schools, there is generally a lack of local empirical evidence or Zambian studies that indicate the relationship between pre-schooling and academic performance. This situation compelled the researcher to conduct this study. The study investigated whether there was a relationship between pre-schooling and academic performance of pupils that have been to pre-school at primary school in Zambia. This study also investigated whether SES of parents, pupils sex, age and parent-child interactive behavior were related to academic performance of the lower primary school pupils.

This study is a contribution to the body of knowledge that seeks to explore the relationship between pre-schooling and academic performance of lower primary school pupils in Literacy and Numeracy which has not been adequately explored in Zambia. The study explored the importance of this relationship in fostering optimum academic performance to facilitate desirable transition from informal to formal education at lower primary school.

1.3 Purpose of the study

The purpose of this study was to investigate the relationship between pre-schooling and academic performance at lower primary school level.

1.4 Research questions

(i) What is the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils?

(ii) Is socio- economic status of parents related to the academic performance of pre-schooled and non pre-schooled lower primary school pupils?

(iii) Is age related to the academic performance of pre-schooled and non pre-schooled lower primary school pupils?

(iv) Is gender (sex) related to the academic performance of pre-schooled and non pre-schooled lower primary school pupils?

(v) What is the relationship between parent-child interactive behavior and academic performance of pre-schooled and non-pre-schooled lower primary school pupils?

1.5 Hypotheses

The study tested the following hypotheses:

1.5.1 Main Hypothesis

(i). Pre-schooling has a positive relationship with academic performance of pre-schooled lower primary school pupils

1.5.2 Sub Hypotheses

(ii). Lower primary school pupils from parents of high socio-economic status would academically perform better than pupils from parents of lower socio-economic status.

(iii). Girls who attended pre-school would perform better than boys who attended pre-school.

(iv). Age has a positive relationship with the academic performance of lower primary school pupils

(v). Parent-child interactive behavior has a positive relationship with academic performance of lower primary school pupils.

1.6 General objective

The objective of the study was to investigate the relationship between pre-schooling and academic performance of lower primary school pupils. The study also explored whether parents SES, pupils gender (sex), age and parent-child interactive behavior were related to academic performance of lower primary school pupils.

1.7 Specific objectives

(i). To investigate the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils in Literacy and Numeracy.

(ii). To assess whether socio-economic status of the parents of pupils is related to the academic performance of pre-schooled and non pre-schooled lower primary school pupils.

(iii) To explore whether gender (sex) is related to academic performance of pre-schooled and non- pre-schooled lower primary school pupils.

(iv) To explore whether age is related to academic performance of pre-schooled and non pre-schooled lower primary school pupils.

(v) To explore whether parent-child interactive behavior is related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils.

1.8 Significance of the study

The importance of achieving sustainable early childhood education among the Zambian children cannot be over emphasized. This is so because education is not only a privilege, but a basic human right. The study aimed to establish the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils. There is an increasing theoretical significance and belief that children subjected to pre-school programs have higher probability of doing well in school than those not exposed to it (Mwaura and Marfo, 2011). Research conducted by Nawa (2011) in Botswana on pre-schooling found that pupils that attended pre-school performed better than their counterparts who did not have pre-school experience.

The concept of pre-schooling is still in its rudimentary stage of development in Zambia, thus recognizing and understanding the importance of pre-schooling requires research that may inform the wider population. Considering governments' announcement that pre-school is now a responsibility of Ministry of Education, results of the current study will help inform policy makers such as Ministry of Education and other stakeholders concerned with the well-being of young children on pre-schooling and academic performance of lower primary school pupils.

It was envisaged that the findings of this study might expose the relevance of pre-schooling and other factors that may be responsible for pupils' academic performance. Findings of this study might not only lead to public education on the importance of Pre-schooling, but also be useful to parents and guardians of pupils on the importance of taking their children to pre-school before enrolling in Grade One. It was hoped that this study would make a substantial contribution to the field of early childhood education by exploring the relationship between pre-schooling and academic performance of lower primary school pupils.

1.9 Theoretical Framework

This study utilized the cognitive development theory espoused by Piaget. Piaget is the major exponent of the cognitive development theory. Piaget was concerned with the qualitative changes that take place in a person's mental make-up between birth and maturity. Piaget maintained that human organisms like all other biological entities have the characteristic of internal organization and as a result of interaction with the environment; the organism adapts its cognitive structures (Turner, 1975).

Piaget's theory on children's cognitive development has garnered much attention within the field of education. Piaget's theory concerning the developmental stages of children cognition is one of his major contributions to Psychology. Piaget believed that the cognitive development of a child occurs through a continuous transformation of thought processes. Children develop steadily and gradually throughout the varying stages and the experience in one stage forms the foundation for the movement to the next.

According to Piaget, there are four stages of cognitive development namely sensorimotor (birth-2 years), preoperational (2-7 years), concrete operational (7-11 years) and formal operational (11 years and beyond). The work of Piaget on stages of development has provided Mathematics educators with crucial insights into how children learn Mathematics. Particular interest and relevance to this present study is the pre-operational stage of cognitive development. This stage is linked to children who could be at pre-school. Children at this stage of cognitive development engage in learning Mathematics through problem-solving tasks that incorporate available materials in their learning environments such as sticks, counters, blocks, sand and water predominantly through games and play (Berk & Winsler, 2000). The play

activities performed by children in pre-school act as a vehicle to teach mathematics and literacy skills. Burns and Silbey (2000) contend that the hands on experiences encountered by pupils at pre-school are a way of fostering acquisition of Mathematical and Literacy skills to children who attend pre-school.

Piaget's cognitive development theory is the basis of academic performance of pupils. This is so because for a pupil to perform well in academic activities, cognitive maturity is fundamental. Learning is a relatively permanent change in behavior and stems from experiences in one's environment. Although learning stems from social interaction with people and the environment, mental processes are also involved. Piaget's cognitive development theory advances that learning begins with an inborn tendency to organize experiences into meaningful patterns called schema. Furthermore, Piaget notes that other mental processes such as assimilation and accommodation are key in learning. Assimilation is defined by Saccuzo (1987) as the process of incorporating new experiences into the existing organized patterns of behavior or thought. Accommodation on the other hand refers to the development of a new schema or modification of an existing one.

Similarly, pupils in pre-school need to use the processes of accommodation and assimilation in acquiring knowledge in the learning process in order to achieve academic performance. In the light of the above theory of cognitive development, it is evident that academic performance of pupils in pre-school will be contingent upon the proper development of the cognitive domain. Pupils whose cognitive domain is well developed are more likely to perform better than their counterparts whose cognitive domain is underdeveloped.

This study was inspired in part by the Head Start projects of the United States of America (USA). Particular inspiration was drawn from the Abecedarian project which was a carefully controlled scientific study of the potential benefits of early childhood education for poor children. The Abecedarian project demonstrated that young children who received high quality early education from infancy to age five did better academically and were more likely to stay in school longer and graduate. The Abecedarian project is also regarded as one of the nation's (USA) leading early education programs that tracked participants in early education program from infancy to age twenty one.

Although the Abecedarian project indicated that academic performance for children who participated in this project were higher in both reading and Math, the study was conducted in a different cultural context to that of Zambia. This current study focused on exploring whether academic performance in lower primary school pupils is related to pre-school attendance in the Zambian context.

The Government of the Republic of Zambia through the Ministry of Education Science, Vocational Training and Early Education announced the introduction of pre-schools in government primary schools. Research in this area in Zambia is needed in order to influence policy in early childhood education. This study is significant because the findings may be used as empirical evidence in influencing the formulation of national policy which will consequently guide action in the area of pre-schooling.

1.10 Limitations of the study

Data was collected only from three schools in Zambezi district. Data collected from parents and guardians was self reporting. The questionnaire to parents was based on self reporting. Therefore respondents might have not reported truthfully about themselves which would lead to a bias of the findings. Leary (2008) contends that self report measures may sometimes compel respondents to respond in a socially desirable manner lowering the validity of certain measures. The researcher cannot generalize the results of the study beyond Zambezi District.

1.11 Operational definitions

Pre-school: refers to institutions of learning attended by children prior to primary education

Pre-school attendants: pupils who were exposed to preschool before enrolling in primary school

Non-Preschool attendants: pupils enrolled in primary school without exposure to preschool

Sex: the state of being male or female

Academic performance: refers to how well a pupil is doing in class in a given subject. In this study academic performance refer to how well pupils performed in the Literacy and Numeracy tests administered to them.

Socio-economic status: refers to a combination of academic and professional qualifications, income and occupation of the parents or guardians of the pupils participating in the study.

Lower primary: refers to Grade One and Two in a given school**.**

Parent: means father, mother or guardian of the child, either biological parent, auntie, uncle or any other person performing parental obligations at the time of data collection for this research.

Parent-child interactive behavior: The interaction, attitude and parental involvement in the academic related activities of the child. In this research parent-child interactive behavior refers to a parent speaking to the child in a friendly voice, praising a child, attending PTA meetings, engaging in school conversations and helping the child with homework.

1.12 Ethical Considerations

After approval by the University of Zambia Ethics Committee and permission from Zambezi District Board Secretary was sought, ethical issues such as confidentiality, informed consent, protection of participants from harm and participants right to privacy were highly upheld during the collection, analysis and publication of this study. Only participants who gave informed consent participated in the study. Data that was collected from the participants was not exposed to unofficial persons. The study protected participants from risks of harm, embarrassment and psychological abuse by not exposing the participants to undue physical or psychological pressure. All participants were briefed about the purpose of this research and their right to withdraw any time if they wished to do so. The researcher ensured that participants voluntarily participated in the study and an open and honest approach to the study was maintained.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction to Literature Review

This chapter reviews relevant literature on the relationship between pre-schooling and academic performance. The review commences with the history of pre-schooling movement. The review will thereafter be followed by African and Zambian perspectives of pre-schooling. The review will be presented according to the following order:

(i) History of pre-schooling movement

(ii) African perspective of pre-schooling

(iii) Zambian perspective of pre-schooling

(iv) Pre-schooling and academic performance

(v) Socio-economic status and academic performance

(vi) Gender (sex) and academic performance.

(vii) Age and academic performance

(viii) Parent-child interactive behavior and academic performance

2.2 History of Pre-schooling Movement

Globally, pre-school is regarded as the first step in the formal education journey of a child. Pre-school education refers to the type of education which is given in a group setting to children aged three to seven years. In other words, a pre-school, nursery or kindergarten is an educational establishment offering early childhood education (ECE) to children between the ages of three and seven prior to the commencement of compulsory education at primary school. Pre-school education is designed to assist in the mental, physical, emotional, linguistic development and social upbringing of the child. Pre-schools may be government or privately operated (Moreira, Patron & Tansini, 2007).

The origin of early childhood education in modern times according to Lascarides and Hinitz (2013) is associated with Johann Friedrich Oberlin a Lutheran Pastor who

founded the first "literally hall of refuge'' or infant school in 1767 at his own expense in a rural coal-mining community in the French countryside. The infant school started in 1767 by Oberlin cared and instructed very young children as their parents worked in the Coal fields. The concept of pre-school was further propagated in the nineteenth century through the ideas of Robert Owen of Britain, Johann Heinrich Pestalozzi of Switzerland and Friedrich Wilhelm August Froebel of Germany. Other notable contributors to the popularization of the pre-school movement included Maria Montessori of Italy. Pestalozzi and Montessori understood that the emotional quality of the child's life is heavily affected by the quality of parental love. Froebel philosophically cautioned the world to let life unfold from within because he believed that infancy life evolves itself in an active process (Nalwimba, 2009).

One such notable educator on the European continent was Robert Owen, a Scottish Reformer, who founded an institute for the formation of character known as New Lanark in 1816 in his model community in England. The New Lanark institute served about one hundred children of workers in Robert Owens cotton mills. The achievement of the New Lanark institute led to the establishment of England's first infant school in 1818 to care for children aged one to six years. This school was set up by James Buchanan, a former director of the Robert Owens institute. Samuel Wilderspin a British educator and author of the earliest and widely circulated monographs on infant education imitated Buchannan's infant schools (Braun and Edwards, 1972)

According to Condry (1983) Macmillan went further to improve the concept of pre-schooling which she called nursery school. The nursery school according to Macmillan was developed as a compensatory program for socially and economically disadvantaged children in England. The focus of the nursery school was on the physical and emotional health of children. Macmillan based her approach to education at nursery school on the theories of Edouard Sequin of France. These theories stressed on sensory education and motor training. Isaacs 1949 added the psychological purpose to nursery school practices. Isaacs believed that child well-being developed through social relations. The nursery school was seen by Isaacs as a quasi-domestic setting that could improve children's well-being.

In Italy the first infant school was established by a Roman Catholic Father called Ferrante Aporti in a place called Cremona in 1829. Father Ferrante Aporti devised an educational plan that aimed at a harmonious combination of moral, intellectual and physical education. He also encouraged manual work at all educational ages in order to give education a degree of concreteness and rationality. This made infant education a complete process of pupil participation, hence, the young became accustomed to discipline, friendly cooperation and faithfulness (Condry, 1983).

In Germany, Friedrich Froebel opened his first infant school in 1837 which he later called kindergarten or garden for children as a non academic approach to early education. Froebel shared Rosseau's vision of the innocence of children. Frobel believed in the importance of connecting learning to real-life experiences and used materials or objects for a more symbolic purpose. Froebel contended that early schooling should not be considered merely as a period of preparation for adult roles, but as a special phase during which the child expresses himself through play. Froebel viewed child play as a process of discovery and recognition that educated the child to unity among peers and the diversity of things in nature. He further believed that infants learned best not through formal instruction but through play and imitation. After the death of Froebel in 1852, the concept of kindergarten spread rapidly to major cities in Austria, Belgium, Canada, Germany, Great Britain, Hungary, Netherlands, Japan, Switzerland and the United States of America (Braun and Edwards, 1972).

The above cited literature on the historic development of pre-schools, philosophical principles and key figures that popularized the early childhood education movement is very useful to this current study. Today the concept of pre-school, kindergarten or nursery school is a wide spread practice all over the world. Many children in many parts of the world attend pre-school as a way of preparing them for primary education. However, the literature cited above does not state how children who attended pre-school performed academically when enrolled at primary school. How the children that attended pre-school perform academically at lower primary school was what this current study intended to establish in order to fill this information gap.

2.2.1 African Perspective of Pre-schooling

Africa comprises of 54 countries, 48 of these countries are in the Sub- Sahara Africa (SSA). It is estimated that approximately 130 million children below the age of six live in the sub-Sahara African region (Garcia, Pence and Evans, 2008). Furthermore, United Nations International Children's Emergency Fund (UNICEF) (2006) reiterates that 27 million children are born every year and that 4.7 million children under the age of 5 die every year in Africa. The children that survive need to be prepared for adult life right from childhood through programs such as pre-schooling.

Pence (2004) noted that early childhood education and care (ECEC) has a longer history as a part of the colonization activities. The first nursery school in Kenya was established in 1942 for European children during the British Administration. Kenya has been at the forefront of ECEC development in Africa. Kenya identified early childhood services as a key component of local development, especially in the rural areas. The Kenyan Harambee (let us pull together or self-help and mutual aid) pre-schools were informally organized and typically had one of the local mothers identified as a teacher.

Kenya achieved visibility in early childhood and development (ECD) partly as a result of interaction and support from the international donor community such as the Bernard van Leer Foundation. The Ministry of Education in Kenya in collaboration with the Bernard van Leer Foundation launched the Pre-school Education project (PEP) in 1971 at the Kenyan Institute of Education. This project arguably became the best ever known ECD project in Africa (Pence, 2004).

Uganda got her political independence in 1962. It had the Pre-school program for 3-5 year olds transferred from the Ministry of Culture and Social Services to the Ministry of Education and Sports in 1980 (Pence, 2004).

Mauritius became independent from the colonial rule of France in 1968. Since 1978, ECEC has been organized into two separate systems covering two age groups, the under 3s are in child care system under the Ministry of Women's Rights, Child Development and Family Welfare. The 3-5 years olds are in the pre-school system under the Ministry of Education (Bennett, 2000). The public in Mauritius view pre-schooling education as a way of preparing children for primary school so that they acquire reading and writing skills before entering primary school.

Senegal became politically independent in 1960. The first public nursery in Senegal was established in 1965. This nursery followed the French model of pre-schools. However, in 1971 pre-school education became part of the education system, though with a diverse delivery system made up of public, Non-Governmental Organizations (NGO's) and religious bodies.

Dealing with the issues affecting the welfare of young children has been a big challenge especially in Africa. However, the 20th century saw the birth of world bodies to formally deal with challenges affecting the well-being of children. One such movement was the Convention on the Rights of the Child (CRC) (United Nations, 1989).

The Convention on the Rights of the Child was formally adopted by the United Nations General Assembly in November 1989. The Convention on the Rights of the Child got quickly ratified by many countries in the world (Annan, 2001). Zambia as well is a signatory to this convention.

Furthermore, the inclusion of the rights of young children became evident in 1990 when the world conference on education for all (EFA) was held in Jomtien in Thailand. The Jomtien conference observed that learning begins at birth (United Nations Educational, Scientific and Cultural Organization, 1990). The declaration that learning begins at birth marked the formal genesis of Early Childhood, Care, Development and education (ECCDE) especially in Africa. Maura and Marfo (2011) have made an important observation that after the 1990 conference on education for all many African nations began to notice the significance of ECE in relation to later school success.

UNESCO (2006) estimates that out of the 130 million children in Africa under the age of six, only 12 percent children between the ages three and six were enrolled in pre-school in 2004. However, pre-school enrolment in the sub-Sahara African region has been increasing steadily. UNESCO (2006) estimates that the gross rate of pre-primary enrolment grew by 2% in the period between 1999 to 2004 from a total enrolment of 5.1 million children to 7.4 million. Despite this increase, countries in the Sub-Sahara African (SSA) region still lag behind in terms of gross enrolment ratios (GER) as compared to other countries from other parts of the world.

The continent of Africa is making all efforts to support the concept of pre- school. There are a good number of locally adapted and designed pre-schools in Africa. One such example is the Madrasa Resource Centre (MRC). The Madrasa resource centre early childhood and development is a regional initiative in East Africa that began in the 1980's. The overall role of the Madrasa pre-schools is to improve the well-being of children. Madrasa pre-schools are common in Kenya, Uganda, Tanzania, and Zanzibar. Zambia also has some Madrasa pre-schools in Lusaka district and Chipata in the Eastern province. The Madrasa initiative has resulted in the creation of quality affordable, culturally appropriate and sustained pre-schools among the socio-economically disadvantaged Muslim communities in East Africa (Mwaura, 2002).

The key features of the Madrasa Resource Centers (MRC) is to improve the well-being of young children from marginalized communities through ensuring a supportive religious, cultural, and learning environment in their early years. More specifically, the community-based Madrasa Early Childhood Development Program aims to provide Muslim children in underprivileged communities with access to high quality, culturally relevant, and affordable early childhood programs that will ground them in Islam and increase their readiness for, access to, and success in later schooling (Mwaura & Mohamed, 2008).

There has been a paradigm shift of attention to ECE in the African context. Many countries in Africa are signatories to the Education for All goals adopted at the world conference held in Jomtien in 1990. Since then many African countries have initiated state supported pre-school education programs with a view to increasing schooling success and reduce dropout rates and repetitions. The motive behind these programs is to create a smooth transition from the informal to the formal system, ensure that children enter formal education based on readiness rather than chronological age and allow for intervention and remediation before formal schooling is introduced.

The above cited literature on the development of early childhood education in Africa is important to this study. Though the development of early childhood education in Africa is not exactly what was being investigated in this study, knowledge about how the concept of pre-school has developed in Africa is essential. This study benefited from the above literature in that it highlighted the development of early childhood education in Africa, and this created a significant setting of the gap being

investigated which is Pre-schooling and academic performance of lower primary school pupils.

2.2.2 Zambian Perspective of Pre-schooling

The Republic of Zambia achieved independence from her colonial master in 1964. Zambia is a land locked country occupying an area of 752,620 square kilometers of tropical high plateau in south central Africa. The country has a total population of 13.2 million people (Census Report, 2010). It is important to mention that the education system in Zambia, then called Northern Rhodesia was controlled by the colonial masters.

The development of early childhood education in Zambia traces its commencement during the colonial era when the colonial government came up with the Day Nurseries Act of 1957. This Act was the first matter of policy direction in relation to early childhood education in Zambia. The Day Nurseries Act facilitated the establishment, registration and regulation of Day Nurseries for children under the age of seven. The Act of 1957 also provided for the legal support for any one capable of providing early childhood education (ECE) for African children to do so. This saw the introduction of ECE for the native children (Nalwimba, 2009).

After independence in 1964, the Government of the Republic of Zambia established nurseries and pre-schools through the Ministry of Local Government and Housing. The government owned nurseries and pre-schools were mainly located in welfare centers for the Zambian children in urban communities. In 1972, the Lusaka Pre-school Association (LPA) was formed and later became transformed to be the Zambia Pre-school Association (ZPA). Ettling et al. (2006) noted that during the colonial period up to 1964, early childhood care development and education (ECCDE) was provided only by the African Traditional Society (ATS) through the extended family system. It is observed that during the 1970's ECCDE was offered to the Zambian children through different categories of institutions such as day nurseries, community pre-schools, day care centers' and private run pre-schools.

In Zambia just like any other country in Africa, pre-school education caters for children prior to their entry in primary school. The age group of children that are enrolled in the Zambian pre-schools range typically from two or three years to five.

Some parents in Zambia take their children to pre-schools as a way of preparing them for primary school entry, yet other parents opt to keep their children at home.

UNICEF (2007) state that only 17.1 percent of children enrolled in Grade One in 2007 had pre-school experience in Zambia. Urban provinces have the highest rates of new school entrants with prior early childhood education. Lusaka and Copperbelt provinces are the highest provinces with entrants at Grade One that has pre-school background. Rural provinces such as Western, North Western, Luapula and Northern have lower proportions of Grade One entrants that have been to pre-school. The concept of pre-school is still relatively new in Zambia (UNICEF, 2007).

The sector (pre-schools) faces a number of challenges which range from insufficient allocation of resources by government, inadequate trained human resources and general lack of capacity to deal with or co-ordinate programs (MOE, 2009). Despite the challenges the sector is facing, it is a well known fact that early education to children is very important. In Zambia, the most common form through which ECCED is provided is pre-school.

There is a recent drive of promoting ECE in Zambia. This drive is anchored on the understanding that human survival, growth and development is shaped by an individual's capacity. If then the capacity of an individual to shape and improve their life is a measure of development, then education for all is surely a necessary condition (GRZ, 2005). Furthermore, it is argued in the context of Zambia that everyone must learn in order to understand and appreciate new challenges in the constantly changing world. Only in this way can every citizen be expected to act more intelligibly and contribute to the welfare and development of self and society. The above philosophical arguments form the foundation for ECE in the context of Zambia.

In view of the recent arguments on ECE, Government commitment to the sub-sector is demonstrated through Ministry of Education programs such as the annexing of pre-schools in Government primary schools, development of policy and curriculum framework and training of teachers for the sub-sector. Despite all the arguments and government efforts in promoting ECE in Zambia, it is evident that there is limited empirical local evidence from research which shows the relationship between pre-schooling and academic performance, hence this study.

This study was designed with the hope that the findings would bridge the information gap on the relationship between pre-schooling and academic performance of lower primary school pupils. How children that attended pre-school perform academically in lower primary schools in Zambia has not been adequately studied. This study explored the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils.

2.3 Pre-Schooling and Academic Performance

Pre-school learning is a transitional formal education arrangement organized for children between the ages of 3-6 before entering primary school. Pre-schooling is one of the channels through which early education provision for children is delivered (Ministry of Education, 1996). Achombo (2010) explained that academic performance is the quality and quantity of knowledge, skills, techniques, positive attitudes, behavior and philosophy that learners achieve as they get involved in learning activities. Pupils' academic performance may be evident through the marks and grades that they obtain in tests done at the end of a topic, week or term and examinations done at the end of the year. It can be said that the scores and grades that each individual obtains in a test or final examination measures the degree of achievement and academic performance for that particular pupil (Achombo, 2010).

Ruhm and Waldfogel (2011) observe that the realization of the importance of early childhood education has been receiving considerable attention world over. However, it is important to mention that such realization is based on studies from few selected regions of the world. This is because the evidence is derived from a limited number of studies that delivered early childhood education in the United States. The studies showed convincingly that high quality early childhood education can improve child outcomes, particularly for the disadvantaged children and can yield benefits exceeding costs. The Head start, a compensatory early childhood education program targeted to the low income children in the United States of America has provided evidence to indicate positive impacts of early childhood education.

The Head Start Impact Study (HSIS) and other econometric studies that followed children for longer periods of time showed positive effects on medium and long term outcomes of early childhood education such as improved test scores and high school progression rates for children that attended pre-school as compared to those that did

not have pre-schooling experience (Almond and Janet, 2011; Blau and Currie, 2006; Gibbs, Ludwig and Miler, 2011)

The Organization for Economic Cooperation and Development (OECD) (2006) observed that a number of countries apart from the US have implemented large scale early childhood education programs and that it has become a normal trend for governments to provide public funding and universal pre-schools for children under the age of seven years. There has been convincing results from recent studies to indicate that early childhood education has long term effects on young children.

This current study is different from the Head Start Impact Study in various ways. The HSIS had a sample size of 5,000 children and was longitudinal. The HSIS also compared academic performance of children who all had pre-school experience. The children that constituted the study sample in the HSIS had either been enrolled in the Head Start pre-school or other community and support pre-schools. This current study had a sample size of one hundred and twenty children and compared academic performance of pupils with pre-school experience and those without pre-school experience in Numeracy and Literacy. Therefore, though the HSIS found consistent to moderate significant advantage in Literacy, the results cannot be relied upon in the Zambian context. There is great need to conduct research in Zambia to investigate whether there is a relationship between Pre-schooling and academic performance of lower primary school pupils.

A research done on the Perry Pre-school Project (PPP) that evaluated long term gains through age forty observed for the treatment group benefits in a number of dimensions which included educational attainment, earnings and economic status, marriage and single parenthood and reduced incidence of criminality (Karoly, Lynn, Kilburn, Rebecca and Jill, 2005; Heckman, Seong, Pinto, Salvelyez and Yavitz, 2010). One distinctive feature of the HighScope Perry Pre-school is the cost-benefit analysis. Barnett (1996) cost-benefit analysis of the effects of HighScope Perry Pre-school noted that the economic benefits were greater than the cost of pre-school programs.

This study has benefited from the above literature on the HighScope Perry Pre-school because the information brought out has policy implication on how government expenditure can be influenced to invest in early childhood education

programs in a bid to improve the lives of the children involved in the programs. The literature on the Perry-pre-school however, does not bring out how children who attended the Perry- pre-schools performed academically in relation to other children who did not attend pre-school. This gap was what this current study intended to fill.

Another important early childhood education program worth discussing is the Abecedarian project. The Abecedarian project was an early childhood intervention program that involved participants from impoverished African-American families in the United States of America. This project recruited one hundred and eleven children who were randomly assigned to either receive five years pre-school intervention from infancy to age five or be in the control group. When children were assessed at age 15, the Abecedarian showed positive effects on cognitive tests and academic performance. At age 15, using the Mean Woodcock Johnson age referenced standardized score for reading was 94.3 points, 93.6 points in Mathematics for the pre-school group compared to 88.5 points in reading and 86.8 in Mathematics for the control group (Campbell, Pungelle, Buchinal, Kainz, Kirsten, Pan, 2012).

Information on the Abecedarian project shows that pupils that were assigned to the pre-school treatment group earned significantly higher scores on intellectual and cognitive measures as young adults and attained significantly more years of total education and reduced cases of crime. In addition, pre-school treatment was also associated with significant effect sizes on reading and Math skills that persisted into adulthood (Clarke and Campbell, 1998)

A study carried out in Sweden by Fredriksson, Hall, Johansson and Johansson (2010) analyzed the effects of pre-school attendance on test scores at age thirteen. The study reported that pre-school attendance was found to close the language score disparity between children of immigrants and their peers with Swedish born parents.

The Abecedarian project and the Fredriksson, Hall, Johansson and Johansson study were long term studies. The age of pupils targeted in the Johansson study was thirteen while the Abecedarian project first assessed children at the age of 15. Despite the children having been to pre-school, the result of the two mentioned studies above may differ from the results of this current study, in the sense that the current study targeted children between ages seven to ten. In addition the current study is different from the Abecedarian project in the sense that in the Abecedarian

project deliberate intervention was provided to one group of pupils and denied the control group the intervention. This current study did not provide intervention to the pre-school group. The pupils had attended pre-school without the involvement of the researcher. Therefore, results of the Abecedarian may differ from the results of this current study, hence the need to conduct this study.

Recent studies (Moreira, Patson, & Tansini, 2007; Nagle & Tansini, 2000) found significant differences in academic outcomes of children in primary education at public schools. The studies reported that generally pupils who went to pre-school achieved better results at the first grade in primary school. Furthermore, the studies cited above reported that the failure rate among children who did not attend pre-school before entering primary school was double as compared to that of pupils who had pre-school background. The differences in academic performance in pupils in primary schools as reported above were attributed to pre-school education.

It can be argued that differences in academic performance among those that attend pre-school and their counterparts who do not attend arise from the fact that pre-school education is designed to support the mental, physical, social and linguistic domains of the child. The exposure to pre-school gives an added advantage to the children who attend pre-school when they enter primary school. Moreira, Patson and Tansini (2007) observe that pre-school education provides a child an opportunity to participate in a formal educational program before entering into primary school. By participating in a formal educational system before being enrolled in the first grade at a primary school, the social-emotional, academic, linguistic and literacy skills of the child are enhanced or promoted. Above all, children's health and well-being are also enhanced as they participate in the day to day activities of their pre-school.

Moreira, Patson and Tansini (2007) study is significant to this study in that it brought out issues related to academic outcomes of children who attended pre-school at primary school. This study benefited from the above literature in that it highlighted that those pupils who went to pre-school achieved better results at the first grade in primary school. However, Moreira, Patson and Tansini study did not highlight the primary subject areas in which pre-schoolers achieved better results. This study assessed pupils in Numeracy and Literacy. In addition, the study findings may not be

relied upon because it was conducted in a different socio-cultural environment from that of Zambia.

Nalwimba (2009) in her Masters dissertation conducted a study entitled: *nurseries and pre-schools' curriculum appropriateness in Zambia* in Chongwe and Lusaka districts of Lusaka province. The study found that nurseries or pre-schools used various kinds of curricula. The study also revealed that it was as a result of using various curricula that led to the ECE sector to experience low standards. The results further revealed that the Zambian government had failed to provide the ECE sector with a common curriculum. This study benefited from Nalwimba's work in that it brought out information relevant to this study. The Nalwimba study observed that lack of a common curriculum led to low standards in ECE in Zambia. However, Nalwimba's study did not bring out the relationship between academic performance of pre-schoolers and non- pre-schoolers. This study attempted to investigate the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils.

Lengalenga (1994) conducted a study entitled: *a comparative study of the scholastic performance of pre-schoolers and non-pre-schoolers* in Lusaka district. The study results showed a difference in performance between pre-schoolers and non-pre-schoolers. Pupils who attended pre-school performed better in academic work than those who had no pre-school experience. Lengalenga's study brings out issues relevant to this study. He noted, among other issues that the academic performance of pupils with pre-school background was better than those that did not have a pre-school experience. However, the study did not capture other variables such as socio-economic status of guardians or parents of pupils, parent-child interactive behavior, age and sex of pupils and how these variables interact to influence academic performance of learners. In view of the above, this study attempted to fill this gap.

2.4 Socio-Economic Status and Academic Performance

Socio-economic status (SES) refers to various factors that border on the day to day well-being of the family. Basically, socio-economic status is a theoretical construct encompassing individual, household and community resources. Socio-economic status is commonly conceptualized as a combination of family income, level of

parents' education, employment, parenting style and nature of family relationships (Shoukat, Haider, Khan, Ahmed, 2013).

Many researchers have identified that there are many factors that affect academic performance of pupils. These factors include age, sex, teaching faculty, father or guardians socio-economic status to mention just a few (Graet, 1995). Socio-economic status of the parents or guardians of the learner was one such variable that this study investigated in order to assess its relationship to academic performance of lower primary school pupils. The main findings of the meta- analysis review done by Sirin (2000) on SES showed that school success was greatly influenced by learners' family socio-economic status.

Research done on school dynamics show that the parents' socio-economic status is associated to academic excellence of their children (Jeynes, 2002; Scarce, 2003 & Eamon, 2005). The above studies all confirm that academic achievement of pupils is contingent upon parents' socio-economic status. The employment status of parents seems to be a very essential factor in influencing the academic performance of children. Ghazi, Nawaz, Shahzad, Shahzada and Rukhar (2013) found that there is a significant positive correlation between parents jobs and pupils academic performance. Parents whose jobs paid them well had children who performed academically performed better.

Parents' employment status is closely linked to the parents' income. Parents' income is very essential to the education of children. Income shocks do not only affect investment in children's education but also children's performance. When families are constrained by few resources, children's learning is subsequently affected. Alisa (2010) noted that children's test scores are lowest when poverty levels persist across the generations and highest when material advantage is long lasting. Alisa (2010) found that the gap in attainment between children from the poorest and the richest backgrounds grew fast particularly during the primary school years.

It should be noted that when parents' income is not sufficient to sustain academic and social life of the child, this to a large extent affects the psychological balance of the child. Consequently, the psychological imbalance will cause low concentration, low perception, frustration, sickness and emotional disturbance in the academic performance of the child. In most rural parts of Zambia, children lack adequate living

standards (shelter, nutrition, healthcare, water and sanitation services. The needs and services mentioned above are important for child growth and development (Bugembe, et al. 2005).

In view of the above, it can be safely observed that pupils from higher socio-economic backgrounds tend to perform better than those from low socio-economic settings. There seem to be a huge complexity of reasons why pupils from parents of low SES are less likely to excel in education. These factors range from financial hardships, parents ambivalent attitudes to education and poor attendance at school on the part of the child due to demand for child labor at home by parents. Likewise, there are also a number of reasons why pupils from parents of high socio-economic status excel in education. This include ability of literate parents to support pupils with home and school work, monitoring and supervision of children's school work and access to information and social networks necessary for their children's success in life.

The above supposition seems to be true in the sense that children from affluent families will have almost all that they need in life. For instance, they have the resources to procure school materials such as text books, laptops and even pay for extra tuition. On the other hand academic progression of children from poor socio economic settings seems to be marred with several challenges ranging from what to eat at home and a general lack in many areas of need. It is not clear however how children from parents of low socio-economic status and those from parents of high socio-economic status perform academically in Zambia. This study sought to explore whether parents SES related to academic performance of lower primary school pupils.

Parents' level of education is important to the academic performance of the child. According to Nannyonjo (2007) pupils with parents who completed Secondary or University education considerably performed better. Nannyonjo found that the highest increase in test scores was for pupils whose parents completed University education. The above finding by Nannyonjo denote that pupils with families where parents have less education tend to systematically perform worse than pupils whose parents have more education.

Similarly, Okumu et al. (2008) in a study on socio-economic determinants of primary school dropout found that high academic attainment of parents significantly reduces chances of primary school dropout for both boys and girls. This could be attributed to the view that most educated parents are more effective in helping their children with homework and other school related tasks as compared to the educated parents. By helping out with school tasks, parents are also able to monitor and supervise their children's academic progress. Furthermore, it is evident that educated parents are more concerned with academic progress of their children because they are aware of the possible returns of education to their children.

2.5 Gender (Sex) and Academic Performance.

Sex is the state of being male or female. Gaps in academic performance between males and females continue to be observed all over the world. A large volume of literature attests to this effect (Guiso, Monte, Sapienza and Zingales, 2008; Else-Quest, Hyde, and Linn, 2010; Sutter and Rutzler, 2010). It is observed that low academic achievements among females are more prevalent in science related disciplines such as Mathematics, Chemistry, Biology and Physics. In addition, it is also observed that very few females enter fields such as Engineering. Somehow, it can be argued that this sex gap in academic performance could be attributed to societal influences rather than biological factors. It is the beliefs that the society hold about females that may deter them from venturing into science related disciplines. Cultural stereotypes held by society to a great extent discourage females in their academic endeavors and also influence what type of subjects they will excel in (Spencer, Steele, Quinn, 1998).

Spencer et al. (1998) state that when females perform poorly in Math, they risk being judged by the negative stereotype that females have a weaker ability in Math. The apprehension that the stereotyping remarks evoke may cause a disruption in females' performance in Math. A large volume of literature (Eccles, Jacobs and Harold, 1990; Fennema and Sherman, 1977; Swim, 1994) shows that when one's group is stereotyped, the stereotyping remarks exert extra pressure which may interfere with performance.

A study on the gender gap in academic achievements in Mathematics done by Guiso, Monte, Sapienza and Zingales (2008) found that the sex gap in academic

performance was influenced by a socio-economic indicators of equality that takes account of females education opportunities, economic activity, political empowerment and cultural attitudes towards females. This is to say that in more egalitarian societies, the sex gap turns out to be small and may even disappear. Countries such as Norway and Sweden have been cited as examples where males and females enjoy a very high equal status.

Some scholars have explained the sex gap in academic performance as being the result of lack of willingness in females to compete. Males seem to be generally willing to compete than females (Gupta, Poulsen and Villeval, 2012; Niedele and Vesterlund, 2007; Gneezy, Leonard and List, 2009; Sutter and Rutter, 2010). The above listed studies all argue that sex-specific attitudes towards competition cause the disparities between males and females in academic achievements.

Lee and Lockheed (1990) conducted a study on pupils in the ninth grade in Nigeria. The Lee and Lockheed study noted that single sex schools in Nigeria improved girl's achievements in Mathematics. The study also noted that the improvement in girl's academic performance in Mathematics was attributed to the less stereotyping threats among fellow females.

In Zambia, perceived sex differences in academic performance are prevalent. The Government of the Republic of Zambia National Gender Policy (2000) states that despite the increase and participation of girls in the education system, the performance of girls however has still lagged behind that of boys. In addition to the above described scenario, it is observed that the Zambian society in some parts of the country especially in rural and illiterate communities still hold stereotyping attitudes against females. It is for this reason that this study set out to explore the differences in academic performance between boys and girls in the lower primary in a Zambian context. The study assessed the academic performance of girls and boys who attended preschool in the lower primary school. Furthermore, the study also assessed the differences in academic performance between girls who did not attend pre-school against boys who did not attend pre-school.

A study done in Oslo to examine the introduction of free pre-school for five years olds found that preschool attendance led to higher points averages at age sixteen, though the effect was significant only for girls. This study benefited from the Oslo

study. It brought out relevant information on how girls who attended pre-school perform at primary school. How girls that attended preschool perform academically in Zambia was not pursued and could be subject of future research (Havness and Mogstad, 2011).

A research conducted by Jules and Kutnick (1990) that explored school achievement differences between girls and boys in the Caribbean countries showed that in primary schools girls had higher reading in English language and Mathematics scores than boys. This study benefited from the above literature in that it brings out information about how boys and girls perform academically. However, Jules and Kutnick's study does not specify whether the study was conducted among lower, middle or upper primary school pupils. This study concentrated on the relationship between pre-schooling and academic performance of lower primary school pupils.

Kutnick (2000) findings from a large-scale research project exploring female attainment and male underachievement in representative samples of pupils from the Island of Barbados and St. Vincent found that generally, girls attained higher marks than boys. However, the higher attainment of girls in Kutnick's study was qualified by the type of school attended and pre-school attendance. This study benefited from Kutnick' s study in that the implication of the findings point to the idea that girls who attended pre-school would perform better than boys who equally attended preschool.

A study conducted by Bledsoe (2009) among lower primary school boys and girls found that girls scored significantly higher than boys in tests of self-concept. The significant difference in mean scores was an indication that girls had greater self-esteem than boys. However, Bledsoe (2009) observed that such differences between girls and boys may be a function of maturation, since girls of age ten are on the average more developed than boys of the same age.

In the context of pupils that attended pre-school there is evidence that pupil that attended pre-school may exhibit higher cognitive maturation as compared to their counterparts that did not attend preschool. A study done by Sabbie and Agyeman (2015) on pre-school and intellectual abilities of primary school pupils in Ghana found statistically significant differences in intellectual maturity scores between pupils with pre-school experience and those without it. Sabbie and Agyeman study in Ghana is an indication that pre-school attendance contributes to intellectual

maturation of both boys and girls. Quality pre-school programs may increase school readiness, boost emotional intelligence and create better learning attitudes towards learning (Zigler and Styfo, 2001).

Bledsoe and Sabbie and Agyerman studies are important to the current study in that they explain the reasons why girls may perform better than boys especially at this early stage of child development. In view of the above studies by Kutnick, Bledsoe, Sabbie and Agyeman, it may be perhaps noted that simplistic gender-based cultural arguments may not be adequate to explain school attainments between boys and girls.

2.6 Age and Academic Performance

Age and academic performance has been a subject of considerable discussion all over the world. There are two divergent views on age and academic performance. The two divergent views are early school starting age and late school starting age. Some scholars in favor of early entry into school have argued that young people are capable of learning formal skills inherent in the curriculum. Furthermore, it is argued by proponents of the early school starting age that starting school early gives a head start in learning to the younger pupils and provides an opportunity for children from less advantaged backgrounds to make up for their deficits in academic skills (Sharp and Hutchison, 1997). Children from less advantaged backgrounds may not have access to educational resources in their homes; hence being enrolled in school early may cover this deficit.

Blake and Finch (2000) observe that early school starting age is thought to be popular among parents. A survey of parents who moved their children from pre-school playgrounds to primary school at four found that most of the parents were happy with their decision. It is important to note that age of entry into primary school differs from one country to the other. In Northern Ireland children start school at the age of four while in England, Malta, Netherlands, Scotland and Wales children start school at five. In Austria, Greece, Hungary, Norway, Belgium, Germany, France, Spain, Portugal, children start school at six. In Bulgaria, Estonia, Denmark, Finland, Poland, Romania and Sweden, children start school at seven (Sharp and Hutchison, 1997).

In Zambia most children start formal education at pre-school from the ages 3-5. The statutory age of school entry is seven years (Ministry of Education, 1996). The ages of children in any given grade in Zambia varies enormously. Some children start school a year or two later than seven years due to difficult home circumstances. However, children who attend pre-school usually start grade one earlier than those who have been to preschool. Some start grade one as early six years. How the pupils of various ages in primary school perform academically in Zambia has not been formally investigated. It is not clear whether age has an influence on academic performance of pupils that attended preschool and those that did not attend pre-school in Zambia. This study explored whether age is related to academic performance and filled this gap.

2.7 Parent-child Interactive Behavior

Parent-child interactive behavior refers to the interaction, attitude and parental involvement in the academic related activities of the child. Parent-child interactive behavior is a wide area that is generating interest among scholars. In this research parent-child interactive behavior denotes parent speaking to the child in a friendly voice, praising a child, attending PTA meetings, school conversations and helping the child with homework.

The child is embedded in a variety of social systems and links that constitute the social worlds of childhood interaction. These social worlds of interaction contribute to social development. Liable (2004) emphasizes on the interdependence of the family and peer systems. Interactions with family members such as father, mother and siblings may provide opportunities for the child to learn and refine social skills. Social skills such as initiating conversations, maintaining relationships and resolving conflicts are important to successful social interaction in the family and other social contexts such as pre-school.

Havinghurst, Harley and Prior (2004) observe that parent child interactions help set the course for the child's development. It is important to note that responsive, sensitive and warm parent-child interactions and appropriate levels of stimulation nurtures positive child outcomes. Parents, adult family members and siblings contribute significantly to the development of various components of the child's personality and also in improving academic performance. The importance and

pivotal role of parents has been recognized as essential for the complete development of the personality and career of the child (Gonzalez-Pienda, Nunez, Gonzalez-Pumariega, Alverez, Roces and Garcia, 2002).

The current study investigated whether parent-child interactive behavior is related to academic performance of lower primary school pupils. The behaviors that were analyzed in this research were parental friendly voice, parental child praise, attendance of Parent Teachers Association meetings, engaging in school conversation and parental help for homework.

Speaking to the child in a friendly voice by the parent is psychologically comforting. This is so because emotional support is very important to children. Children seek emotional support from parents when they face academic problems. Repetti (1996) postulates that educated and sensible parents always encourage their children and give proper guidance in school related issues in a friendly voice, warm and comforting atmosphere. Illiterate parents on the other hand may act violently and thus upset their children.

It is important to note that speaking to a child in a friendly voice builds the child's self-concept. Self-concept refer to a set of planned self- attitudes that are relatively established which form part of the characteristics of an individual (Demo, 1992). Therefore, positive self-concept plays a significant role in academic achievement of a pupil. Despite, the literature above indicating that a parent speaking to a child in friendly voice is contributes to academic achievement of that child, little or no research has been done in Zambia on this subject. This research explored whether speaking to a child was related to the academic performance of that child in Zambia, particularly in Zambezi district where the study was conducted.

Parent-child interactive behavior may have significant effect on the academic achievement of the child. Doralia and Wydick (2011) argue that in the context of parent-child interaction, there varying opinions on what is responsible for academic achievement in the child. A study done by Sylva, Melhuish, Samsons and Siraj-Blatchford (1999) found that parental interactive behavior at home was associated with increased child academic achievement, co-operation, conformity, peer sociability and confidence.

Parent-child interactive behavior such as child praise is vital in increasing academic performance of the child. A study conducted by Mueller and Dweck (1998) found that parental praise for effort to a child encourages academic initiatives. It can be observed that parental praise to a child encourages academic efforts in the sense that praise motivates and builds confidence in a child which in turn propels a child to succeed in a given academic task. Henderlong and Lepper (2002) contend that praise may be a compelling motivator in many instances and is perceived to be genuine to motivation when it encourages academic performance, promotes autonomy, enhances competence without an overreliance on others. It can be argued that rewards such as child praise may increase extrinsic motivation, empower and encourage a child, send signals of confidence, raise self-esteem and may consequently improve academic performance of the child (B'enabeu and Tirole, 2003; Kreps, 1997).

In a nutshell, the above cited literature on parental interactive behavior is important to this study. This study has benefited from the above cited literature on parent-child interactive behavior such as child praise in the sense that the above cited literature has brought out key issues such as the importance of parent child interactive behavior and how such behavior encourages academic performance of the child. However, the above cited literature is all based on foreign studies. Recognizing the powerful influence that parent-child interactive behavior plays on academic performance of the child requires research especially in Zambia. This study investigated how child praise and other child parent interactive behavior encourages academic performance in addition to pre-schooling, sex, age and SES of parents in the Zambian rural context in which this study was conducted.

Parents are expected to regularly come into contact with school administration through platforms such as the Parent Teachers Association. It is concluded that when parents come regularly or attend PTA meetings to know the wellbeing of children, reinforces the view in children that school and home are connected and that school is an integral part of the whole family. When children realize that school and home are connected, this has an impact on self-perception, self-esteem and motivation for their educational aspirations. All in all parental involvement in school related functions such as PTA meetings frames pupils' education and school, consequently, bolstering their motivation to succeed (Grace, Jethro and Aina, 2012).

Parents have vital roles to play in the life of a child. Some of these roles include good parenting and talking to teachers on school related matters. School conversations between parents and teachers play an important role in building the teacher parent relationship. It is important to note that when schools work together with the parents to support learning, children tend to succeed not just in school but throughout life. Parents should get involved in the education of their children by having regular school related conversations with teachers of their children. This research explored whether school related conversations with teachers of their child was related to academic performance of the child.

Parents interact with their children by rendering help on homework tasks given by teachers. Homework refers to the tasks that are assigned to students by teachers and are meant to be performed during non-school hours. A pupil is expected to complete his or her homework at home. Parents or other family members may be involved in the process of guiding the child. Research studies indicate that parental support in doing homework tasks has significant effects on pupil academic achievements (Singh, Granville, Sandra and Dika, 2002; Eilam, 2001).

All parents desire to do something better for their children according to their available resources. It is clear that without the children's parental support in homework, it is very hard for teachers to devise academic activities to help pupils learn meaningfully in home settings. However, the extent and effectiveness of parental help in child homework depends on a variety of reasons such as nature of occupation, educational level of the parents and the awareness of the importance of education. The values and aspirations that parents share with their children as they get involved in rendering a helping hand in the child's homework acts a bridge for academic success of children (Schneider and Lee, 1990).

In Zambia and particularly in rural areas, literacy levels are very low. This makes it very hard for children to seek proper guidance and help in homework after school hours. This is so because most parents have not been to school and are illiterate and innumerate. This scenario creates a major problem for the child and the school. This research explored whether parental help rendered to the child through homework was related to the academic performance of the child.

In conclusion, this current study reviewed literature on history of pre-schooling movement, African perspective of pre-schooling, Zambian perspective of pre-schooling, pre-schooling and academic performance, socio-economic status and academic performance, gender (sex) and academic performance, age and academic performance and parent-child interactive behavior and academic performance. It is evident that pre-schooling plays a major role in enhancing academic performance of children. It has been shown in the literature cited in this study that pre-schooling exposes children to a formal learning environment where they acquire various skills before entry into primary school. At pre-school children become exposed to numbers, letters and shapes. More importantly, children learn how to socialize. Therefore, children who attend pre-school enter primary school with better pre-reading, stronger Math skills and richer vocabularies than those who do not. However, it should be noted that most of the literature cited in this study supporting the preposition that pre-schooling enhances academic performance of pupils is foreign. Therefore, exploring whether pre-schooling, pupils' gender (sex), age, parents SES and parent-child interactive behavior is related to academic performance of lower primary school pupils in the Zambian context is not just necessary but extremely significant.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction to Methodology

This chapter outlines the methods selected and used in data collection and analysis in order to arrive at the study conclusions. The methodology included the research design, study population, study sample, sampling procedure, instruments for data collection and data analysis.

3.2 Study Design

This was a quantitative cross sectional study. Cresswell (2009) states that cross sectional research designs examine the relationship among variables. In cross sectional studies, variables of interest are assessed once and the relationships between them are established. The reason for using this study design was that such a design would enable the researcher to determine the relationship between pre-schooling and academic performance of lower primary school pupils. Pupils who attended pre-school and those who did not attend were assessed in both grade one and two instead of the same pupils being assessed in Grade One and then followed up in Grade Two. The groups were selected based on existing differences of pre-school attendance and non-pre-school attendance in Grade One and Two (Healy and Devane, 2011). The pupils were assessed in term three which was a period marking the end of a grade in the school calendar in Zambia. The independent variable was pre-schooling and the dependent variable was academic performance. Pupils' age, sex, parents' socio-economic status and parent-child interactive behavior were used to determine whether they influenced the relationship between pre-schooling and academic performance of pupils. The above mentioned variables were used as moderator variables. According to Baron and Kenny (1986) a moderator variable is a variable that affects the direction and strength of relationship between the independent and dependent variable. In other words, a moderator variable influences the strength of the relationship between two variables (independent and dependent).

3.3 Target Population

The target population was pupils who attended pre-school and those who did not but were in lower primary school, particularly in grade one and two. The population was drawn from Zambezi, Lwampungwa and Chilen'a primary schools in Zambezi

district of Zambia. The justification to draw the target population from the above mentioned schools was that these schools are within ten kilometer radius of Zambezi Township. One very distinct influential factor in the choice of the three schools was that the three schools were the only schools in the district where at least some pupils who attended pre-school could be found in grades one and two. It is a well known fact that the concept of pre-school in Zambia is still in its rudimentary stage especially in rural area like Zambezi district where this study was conducted (Ministry of Education, 2010). It was therefore, logical to make a selection of sample schools that have pupils that attended pre-school before entry into primary school.

3.4 Sample Size

The study recruited 240 participants (120 pupils and 120 parents), 60 girls and 60 boys, 35 male parents and 85 female parents (see appendix 1). 60 pupils had pre-school experience while the other 60 pupils had no pre-school experience before being enrolled in Grade One. The sample comprised all pupils from the selected classes that met the inclusion criteria at Zambezi, Lwampungwa and Chilen'a primary schools. The pupils were in Grades One (1) and Two (2). The age range of pupils in the study was seven (7) to ten (10).

3.5. Inclusion Criteria

All pupils who were seven (7) or eight (8) years of age in a selected grade one class were included in the study. All pupils who were nine (9) or ten (10) years old and were in grade two were included in the study. All parents or guardians of the participating pupils who were able to read and write English were included as part of the study sample.

3.6 Sampling Procedure

The sampling procedure used in the study was convenience sampling as only those participants that were readily available in the selected school and met the inclusion criteria took part in the study. This sampling procedure was used in this study due to the reason that the concept of pre-school was still not adequately implemented in rural areas in Zambia such as Zambezi where this study was conducted. There were only few pupils with pre-school background in the schools targeted. Therefore, all pupils that met the inclusion criteria were conveniently sampled. The study also used purposive sampling method in selecting the parents or guardians of the pupils. The

reason for purposive sampling of parents or guardians was to track their socio-economic status and relate it to the academic performance of their children. This meant that only the parents of the pupils selected for the study automatically formed part of the study sample.

3.7 Data Collection Method

Permission was sought from Humanities and Social Sciences Research Ethics Committee (HSSREC) at the University of Zambia, Ministry of Education from the District Board Secretary (Zambezi District) and School Headmasters to conduct this research (see appendices 2&3). Data were collected using a questionnaire (see appendix 5), dictation test in Literacy (see appendix 6) as well as the Zambian Achievement test (ZAT-M) in Numeracy (see appendix 7). The data collected from the dictation test in Literacy and ZAT-M test in Numeracy captured scores of pupils which represented their academic performance. The questionnaire captured data of parents in the areas of socio-economic status, parent involvement in education activities, level of education and parental attitudes towards education. Parents who earned an income of less than twenty nine thousand kwacha (K29, 000) per annum and possessed no Certificate in any field of study were categorized as being of low socio-economic status (LSES). On the other hand parents that earned an income between thirty thousand and one hundred and twenty thousand kwacha (K30, 000-K120, 000) per annum and possessed Diploma, Bachelor's, Master's and Doctorate degrees in any field of study were categorized as being of high socio-economic status (HSES).

3.8 Data Collection Procedure

This involved the invitation and briefing of the participants on the nature of the study, seeking informed consent and signing of the consent forms by the guardians and parents (appendices 8 & 9). Guardians and parents with low education levels were helped to fill in the consent form which was read to them. In this study, data collection was done through administering the questionnaire to the parents or guardians. Data about pupils' performance was collected as raw scores from the dictation test in Literacy and ZAT-M test in Numeracy. The teachers assisted in administering the dictation and ZAT-Numeracy tests and forwarded the self-administered questionnaires to the parents or guardians of the pupils in the study from their respective classes. The parents or guardians sent back the questionnaires

through their children to the teachers after a period of one week. This was the easiest way to get too busy parents.

3. 9 Research Instruments

Taking into account that this study was entirely quantitative, data were collected using a self-administered questionnaire, dictation and ZAT-M tests (see appendices 4, 5 and 6).

3.9.1 Questionnaire

The researcher used a standardized self-administered questionnaire adapted from MacArthur Research Network on Socio-economic Status and Health. The MacArthur network on SES and Health has developed a Socio-demographic questionnaire which is widely used on a number of projects. The questionnaire was directed towards the parents or guardians of the pupils participating in the study. The questionnaire was used to obtain information from parents on their socio-economic status, level of education, involvement in education activities of their children and their (parental) attitudes towards education. A questionnaire was preferred because of being objective, easy to analyze and being an easy means to obtain information in a shortest time available. The questionnaire comprised of twenty three questions on points of Likert- scale format.

3.9.2 Dictation Test

The dictation test was developed by Ojanen, Kujala, Richardson and Lyytinen (2013).The dictation was used to gauge pupil's performance in Literacy. Items in the test consist of phonemes, syllables and words arranged in order of increasing difficulty. The students were required to underline the correct response from four possible answers. The dictation test has been used in one of the largest Zambian literacy project known as Reading Support for the Zambian children conducted in 2011. This project was collaboration between the University of Zambia and University of Jyvaskyla of Finland (Jere-Folotiya Kabali, Munachaka, Sampa, Yalukanda, Westerholm, Richardson, Serpell and Lyytinen, 2014).

3.9.3 Zambia Achievement Test- Numeracy (ZAT-M)

The ZAT-M test was developed by researchers from the University of Zambia and Yale University (Stemler, Chamvu, Chart, Jarvin, Jere, Hart, et al. 2009). This instrument was used to measure competence in Mathematics. The ZAT-M has been

standardized on a large population of primary school pupils in Zambia. (Jere-Folotiya et al., 2014).

3.9. 4 Validity of Instruments

Validity is defined by Taylor (2006) as the success of a method in probing or assessing what it sets out to probe or assess. Validity may also refer to possibility to have research findings accurately represent reality when the instruments used accurately measure what they are supposed to measure (Taylor, 2006). Accuracy of information was guaranteed by the use of relevant research instruments in this research. The questionnaire despite it being standardized was pretested on forty parents before the main study.

3.9.5 Reliability of Instruments

Reliability refers to the consistency of data stemming from the use of a particular research method. It is argued that a measure is reliable when repeated application of it under the same condition gives the same results (Taylor, 2006). To ensure reliability of research instruments, the questionnaire was pre-tested before the main study was conducted. Pre-testing of the questionnaire helped in ensuring consistency and dependability of the research instruments and their ability to obtain relevant data to answer the research questions and objectives. The ZAT-M test reported a satisfactory internal consistency of $\alpha = .77$. The dictation test has a test retest reliability of $r = .82$ (N=43) (Jere-Folotiya et al., 2014).

3.10 Data Analysis

The data collected were coded and analyzed quantitatively using the statistical package for social sciences (SPSS). The Multivariate Stepwise Binary Logistic Regression was computed to investigate the relationship and direction of relationship between pre-schooling and academic performance of lower primary school pupils in Literacy and Numeracy. Parents SES, parents' interactive behavior, age and sex of pupils were investigated simultaneously in the same Multivariate Stepwise Binary Logistic Regression Model. This was done in order to examine how each variable contributed to academic performance of pupils (Leedy and Ormrod, 2009).

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction to Results

This chapter presents the results of this study. The presentation of results does not commence with the demographic information of the participants (parents and pupils). The demographic information of participants is presented using figures and tables in the appendices section (see appendix 1). There were 240 participants recruited for the study, 120 pupils and 120 parents of guardians. Two tests were administered to the 120 pupils and 120 questionnaires were issued to the parents or guardians. All the 120 questionnaires were answered and received back. The above was the response rate of the study.

In this section, the analysis considers a multivariate model that encompasses all variables to establish which ones contributed the most to academic performance and possibly how the variables interacted with each other to influence academic performance. The model uses a stepwise (forward) binary logistic regression approach with the dependent variable (Academic Performance) being dichotomous, with the higher academic performance pupils belonging to the 1 group and lower academic performance pupils belong to the 0 group. The model estimates the odds (β [exp]) of each of the pupils who were administered with the performance assessment test belonging to the 1 group, which is the group with higher academic performance. Model 10 of the data had an accuracy of 96.7% and 4.0% (Cox and Snell R^2 :0.040) of the variation in pupil academic performance (dependent variable) was explained by the model. The model fitted well with -2 Log likelihood statistic of 1219.89 and Hosmer and Lemeshow goodness of fit of 0.427 (> 0.05). Below is a model of the multivariate analysis showing how the variables were analyzed.

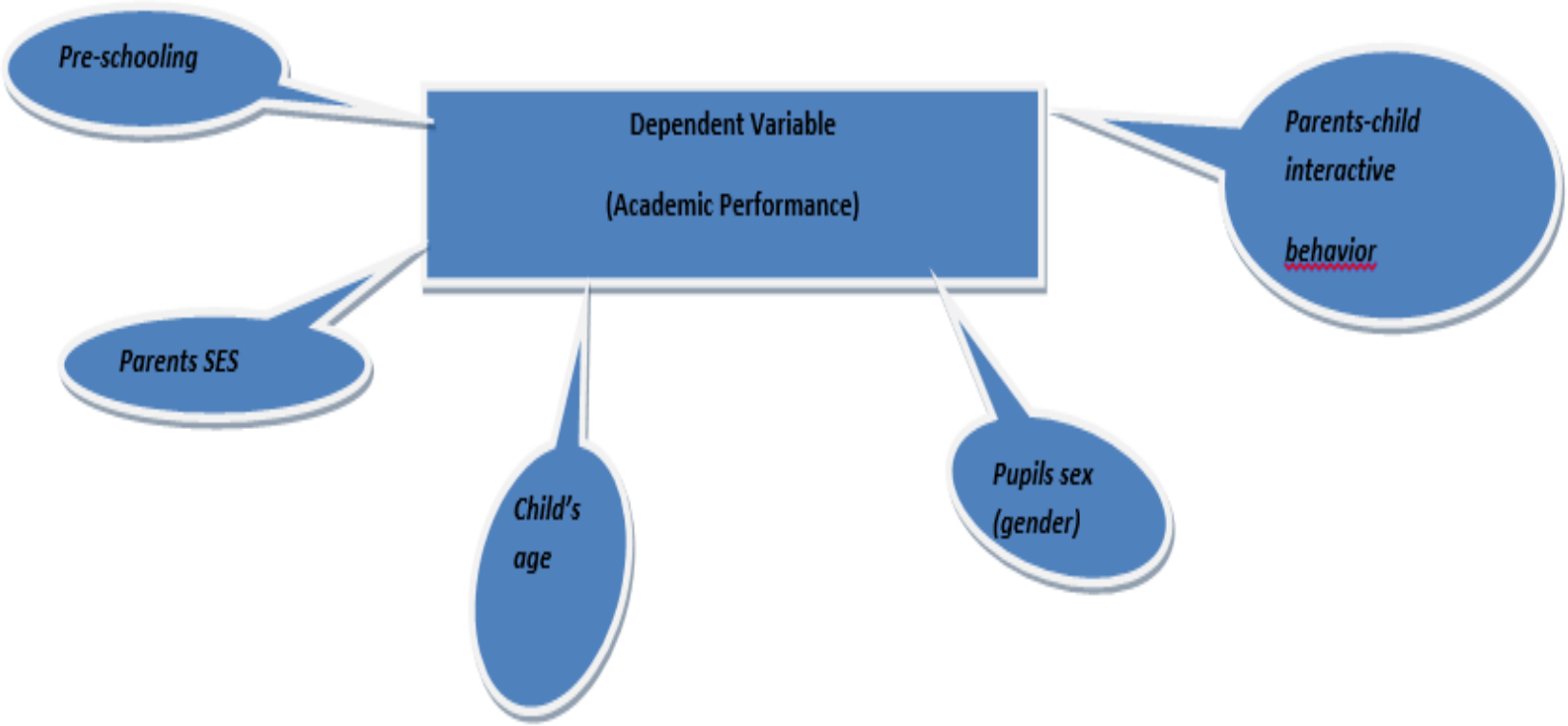

Figure 1: Model of Multivariate Analysis

Table 1: Multivariate Logistic Regression Results-Pupil's Academic Performance with the Independent Variables

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9		Model 10	
Independent Variables	OR	Sig.	OR	Sig.	OR	Sig	OR	Sig	OR	Sig.	OR	Sig.	OR	Sig.	OR	Sig.	OR	Sig	OR	Sig.
1. Pre-schooling																				
PA	25.286	0.002	25.637	0.002	29.469	0.001	24.702	0.003	31.768	0.003	28.905	0.004	24.925	0.008	24.473	0.010	34.556	0.061	28.281	0.028
NPA (RC)	1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000	
2. Child's Gender																				
Male (RC)			1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000		1.000	
Female			0.641	0.417	0.675	0.492	0.731	0.597	0.464	0.254	0.504	0.325	0.360	0.117	0.355	0.172	0.200	0.061	0.192	0.058
3. Child's Age																				
Young (7-8)					0.247	0.021	0.272	0.036	0.220	0.033	0.262	0.071	0.358	0.192	0.314	0.159	0.241	0.150	1.000	
Old (9-10) (RC)					1.000		1.000		1.000		1.000		1.000		1.000		1.000		0.236	0.164
4. Parents Interactive Behavior																				
4.1: Friendly Voice																				
Always (RC)							1.000		1.000		1.000		1.000		1.000		1.000		1.000	
Never							1.490	0.749	6.866	0.197	8.132	0.187	17.581	0.101	17.668	0.105	33.673	0.073	42.625	0.065
Often							0.836	0.837	1.134	0.900	0.986	0.987	1.425	0.757	1.451	0.749	1.966	0.583	2.163	0.548
Sometimes							0.441	0.235	0.867	0.858	0.766	0.754	1.122	0.902	1.280	0.809	3.266	0.330	2.719	0.426
4.2: Child's Praise																				
Always (RC)									1.000		1.000		1.000		1.000		1.000		1.000	
Often									1.817	0.619	1.958	0.578	1.373	0.815	1.232	0.879	0.552	0.716	0.415	0.613
Sometimes									0.107	0.012	0.124	0.020	0.093	0.014	0.078	0.012	0.034	0.008	0.033	0.008
4.3: Parents attend PTA																				
Always (RC)											1.000		1.000		1.000		1.000		1.000	
Never											0.541	0.589	0.570	0.643	0.490	0.566	0.417	0.508	0.465	0.560
Often											0.553	0.592	0.527	0.561	0.523	0.597	0.945	0.999	0.736	0.752
Sometimes											0.922	0.927	1.031	0.973	0.923	0.931	0.874	0.435	1.232	0.853
4.4: School Conversation																				
Always (RC)													1.000		1.000		1.000		1.000	
Never													0.187	0.351	0.129	0.298	0.920	0.948	0.038	0.178
Often													0.235	0.279	0.327	0.392	0.945	0.990	0.075	0.081
Sometimes													0.780	0.893	0.504	0.732	0.130	0.321	0.152	0.462
4.5: Homework																				
Always (RC)															1.000		1.000		1.000	
Never															0.967	0.977	0.875	0.891	0.820	0.178
Often															1.237	0.792	0.745	0.857	0.945	0.081
Sometimes															1.644	0.621	0.520	0.567	2.698	0.449
5. Social Economic Status																				
5.1: Parents Employment Status																				
Fulltime Employed (RC)																	1.000		1.000	
Part-time Employed																	0.731	0.597	0.711	0.524
Retired																	0.504	0.325	0.501	0.315
Unemployed																	0.355	0.117	0.320	0.119
5.2: Academic Qualification																				
Bachelor's Degree (RC)																			1.000	
Certificate																			0.927	0.936
Diploma																			0.852	0.811
None																			0.711	0.721

RC = Reference Category, OR = Odds Ratio

4.2 Analysis of Objectives and Hypotheses

In order to meet the research objectives and to test the hypotheses, Multivariate Stepwise Binary Logistic regression Model was used to analyze all the objectives of the study simultaneously.

4.3 First Objective and Hypothesis

The first objective of this study was to investigate the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils in Literacy and Numeracy. The hypothesis was that "pre-schooling has a positive relationship with academic performance of pre-schooled lower primary school pupils". The results from table 1 show that children who had attended pre-school performed better than those that did not attend pre-school. Children who had pre-school experience were about 28 times more likely to perform well than those who did not attend pre-school. This was significant at $p< 0.05$. This result shows that there is a relationship between Pre-schooling and academic performance of pupils. It could not be proven that there is independence, and therefore it was concluded that the two variables are related. Therefore, it was concluded that there is a statistically positive relationship between pre-schooling and academic performance of lower primary school pupils in Numeracy and Literacy.

4.4 Second Objective and Hypothesis

The second objective of this study was to assess whether socio-economic status of the parents was related to the academic performance of the pre-schooled pupils and non pre schooled pupils in lower primary school. The hypothesis was that "lower primary school pupils from parents of high socio-economic status would academically perform better than pupils from parents of lower socio-economic status". The results of the Multivariate Stepwise Binary Logistic Model shows that parents in full time employment and had Bachelor's degree had children who had higher chances of performing better than others. However this was not significant at $p< 0.05$. This result indicates that there is no statistically significant difference in academic performance of pupils from parents of high and low SES. Since the p-values are higher than 0.05, the null hypothesis that the average scores of pupils from parents of high socio-economic status are not different with pupils from parents of low socio-economic status could not be rejected. This means that there was no

statistically significant difference in the performance of pupils from parents of high socio-economic status and pupils from parents of low socio-economic status.

4.5 Third Objective and Hypothesis

The third objective of this study was to explore whether gender (sex) was related to academic performance of pre-school and non-preschool lower primary school pupils. The hypothesis was that "girls who attended pre-school would perform better than boys who attended preschool". Results from our analysis showed that female pupils who attended pre-school did not perform better than boys who as well attended pre-school. Results were significant at $p < 0.05$. This result implies that boys performed better than girls, meaning that sex was related to academic performance of lower primary school pupils in Numeracy and Literacy. Since the observed p-value is lower than 0.05, the null hypothesis that the average scores of both sexes are not equal could not be rejected. Therefore, the average scores of girls and boys who attended pre-school are not statistically the same. Girls who attended pre-school did not perform better than boys who as well had pre-school experience. Boys performed better than girls in literacy and Numeracy tests.

4.6 Fourth Objective and Hypothesis

The fourth objective of the study was to explore whether age was related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils. The hypothesis was that "age has a positive relationship with the academic performance of lower primary school pupils". The analysis showed that older pupils had higher chances (67%) to perform better than younger pupils. However, the result was not significant at $p < 0.05$. The results on child's age and academic performance showed that there was no relationship between age and academic performance. Whether a pupil was old or young, their performance was not significantly different in this study. Therefore, the alternative hypothesis that age has a positive relationship with academic performance of lower primary school pupils could not be sustained. It was rejected.

4.7 Fifth Objective and Hypothesis

The fifth objective of the study was to explore whether parent-child interactive behavior was related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils. The hypothesis was that parent- child interactive

behavior has a positive relationship with academic performance of lower primary school pupils. The parent-child interactive behavior captured in the self-administered questionnaire included “parent speaking to the child in a friendly voice”, “child praise”, “attend parent teacher association meetings”, “help child with homework” and “parent having conversations with school staff”. The results showed that children who had never received a friendly voice from parents on academic issues performed 42 times better than those who received a friendly voice from parents. However, the result was not significant at $p< 0.05$. In fact the results show that using softer voice to children reduces their chances of performing better.

The analysis further showed that children who received praise, had parents attending PTA and had parents who had conversations with school staff had higher chances of performing better than children that had parents who did not praise them, attend PTA and never had conversations with school staff. However, the results were not significant at $p< 0.05$. Furthermore, analysis also showed that children who had parents who attended to their homework had higher chances of performing better than children of parents who did not help out with homework. The results however were not significant at $p< 0.05$. All in all the results from the analysis indicated that parent-child interactive behavior was not significantly related to the academic performance of pupils in this study.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction to Discussion

This chapter discusses the findings of the study with reference to the aim and specific objectives as stated in chapter one. The discussion of the research results is anchored on the relevant literature reviewed in chapter two and the data collected from the field. The study has investigated the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils in Zambezi district, Zambia. Four specific objectives were pursued and these objectives were:

(i) To investigate the relationship between Pre-schooling and academic performance of lower primary school pupils in Literacy and Numeracy.

(ii) To assess whether socio-economic status of the parents of pupils is related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils.

(iii) To explore whether gender (sex) is related is related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils.

(iv) To explore whether age is related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils.

(v) To explore whether parent-child interactive behavior is related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils

5.2 Interpretations of the Results

5.2.1 The Relationship between Pre-schooling and Academic Performance of Lower Primary School Pupils in Literacy and Numeracy

According to the research results presented in chapter four, it is shown that pre-schooling is related to academic performance of lower primary school pupils in Literacy and Numeracy. It was concluded that pre-schooling and academic performance were related since the Multivariate Binary Logistic Regression showed

that there was a statistically significant relationship between the two variables under investigation under the first objective and hypothesis of this study. The alternative hypothesis that pre-schooling has a positive relationship with academic performance of pre-schooled lower primary school pupils could not be rejected, it was rather confirmed that there is a strong positive relationship.

The current study results on the first specific objective and hypothesis is an indication that pre-schooling has a positive relationship with academic performance of pupils. The results suggest that pupils who attend pre-school before being enrolled in primary school would perform better than their counterparts without pre-school experience. The difference in academic performance between pupils who attended pre-school and those who did not could be attributed to fact that pupils that are exposed to pre-school before entry in primary school acquire pre-reading skills, stronger Mathematical skills and graduate into primary school with richer vocabularies. This gives the children with pre-school experience an added advantage compared to their counterparts who did not attend pre-school who may lack the essential skills mentioned above.

The above research finding is consistent with Almond and Janet (2011) and Gibbs, Ludwig and Milner (2011) results of the Head Start Impact study (HSIS) that followed children for a long period of time. The HSIS found that there were positive effects on medium and long term outcomes of early childhood education such as improved test scores and high school progression rates for pupils that attended pre-school as compared to pupils that did not have pre-school experience.

The results of this study are also consistent with Karoy, Lynn, Kilburn, Rabecca and Jill (2005) research findings on the Perry Pre-school Project which indicated that pre-schooling has long term effects which include among others educational attainments.

The results of this study are also consistent with Lengalenga's (1994) results in a research entitled a comparative study of the scholastic performance of pre-schoolers and non-preschoolers in Lusaka district, Zambia. Lengalenga's study results showed a difference in performance between pre-schoolers and non pre-schoolers, in that pre-schoolers performed better in academic work than non pre-schoolers. By and large the results of this study denote that pre-school attendance is very essential in supporting academic performance of learners especially at lower primary school.

5.2.2 Socio Economic Status and Academic Performance

The second objective of this study was to assess whether socio-economic status of parents of pupils was related to academic performance of the children. It was hypothesized that lower primary school pupils from parents of high socio-economic status would academically perform better than pupils from parents of lower socio-economic status. The results of the Multivariate Binary Logistic Regression analysis showed that children who had parents who were in full time employment and had Bachelor's degree had higher chances of performing better than others. Although employment and education of parents seemed to be related to academic performance of pupils, the result nevertheless, was not significant. The socio-economic status variables that were included for analysis were parents' education and employment. The results mean that the socio-economic variables that were analyzed did not have a significant relationship with academic performance of the pupils under this study.

The implication of the results is that whether the parents were in employment and had higher qualification or where not in employment and had no higher qualification did not influence the performance of the children. Some pupils whose parents were not employed and whose education level was low still performed better. This is contrary to Alisa (2010) and Okumu et al. (2008) findings that pupils from highly educated families perform better because their parents encourage, monitor and supervise their academic progress. Children from parents with low education performed as well as those from highly educated parents probably because they found other people to read with and encouraged them. They may have also befriended other children whose parents were better educated and learned from those parents. It is also noted that sometimes the challenges that low educated and unemployed parents face and are witnessed by their children may be a motivating factor for the children of such parents to be more attentive in class so that they perform better in order not to face the same hardships experienced by their parents.

The results of this study are inconsistent to the findings of Sirin (2005) meta-analysis review on SES which found that school success was influenced by learners family socio-economic status. The results of this study are also contrary to the findings of Jeynes (2002), Scarce (2003), and Eamon (2005) on school dynamics. The above researchers found that socio-economic status of parents is associated to academic excellence of their children. The assumption that academic achievement of pupils is

contingent upon parents' socio-economic status was not the case in this current study. This current study was conducted in a rural setting where the majorities of the parents are peasant farmers and are not in employment. In addition, the majority of the parents in rural settings such as Zambezi have minimal education and qualifications and therefore, it could be argued that there was not enough variability of variables in the case of the parents included in this sample. In the light of the above scenario, parents' qualifications and employment did not significantly relate to the academic performance of their children as the case may be in other settings.

5.2.3 Gender (Sex) and Academic Performance

The third specific objective of this study was to explore whether gender (sex) was related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils. It was hypothesized that girls who attended pre-school would perform better than boys who attended pre-school. The results indicated that there is a statistically significant difference in the performance of girls and boys that attended pre-school. The analysis showed that male pupils were in fact more likely to perform better than girls. This means that boys performed better than girls; rather sex had a significant relationship with academic performance of girls and boys that attended pre-school. The girls did not perform better than the boys. In fact the results showed that boys performed significantly better than the girls. This went against our hypothesis because it was hypothesized that girls would perform better than boys.

The results of this study are inconsistent with Jules and Kutnick (1990) study that explored school determinants of academic success within classrooms in Trinidad and Tobago. The Jules and Kutnick study found that in primary schools girls had higher scores in English and Mathematics than boys. This study found statistically significant relationship in the performance of girls and boys. The performance of girls was not similar to that of boys in Literacy and Numeracy.

The finding on gender and academic performance are consistent to Guiso, Monte, Sapienza and Zingales (2008), Else-Quest, Hyde, and Linn (2010) and Sutter and Rutzler (2010) contend that gaps in academic performance between males and females continue to be observed all over the world. In some way, it can be argued that this sex gap in academic performance could be ascribed to societal influences rather than biological factors. It is the values that the society holds about females that

may deter them from performing as well as boys. Cultural stereotypes held by society to great extent demoralize females in their academic endeavors. Due to negative stereotypes females may perform poorly in school. This could be as a result of the anxiety that the negative stereotyping remarks which may induce a disruption in female's academic performance.

The results of this study are also inconsistent to the findings of Kutnick (2000) who found that girls that attended pre-school attained higher scores than boys who equally attended pre-school. In the current study, boys' performance was statistically different from that of girls. Despite the performance of girls being statistically inferior from that of boys in this study, it can be pointed out that pre-school attendance showed improvement in pupil performance (GRZ, 2000). This improvement could be attributed to intellectual maturation as a result of pre-school attendance. Zigler and Styfo (2001) contend that pre-school attendance enables a child to acquire specific intellectual abilities such as problem solving, learning strategies and other cognitive advantages which serve as building blocks for the accumulation of knowledge and skills in school. It could perhaps be argued that girls performed significantly inferior to the boys because of the cultural beliefs in Zambia that girls perform poorly in numerical subjects such as Math and Science.

5.2.4 Age and Academic Performance

The fourth specific objective of this study was to explore whether age was related to academic performance of pre-schooled and non-pre-schooled lower primary school pupils. It was hypothesized that age had a positive relationship with the academic performance of lower primary school pupils. Results from the Multivariate Stepwise Binary Logistic Regression analysis showed that older children had higher chances of performing better than younger pupils. However, this result was not significant. This result means that age has no significant relationship with academic performance of pupils. The result also implies that young pupils performed as well as older pupils.

The results of this study are consistent to Sharp (2000) views which state that early school starting age gives a head start to learning to the younger pupils and provides an opportunity for children from less advantaged backgrounds to make up for their deficits in academic skills. It was evident that pupils who were seven and eight years had similar scores in Literacy and Numeracy with those that were nine and ten years

old. There were no statistically significant differences in the performance of the pupils according to age. It was observed that age as a variable was not related to academic performance of the pupils in this study. It can be argued that perhaps by this early age the gap has not grown in terms of differences according to chronological age.

5.2.5 Parent-Child Interactive Behaviour

The fifth specific objective of the study explored whether parent-child interactive behavior was related to academic performance of lower primary school. It was hypothesized that parent-child interactive behavior was positively related to academic performance of pupils. The parent-child interactive behavior that was analyzed in this study was friendly voice, child praise; attend PTA, school conversation and homework.

Results from our analysis showed that children who received praise had higher chances of performing better. However, this result was not significant. Parents who spoke to their children in a friendly voice, attended PTA, had school related conversations with school staff and helped their children with homework did not significantly contribute to the academic performance of their children. However, children from such parents had a higher chance of performing better. The results are inconsistent to Mueller and Dweck (1998) study which found that parental praise for effort to a child encouraged academic initiatives. It was observed that parental praise to a child encouraged academic efforts in the sense that praise motivated and built confidence in children which in turn propels a child to succeed in a given academic task.

The results of this study on child praise by parent are also contradictory to Henderlong and Lepper (2002) who contend that praise may be a compelling motivator in many instances and is perceived to be genuine to motivation when it encourages academic performance, promotes autonomy, enhances competence without an overreliance on others. It can be argued that rewards such as child praise may increase extrinsic motivation, empower and encourage a child, send signals of confidence, raise self-esteem and may consequently improve academic performance of the child. However, though child praise is motivator to the child, the case was different in this study. This study was carried out in society probably that do not

appreciate the value of praise in relation to how it motivates the child to work extra hard. It could be argued that perhaps even the parents that praised their children applied it untimely and therefore it did not impact the child positively in terms of academic performance.

5.3 Theoretical Significance of the Findings

Rigorous research shows that high quality pre-school education is an extraordinarily powerful means to promote continued success in school, workplace, social and civic realms. This may seem surprising, but it is established that the experiences of children in their early years have an excessively large impact relative to their school years and across the whole spectrum of later life. Children gain a lot from going to pre-school. At pre- school, children become exposed to numbers, letters and shapes. Children also learn to socialize with peers through various activities that they undertake at pre-school. This early exposure to pre-school means that most children who attend pre-school enter primary with better pre-reading skills, richer vocabularies and stronger basic Mathematic skills than those who do not attend. This means that if children lag behind in the skills mentioned above in their early years, chances are that they may not catch up. Furthermore, remediation of deficiencies in learning is far much difficult and expensive than early learning. It is in the light of the above understanding from theory that, the findings of this study have theoretical significance to practice and research. The findings entail that pre-school attendance results in improved school success as shown in this research. The theoretical significance of the study findings is that this study has confirmed what is held in theory that early exposure to childhood education builds academic capacity in children to succeed in education and other walks of life.

5. 4 Practical Implications of Findings

In the light of the evidence from this research, it practically implies that every child in Zambia ought to be provided with quality pre-school education prior to entry in primary school. Although pre-school education is not a panacea of all problems, it has been shown through this study that it can substantially improve academic performance of pupils. If quality pre-school education is implemented seriously in Zambia, this may lead to decrease in grade repetition, cases of special education and increase in high school graduation since results of this study have shown that pupils

who attend pre-school perform better academically at primary school than those without pre-school experience.

The limitations of the study that might have had a bearing on the weight accorded to the findings include the fact that pupils were tested once in Numeracy and Literacy, the scores gotten may have not depicted the overall ability of each pupil in the pre-school and non-pre-school attendance groups. This could have affected the results of the study on pupil performance. However, the results of this study could be used as a building block to conduct more research on the relationship between pre-schooling and academic performance. The study investigated the relationship between Pre-schooling and academic performance of Grade One and Two pupils in Numeracy and Literacy only. Therefore, this study limited itself to the variables under investigation.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes and concludes the study. It also presents recommendations both for policy implication and future research.

6.2 Conclusion of the Main Results

The study aimed at investigating the relationship between pre-schooling and academic performance of pre-schooled lower primary school pupils in Zambezi district, Zambia. In line with the study objectives, it has been shown that there is a positive relationship between pre-schooling, sex and academic performance of pre-schooled lower primary school pupils in Literacy and Numeracy. Socio-economic status of parents of pupils, age and parent-child interactive behavior had no significant relationship with the academic performance of lower primary school pupils in Literacy and Numeracy. This study has shown that socio-economic status of parents of pupils is not related to academic performance of their children in the context of a rural area like Zambezi district where the study was conducted. Findings of this study especially on the positive relationship between Pre-schooling and academic performance of pre-schooled lower primary school pupils are in line with some of the earlier studies conducted in the area of early childhood, care, development and education in Zambia and other parts of the world.

6.2 Recommendations and Policy Implications of the Results

The results from this study carry important policy implications for stakeholders that deal with early childhood, care, development and education issues. Findings of the study show that Pre-schooling is related to academic performance of lower primary school pupils. Based on the findings, the following recommendations are made:

There is need for the Ministry of Education to scale up the implementation of pre-schools in government schools. This may provide easy access to preschool especially in rural areas where pre-schools are very few if any.

There is need for Ministry of education to quickly revise the policy framework on ECCDE to direct the operation of ECCDE in Zambia. ECCDE policy framework

would spell out the Ministry structure from district to national level and may help in the implementation, monitoring and evaluation of activities related to ECCDE.

Parents of children in rural Zambia should actively be encouraged to take their children to Preschool before they start Grade One.

6.3 Recommendations for Future Research

Due to limitation of this study, the following recommendations were made for further research:

Longitudinal research to be conducted to determine whether the relationship between Pre-schooling and academic performance is sustained throughout primary grades.

Similar research to be conducted both in rural and urban Zambia on a larger sample so that the findings can be generalized to entire Zambia, rather than Zambezi district, a rural district.

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Appendices

Appendix 1: Demographic Background of Participants

In order to have a clear picture of the sample that participated in this study, a background check was done. In the background checks, all the demographic information that were captured in the questionnaire was explored and was presented using figures as shown below.

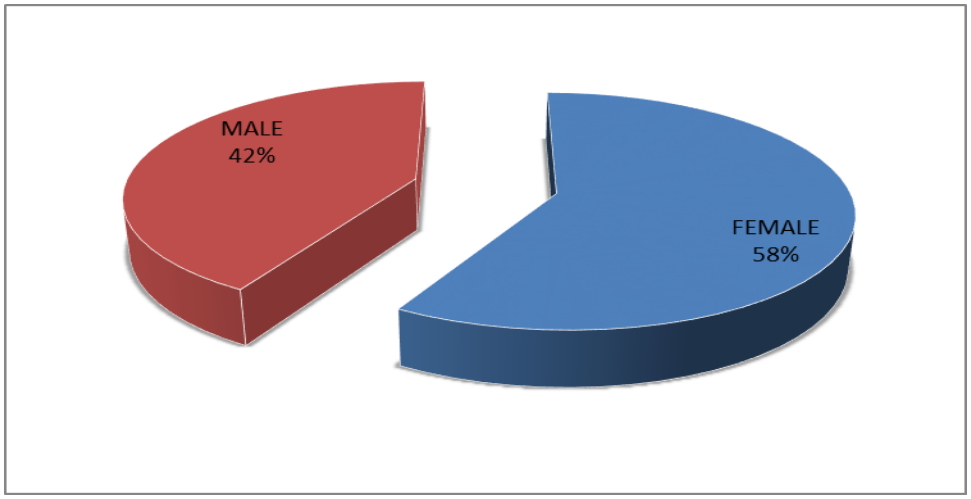


Figure 2: **Parents Sex Distribution**

Figure 2 (pie chart) shows the parents' sex distribution. (58%) of the parents were female and (42%) were male. Therefore, there were more female parents than male ones.

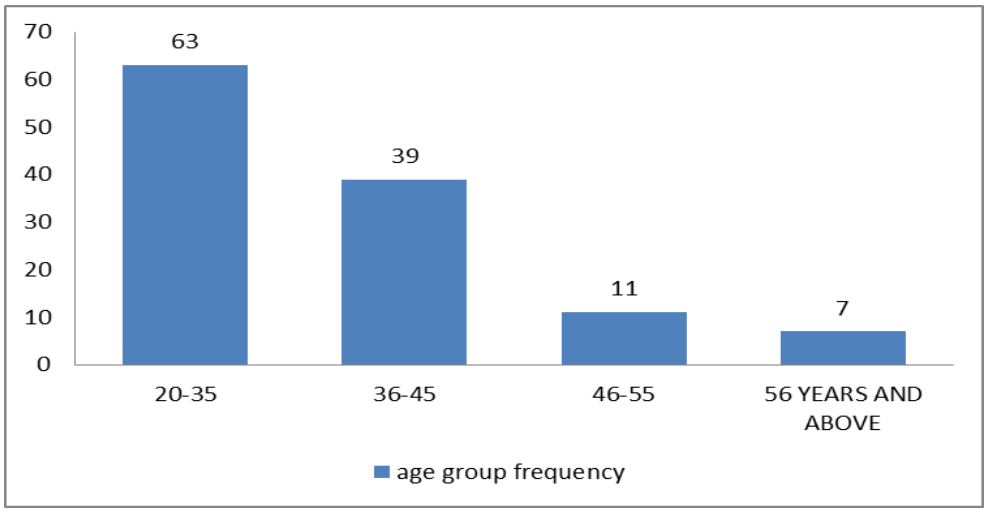


Figure 3: Parents Age Group

Figure 3 (bar chart) looked at the parents' age groups. The researcher believed it would be less cumbersome if the parents gave their age range and not their specific age. From the bar chart above, it was seen that most parents fall in the age range of 20-35 years while the least number of parents fall in the age range of 56 years and above. Generally, there were many young parents in the study.

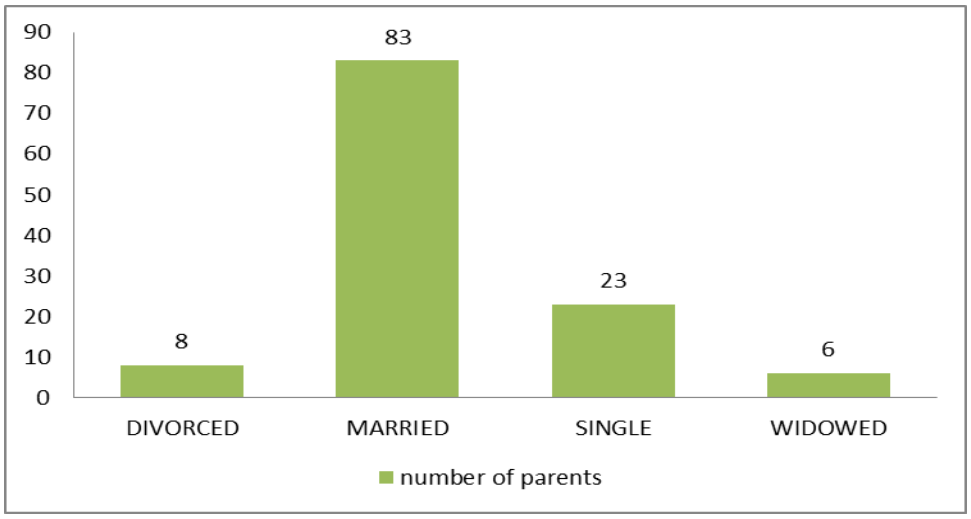


Figure 4: Parents Marital Status

Figure 4 (bar chart) shows that most (83) parents were married (23) were single, (8) were divorced and 6 parents were widowed.

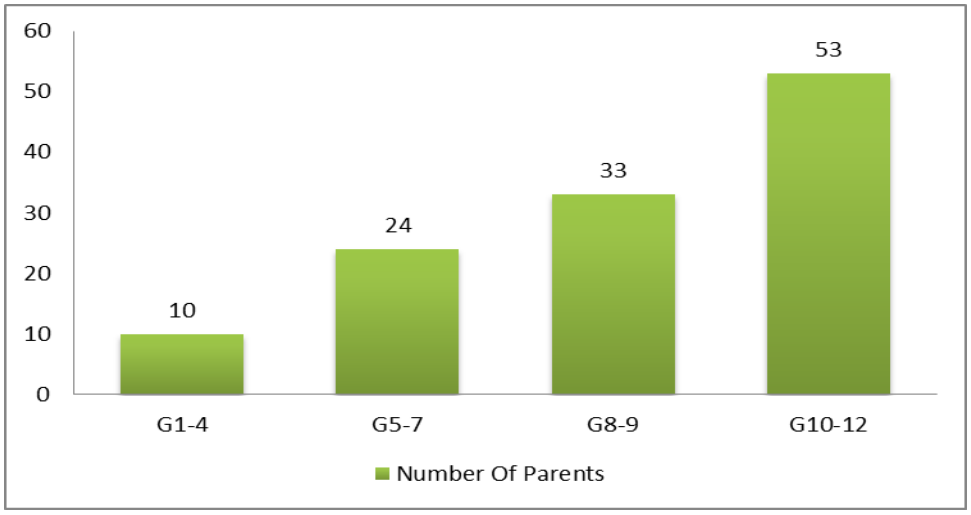


Figure 5: Parents level of education

Figure 5 (chart) shows that 53 parents had obtained an education level between Grade Ten to Twelve (G10-12), 32 parents had an education level of grade eight to

nine (G8-9), 34 parents had an education level between grade five and seven (G5-7) and 10 parents had an education level between grade one to four (G1-4).

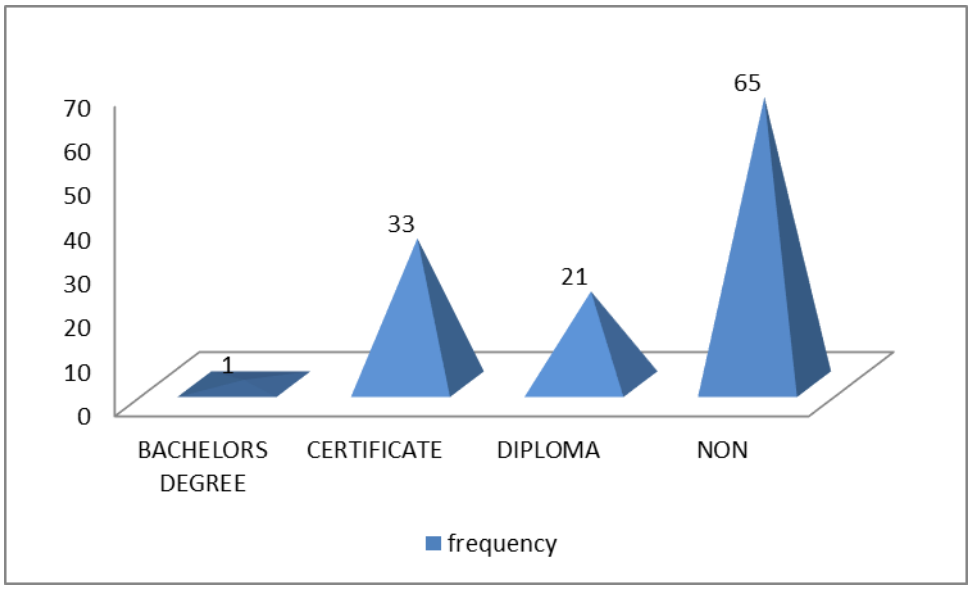


Figure 6: Parents Tertiary Level of Education

Figure 6 (bar chart) shows the tertiary education of parents. Most parents (65) did not have tertiary education, 21 had a diploma, 33 had a certificate and 1 had a bachelor's degree.

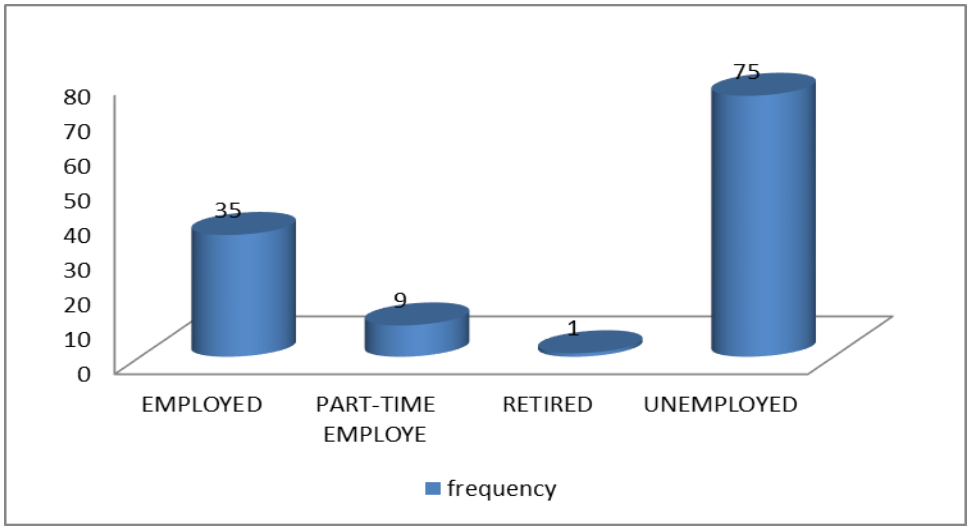


Figure 7: Parents Employment

Figure 7 (bar chart) shows parents' employment status. Most of the parents (75) were not employed, 1 parent was retired, 9 parents were in part- time employment and 35 parents were employed at the time of the research.

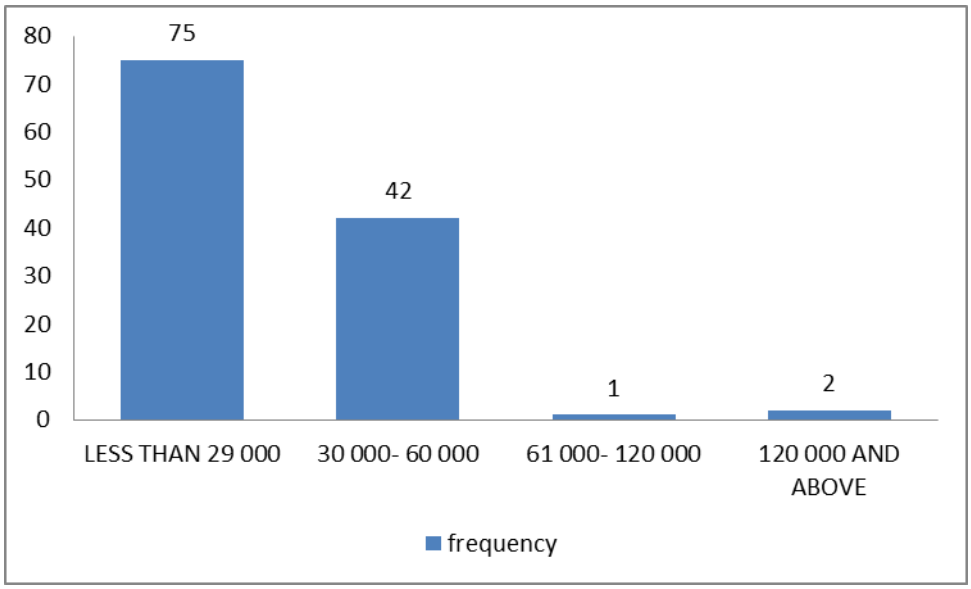


Figure 8: Parents Income Range

Figure 8 above shows the income distribution among the parents and it is evident that most (75) parents had less than K29 000, 42 parents had K30, 000-K60, 000, 1 parent had K61, 000- K120, 000 and 2 parents had K120, 000 and above as income per year. Note that this income is measured in Zambian Kwacha.

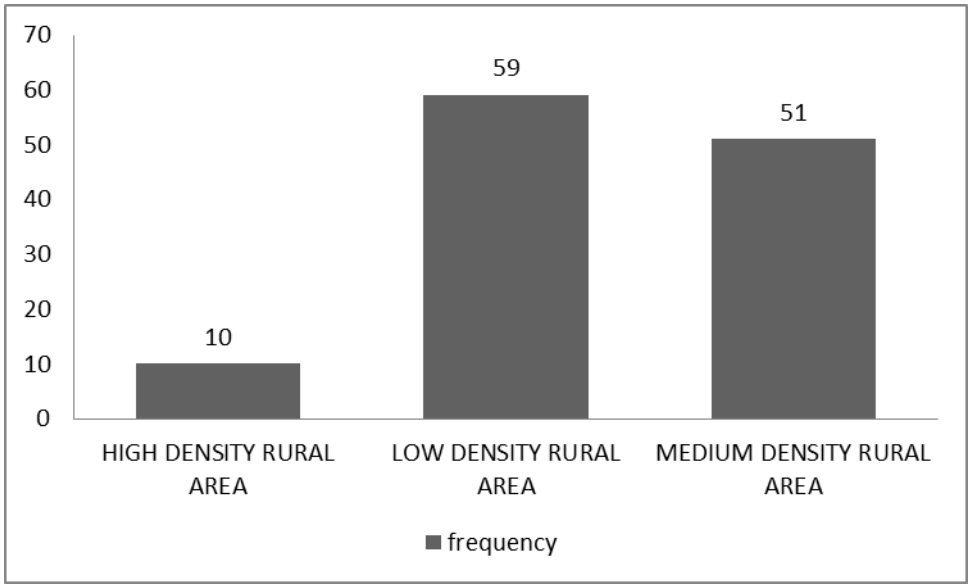


Figure 9: Parents Residential Area

Figure 9 shows that 59 parents lived in low density rural area,51 parents lived in medium density rural area and 10 parents lived in high density rural area.

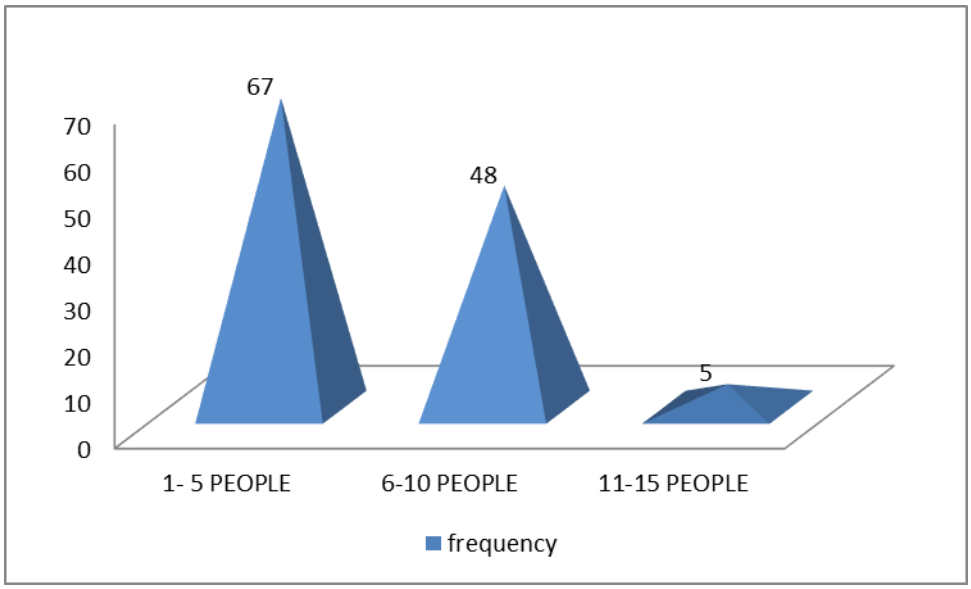


Figure 10: Number of People in Households

Figure 10 (bar chart) shows that most of the parents (67) have 1-5 people living in their households, 48 parents had 6-10 people living in their households and 5 parents had 11-15 people living with them.

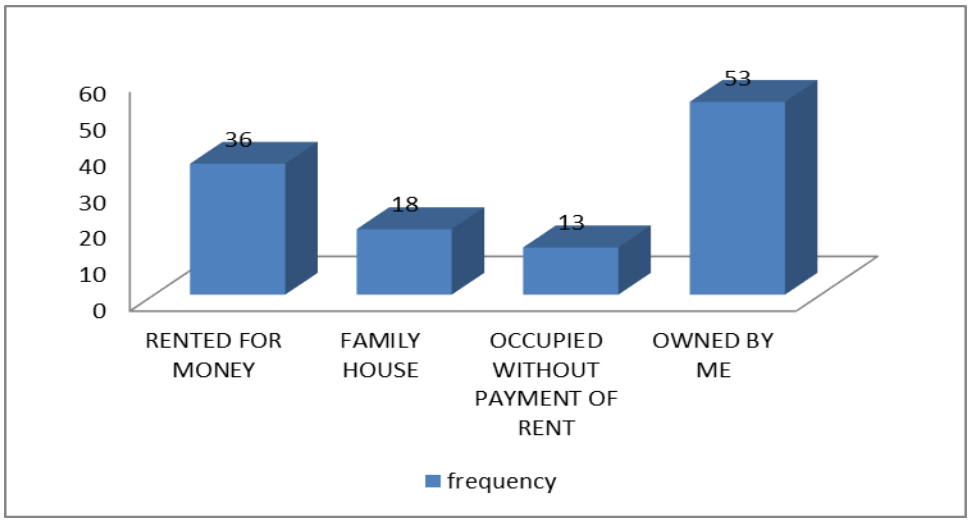


Figure 11: House Ownership

Figure 11 (bar chart) shows that most of the parents (53) live in houses owned by them, 36 parents lived in rented houses, 18 parents lived in family houses and 13 parents lived in houses occupied without payment of rent.

Table 2: Pupils Background Information.

Gender (Sex)	Grade One	Grade Two	Total
Female	30	30	60
Male	30	30	60

The table shows that the number of pupils in the study for each Grade was equal.

Table 3: PA and NPA Distribution in Schools.

School	PA	NPA	Total
Chilen'a primary	20	20	40
Lwampungwa primary	20	20	40
Zambezi primary	20	20	40

The table above shows that an equal number of pupils who attended

pre-school (PA) and those that did not attend pre-school (NPA) were selected for the research from the three schools.

Appendix 2: Request for Authority Letter

The University of Zambia,
School Of Humanities and
Social Sciences,
Department of Psychology,
P.O. Box 32379,
Lusaka.

The Director,
Post Graduate and Research Studies,
The University of Zambia,
P.O Box 32378,

Lusaka.

Dear Sir/ Madam,

REF: REQUESTING AUTHORITY TO CONDUCT RESEARCH ON THE SUBMITTED PROPOSAL.

The above subject matter refers:

Following the submission and oral presentation of my research proposal entitled "Pre-schooling and Academic Performance of Lower Primary School Pupils'' to the Department of Psychology in the School of Humanities and Social Sciences, I submit my proposal to the Research Ethical Committee for further scrutiny and request for permission to conduct research.

I hope to start the process of data collection in November to December, 2014.

Yours faithfully,

Chizawu Kepson - 513801031

APPENDIX 3: The University of Zambia Ethical Clearance

THE UNIVERSITY OF ZAMBIA
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

Telephone: 290258/291777
Fax: +260-1-290258/253952
E-mail drgs@unza.zm
IRB: 00006464
IORG: 00005376

P O Box 32379
Lusaka, Zambia
Your Ref:
Our Ref:

31st October 2014

Kepson Chizawu
Zambezi Primary School
P O Box 150012
ZAMBEZI

Dear Mr. Chizawu

Re: **APPLICATION FOR ETHICAL CLEARANCE**

Reference is made to your application for ethical clearance for your proposed study entitled "***Preschooling and academic performance of lower primary school pupils in Zambezi District, Zambia***".

As your research project does not contain any ethical concerns, you are hereby given an exemption from full clearance to proceed with your research.

ACTION: APPROVED
DECISION DATE: 29th October 2014
EXPIRATION DATE: 28th October 2015

Please note that you are expected to submit to the Secretariat a Progress Report and a copy of the full report on completion of the project.

Finally, and more importantly, take note that notwithstanding ethical clearance given by the HSSREC, you must also obtain express authority from the Permanent Secretary Ministry of Health, before conducting your research. The address is: Permanent Secretary, Ministry of Health, Ndeke House, P O Box 30205, Lusaka. Tel:260-211-253040/5; Fax +260-211-253344.

Dr. Augustus Kapungwe
CHAIRPERSON, HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc Director, Directorate of Research and Graduate Studies
Assistant Director, Directorate of Research and Graduate Studies
Assistant Registrar (Research), Directorate of Research and Graduate Studies

APPENDIX 4: Permission Letter from District Authority-Zambezi

In reply please

All correspondences should be addressed to: *Ref:*
The District Education Board Secretary, Ministry of Education
Science, Vocational Training and Early Education.
not to any individual by name.

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND EARLY EDUCATION
DISTRICT EDUCATION BOARD SECRETARY
P. O. BOX 150014
ZAMBEZI

20th November, 2014.

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION SCIENCE AND VOCATIONAL TRAINING
20 NOV 2014
DISTRICT EDUCATION STANDARDS OFFICER
P.O.BOX : 150014, ZAMBEZI

To: All Head Teachers,
ZAMBEZI DISTRICT.

Dear Sir/ Madam,

RE: CLEARANCE LETTER: MR CHIZAWU KEPSON

This letter serves to inform you that the above named officer is a teacher at Zambezi primary school. The named officer is pursuing postgraduate studies at the University of Zambia. I write to inform you that the DEBS office has cleared him to conduct his research project entitled Preschooling and Academic Performance of Lower Primary School Pupils in Zambezi District.

All help rendered to him shall be greatly appreciated.

Yours sincerely,

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION SCIENCE AND VOCATIONAL TRAINING
27 JAN 2015
DISTRICT EDUCATION STANDARDS OFFICER
P.O.BOX : 150014, ZAMBEZI

Kambita George
District Education Standards Officer
For/DISTRICT EDUCATION BOARD SECRETARY
ZAMBEZI.

APPENDIX 5: Self-Administered Questionnaire

THE UNIVERSITY OF ZAMBIA,

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES,

DEPARTMENT OF PSYCHOLOGY

P.O BOX 32379, LUSAKA, ZAMBIA.

PARENTAL INVOLVEMENT AND ATTITUDE TOWARDS EDUCATION OF THEIR CHILDREN QUESTIONNAIRE.

Dear Sir/ Madam.

I am a Masters student at the University of Zambia undertaking a research project entitled Preschooling and Academic Performance of Lower Primary School Pupils. I kindly request that you complete this questionnaire regarding your socio-economic status, involvement and attitude towards the education of your child. Your participation in this project is entirely voluntary.

Please, do not enter your name and contact details on this questionnaire. Your personal particulars will remain anonymous. The information provided will be used for this research project only and will remain confidential.

Kindly return the completed questionnaire to the researcher through your child to his or her teacher at school. Please endeavour to complete the questionnaire within a period of one week.

Should you have any queries or comments regarding this research project contact:

Chizawu Kepson	**DR. Mwaba S.O. C**
0977278339,	The University of Zambia
0969225200.	0975496346.
Principal Investigator.	**Supervisor**.

Instructions: Please indicate **(X)** on the appropriate answer to the question.

Section A: Bio-data

1. What is your gender?

Male	
Female	

2. How old are you?

20-35 years	
36-45 years	
46-55 years	
56 years and above	

3. What is your marital status?

Single	
Married	
Divorced	
Widowed	
Cohabiting	

SECTION B: Education

4. Highest school grade completed?

Grade 1-4	
Grade 5-7	
Grade 8-9	
Grade 10-12	

5. What is the highest qualification you have obtained?

Non	
Certificate	
Diploma	
Bachelor's degree	
Master's degree	
Doctorate degree	

SECTION C: Employment, Income and Residence.

6. Which of the following accurately describes your current employment status?

Employed	
Retired	
Part- time employed	
Unemployed	

7. What do you do for a living? ----------

8. What is your income per year?

Less than K29 000	
K30 000-K60 000	
K61 000-K120 000	
K120 000 and above	

9. Which of the following describes your residential area?

Low density rural area	
Medium density rural area	
High density rural area	

10. The home where you live:

Rented for money	
Occupied without payment of rent	
Family house	
Owned by me	

11. How many people are currently living in your household including yourself?

1-5	
6-10	
11-15	
16 and above	

SECTION D: Parent involvement in the education of the child

12. Do you help your child with homework?

Never	
Sometimes	
Often	
Always	

13. Do you have learning aids at home such as books and toys ?

No	
Yes	

14. List some of the learning aids you have at home which you use with your child?

.....

15. Do you borrow any learning materials from school to use at home?

Never	
Sometimes	
Often	
Always	

16. Do you hold school related conversations about your child with school staff?

Never	
Sometimes	
Often	
Always	

17. Do you attend Parent Teacher Association meetings?

Never	
Sometimes	
Often	
always	

SECTION E: Parent attitude towards education of the child

18. Do you encourage your child to attend classes if he or she decides to stay away from school?

Never	
Sometimes	
Often	
always	

19. Do you help your child when he or she is putting on school uniform for school?

Never	
Sometimes	
Often	
always	

20. Do you praise your child for good performance at school?

Never	
Sometimes	
Often	
always	

21. Do you speak to your child in a friendly voice on education issues?

Never	
Sometimes	
Often	
always	

22. Did your child do preschool before enrolling into grade one?

Yes	
No	

23. In your opinion is pre-school an important stage to children's education?

Strongly agree	Agree	Neutral	Disagree	Strongly disagree

THE END.

APPENDIX 6: Dictation (spelling) Test.

School:.....Tester:.....Date:.....

Pupil:..... Gender: F, M
Teacher:.....

b	**d**	**a**	**m**
i	**a**	**o**	**u**
d	**m**	**a**	**b**
i	**e**	**n**	**g**
o	**d**	**m**	**u**
de	**pa**	**ta**	**be**
fa	**ni**	**me**	**cha**
ma	**ta**	**da**	**ba**
la	**pa**	**ba**	**ta**
la	**tu**	**pa**	**ka**
ona	**ake**	**ana**	**iwu**
ma	**ka**	**ko**	**ke**
Iwu	**aka**	**ima**	**en'a**
Ana	**ona**	**iya**	**nka**
ena	**eka**	**ima**	**enu**
Tona	**taya**	**enda**	**koma**
Keki	**kawa**	**pita**	**wuwa**
End	**leka**	**imba**	**kawa**
Fulu	**mafu**	**enda**	**taya**
Kama	**maama**	**vuwa**	**koma**
m	**n**	**g**	**u**
y	**a**	**i**	**e**
p	**d**	**b**	**h**
a	**y**	**o**	**i**
f	**h**	**g**	**v**
k	**j**	**i**	**h**
d	**b**	**k**	**g**
c	**o**	**s**	**a**
C	**e**	**a**	**i**
J	**k**	**g**	**l**

APPENDIX 7: Zambia Achievement Test- Mathematics

#1. **3**

3	**8**
6	**2**

Circle the number which is the same as the number on top of the table

#2. **78**

78	**36**
99	**22**

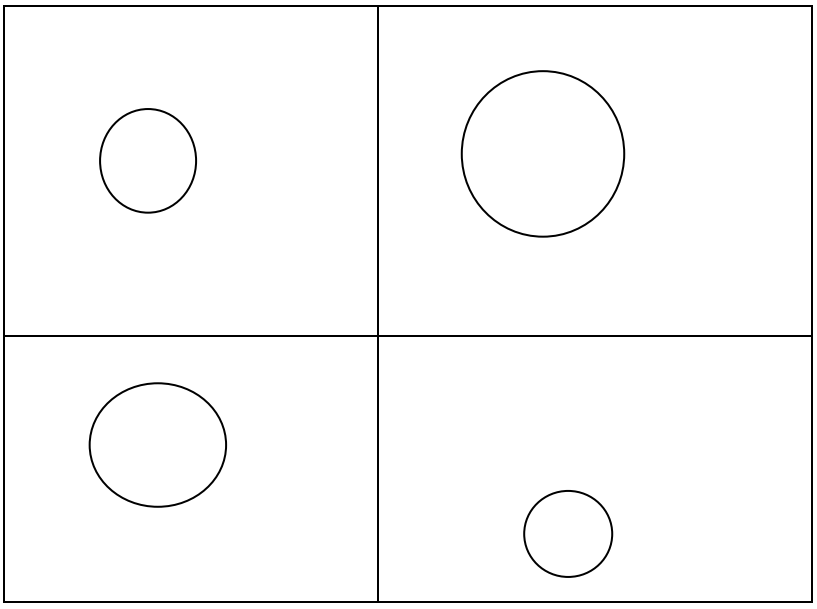
Circle the number which is the same as the number on top of the table

#3.

45	**68**
22	**17**

Which number is 22 among the numbers in the table

#4.



Which box has the largest ball?

#5.

FEBRUARY

Sun	Mon	Tues	Wed	Thur	Fri	Sat
2	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

Which day is the last day in the month of February?

#6

1	15
28	29

3,----------, 5

Which number is supposed to be between 3 and 5

4	8
6	1

 # 7 1

+ 5

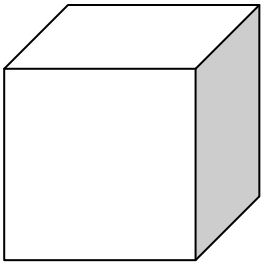
4	6
10	16

 # 8. 7

- 2

9	**7**
1	**5**

#9



square	**rectangle**
triangle	**cube**

Name the shape above?

#10. 16

-9

7	**12**
4	**9**

 # 11. 24

+36

876	**36**
121	**60**

#12 49

-24

9	**37**
16	**25**

#13. 3

x 2

9	**6**
5	**1**

APPENDIX 8: Invitation Letter for a Meeting with Parents or Guardians

The University of Zambia,

School of Humanities and Social

Sciences,

Department of Psychology,

P.O. Box 32379,

Lusaka.

Dear Parent/Guardian.

This note serves to invite you to a meeting on ..... the..... November, 2014 at .....primary school at..... hours. I shall be very grateful to have you in attendance.

Yours faithfully,

Chizawu Kepson

Principal Researcher

Cell: 0977278339, 0969225200, 0954543139

APPENDIX 9: Informed Consent Form.

Informed Consent for Participants

The University of Zambia

Humanities and Social Sciences

Department of Psychology

Please read this document carefully. Sign your name below only if you agree to participate in the study and you fully understand your rights. Your signature is required for your participation in this project. You must be a parent or guardian of a child selected to participate in the study. If you desire a copy of this form, you may request one and it shall be provided.

Introduction:

This study is entitled "Preschooling and Academic Performance of Lower Primary School Pupils". This research is directed by a Masters Student in Child and Adolescent Psychology at the University of Zambia. This document defines the terms and conditions for consenting to participate in the study.

Description of the Study

You are invited to participate in the study about Preschooling and Academic Performance of Lower Primary School Pupils. This study is investigating if there is a relationship between pre-schooling and academic performance of lower primary school pupils.

Time Frame of the Study

The process of data collection will take duration of approximately two months.

Risks and Benefits

You may experience fatigue due to length of time required to complete the questionnaire

You may experience emotional discomfort during the process of answering the questionnaire.

Direct benefits may not be guaranteed though you will have an opportunity to contribute to a study that may help the Zambian community in the area of pre-schooling and academic performance.

Confidentiality

All information collected shall be kept confidential. No un authorized persons will be allowed access to the information collected. The data questionnaire will have no identification information of participants to enhance confidentiality.

Participation Rights

Participation in this study is purely voluntary, if you decide to withdraw at any point, there will be no consequences to you

All personal identifying information will be kept confidential and questionnaires will be kept under key and lock in accordance with the standards of the University of Zambia. In case of publication of the study findings, your identity will still remain private.

VOLUNTARY CONSENT

I have read (or have had the information explained to me) the information about this research as contained in the Participant Information Sheet. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I now consent voluntarily to be a participant in this project and understand that I have the right to end the interview at any time, and to choose not to answer particular questions that are asked in the study.

My signature below says that I am willing to participate in this research:

Participant's name (Printed): …….....

Participant's signature:……Consent Date:…….....

Researcher Conducting Informed Consent (Printed) ……...

Signature of Researcher: ……..…….. Date: ……

Name of Witness:.....

Signature of Witness ……. Date: …….....

Contacts

If you have any further questions about this research please contact:

The Supervisor

Dr Mwaba S.O.C.

The University of Zambia,

School Of Humanities and Social Sciences

Department of Psychology.

Lusaka.

Cellno': 0975496349.

The Principal Investigator

.Mr Chizawu Kepson

The University of Zambia

Department of Psychology

Lusaka.

Cell no": 0977278339,

0969225200