

**INFLUENCE OF PARENTS' DEMOGRAPHIC CHARACTERISTICS ON THEIR
INVOLVEMENT IN LOWER PRIMARY SCHOOL CHILDREN'S LEARNING OF
MATHEMATICS IN KWALE COUNTY, KENYA**

**NKABI NASSORO MAJIBU
E55/CE/21390/2012**

**A THESIS SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE
OF MASTER OF EDUCATION IN EARLY CHILDHOOD EDUCATION OF
KENYATTA UNIVERSITY**

MAY, 2021

DECLARATION

I declare that this thesis is my original work and has not been presented in any other university/institution for consideration of any certification. The thesis has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

Signature_____ Date_____

Nkabi Nassoro Majibu E55/CE/21390/2012

Department of Early Childhood and Special Needs

Supervisor:

I confirm that this research project has been submitted for review with my approval as the university supervisor.

Signature_____ Date_____

Dr. Mary Ndani

Lecturer,

Department of Early Childhood and Special Needs Education

DEDICATION

I wish to dedicate this project work first and foremost to my dad Nassoro Masoud and my mum Nusra Omar and children Mariam Yusuf, Fahim Yusuf, Amina Yusuf and Abeid Yusuf who tirelessly encouraged me to continue and not to give up when tough moments occurred. My colleagues who gave me educational ideas towards the success of this research project work and to all who gave me any form of support,

May God Bless ALL.

ACKNOWLEDGEMENTS

This research Project could not have been possible without the material and moral support from various people. My gratitude first goes to the Almighty Allah who gave me the strength and courage to undertake this project. I do acknowledge and appreciate the efforts put by my supervisor Dr. Mary Ndani. Who worked tirelessly to ensure that I sail through this project work. I would not forget also to acknowledge the Department of Early Childhood Development Studies, Kenyatta University lecturers who impacted professionalism in my work. My greatest gratitude also goes to Angela Mutisya who facilitated the whole research work. My thanks also go to all who gave in any form of support.

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ABBREVIATIONS AND ACRONYMNS

DICECE	District Centre for Early Childhood Education
KICD	Kenya Institute of Curriculum Development
MDGs	Millennium Development Goals
NACECE	National Centre for Early Childhood Education
UK	United Kingdom
US	United States

ABSTRACT

Research has linked level of parents' involvement in their children's learning activities particularly homework to improvement in children's learning outcomes. This relationship is more pronounced for children in early childhood education phase. However, empirical data that demonstrates parents' involvement in their children's learning Mathematics in particular, a subject which though important continues to register poor achievement is scarce. Yet even with records demonstrating that parental level of involvement in their children schooling is low, the contributing factors to this fact have not been clearly established. This study therefore attempted to make its contribution in the ongoing debate especially for emerging economies such as Kenya by assessing the influence of parents' demographic factors on their involvement in lower primary children's learning mathematics. Specifically, the study focused on public primary schools in Kwale County, Kenya an area that has consistently reported poor achievement by learners in Mathematics. The aim of the study was to determine the degree of parental involvement in supporting their children's learning mathematics in lower primary school, to determine the impact of parents' demographic factors on their involvement in their children's learning mathematics in lower primary school, and to discover the challenges that parents face in their involvement in their children's learning mathematics in lower primary school. The research used a descriptive survey design. A stratified random sampling approach resulted to 381 respondents constituting of 356 parents of class three students, 17 mathematics teachers, and 8 primary school principals in Kwale County. A pilot study with 68 respondents was conducted prior to the start of the actual study to pre-test the research instrument. Questionnaires for sampled parents and mathematics teachers, as well as interview guides for head teachers, were used to collect data. Data obtained was analysed both qualitatively and quantitatively. Qualitative data was analysed thematically while for quantitative data, descriptive statistics was used with the aid of Statistical Package for Social Sciences (SPSS) version 23 computer software. Chi square analysis and Contingency Coefficient measure of association was used to assess the influence of parents' demographic factors on their involvement in their lower primary school children learning mathematics. Findings confirmed low level of parents' involvement in their children's learning. Parents' level of education, their marital status and family monthly income were found to have a significant influence on their involvement in their children's learning. Lack of time, failure to understand the role that parents should play, The key factors leading to parents' low level of involvement in their children's mathematics learning were found to be a lack of expertise, a lack of invitation to participate, and feelings of incompetence. As a result, it is suggested that concerted attempts be made to increase parental participation.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.0 Introduction

This chapter consists of background information relevant to the study, statement of the problem, purpose of the study, objectives and the research questions as well as its significance. Further, it focuses on limitations as well as delimitation of the study. Lastly, it contains the scope and assumptions that will be made during the study as well as theoretical and conceptual framework.

1.1 Background to the Study

Parental participation in their children's learning experiences significantly affects the learning outcomes of their children. Evidence show that parents as models can impart in their children positive attitude and behaviour towards the school and its programs (Chowa, Masa & Tucker, 2013). In particular, it is observed that the concern from the parents participating on school work of the children at home creates a more likelihood of these children having a better performance in school. The same can be said about children whose parents take the initiative to monitor and ensure that they complete learning tasks given by their teacher or who at times set tasks for their children (Fan & Chen, 2001; Houtenville & Conway, 2008; Jeynes, 2003, 2007). Such involvement most often results in the children's academic success.

Parental support to student learning has been defined in various ways by researchers, but two main approaches to the definition appear to be more inclusive

and are therefore commonly accepted. The first definition identifies parental support to children's learning as a complex construct with six typology categories (Epstein, 1990, 1995). It explains the basic roles of parenting towards their children's schooling as making studies at home easier, school engagement, volunteership, taking part in making decisions and group participation are all things that can be done at home. In this context, parental involvement entails their engagement with the learning circumstances and environments of their children.

The second definition recognizes parental support to children's learning as a one-dimensional construct with the basis on the place where it will be done (Giallo, Treyvaud, Matthews, & Kienhuis, 2010; McCarron & Inkelas, 2006; Oyserman, Brickman, & Rhodes, 2007) categorizes parental participation on the basis of school and home. Volunteering at school, engaging in school tasks and clubs, and interacting with teachers and school administrators about the child's wellbeing are all examples of school-based parental support, according to this school of thinking (Mau, 1997; Oyserman, Brickman & Rhodes, 2007). In the same breadth, home-based parental support implies activities that take place at home in support of learning activities and helping the child in doing school assignments at home, taking part on matters concerning their school, bringing about higher hopes, promoting school achievement, and providing peaceful learning atmosphere while at home are all things to consider (Altschul, 2012; Sui-Chu & Willms, 1996). McMullen and Abreu (2010) specifically stated that such parental support means that parents are engaging in some aspect of teaching. Whatever the definition one

picks, parental involvement implies their interaction with their children's learning circumstances.

Empirical data attest to the significance of parental support to children's learning, the need for support being even more important for children in early childhood education phase (Melhuish et al., 2008). It is the contention of researchers that the perceived significance could be more pronounced for learning of subjects such as Mathematics whose mastery in developing literacy cognitive skills of a child and numeracy. Specifically, they found that the support is even more significant in creating appropriate learning environment for task performance for this category of children. Their observation is corroborated by Agostin and Bain (1997); Barnes and Freude-Lagevardi (2003); DeGarmo, Forgatch and Martinez (1999); Hannon et al. (2005) among others.

In the United States, studies on parental engagement and academic results observe that parents who are involved at home create a positive effect and in school especially during early schooling years positively predicts numerous academic outcomes (Jeynes, 2003, 2007). In particular, it was established that higher rates of attendance, participation and educational attainment including pass rates were characteristic primarily of learners whose parents are more involved irrespective parents socio-economic status. Similarly, children with more involved parents were not only prone to succeed more academically, but they were also more likely to better develop social skills and be well behaved. In supporting this assertion, Heckman (2006) reaffirms that the only cost-effective way to intervene is early by

concurrently promoting social justice and economic productivity of the child's adult life. According to the researcher if intervention at the early stages is missed then compensation later for the deficient family environments would be very costly. Specific to Mathematics, Pezdek, Tiffany and Reno (2002) in their investigation concluded that increasing parents' knowledge of their children's mathematical abilities is an important first move toward improving children's success in the subject. The researchers found that involvement of parents to help with homework increases greater motivation, responsibility, sense of self, and trust are all aided by the depth and quality of learning. Both of these variables contribute to a higher level of achievement.

In Britain, studies illustrated that parental interest and participation in their children's learning were more significant than parental education and social status in explaining learners' academic achievement at 16 years (Feinstein & Symons, 1999). Melhuish and Petrogiannis (2006), observe that countries such as China also have noted the significant importance of engagement of parents during the preschool experience and early years of education.

In Africa, Nyarko (2011) reported positive academic performance for youths with parents who were enthusiastic about and being lively concerning the way they were taking their academics at home by a study undertaken in Ghana. This is supported by Chowa et al. (2013) who discovered that parents taking participative role concerning about the education of their children either home or in school was statistically and significantly explains their academic performance. Specifically,

their involvement at-home was observed to be positively linked to their academic performance. A similar study in Namibia also revealed that engaging parents contributed positively on the way children performed academically irrespective of family social and economic background (Erlendsdóttir, 2010). Corroborating evidence was also reported for Senegal, Malawi, Burundi and Uganda in a study commissioned by Institute of Education and ActionAid (Marphatia, Edge, Legault & Archer, 2010).

The significance of parental support to children's learning therefore informs the need for studies in developing countries such Kenya in which achievement in subjects such as Mathematics continue to be a challenge to a majority of learners with many posting below average scores at the formative and summative levels of assessment (Nyabuto & Njoroge, 2014). Notwithstanding its importance, Evidence suggests that in the country's 8-4-4 educational system, mathematics performance has stayed low compared to other subjects (Nyabuto & Njoroge, 2014). Within the country, the topic is regarded as crucial in terms of supplying the current market full of individuals who can have an effective contribution towards the ever advancing technology being required by the country so as to be an industrialized nation envisioned in the Sustainable Development Goals (SDGs) and vision 2030 (Birgen, 2004). It has therefore been suggested that concerted effort be put to advance strategies aimed at enhancing learner achievement in the subject. Amongst the strategies is the concern by the parents about the improvement of education of their children.

Having parents participate on the matters concerning the education of their children is not a new idea in Kenya. According to Kimu (2012), since independence, parents within the country have been keenly and aggressively interested in educational matters of their children. Accordingly, the researcher has been manifested in various support services both at home and in school which they have and continue to provide as a way of buffering up the government's effort in provision of education to their children. This assertion is supported by among others Ngaroga (2006) as well as Republic of Kenya (2007). In corroborating this, Nyabuto and Njoroge (2014) emphasized the parents do contribute immensely towards the education of their children especially in mathematics noting that their efforts are important in improving their children's grades in subject. However, much of the existing data are general to parental involvement across the board and is not specific to their involvement in early childhood education, an area that this study sought to specifically focus on. The studies have also done little with regard to the variables that affect parental involvement levels. Particularly, on the function played by the demographic variables in getting parent involved about learning mathematics learning has received little attention, especially in Kenya. This study therefore sought to make a contribution in the ongoing debate by assessing the influence of parents' demographic characteristics on their participation on learning mathematics by children with a special emphasis on Kwale County.

1.2 Statement of the Problem

The persistent poor mathematics achievement and other related subjects in the Kenya Certificate of Primary Education (KCPE) by a majority of learners continue to concern education stakeholders including the Government of Kenya. The trend in poor performance at the lower primary school level which serves as the foundation is believed to be one of the probable causes of poor achievement in Mathematics and Science subjects at higher levels. As a result, science and technology-related areas are underutilized. This, it is said, may be one of the major roadblocks to achieving development goals by the country since it continues to contribute in denying Kwale County in particular and the country in general competent graduates in science and technology related fields.

That even with the implementation of various interventions including curriculum review, the trend continues unabated is worrying and calls for urgent but lasting solution. Among the possible solutions, is a look at the foundation that children get during their pre-school and early primary education that collectively constitutes early childhood education, with specific focus on Mathematics. Since most of the existing interventions have tended to revolve around the child's school learning environment including contribution of learner, teacher and school related factors, a look at the home, and or home-school interphase could enrich the discourse, particularly as regards the role that parents play. Currently, this discussion is hampered by limited empirical data that specifically provide an insight on the extent and influence of parental support to pupils' learning Mathematics with a bias in the early phases of the child's academic life in the

country. This study thus sought to contribute to this discourse by determining the impact of parental demographic factors on their children's learning Lower primary mathematics, with an emphasis on public schools in Kwale County.

1.3 Purpose of the Study

The study aimed at determining how parents' demographic factors has an impact on their involvement in their children's learning Mathematics, thereby providing information that may be useful in designing possible intervention strategies to enhance achievement in Mathematics.

1.4 Objectives of the Study

- i. Establish the level at which parents are involved to support their lower primary school children's learning Mathematics.
- ii. Determine the way in which parents' demographic factors influence them getting involved in their lower primary school children's learning mathematics.
- iii. Find out the challenges faced by the parents when getting involved in their lower primary school children's learning mathematics.

1.5 Research Question

- i. What is the level at which parents are involved to support their lower primary school children's learning Mathematics?
- ii. What challenges do parents encounter in the course of their involvement in their lower primary school children's learning mathematics?

1.6 Research Hypothesis

H₀₁: Parents' demographic factors do not significantly influence their involvement in their lower primary school children's learning mathematics.

1.7 Significance of the Study

The results would aid in the improvement of mathematics learning as a foundation for Science and Technology related careers. It will therefore benefit the following:

- i. Parents by informing them on best approaches for increasing their participation in learning mathematics by their children to ensure conducive and sustainable home-school learning environment for improved learning and ultimately achievement in mathematics.
- ii. Administrators in schools are likely to gain from guidance on the best approaches to take in order to create an enabling atmosphere for parental sponsorship of learning mathematics by children in order to enhance their success in the subject.

1.8 Delimitations and Limitations of the Study

The study was restricted to an analysis of a few parameters and was faced with various issues as described below.

1.8.1 Delimitations

Although there are public and private schools within Kwale County, only public schools were involved in the study due to the perceived challenges that children in these schools face. Secondly, whereas early childhood phase incorporates learners from the pre-unit level to class three, the study was confined to class three learners only. This choice was justified by the fact that this is the class in which serious

mathematical operations begin. Lastly, Despite the fact that parental support is expected for all subjects under the current primary school program, the study focused on support directed toward teachers at learning mathematics due to its perceived importance.

1.8.2 Limitations

The study was expected to face a number of limitations. First and foremost, validity of the information anticipated from the respondents may limit the study since some respondents could provide false information. This was overcome by seeking data from a wide range of respondents through triangulation. Secondly, tools for data collection could have restricted the study especially due to the fact that they contained items that had not been validated. This was overcome by piloting the instruments to ascertain their reliability and validity. Lastly, study locale being just in 1 County could limit generalization of study results. This countered by ensuring adoption of good sampling techniques such as purposive and stratified random samplings which are deemed to be good sampling techniques capable of providing valid data for generalization.

1.9 Assumption of the Study

During the research, it was believed that primary schools in Kwale County employ strategies aimed at getting parents involved about the learning of their children. At the same time, this study assumed that teachers foster a conducive atmosphere for parental involvement. Furthermore, the study hypothesized that parents would be

readily available, supportive, and willing to help their children both in schools and at their individual homes.

1.10 Theoretical and Conceptual Framework

This section deals with the theory as well as the hypothesized conceptual framework and their relationship with the research concept. The theory discussed is the Ecological Systems Theory.

1.10.1 Theoretical Framework

The study is based on Ecological Systems Theory by Urie Bronfenbrenner (Bronfenbrenner, 1995). The theory human in an effort to justify development during the early childhood phase considers the role that the environment within which the child exists plays. It posits that a child is grows up in an environment with a complex of layers, each influencing the development of the child. Components of the environment consequently affected the child's development. An understanding of the child's development would thus be best achieved by analysis of the context of numerous settings, also known as ecological systems. According to Bronfenbrenner, the environment within which children are born and brought up is made up of an ecosystem ranging from the immediate and moving outward from the most intimate home ecological environment to the school system, community, and culture not only can these processes communicate and affect one another, but they also influence one another but also the child's life. He divided the environment into five external impact levels, two of which are important to this research. The two levels directly applicable in this study are the microsystems and mesosystems.

Microsystem forms the first and immediate environment around the child. Its components include home, The child's school or daycare, his or her peers, and the society in which they live. Personal relationships with parents, siblings, peers, teachers, and caregivers are all part of this environment's interactions. The quality of interaction between each member of the stratum individually. Equally, response that each member either individually or collectively receives from the child will also have an impact on how they handle the child. Consequently, Bronfenbrenner advocates for experiences and relationships that are more caring and cooperative within this stratum for improved development of the child.

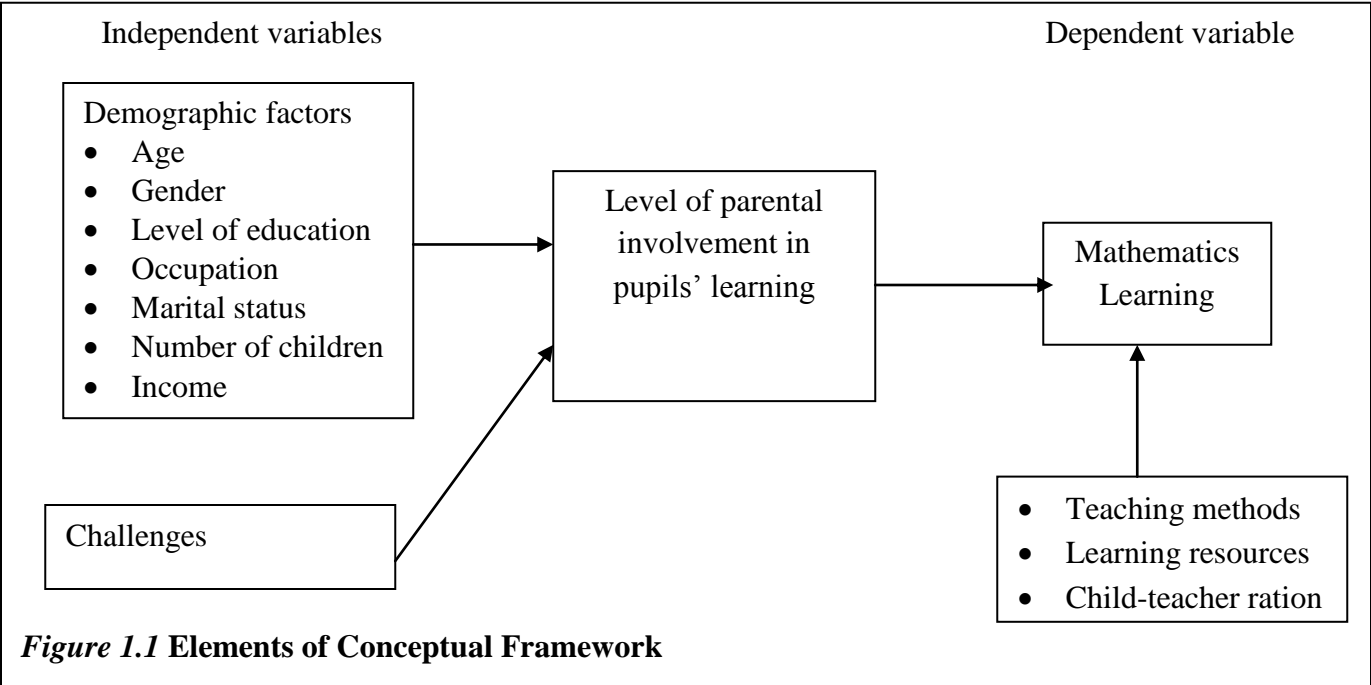
The mesosystem on its part constitutes the second stratum of the child's ecosystem. It is made up of the interaction of two or more microsystems in which the child lives. In essence, it entails connections between home and school, friends and family, or family and church. Parents who participate in their children's events actively like inviting their friends over to their house and who stay with children often form healthy connection with their children which aid in the child's development. On the contrary those who do not participate in their child's activities make themselves detached from them making their children experiences disequilibrium and conflicting emotions which affect their development negatively.

The theory was found to directly fit the expectations of this study in a number of ways. To begin with, the main aim of parents' participation in their children's

education is to have a supporting environment for intellectual development critical for learning. The theory advocates for parents active involvement in enriching the micro and mesosystems for the children's enhanced performance. More importantly, the theory provides the rationale for the engagement of parents as models especially for those children at the critical age of character development.

1.10.2 Conceptual Framework

The study considers several elements as predictors of parental involvement to support their children learning mathematics and conceptualizes their interaction as illustrated in Figure 1.1. According to information contained in the figure, the study aimed at assessing parent's demographic characteristics influence on the way they participated in learning of mathematics by their children in public schools. Study proposed that children's learning Mathematics which was the dependent variable was influenced by parental involvement. Parental involvement was however dependent on the parents' demographic factors such as age, gender, level of education, marital status, occupation as well as their income in the direction shown by the arrows. At the same time, various challenges could contribute inhibiting the level of parental involvement.



1.11 Operational Definition of Terms

Achievement in mathematics: The competency level attained in mathematics measured in terms of pupils' scores in class tests.

Low achievement: A mathematics achievement rating that is less than 30 percent on a standardized class exam is considered unsatisfactory.

Parent: Adults with children in class three in public schools in Kwale County.

Parental involvement: The way in which parents are engaged on matters concerning learning in mathematics by their children either helping them with assignments, giving them work or ensuring that such work is done.

Public Schools: Government-funded schools through deployment of human resource and other related logistics in Kwale County.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter provides a review of literature related to parental involvement in pupils' learning and its ultimate influence of their achievement in Mathematics. It entails a review of literature related to level of involvement of parents to pupils' learning, predictors of parental involvement in pupils' learning, challenges faced by parents when involved and the gaps in existing literature.

2.2 Level of Parental Involvement in their Children's Learning of Mathematics

The need to enhance student learning outcome in the recent past due to reported poor achievement has led to calls for concerted remedial measures including parents getting involved on education of the children (Hoover-Dempsey, Battiato, Walker, Reed, DeJong & Jones, 2005). The call for increased parental involvement has been prompted by study findings linking involvement of parents to learning activities of their children such as helping with homework with improved achievement as well as improved personal attributes. This is in line with observations of social cognitive theorists who had earlier suggested that learning on messages by children concerning acceptable behavior and social goals derived from individual who matter in their life, including parents, by watching and communicating with them (Bandura, 1977 as cited in Chowa et al., 2013). Similarly, empirical literature demonstrate gives an evidence that parent have the capability of modeling an attitude positively and the way they children can behave

when at school (Fan & Chen; 2001 and Jeynes, 2003, 2007). At the same time, parents' involvement has been linked to academic success of their children since it has been shown that showing children that they are interested about the school work and also assisting them when doing school assignments at home and are willing to keep them responsible for completing school assignments, these children have a higher likelihood of applying to themselves and perform well.

Similarly, conducive home environment whereby parents are part of the educational matters of the children is linked with learner's academic success. Cotton and Wikelund (1989) pointed out that the home and family atmosphere affected much performance of children's academics. According to the researchers, greater achievement is more probable if the influence is "harnessed," earlier in the child's academic life. It was their contention that early childhood education programs with enhanced involvement of parents have vindicated time and resources invested in the program. At the same time, they demonstrated that the benefits that accrue due to parental involvement increase with the level of involvement, the more the level the more the benefits. This influence was found to cut across all levels of parental participation, as well as learners of all types and ages. Other researchers who support this observation include Edwards and Alldred (2000), Richardson (2009), Sanders and Sheldon (2009), Sheldon (2009). In particular, Sanders and Sheldon (2009) established that academic success is more probable for learners with more supportive home environments.

The Department of Education in the United States conducted studies in 2004 linked higher rates of attendance, participation and educational attainment

including pass rates as transition to learners whose parents are more involved irrespective of parents' social and economic position. Similarly, Obeidat and Al-Hassan (2009) observed that children who were more occupied with parents not only succeed much academically, but they are also more likely to improve social skills and conduct themselves well. Research also shows that parents getting involved with the education of the children should aim at improving children learning together with their development (Erlendsdóttir, 2010). In general, studies indicate it is essential for parents to be involved on matters concerning the education of the children.

Relative to attainment of specific learning outcomes, Bradley (2002) observed that practices by parents including reading for children; speaking in complex language, being receptive, and being warm in interactions are all linked to improved developmental outcomes. Melhuish et al. (2008) on their part found that by parents involving themselves in certain activities such as linking letters to sounds, they help their children's to develop special skills that motivate and enable them develop special ability important in predicting learning outcomes. Similarly, some studies indicate that parental involvement impacts mastery of literacy skills and reading preschoolers and students in the first grades of elementary school (Sheldon, 2009; Sanders & Sheldon, 2009). Corroborating findings were reported in learning and achievement in sciences (Senler & Sungur, 2009). In particular, the researchers found that parental intervention affects how children view the subject and, as a result, their attitude toward it. At the same time, they ascertained that parental involvement contribute positively to achievement in science.

With regard to mathematics, empirical data show that parental involvement directly predict learner's mathematics achievement especially among learners in early childhood levels (Sanders & Sheldon, 2009; Yan & Lin, 2005). According to the researchers, Parents who actively participate on the education of children predispose the children to do better and achieve more in mathematics than other children. Parental participation, according to Sirvani (2007), plays a significant role concerning academic achievement of students at primary level together with those at secondary school level. Furthermore, such students have a higher likelihood of pursuing mathematics in their future (Sheldon, 2009). Yan and Lin (2005) observe that achievement in mathematics largely depends on the high standard of parents. Furthermore, there is an existence of a body that is significant in showing that home environment has a great influence not only their academic performance, skill and attitudes toward mathematics is also a determining factor (Sheldon, 2009). According to Sanders and Sheldon (2009), schools and home partnership and support are critical for math achievement because how parents become social to children significantly influences the way they perceive their self skills and accomplishment.

As per a number of research, the way children perceive mathematics ha a close association with the way parents interpret own ability in the subject more than grades they receive (Bleeker & Jacobs, 2004; Glasgow & Whitney, 2009; Sheldon, 2009; Sanders & Sheldon, 2009). In explaining this observation, Bleeker and Jacobs (2004) assert that the psychological consequences are significant in explaining learners' achievement in the subject. Additionally, children own

perception about their capability in a subject have an effect on their subsequent career choices. Gal and Stoudt (in Sanders & Sheldon, 2009) and Sheldon (2009) emphasize the role of schools in fostering positive family partnerships and reaching out to parents when it comes to learning mathematics. According to studies, many families need assistance and support in their relationships with their children as regards mathematics learning (Sheldon, 2009). This is due to the fact that some parents are said to lack trust on own capability in assisting children in challenges they face in mathematics. Furthermore, there is a clear indication that the method being used in teaching mathematics has really changed due to the fact that a number of parents have attended school (Glasgow & Whitney, 2009). As a result, there is a great importance for schools to incorporate activities and partner with the parents. Regrettably, this is rarely achieved. In their analysis, Baker, Gersten, and Lee (in Sanders & Sheldon, 2009) discovered that few mathematics programs make an effort to communicate with parents. They argue that this lack of parental involvement contradicts research findings that show that getting parents involved on learning of mathematics by the children increases their subject success.

Globally, existing literature indicates attempts by researchers to underscore the level at which parents are engaged with the education of children. Holloway et al. (2008:2) parents in countries that are developing for instance Japan and the United States of America are typically optimistic in participating in the educational matters of the children as they had a better education in assisting their children with their schooling, according to the study. Menheere and Hooge (2010)

examined how parental involvement in intrinsic motivation for learning was related to educational performance of 3rd and 4th grade children in Romania and found that school performance is strongly linked to parental involvement and intrinsic motivation. Khajehpour and Ghazvini (2011) looked at how parental participation had an impact on children's academic success in Tehran and discovered that only about half of the parents participated.

Maluleke (2014) conducted a study in Africa to determine the level at which parental participation of the education of children in Vhembe region in Limpopo Province in South Africa observed that few parents acknowledged as highly concerned with learning of the children. Page (2016) found that parental engagement would positively affect primary school learners' academic achievement in a study that looked at how parents contributed to the success in academics of the children coming from primary school in Cape Town with disadvantaged past. This was corroborated by Yaro (2015) in a qualitative study in a rural Community, Ghana. In a report on the impact of parental participation in education, Erlendsdóttir (2010) used a case study in Namibia to show that parents were very fascinated by their children's education and had high hopes for his or her children's education and future.

In Kenya, precise literature on degree of parental involvement in pupils' learning mathematics in the early childhood education is minimal. Literature that generally describes involvement of parents in their children's education in the country include Kimu (2012) who say that in Kenya, the majority of family involvement in education is restricted to monetary contributions and teacher-parent meetings.

Nyabuto and Njoroge (2014), as part of a report on parental participation in children's mathematics success in Kenyan public primary schools and concluded that parents' factors affecting students' math success providing a child with mathematics learning materials, proper stationery, supporting them with homework, following up on their schoolwork, and participating in school meetings and functions are just a few examples. The study aimed to make a contribution by focusing on the extent of parental participation in their children's mathematics learning in early childhood education, with a particular emphasis on public primary schools in Kwale County.

2.3 Parents' Demographic Factors and their Involvement in their Children's' Learning Mathematics

Parents' socioeconomic status is associated with their participation in their children's education. Age, gender, education level, marital status, and the number of children has been demonstrated to be a strong predictor of parental involvement in their children's education. Parent's occupation and level of income parental involvement in their children's education has also been connected to success. Specifically, findings by Eccles and Harold (1993), family indicators including family income, academic qualification, and marital status are linked to engagement of parents in their children's education. Other factors advanced include parent's age and gender, number of children as well as their occupation. In particular, the researchers observed that well educated parents are more involved as compared to those who have little or no education.

At the same time, Toldson and Lemmons (2013) illustrated that parents' level of education has a significant relationship with their involvement. Parents without a high school diploma had a three-fold lower chance of having a college diploma than parents with a high school diploma to attend their children's school. They came to the conclusion that a low-income African American parent's level of education was a significant predictor of school-based participation. This observation is similar to findings by Hayes (2011), Terriquez (2007) Hoover-Dempsey and Sandler (1997) and Lareau (2011). In explaining this observation, According to Lareau (1996), parents with less years of schooling are more likely to have negative interactions with schools and thus are ill-equipped to challenge the teacher or school. According to some studies, when it comes to their involvement in their children's education, less-educated parents may have lower levels of self-efficacy (Hoover-Dempsey & Sandler, 1997; Lareau, 2011). At the same time, in comparison to parents who have received little or no formal education, Eccles and Harold (1993) revealed that parents with a higher education are more interested in their children's education. However, Smock and McCormick (1995) discovered that parental school participation did not differ significantly depending on the parent's educational level. Existing contradictions imply that more studies need to be done to verify the link between parents' educational attainment and interest in their children's education, a task that this study sought to undertake.

Studies on family size link household composition to parental involvement. For instance, According to some reports, parents with fewer children are more interested than those with many children (Balli, Demo & Wedman, 1998; Bernie

& Lall, 2008; Eccles & Harold, 1993). Similar observations are also attributed to Astone and McLanahan (1991) as well as Yaro (2015) who maintain that household composition is linked with parental involvement. Additionally, Toldson and Lemmons (2013) parents with more children were shown to be considerably less likely than parents with fewer children. with less children to attend school. All these studies are foreign based and may or may not explain the Kenyan situation, a task that this study sought to undertake.

Gender and marital status have also been found to predict parental level of involvement. Toldson and Lemmons (2013) in their study found significant differences among learners who grew up in homes with both a mother and a father, but only the mother, father only and nonparent guardians. Similarly, McLeod et al. (2008) discovered that children from two-parent households perform better on a variety of social metrics than children from single-parent homes. Coley (2008) discovered that children living with one parent at the age of 17, they were less likely than their two-parent counterparts to be in school. In another study, the involvement of a father was found to have a major positive relationship with self-esteem (Alston & Williams, 2002). In particular, it demonstrated that for parents in United States, lower-income parents are less likely to believe it is their responsibility to oversee their children's education, and they are less engaged in educational activities at home and at school. According to the report, these parents were primarily less educated, had less skills and experience, and thus had little to give in the way of parental support to the school and their child. This study sought

to give the Kenyan perspective of the influence parents' gender and marital status on their involvement in their children's learning.

Although some studies have shown that a parent's job status has little impact on their children's learning, others have discovered that it has a significant impact on parents' visits to the school. Nyarko (2011) claims that there is a statistically significant link between a mother's engagement and academic results. Many parents, Due to full- or part-time employment, Epstein and Dauber (1989) report low school-based engagement. Working full-time and becoming a monolingual Spanish speaker are connected to low levels of parental participation in their children's schools among Latino parents, according to studies (Terriquez, 2007). In contrast, Smock and McCormick (1995) discovered that parental school participation did not differ significantly depending on the parent's employment status. This study sought to contribute in furthering this line of research in order to ascertain the link between parents' employment status as a result of their involvement in their children's education.

Parents from better socioeconomic origins are more likely than parents from lower socioeconomic backgrounds to participate in their children's schooling. The chance of parents advocating for their children's placement in honors classes and actively controlling their children's education is linked to their level of education (Baker & Stevenson, 1986). Low-income parents, on the other hand, confront a plethora of challenges, including rigid work schedules, a paucity of resources, transportation issues, and the stress of living in blighted areas (Hill & Taylor, 2004). According to Lareau (11), parents of lower socioeconomic class in the United States are less

likely to believe that it is their responsibility to supervise their children's education and are less interested in educational activities at home and in school. Lower-income parents are more likely to be uneducated, which will restrict the skills and information they can offer to their child's school (Hoover-Dempsey et al., 2005). Finally, parents from low-income families are more likely to have jobs that require them to work long and irregular hours, limiting their ability to be engaged at home and at school (Heymann, 2000; Hoover-Dempsey et al., 2005). Hill and Taylor (2004) lamented how difficult it is to encourage parents of children who would benefit most from parental involvement to get involved and stay involved. Smock and McCormick (1995), who found no significant differences in parental school participation based on income, have contradictory findings. This study sought to provide the Kenyan perspective by assessing the relationship between parental involvements in children's learning Mathematics and their demographic factors with a specific focus on children in early childhood education in public schools within Kwale County.

2.4 Challenges of Parental Involvement in their Children's Learning Mathematics

A number of factors have been reported to put a stumbling block in the way of parents' involvement in their children's education (Obeidat & Al-Hassan, 2009; Christenson & Sheridan, 2001). According to these researchers, the challenges affect the formation of school-home community partnership. The challenges include misconception about teachers and parents desire for support to pupils' learning (Glasgow & Whitney, 2009), time and financial constraints (Christenson & Sheridan, 2001) and parental characteristics and experiences (Eccles & Harold,

1993). According to Glasgow and Whitney (2009), Parents and teachers frequently misunderstand one other's true motivations and support for parental participation. The misconception is attributed to non-response by parents from school to communication. Teachers may mistakenly believe that such parents are uninterested or uncommitted in their children's education. Parents, on the other hand, believe that teachers do not want them to participate in their children's learning. The problem is made worse by some parents and teachers' perceptions that some students do not value or accept parental involvement.

In reality, according to Richardson (2009), there is a group of teachers who believe parents are not required to participate in their children's education. Once a parent has sent their child to kindergarten, according to such teachers, it should be the school's sole duty to ensure that the child succeeds. Involving parents is too complex and time-consuming for certain teachers. As a result, they actively discourage parents to get too involved. At the same time negative school experiences by parents attributed to poor relationship with the school may also jeopardize parental involvement especially when such negative relationship emanates from the child's class teacher (Graham-Clay, 2005; Richardson, 2009). Indeed, parents may be unaware of how to communicate effectively with the school system.

Evidence also shows that financial as well as time constraints are factors that inhibit meaningful interaction of teachers and parents and thus have a negative impact on parents' involvement in their children's education (Christenson &

Sheridan, 2001). This is due to the effects of parents' work schedules, which often clash with school activities, preventing parents from attending to their children's school related activities. This observation is also expressed by Lindle (1989), Ndani (2008) and Nichols and Read (2002). Parental characteristics as well as their experiences have also linked with minimal or a lack of interest on the part of parents in their children's education (Eccles & Harold, 1993). Parents' involvement in their children's learning has been demonstrated to be negatively impacted by a lack of time, energy, limited financial resources, lack of information, feelings of ineptitude, failure to grasp the role that parents can play, or a lengthy history of unpleasant encounters with schools. Heldebrand (1981) as cited by Ndani (2008) in corroborating this observation adds that parents whose children fail in school activities usually feel embarrassed and they even miss going to school to keep track of their children activities. Similarly, the researcher contends that factors Bad reporting practices and animosity toward parents have been blamed on school and teacher attributes and characteristics also contribute to parents' level of involvement. In particular, Ndani (2008) established that the sense of ownership of the school by parents and the invitation of teachers both help to the level of their involvement. This study sought to provide the Kenyan perspective by documenting factors that could be preventing parents from participating in their children's mathematics education, with an emphasis on class three children in primary schools in Kwale County.

2.5 Summary

Parental participation in children's learning, especially in subjects like mathematics is of great importance in enhancing learner achievement in the subject. This is even more important considering the significance of the subject in learners' future career prospects. School leadership is one of the aspects that is thought to play a significant effect in parents' involvement in their children's education. However, the extent to which parent's demographic factors in Kenya, the effects of parents' involvement in their children's education are mainly unknown. This study was meant to address the gap through the examination of the impact of parents' demographic factors on their participation in their children's learning in lower primary school. Mathematics with a special emphasis on lower primary school students from Kwale County public schools. The emphasis of the chapter was a review of the literature on parental participation in children's learning mathematics. It includes a study of the literature on parental involvement in children's learning, as well as the impact of demographic influences on parental involvement and gaps in the current literature.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter outlines the research methods to be used by the researcher when gathering data for the analysis. It gives information about the proposed research design, the study locale, target population as well as the sample size. It also contains the sampling procedure to be used, the instruments for data collection and the anticipated method for data collection and analysis as well as issues of ethical consideration.

3.2 Research Design

A descriptive survey research design was used in this study. The researcher wanted to understand more about the elements that influence parents' involvement in their children's education. Mathematics at public primary schools in Kwale County, with a special focus on parents of class three students. The design adopted is appropriate as suggested by Robson (2002) who believe that descriptive research is sufficient when the aim is to provide precise statistical data on how often, how many, and how often a phenomenon occurs. Similarly, Orodho (2009) described a descriptive study as an investigation into who, what, which, and how a phenomenon that is the subject of the proposed study occurs.

3.2.1 Variables

The independent variables of the study comprised parents' demographic factors including age, gender, level of education, occupation, and marital status. Other

demographic factors include number of children and level of income. Meanwhile, parental involvement in their children's education has never been higher. and challenges were other factors that were considered. The dependent variable was children's learning Mathematics. Each of the demographic variables were measured as a categorical variable with gender being classified as male and female, age was categorised as below 30, 30 – 45 and above 45 and level of education was categorised into those with no formal education, those with Primary, Secondary, College and University education. Parental occupation on its part was clustered into 3 categories: formal employment, business and peasant farmers. Marital status was viewed from a dichotomy of either being single or married while the number of children was categorised as less than 3, 3-5 and more than 5. Lastly, estimated family monthly income was grouped into 3 clusters: less than Ksh. 15,000; 15,000-45,000 and more than 45,000.

3.2.2 Research Methodology

The study adopted the mixed method which sought to gather both qualitative and quantitative data. Use of questionnaires was done in collecting data in quantitative nature. This data was used in determining the relationship between parental demographic variables and their participation in their children's learning in mathematics. Qualitative data was obtained with the use of interview schedule and thematically analyzed. The study was also deductive in nature and aimed at making generalization.

3.3 Location of the Study

The research was carried out in Kwale County, Kenya's Coastal Area. Kwale County was selected as the study location due to reported poor performance of a majority of learners in mathematics. The trend of poor performance in the subject that persists implied that a majority of learners transiting public schools in areas such as Kwale by achieving low grades in mathematics have their future careers being jeopardized. Efforts aimed at reversing the trend has required the Kenyan government, in partnership with other stakeholders, to deploy a variety of student-focused programs, teachers, and the overall teaching and learning environment. Despite these efforts, Kwale County continues to underperform the national average, with lower mean scores being registered year after year. As a result, a research on the impact of parental demographic factors on their children's learning mathematics.

3.4 Target population

The study targeted the total number of parents with children in grade three in public primary schools within Kwale County, mathematics teachers of class three and respective school head teachers. The distribution of each of the population targeted is as summarised in Table 3.1.

Table 3.1 Target Population

Sub-county	Schools	Head teachers	Std. 3 Teachers	Std. 3 Parents
Matuga	100	100	139	5,000
Msambweni	136	136	214	7,520
Kinango	159	159	232	6,526
Total	395	395	585	19,046

Source: Kwale County Education Office, 2016.

Data obtained from the county office indicated that there were a total of 395 head teachers, 585 class three mathematics teachers and an estimated 19,046 parents drawn from 395 schools within the County. Thus the total population targeted for this study was 20,026.

3.5 Sampling Technique and Sample Size

This section contains information on how the sample was determined from target population and the sampling technique.

3.5.1 Sample Size Determination

Determination of the size of the sample was done using a formula by the Yamane's (1973). The method is:

$$n = N / (1 + Ne^2) \text{ where;}$$

n= the sample size; N= the size of population; e= the error of 5 percentage points.

$$n = 20,026 / (1 + 20,026 \times 0.05^2)$$

$$= 392.1668 = 393$$

Each category of respondents was determined proportionately using n/N ratio i.e

$$\text{Parents} = 19,046 \times 393 / 20,026 = 374$$

$$\text{H/Teachers} = 395 \times 393 / 20,026 = 8$$

$$\text{Teachers} = 585 \times 393 / 20,026 = 11$$

3.5.2 Sampling Procedure

Selection of the respondents was done using stratified technique and random sampling technique. This strategy was adopted with the idea that the study targeted different respondents at different locations (parents, teachers and head teachers), The approach would ensure that subgroups that would otherwise be excluded completely by other sampling methods due to their small numbers in the population would be included in the study (Byrne, 2011). Sampling proceeded in phases beginning with the county, school and lastly study respondents (head teacher, class 3 Mathematics teacher and parents).

County: Kwale County was proposed as the research site purposively.

School: The selection of school from where head teachers, class 3 Mathematics teachers and involvement of parents in the research are to be drawn was done through stratified random sampling based on number of schools in each Sub County. Once a school had been sampled, the head teacher of the school was picked purposively. With regard to teachers and parents, sampling proceeded based on class 3 streaming in the school. In schools with only one stream for class 3 with 50 or less children, the Mathematics teacher and all the parents were sampled purposively. In case there was more than one stream for the class in a school, simple random sampling was used to select the stream to be used as sampling point. The calculated sample size of 393 was attained as summarized in Table 3.2.

Table 3.2 Sampling Grid

Sub-county	Target Population			Sample			
	Head Teachers	Teachers	Parents	Head Teachers	Teachers	Parents	Total
Matuga	100	139	5,000	2	2	98	
Msambweni	136	214	7,520	3	4	147	
Kinango	159	232	6,526	3	5	129	
Total Sample				8	11	374	393

From the sampling grid, the study sampled 11 class three Mathematics teachers, 8 head teachers as well as 374 class three parents from the three sub-counties within Kwale County proportionately to participate in the study making a total of 393 respondents as estimated.

3.6 Instruments

Collection of data was done using three instruments from sampled respondents. This constituted of two questionnaires; the first for parents and the second for Mathematics teachers. Data was collected from the sampled head teachers using an interview schedule.

3.6.1 Parents Questionnaire

This instrument was intended to determine the extent of parental involvement in their children's mathematics education. The questionnaire was of the following sections. The first section aimed to collect information on the parents' demographics. The second sought to identify their level of involvement in their children's mathematics learning using Likert type statements. The third which also contained Likert type statements sought to find out what factors it may be more challenging for parents to participate in their children's learning. In this case,

because it is straightforward to administer and allows the researcher to obtain meaningful data from a large number of people, a questionnaire is the best option for the researcher to collect data from the parents of the students. (Orodho, 2009). The questionnaire was self-administered for parents who could read and write while for those who cannot, it was administered with the help of the researcher. Appendix I includes a copy of the questionnaires.

3.6.2 Teachers Questionnaire

A questionnaire was provided to the class three Mathematics teachers in order to gather information on parents' involvement in their children's mathematics education. Items in this questionnaire were also categorized in three sections with the first section containing items aimed at collecting data on teachers' demographics. The second and third which are mainly Likert type statements were aimed at gathering data on the level of parental involvement in their children's mathematics learning and the barriers that hinder parents from participating in their children's learning. Appendix II of the proposal includes a copy of the questionnaires.

3.6.3 Head Teachers' Interview Schedule

A schedule of interviews was created in order to encourage a follow-up interview, especially with the head teachers in schools from where parents and Mathematics teachers had been sampled to take part in the study. This was considered to be important since enabled capture of administrative issues that could be impacting the process. The main issues dealt with in the schedule include trend of

achievement of the school in mathematics and schools policy on parental involvement in their children learning. Appendix III contains a copy of this instrument.

3.7 Pilot Study

A pilot study was done with the aim of gathering information needed to determine the testing instruments' reliability. A total of 78 respondents including 74 parents, 2 Mathematics teachers and 2 head teachers drawn from 2 public primary schools and were not allowed to take part in the final study were sampled to take part in the pilot study. This constitutes 20% of the population to be sampled for the study as advocated for by Kothari (2004). The results from the pilot study were used in assessing how the instruments were reliable.

3.7.1 Validity

The study measured content validity. To ensure that the research was done correctly, the researcher sought assistance from the Supervisor and other specialists that the instruments content were correct. from the Department of Early Childhood Education, Kenyatta University who commented on the elements in the instruments' suitability in relation to the study's objectives According to Kothari (2004), validity can be assessed by a jury of people who will assess how well the instruments follow the criteria. Based on the comments, the researcher made adjustments as recommended by the experts.

3.7.2 Reliability

The reliability of the testing instruments was determined using the test-retest process. This entailed giving the same instrument to the same group of people twice. The instruments were given out by the researcher to the same respondents twice within a period of two weeks. Each case's data was edited, coded, and fed into a computer for Cronbach alpha reliability analysis. With the aid of Statistical Package for Social Science version 22 computer software, the Cronbach alpha of the instrument was determined which highlighted on the reliability of the instruments. Table 3.3 presents a summary of the data obtained.

Table 3.3 Reliability of Research Instrument

Variable	N	Cronbach Alpha
Parental involvement in learning their children's learning mathematics	6	0.732
Factors influencing parental involvement	7	0.702

Results presented in Table 3.3 demonstrate that the questionnaire items for each of the variables had a reliability index greater than 0.7000. Any reliability of 0.7000 or higher is considered to be an acceptable degree of instrument reliability, so the questionnaire items were deemed accurate (Kothari, 2004).

3.8 Data Collection Procedure

Once necessary authority has been obtained, the study proceeded in three phases. Phase one involved the researcher visiting sampled schools to introduce herself, sought permission to undertake the study and made appointment with class three Mathematics teachers as well as the head teachers. The researcher sought direction from the head teacher on how to best access parents sampled to take part in the

study. Phase two involved the researcher collecting data from parents sampled. Parents were presented with the questionnaire and requested to complete while the researcher waited. The third phase involved the researcher presenting grade 3 Mathematics teachers with their questionnaire to fill as the researcher waited. Lastly, the researcher sought audience with the school's head teachers in order to administer the head teacher's interview. The interview was carried out in form of discussion with the interviewees whose permission was sought to audio record the proceedings and notes taken should they decline to be audio recorded.

3.9 Data Analysis

Data was analyzed quantitatively as well as qualitatively. To evaluate qualitative data acquired from the head teachers via interviews, thematic analysis was applied. Thematic analysis is "a method of segmentation, categorization, and relinking of components of data prior to ultimate interpretation," according to Grbich (2007, p. 16). Quantitative information gathered from instructors and parents was edited, categorized, and analyzed using SPSS version 23 computer software based on the research objectives. The study had three objectives. The first objective sought to establish the level of involvement of parents in supporting their lower primary school children's learning of Mathematics. Data obtained for this objective was analyzed using frequencies and percentages.

The second objective sought to determine the influence of parents' demographic factors on their involvement in their children's learning of Mathematics. Data for this objective was analyzed using Chi square analysis and Contingency Coefficient

Measure of Association. The last objective sought to establish challenges impacting Involvement of parents in their children's learning of mathematics in Kwale County. Data for this objective was analyzed using frequency and percentages.

3.10 Logistical and Ethical Considerations

Logistical and ethical guidelines were followed since the researcher sought permission from the University, NACOSTI, the Kwale County Commissioner as well as the County Director of Education. The researcher sought permission to undertake the research from the University through the Department of Early Child Education review board in collaboration with Graduate School who provided a letter of authorization to undertake the research. Upon approval, the researcher obtained research permit from NACOSTI using the letter of authorization. The researcher then visited Kwale County Commissioner as well as the County Director of Education to obtain their approval to undertake the research within the County. At the same time, Each participant was asked for informed consent and given assurances of confidentiality, in addition to the right to decline or withdraw from the study at any moment. Respondents' names were never revealed in any way to preserve their privacy. Following the review, the report will be made available in the University library to those who wish to read it.

CHAPTER FOUR
PRESENTATION OF FINDINGS, INTERPRETATION AND
DISCUSSIONS

4.1 Introduction

This chapter describes the study's conclusions, explanations, and discussion in accordance with the study's objectives. The study's goal was to shed light on the following three objectives:

- i. Establish the level at which parents are involved to support their lower primary school children's learning Mathematics.
- ii. Determine the way in which parents' demographic factors influence them getting involved in their lower primary school children's learning mathematics.
- iii. Find out the challenges faced by the parents when getting involved in their lower primary school children's learning mathematics.

4.2 General and Demographic Information

The aim of the study was to see how demographic factors influenced parents' participation in their children's learning mathematics. The findings were intended to provide information that may be useful in designing possible intervention strategies to enhance achievement in Mathematics.

4.2.1 General Information

A descriptive survey research design was used to achieve the study's aim. A total of 357 class three parents, 16 Mathematics teachers and 8 head teachers of schools sampled participated in the study. Thus, a total of 381 respondents participated in

the study. Compared to the projected sample of 393 respondents, the study achieved a return rate of 96.95%. According to Babbie and Muoton (2002), a response rate of 50% or higher is appropriate for data analysis.

4.2.2 Demographic Information

Respondents' demographic information was reviewed based on respondents' category. For parents, information sought includes age, gender, level of education and marital status. Their employment status, number of children and monthly income were also sought. For mathematics teachers, information on gender, level of education and teaching experience was sought. Findings on each category of respondents are presented successively.

a. Parents' Demographic Information

Table 4.1 summarizes the results on parents' demographic statistics.

Table 4.1 Parents' Demographic Information

Demographic Variable	Measures	Frequency	Percentage
Age	Below 30	73	20.5
	30-45	199	55.9
	Above 45	84	23.6
	Total	356	100.0
Gender	Male	166	46.6
	Female	190	53.4
	Total	356	100.0
Level of education	None	82	23.0
	Primary	135	37.9
	Secondary	115	32.3
	College	17	4.8
	University	7	2.0
	Total	356	100.0
Marital status	Single	87	24.4
	Married	269	75.6
	Total	356	100.0
Employment status	Not employed	64	18.0
	Formally employed	114	32.0
	Self employed	178	50.0
	Total	356	100.0

No of children	Less than 3	122	34.3
	3-5	140	39.3
	More than 5	94	26.4
	Total	356	100.0
Av. Monthly income	Less than 15,000	276	77.5
	15,000-45,000	64	18.0
	More than 45,000	16	4.5
	Total	356	100.0

Data contained in Table 4.1 on the parents' age show that slightly more than half of the parents (55.9%) were 30 to 45 years old while those who were above 45 and those below 30 were more or less equal accounting for 23.6% and 20.5% respectively. As a result, most of the parents questioned were either young or nearing middle age.

With regard to their gender, a slight majority of the parents were females (53.4%) as compare to males implying that a growing number of female are concerned about their children's education compared to males. Information on level of education indicates that most of the parents that participated in the study were illiterate.. Specifically, it was observed that parents with no formal education only comprised 23% compared to 37.9% with either primary level of education or 32.3% with secondary level of education and 6.8% with either college or university education.

Information on marital status illustrates that a significant majority of the parents (75.6%) are married while slightly less than a quarter (24.4%) indicated that they are single. As regards parents' employment status, data obtained shows that a half of the parents were self-employed (50.0%), about a third were in formal

employment (32.0%) while the rest (18.0%) were unemployed. As a result, the vast majority of the parents were either self-employed or employed.

Data on size of the families especially with regard to number of children shows that most of the families were small in size with less than five children. In particular, it was observed that parents with less than 3 children were slightly more than a third (34.3%) which was more or less similar to those with between 3 and 5 children (39.4%) while slightly less than a third (26.4%) had more than 5 children. Lastly, information on family monthly income obtained illustrated that a majority of the families were poor and were struggling to make ends meet. Specifically, a majority of the families (77.5%) had a monthly income of less than Ksh. 15,000 compared to 18% who depended on between Ksh. 15,000 and 45,000 or 4.5% of the families whose monthly income was more than Ksh. 45,000.

b. Class Three Mathematics Teachers’ Demographic information

Findings on class three Mathematics teachers’ demographic information were as presented in Table 4.2.

Table 4.2 Teachers’ Demographic Information

Demographic Variable	Measures	Frequency	Percentage
Gender	Male	7	41.2
	Female	10	58.8
	Total	17	100.0
Level of education	P1	7	41.2
	Diploma	8	47.0
	Graduate	2	11.8
	Total	17	100.0
Teaching experience	Less than 5 years	2	11.8
	5-15	4	23.5
	More than 15	11	64.7
	Total	17	100.0

Information obtained show that based on gender, there were more female teachers (58.8%) compared to males. With regard to level of education, a majority of the teachers were either P1 or diploma holders (41.2% and 47.0% respectively) compared to those who graduates (11.8%) who very few. This is consistent with the requirements for recruitments as a primary school teacher within the country which prescribes P1 as the minimum qualification for recruitment for a primary school teacher. Lastly, four fifth (88.2%) of the teachers had served for more 5 years and therefore could be presumed to have prerequisite experience to provide credible data for the study.

4.3 Parents' Level of Involvement

The first objective was to determine the extent of parental participation in their children's mathematics learning in lower primary school. A collection of six Likert scaled statements were used to assess the extent of parental involvement in their children's learning in mathematics. Data obtained was summarized using frequencies and percentages. Table 4.3 presents a summary of the research findings.

Table 4.3 Level of Parents' Involvement

Type of Involvement	Response (%)				
	Never	Rarely	Usually	Always	Total
I talk to my child about the need to put effort in his/her work in mathematics	39.9	27.0	23.3	9.8	100.0
I check my child's mathematics books to assess his/her progress in school	23.0	33.7	37.6	5.6	100.0
I check my child's mathematics books to ensure he/she has been given assignment	22.2	37.1	31.5	9.3	100.0
I supervise my child do his/her	26.4	23.9	40.4	9.3	100.0

mathematics assignment					
I assist my child on mathematics assignment given	26.4	23.9	40.4	9.3	100.0
I give my child additional work in mathematics	28.9	33.4	28.4	9.3	100.0
I involve my child in tasks and activities that promote learning of mathematics such as counting, building blocks etc.	27.2	34.6	27.2	11.0	100.0

Data obtained show that a majority of parents (66.9%) never or rarely talked to their children about the need to put effort in his/her work in mathematics. The rest (33.1%) either usually or always talked to them. In the meantime, quite a number of parents (56.7%) indicated that they never or rarely checked their children's mathematics books to assess their progress in school as compared to those who usually or always checked their children's books. Similar observation was reported with regard to checking their children's mathematics books to ensure they had, parents who did so accounting for 59.1% of the total while those who gave their child additional work in mathematics constituted 62.3%. Those who involved their child in tasks and activities that promote learning mathematics such as counting, building blocks made up 61.8% of the population. However, 50.3% of the parents indicated that they never or rarely supervise their children do their mathematics assignment or help their children with their mathematics assignment. Overall, the findings established that parents' level of involvement was relatively low. A majority of the parents (57.9%) acknowledged that they were not or only seldom involved. in their children's learning mathematics compared to 42.1% who were usually or always involved. Figure 4.8 summarizes class three parents' conception of their level of involvement.

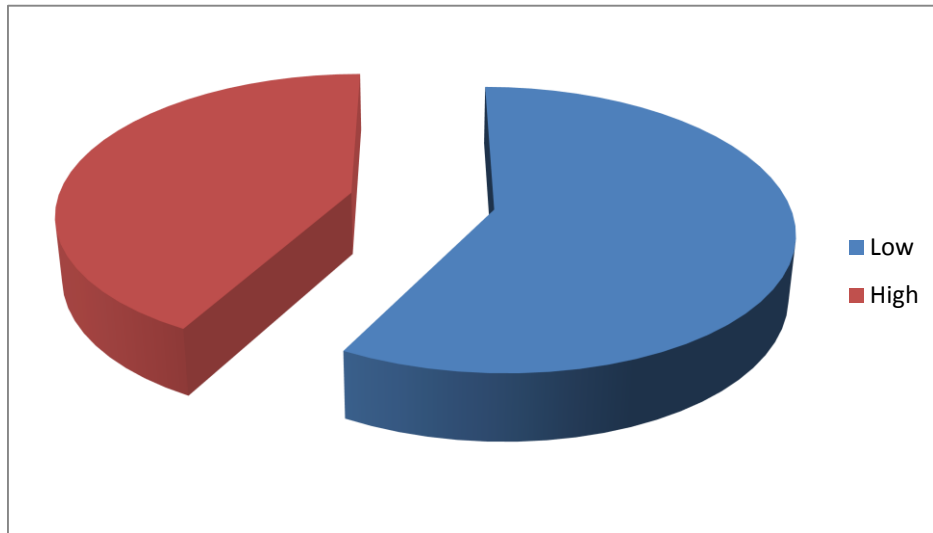


Figure 4.1 Parents' level of involvement

Generally, data obtained showed minimal Involvement of parents in their children's mathematics learning. This finding is consistent with observations by Maluleke (2014) who in a In the Vhembe district of South Africa's Limpopo Province, a research was conducted to determine the level of parental involvement in their children's education. It also mirrors assertions by Kimu (2012) who said that in Kenya, the majority of family involvement in education is restricted to monetary contributions and teacher-parent meetings. However, it contradicts In a case study in Namibia on the impacts of parental participation in education, Erlendsdóttir (2010) discovered that parents were deeply engaged with their children's education and had high hopes for their children's education and future.

4.4 Influence of Parents' Demographic Factors on their Involvement

The second objective sought to determine the influence of parents' demographic factors on their involvement in their lower primary school children's learning mathematics. Factors whose influence was tested include age, gender, level of education as well as employment status. The possible influence of number of

children a parent has, parent’s marital status as well as their monthly income was also sought. This section is optional since these variables were discussed in the previous section specifically discusses their influence on parents’ involvement.

4.4.1 Influence of Parents Age on their Involvement

Parents’ age was categorized as below 30 years, 30-45 and above 45 while their level of involvement was categorized as either low or high. To determine its influence, age was cross tabulated against involvement and subjected to Chi square analysis. Findings of this test are summarized in Table 4.4.

Table 4.4 Age and Parents’ Involvement

		Age			Total	
		Below 30	30-45	Above 45		
Level of involvement	Low	Count	42	124	40	206
		% of Total	11.8%	34.8%	11.2%	57.9%
	High	Count	31	75	44	150
		% of Total	8.7%	21.1%	12.4%	42.1%
Total		Count	73	199	84	356
		% of Total	20.5%	55.9%	23.6%	100.0%

Table 4.4 shows that more parents in the 30-45 year age range (34.8 percent) showed a low level of participation in their children's learning relative to 21.1% who reported high level of involvement. A similar trend was observed with regard to parents in the below 30 age bracket, more parents (11.8%) reporting low level of involvement compared to 8.7% who indicated high level of involvement. However, more parents (12.4%) aged 45 years and they were quite interested in their children's education above compared to other parents, to 11.2% whose level

of involvement was rated as low. Table 4.5 provides a summary of Chi square analysis.

Table 4.5 Influence of Parents' Age on their Involvement

	Value	Df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	5.234 ^a	2	.073	.120
Likelihood Ratio	5.199	2	.074	
Linear-by-Linear Association	1.827	1	.176	
N of Valid Cases	356			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 30.76.

The Chi square results in Table 4.5, $\{X^2=5.234; df=2; P=0.073\}$ indicates an insignificant influence of age on parents' level of involvement in their children's learning mathematics at 0.05 level of influence. Contingency coefficient measure of association shows 12.0% level of influence being attributed to age, those older being more involved as compared to their younger counterparts. This implies that parents' age has no influence on their level of involvement in their children's learning mathematics.

4.4.2 Influence of Parents Gender on their Involvement

Similarly, parents' gender was cross tabulated against level of involvement to establish the extent of their involvement. Findings were as summarized in Table 4.6.

Table 4.6 Gender and Parents' Involvement

		Gender		Total	
		Male	Female		
Level of	Low	Count	98	108	206
		% of Total	27.5%	30.3%	57.9%
	High	Count	68	82	150

involvement				
	% of	19.1%	23.0%	42.1%
	Total			
Total	Count	166	190	356
	% of	46.6%	53.4%	100.0%
	Total			

From the data contained in Table 4.6, more females reported low involvement (30.3%) compared 23.0% who reported being highly involved in their children’s learning mathematics. Similarly, more males reported low levels of involvement (27.5%) compared to 19.1% who indicated being highly involved in their children’s learning mathematics. Results of Chi square analysis were as presented in Table 4.7.

Table 4.7 Influence of Parents’ Gender on their Involvement

	Value	df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	.175 ^a	1	.676	.022
Continuity Correction ^b	.097	1	.756	
Likelihood Ratio	.175	1	.676	
Linear-by-Linear Association	.174	1	.676	
N of Valid Cases	356			

The Chi square results, ($X^2=.175$; $df=1$; $P=0.676$) in Table 4.7 indicates an insignificant influence of gender on parents’ level of involvement at 0.05 level of significance. Contingency coefficient ($C= 0.022$) measure of association imply that a paltry 2.2% in variation in involvement could be accounted for by gender. The findings suggest that the gender of parents has little bearing on their participation in their children's education. It contradicts Nyarko’s (2011) as well as Toldson and Lemmons (2013) who discovered a statistically significant connection between a mother's involvement and academic achievement. Toldson and Lemmons (2013)

in particular found significant differences among learners who grew up in homes with both a mother and a father, mother only, father only and nonparent guardians.

4.4.3 Influence of Parent’s Level of education

Cross tabulation and Chi square analysis were used to investigate the impact of parents' educational levels on their participation in their children's math learning.

Tables 4.8 and 4.9 summarize the findings.

Table 4.8 *Level of Education and Parents’ Involvement in their Children’s Learning*

			Highest level of education					Total
			None	Primary	Secondary	College	University	
Level of involvement	Low	Count	47	84	72	0	3	206
		% of Total	13.2	23.6	20.2	0.0	0.8	57.9
	High	Count	35	51	43	17	4	150
		% of Total	9.8	14.3	12.1	4.8	1.1	42.1
	Total	Count	82	135	115	17	7	356
		% of Total	23.0	37.9	32.3	4.8	2.0	100.0

Results of the analysis contained in Table 4.8 shows that more parents with no education or basic education (primary and secondary) reported low involvement (13.2%, 23.6% and 20.2% respectively) compared to 9.8%, 14.3% and 12.1% respectively with high level of involvement. However more parents with college or University education (4.8% and 1.1%) reported being highly involved compared to 0.0% and 0.8% who were less involved. Table 4.9 contains the Chi square results obtained.

Table 4.9 *Influence of Parents’ Level of Education on their Involvement*

	Value	df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	26.116 ^a	4	.000	.261
Likelihood Ratio	32.169	4	.000	
Linear-by-Linear	3.824	1	.051	

Association	
N of Valid Cases	356

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.95.

The Chi-square results $\{X^2 = 26.12; df=4; P<0.001\}$ in Table 4.9 indicates that parents' level of education significantly influences their level of participation in their children's mathematics learning at 0.05 level of significance. Further analysis using contingency coefficient ($C= 0.261$) measure of association showed that the level of education of parents accounts for 26.1 percent of the overall difference in parental participation, with parents with a college or university education becoming more interested in their children's mathematics learning. This demonstrates that parental participation in their children's education varies depending on their educational level, those with basic education or no education at all being less involved compared to those with college or university level of education. Findings support observations by Toldson and Lemmons (2013) who demonstrated that the degree of education of parents has a significant impact on their participation. According to the researchers, mothers and fathers who did not complete high school visited their children's schools about three times less often than parents who earned a college degree. Other researchers with similar findings include Hayes (2011), Terriquez (2007) and Lareau (2011). In explaining this observation, According to Lareau (1996), parents with less years of schooling are more likely to have negative interactions with schools and thus are ill-equipped to challenge the teacher or school.

4.4.4 Influence of Parents' Marital Status

Influence of parents' marital status on their involvement in their children's learning mathematics was also sought by cross tabulation and Chi square analysis.

Findings were as summarized in Table 4.10 and 4.11.

Table 4.10 Marital Status and Parents' Involvement in Children's Learning

			Marital status		Total
			Single	Married	
Level of involvement	Low	Count	63	143	206
		% of Total	17.7%	40.2%	57.9%
	High	Count	24	126	150
		% of Total	6.7%	35.4%	42.1%
	Total	Count	87	269	356
		% of Total	24.4%	75.6%	100.0%

Information obtained show that twice as many parents who are married (40.2%) reported low level of involvement compared to 17.7% of single parents. Similarly, 35.4% of married parents reported high levels of involvement, which was over five times as many as the single parents, 6.7% of who reported high level of involvement. Table 4.11 provides a summary of Chi square results.

Table 4.11 Influence of Parents' Marital Status on their Involvement

	Value	Df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	9.995 ^a	1	.002	.165
Continuity Correction ^b	9.221	1	.002	
Likelihood Ratio	10.351	1	.001	
Linear-by-Linear Association	9.967	1	.002	
N of Valid Cases	356			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 36.66.

b. Computed only for a 2x2 table

The Chi-square results { $X^2 = 9.995$; $df=1$; $P=0.002$ } in Table 4.11 indicates that parents' marital status significantly influences their level of involvement in their

children’s learning mathematics at 0.05 level of significance. Contingency coefficient (C= 0.165) measure of association attributed 16.5% of the total variation in parents’ involvement to their marital status, married parents being more involved as compared to single parents. This means that according to a majority of parents, their marital status influences their level of involvement in their children’s learning mathematics. The findings supports observations by Georgiou (2007) who maintain that factors such as marital status have an influence on parental involvement. Children from single parent homes could be losing the fight for academic achievement in a number of ways, according to studies on family structure (Weitof, Hjern, & Rosen, 2004). Single parents, as the main and sometimes only source of financial support for their families, parents have less time to assist their children with their homework, are less likely to discipline them regularly, and have less parental engagement and influence.

4.4.5 Influence of Parent’s Employment Status

The influence of parents’ employment status on their involvement in their children’s learning mathematics was also assessed by cross tabulating parent’s employment status against their involvement.

Table 4.12 *Employment Status and Parents’ Involvement in Children’s Learning*

		Employment status			Total
		Not employed	Formally employed	Self employed	
Low	Count	42	66	98	206
	% of Total	11.8%	18.5%	27.5%	57.9%

Level of involvement	High	Count	22	48	80	150
		% of Total	6.2%	13.5%	22.5%	42.1%
Total		Count	64	114	178	356
		% of Total	18.0%	32.0%	50.0%	100.0%

Table 4.12 contains information on the relationship between employment status and parents' involvement in their children's learning mathematics. Results show that more of self-employed parents (27.5%) reported low level of involvement compared to 18.5% of those who are formally employed or 11.8% of those who are not employed. Similarly, more parents who were self-employed (22.5%) reported high level of involvement compared to 13.5% of parents in formal employment or 6.2% of unemployed parents reporting high level of involvement.

Table 4.13 Influence of Employment Status on Parents' Involvement

	Value	df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	2.157 ^a	2	.340	.078
Likelihood Ratio	2.188	2	.335	
Linear-by-Linear Association	1.977	1	.160	
N of Valid Cases	356			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 26.97.

The Chi-square results $\{X^2 = 2.157; df=2; P=0.340\}$ in Table 4.13 illustrates that parents' employment status has an insignificant influence on their level of involvement in their children's learning mathematics at 0.05 level of significance. Contingency coefficient (C= 0.078) measure of association attributed only 7.8% of the total variance in parents' involvement in their children's learning mathematics

to their marital status. According to the findings, the majority of respondents believe that their children's math learning is unaffected by their parents' job status. This finding contradicts with Epstein and Dauber (1989) that many parents have limited school-based involvement due to full- or part-time employment. In a study of Latino parents, Terriquez (2007) Working full-time and being a monolingual Spanish speaker were both connected to poor parental school involvement. In contrast, Smock and McCormick (1995) discovered that parental school attendance was unaffected by the parent's work situation.

4.4.6 Family Size and Parent’s Involvement

The influence of family size based on a parent’s number of children on their involvement in their children’s learning mathematics was also assessed by cross tabulating number of children against their involvement. Data obtained were as summarised in Table 4.14.

Table 4.14 *Number of Children and Parents’ Involvement in Children’s Learning*

		No of children			Total	
		Less than 3	3-5	More than 5		
Level of involvement	Low	Count	70	81	55	206
		% of Total	19.7%	22.8%	15.4%	57.9%
	High	Count	52	59	39	150
		% of Total	14.6%	16.6%	11.0%	42.1%
	Total	Count	122	140	94	356
		% of Total	34.3%	39.3%	26.4%	100.0%

Results contained in Table 4.14 show that more parents with 3-5 children (22.8%) reported low level of involvement compared to 19.7% of parents with less than 3 children or 15.4% of those with more than 5 children. This trend was similar to findings on parents reporting high levels of involvement, more parents (16.6%) with 3-5 children reporting high level of involvement compared to 14.6% of parents with less than 3 children or 11.0% of those with more than 5 children. Chi square results for this relationship are summarized in Table 4.15.

Table 4.15 Influence of Number of Children on Parents' Involvement

	Value	df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	.028 ^a	2	.986	.009
Likelihood Ratio	.028	2	.986	
Linear-by-Linear Association	.028	1	.868	
N of Valid Cases	356			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 39.61.

The Chi-square results { $X^2 = .028$; $df=2$; $P=0.986$ } in Table 4.15 show that family size has an insignificant influence on parents' involvement in their children's learning mathematics at 0.05 level of significance. This means that according to a majority of parents' family size has no influence on their involvement in the children's learning mathematics. This is in contrast to prior research on family size, which suggested that parents with fewer children had a better quality of life are usually more involved than those with many children (Balli, Demo & Wedman, 1998; Bernie & Lall, 2008; Eccles & Harold, 1993). Astone and McLanahan (1991) as well as Yaro (2015) also illustrated that household composition is Parental participation is associated. Parents with more children

were shown to be considerably less likely than parents with fewer children to attend school, according to Toldson and Lemmons (2013).

4.4.7 Family Monthly Income and Parent’s Involvement

Lastly, the influence of family monthly average income on parent’s involvement in their children’s learning mathematics was also assessed through cross tabulation.

Table 4.16 Family Income and Parents’ Involvement in Children’s Learning

			family’s average monthly income			Total
			Less than 15,000	15,000-45,000	More than 45,000	
Level of involvement	Low	Count	171	21	14	206
		% of Total	48.0%	5.9%	3.9%	57.9%
	High	Count	105	43	2	150
		% of Total	29.5%	12.1%	0.6%	42.1%
	Total	Count	276	64	16	356
		% of Total	77.5%	18.0%	4.5%	100.0%

Findings illustrated that more parents whose monthly earning were less than Ksh. 15,000 (48.0%) reported low level of involvement compared to 5.9% of parents earning between 15,000 and 45,000 or 3.9% of those earning more than 45,000. This was the same as parents reporting high level of involvement, more parents (29.5%) earning less than Ksh. 15,000 reported high levels of involvement compared to 12.1% of parents earning between 15,000 and 45,000 or 0.6% of

those earning more than 45,000. Results of Chi square test are summarized in Table 4.17.

Table 4.17 Influence of Family Income on Parents' Involvement

	Value	df	Asymp. Sig. (2-sided)	Contingency coefficient
Pearson Chi-Square	24.133 ^a	2	.000	.252
Likelihood Ratio	24.934	2	.000	
Linear-by-Linear Association	1.719	1	.190	
N of Valid Cases	356			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.74.

The Chi-square results { $X^2 = 24.133$; $df=2$; $P<0.001$ } in Table 4.17 indicates that family monthly income has a significant influence on parents' level of involvement in their children's learning mathematics at 0.05 level of significance. Contingency coefficient ($C= 0.252$) measure of association attributed 25.2% of the total variation in parents' involvement in their children's learning mathematics. This implies that according to a majority of parents, family monthly income parents' interest in their children's mathematics learning. Previous research has shown that parents from lower socioeconomic backgrounds are more likely to work long and erratic hours, which can interfere with their ability to be active at home and at school (Heymann, 2000; Hoover-Dempsey et al., 2005). Hill and Taylor (2004) lamented about the unfortunate fact that it is always the parents of children who stand to benefit the most from parental engagement who find it the most difficult to get involved and stay involved. Smock and McCormick (1995)

came to the opposite conclusion, finding that parental school participation does not differ significantly by income.

4.5 Challenges that Parents face in their Involvement in their Children’s Learning

The last objective sought to find out the challenges that parents face in their involvement in their lower primary school children’s learning mathematics. To achieve the study objective, respondents were provided with seven factors perceived to significantly predict parental level of involvement in their children’s learning for rating using a Likert scale ranging between 1= strongly disagree to 5-strongly agree. Their responses were analyzed based on mean ranking as is illustrated by the Table 4.18

Table 4.18 Factors inhibiting Parental involvement in their Children’s Learning

Factor	Mean	SD	Rank
Lack of time	3.92	1.296	1
Lack of knowledge	3.20	1.385	3
Feelings of incompetence	3.02	1.421	5
Failure to understand the role that parents should play	3.38	1.247	2
Previous negative experiences in schools	2.84	1.366	6
Lack of invitation to be involved	3.13	1.329	4
Teacher’s hostility towards parents	2.63	1.458	7

The results of the mean ranking contained in Table 4.18 shows that lack of time had the highest mean ranking (M=3.92, SD=1.296) followed by failure to understand the role that parents should play (M=3.38, SD=1.247) then lack of knowledge (M=3.20; SD=1.385). Other factors with lower ratings include lack of invitation to be involved (M=3.13, SD=1.329) and feelings of incompetence (M=3.02, SD=1.421), each factor having above average mean rating. However, the contribution of previous negative experiences in schools (M=2.84, SD=1.366) and

teacher's hostility towards parents ($M=2.63$, $SD=1.458$) had the least mean rating. This means that lack of time and failure to understand the role parents should play are the main factors inhibiting parents involvement in their children's learning mathematics while previous negative experiences in school and teachers hostility towards parents have the least influence. Previously, researchers have indicated that a number of factors pose a challenge to the involvement of parents in their children learning (Obeidat & Al-Hassan, 2009; Christenson & Sheridan, 2001). According to these researchers, the challenges affect the formation of school-home community partnership. The challenges include misconception about teachers and parents desire for support to pupils' learning (Glasgow & Whitney, 2009), time and financial constraints (Christenson & Sheridan, 2001) and parental characteristics and experiences (Eccles & Harold, 1993).

4.6 Head teachers' Interview on Parents' Involvement in their Children's Learning

The study also sought the opinion of head teachers of the schools from which class three parents and mathematics teachers were sampled to participate in the study with regard to their schools performance rating in Kenya Certificate of Primary Examination (KCPE), schools policy on parental involvement and its impact on children's learning. Eight head teachers identified in this report as interviewee A, B, C, D, E, F, G and H for the sake of anonymity were involved in the study. To begin with, the opinion of the head teachers about their schools' general performance in KCPE especially in Mathematics was sought. A majority of the head teachers (three out of four) interviewed indicated that their school's

performance was “below average” while the remaining ranked their schools’ performance as being “average.” The poor performance in mathematics in most of these schools was attributed to among other factors “poor foundation especially in the early years”, “negative attitude towards the subject” as well as “misconceptions about mathematics, negative social and environmental impacts” according to the interviewees. Among the factors considered to predict poor performance of learners in mathematics, the foundation established at the lower primary level stood out. In particular, interviewee B, C, E, F and H explained that “poor foundation at the lower classes leads to negative attitude towards the subject and ultimately poor performance in the subject in upper classes and in KCPE.” On the contrary, “good/strong foundation in the subject at the lower classes contributes towards good performance in KCPE” according to interviewee A. The interviewees were unanimous that “both the school community and parents through their involvement” were responsible for establishing a strong foundation for the children’s learning mathematics.

Consequently, the majority of interviewees said their schools have a program in place to ensure that parents are involved in their children's education. Interviewee A indicated that the school’s policy required that parents “buy books and ensure that they cater for their children’s wellbeing in school.” This observation was corroborated by interviewee C, E, G and H who added that their school organize “academic clinics in which parents are invited and get involved in their children’s general and academic work.” Relative to the theme of this study, it is only interviewee B who indicated that their parents were required to participate in their

children's work by "assisting them with revision," according to school policy. Interviewee D and F however had no policy for parental involvement in their respective schools which according to interviewee F "Parents are not corporative in their children's learning and leave their children's academic work totally to their teachers," according to the study."

It was generally the feeling of a majority of the interviewees that attempts to improve pupils' performance in mathematics in their respective schools required the concerted efforts of both parents and teachers. According to interviewee F, "parents should assist their children in homework and make follow-ups on their children's performance" to ensure that they do better. In addition, they need to "visit or call their children's teachers to know the challenges faced by their children." This observation was supported by interviewee A, B, C, E and H. Interviewee E called for "appropriate co-operation between teachers and parents and that parents/guardians take an active role in their children's education" in order to turn around the performance trend.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of findings, conclusions, recommendations and suggestions for further research.

5.2 Summary

The results are presented based on the demographic variables of respondents and the three research objectives.

5.2.1 Respondents' Demographic Information

Data was obtained from 381 respondents. They included 357 class three parents, 16 class three mathematics teachers and 8 head teachers. A majority of the parents who were females were mostly youthful or in the middle age and had basic education having dropped out of primary or secondary schooling. Additionally, a majority were either in self-employment or in formal employment though with low average monthly income. With regard to class three mathematics teachers, there were more females compared to males, four out of five of them having served for more 5 years and therefore could be presumed to have prerequisite experience to provide credible data for the study.

5.2.2 Level of Parental Involvement

The study established that parents' level of involvement was relatively low, a majority of respondents indicating that they were never or rarely involved in their children's learning mathematics compared to those who were usually or always

involved. Specifically, more parents acknowledged never or rarely talking to their children about the need to put effort in their work in mathematics and a majority never or rarely check their children's mathematics books to assess their progress in school. It was also established that a majority of parents rarely check their children's mathematics books to ensure they have been given assignment, a majority rarely give their children additional work in mathematics or rarely involve their children in tasks and activities that promote learning mathematics such as counting, building blocks. This observation was corroborated by mathematics teachers, 82.5% indicating having observed low level of parental involvement in their children's learning.

5.2.3 Influence of Parents' Demographic Variables on their Involvement

The second objective sought to determine the influence of parents' demographic factors on their involvement in their lower primary school children's learning mathematics. Influence of age, gender, level of education and employment status were assessed. Similarly, the contributions of family size based on number of children, marital status and monthly income were also assessed. Chi-square analysis illustrated that parents' level of education, marital status and family monthly income have a significant influence on parents' level of involvement in their children's learning mathematics. The results, $\{X^2 = 26.12; df=4; P < 0.001\}$ showed that level of education significantly influences parents' involvement in their children's learning mathematics at 0.05 level of significance, Contingency Coefficient measure of association attributing 26.1% of the total variance in parental involvement to their level of education. Similarly, Chi-square results $\{X^2$

=9.995; df=1; P=0.002} illustrated that parents' marital status significantly influences their involvement, Contingency Coefficient measure of association attributing 16.5% of the total variance in parental involvement to their marital status, married parents being more involved as compared to single parents. Findings also showed that family monthly income, $\{X^2 = 24.133; df=2; P < 0.001\}$ significantly influences parents' level of involvement, Contingency coefficient measure of association attributing 25.2% of the total variation in parents' level of involvement to family monthly income.

5.2.4 Challenges Parents face in their Involvement in their Children's

Learning

The final objective was to learn about the difficulties that parents face when it comes to their participation in their children's math learning in lower primary school.. Factors found to contribute towards minimal parental involvement include lack of time (M=3.92, SD=1.296), failure to understand the role that parents should play (M=3.38, SD=1.247), lack of knowledge (M=3.20; SD=1.385), lack of invitation to be involved (M=3.13, SD=1.329) and lastly feelings of incompetence (M=3.02, SD=1.421) in decreasing order.

5.3 Conclusions

Based on the findings presented, the study draws three conclusions in line with the study objectives. First and foremost and in line with the first objective which set out to establish parents' level of involvement in their children's learning mathematics, findings established low levels of involvement for a majority of

study respondents. It can therefore be concluded that parents' level of involvement in their children's learning mathematics is low generally.

Secondly, the study sought to establish the influence of parents' demographic factors on their involvement in their children's learning mathematics. Among the demographic variables tested, parents' level of education, marital status, and family monthly income were found to have a major connection with their participation in their children's mathematics learning. As a result, it can be inferred that parents' educational attainment, marital status, and family monthly income have a substantial impact on their participation in their children's mathematics learning.

Lastly, the aim of the study was to discover what factors prevent parents from participating in their children's math learning. Respondents scored highly for lack of time, failure to understand the role that parents should play, lack of knowledge, lack of invitation to be involved and lastly feelings of incompetence. It can therefore be concluded that lack of time, failure to understand the role that parents should play, lack of knowledge, lack of invitation to be involved and lastly feelings of incompetence are the main factors contributing towards parents' low level of involvement in their children's learning mathematics.

5.4 Recommendations

As a result of the study's results, a range of recommendations were made. To begin with, the study discovered a low level of parental participation in their children's

mathematics learning with possible negative impacts on their performance in the subject. It is therefore recommended that concerted efforts be made to enhance parental involvement as a remedy to the poor performance.

Secondly, According to the findings parents' demographic factors, such as their level of education, marital status, and family monthly income, were found to have a major impact on their participation in their children's learning. It is recommended that mechanisms be placed in place to increase the participation of parents with low levels of education, single parents, and low-income families in their children's learning for a possible better learning outcome.

Lastly, the study established that lack of time, failure to understand the role that parents should play, lack of knowledge, lack of invitation to be involved and feelings of incompetence contribute towards low parental involvement in their children's learning. It is suggested that parents be sensitized on the significance of their involvement so as to enable better parental involvement.

5.5 Suggestion for Further Studies

More studies should be done, including a longitudinal analysis of the impact of demographic influences on parental participation in their children's mathematics learning. In addition, a comparison of the factors that stymie parental participation in their children's math learning in urban and rural counties could help guide the implementation of best practices.

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APPENDICES

Appendix I: Questionnaire for Parents

Introduction

The questionnaire below is intended to gather information about your involvement in your child's learning mathematics. Indicate with a tick {√} your level of involvement in your child's learning against each of the questions provided. No response is right or wrong. The information collected through this questionnaire will be kept private and will not be used for any other reason than academic research. You are free to choose whether or not to take part in the research you have the option to leave the analysis at any time. Thanks for accepting to take part in the study.

Section I: Demographic Information

- i. Please indicate your age in years: Below 30 (), 30 – 45 () and above 45 ()
- ii. What is your gender: Male () Female ()
- iii. Kindly indicate your highest level of education: None () Primary () Secondary () Certificate/Diploma () Degree () Master () Others (), Please specify _____
- iv. Kindly indicate your marital status: Single () Married ()
- v. What is your employment status: Self-employed () Formally employed ()
- vi. How many children do you have? Less than 3 (), 3-5 () and more than 5 ()
- vii. What is your family's average monthly income: Less than Ksh. 15,000 (); 15,000-45,000 () More than 45,000 ()

Section II: Level of Involvement in Learning of Mathematics.

Please indicate the extent to which you believe you are involved in activities that are related to your child's learning of mathematics especially at home

Statement	Never	Rarely	Usually	Always
I talk to my child about the need to put effort in				

his/her work in mathematics				
I check my child's mathematics books to assess his/her progress in school				
I check my child's mathematics books to ensure he/she has been given assignment				
I supervise my child do his/her mathematics assignment				
I assist my child with his or her mathematics homework.				
I give my child additional work in mathematics				
I involve my child in tasks and activities that promote learning of mathematics such as counting, building blocks etc.				

Section III: Challenges of Involvement.

Please indicate whether you strongly agree (5), Agree (4), Are not sure (3), Disagree (2) or Strongly disagree (1) that the following factors could be a challenge to your involvement in your child's learning mathematics.

Factor	5	4	3	2	1
Lack of time					
Lack of understanding					
Feelings of lack of ability					
Failure to recognize the importance of parents in their children's lives					
Previous negative experiences in schools					
Lack of invitation to be involved					
Teacher's hostility towards parents					

In your own words, please state any other factor that could be a challenge to your involvement in your child's learning mathematics _____

Appendix II: Maoni ya Mzazi

Utangulizi

Fomu ya maswali ifuatayo imedhamiriwa kukusanya habari kuhusu ushirikiano wako na mwanao katika kujifunza hesabu. Onyesha na alama {√} kiwango cha ushirikiano wako na mwanao anavyojifunza kwa kila swali alilopewa. Hakuna jawabu la sawa wala la makosa. Taarifa itakayopatikana katika hii fomu ya

maswali itahifadhiwa na haitotumika kwa malengo mengine yoyote mbali na ya kielimu. Uko na uhuru wa kuchagua kushiriki katika utafiti au la. Uko na uhuru wa kujitoa katika utafiti wakati wowote. Shukran kwa kukubali kushirikiana kwenye ratiba.

Sehemu 1: Habari kuhusu Mzazi

- i. Tafadhali onyesha umri wako kimiaka chini ya miaka 30(), 30-45(), na zaidi ya 45()
- ii. Ni ipi jinsia yako. Mume () Mke ()
- iii. Onyesha kiwango cha juu kielimu: Hakuna () Nsingi () Upili () Chuo() Na chuo kikuu ()
- iv. Tafadhali onyesha hali yako kindoa: Pweke () Mwanandoa ()
- v. Unafanya kazi gani: Hakuna () Nimeajiriwa () Nimejiajiri ()
- vi. Dhihirisha idadi ya watoto: Chini ya 3 () 3-5 () Na zaidi ya 5 ()
- vii. Onyesha kiwango cha pato kifamilia kwa mwezi: Chini ya shilingi 15000 (); 15000 - 45000 () na zaidi ya 45000 ().

Sehemu 2: Tafadhali onyesha kiwango ambacho unaamini unashiriki kwenye shughuli zinazohusiana na motto wako kujifunza hesabu hususan akiwa nyumbani.

Maelezo	Katu	kawaida	nadra	daima
Namzungumzia mwanangu kuhusu umuhimu wa kufanya bidii kwa kazi yake ya hesabu				
Huziangalia daftari za mwanangu za hesabu kupima maendeleo yake shuleni				
Huangalia daftari za hesabu za mwanangu kuhakikisha amepatiwa kazi za ziada nyumbani				
Humsaidia mwanangu na kazi yake ya hesabu ya ziada				
Humuongeza mwanangu kazi ya hesabu				
Humshughulikia mwanangu na majukumu na shughuli ambazo zitamuenua kujifunza hesabu kwa mfano: kuhesabu, kujenga matofali nk.				

Sehemu 3: Mambo yanayoathiri ushirikiano

Tafadhali onyesha kama: Umekubaliana sana (5) Umekubaliana (4) huna uhakika (3) hukubaliani (2) hukubaliani kabisa (1). Kama mambo yafuatayo yanaathiri ushirikiano wa mwanangu kusoma hesabu.

Mambo	5	4	3	2	1
Ukosefu wa wakati					
Ukosefu wa elimu					
Hisia za kutojiamini					
Kukosa kubeba jukumu ambalo mzazi anapaswa kubeba					
Fikra potofu za zamani kuhusiana na shule					
Kukosa ualishi rasmi wa kuhusishwa					
Mwalimu katili kwa wazazi					

4. Kwa maneno yako mwenyewe, tafadhali taja jambo jengine lolote ambalo linausawishi unapojihusisha na mwanao kujifundisha hesabu.

Appendix III: Questionnaire for Mathematics Teachers

Introduction

This questionnaire is intended to gather information about parental involvement in their child's learning mathematics. Indicate with a tick {√} your opinion about parental level of involvement in their child's learning against each of the questions provided. No response is right or wrong. The information gathered from this questionnaire will be kept private and will not be used for anything other than academic purposes. Thank you for agreeing to participate in the program.

1. Demographic Information

- i. Please indicate your gender: Male () Female ()
- ii. Kindly indicate your highest qualification: Untrained () P₁ ()
Diploma () Graduate () Postgraduate ()
- iii. For how long have you been teaching: Less than 5 () 5 – 15 () More than 15 ()

2. Level of Parental Involvement in Learning of Mathematics.

Please indicate the extent to which parents of your pupils are involved in activities that are related to their child's learning mathematics especially at home.

Statement	Never	Rarely	Usually	Always
Generally talk to the child about the need to put effort in their work in mathematics				
Check their mathematics books to assess their progress in school				
Check their mathematics books to ensure they have been given assignment				
Supervise them do their mathematics assignment				
Help them with their mathematics assignment				
Give them additional work in mathematics				
Involve the child in tasks and activities that promote learning of mathematics such as counting, building blocks etc.				
Visit school to inquire on their child's progress				
Call class teacher to inquire on their child's progress				
Enquire from the class teacher on needed materials				
Attend meetings in school and make contribution on learning mathematics				

3. Challenges of Parental Involvement

In your opinion, to what extent could each of the following factors be a challenge to parents' involvement in their children's learning mathematics?

Factor	1	2	3	4	5
Lack of time					
Feelings of lack of ability					
Failure to recognize the importance of parents in their children's lives					
Feelings of lack of ability					
Negative encounters with schools in the past					
Poor reporting practices by schools to parents					
Teacher's hostility towards parents					

Note: 1- No extent; 2-Little extent; 3-Average extent; 4-Great extent; 5-

Very great extent

4. In your own words, please state any other factors that you think may be a challenge to parents' involvement in their child's learning of mathematics.

Appendix IV: Head Teacher's Interview Schedule

Introduction

This interview aims to learn more about parents' participation in their children's math education. Please suggest each of the statements to the best of your ability. There is no such thing as a correct or incorrect answer. The information gathered during this interview will be kept strictly confidential and used only for academic purposes. Thank you for agreeing to participate in the program. Your cooperation is greatly valued.

1. How do you rate the level of parental involvement in their children's learning in your school? [Probe: lower primary school children]
2. What are some of the factors that could be contributing towards this level of involvement?
3. Does your school have a policy of ensuring that parents play an active role in their children's academic life?
 - i. If yes, kindly elaborate
 - ii. If no, please explain why
4. In your opinion, what do you think should be done to improve parents' involvement in their children's learning in your school?
5. What are some of the factors that could be impeding parental involvement in their children's learning?
6. Is there any other issue related to the theme of our discussion that you would wish to add?


THANK YOU

End

Appendix V: University Research Authorization Letter

AUTHORIZATION - MAJIBU.jpeg

https://mail.google.com/_scs/mail-static/_js/k=gmail.main.en.



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 5753

Our Ref: E55/CE/21390/2012 DATE: 12th July, 2018

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

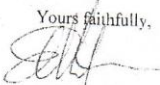
Dear-Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR NKABI NASSORO MAJIBU – REG. NO. E55/CE/21390/2012.

I write to introduce Nkabi Nassoro Majibu who is a Postgraduate Student of this University. The student is registered for M.Ed degree programs in the Department of Early Childhood Studies.

Nkabi intends to conduct research for a M.Ed Project Proposal entitled, "Influence of Parents' Demographic Characteristics on their Involvement in Lower Primary School Children's Learning of Mathematics in Kwaie County, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

**MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL**

EM/000

1 of 1

7/18/2018 6

Appendix VI: NACOSTI Research Authorization Letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

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

Ref: No. **NACOSTI/P/18/40625/27125**

Date: **12th December, 2018**

Nkabi Nassoro Majibu
Kenya University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Influence of parents’ demographic characteristics on their involvement in lower primary school children’s learning of mathematics in Kwale County, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Kwale County** for the period ending **12th December, 2019.**

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

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

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

Copy to:

The County Commissioner
Kwale County.

The County Director of Education
Kwale County.

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

Appendix VII: Research Permit

THIS IS TO CERTIFY THAT: **Permit No: NACOSTI/P/18/40625/27125**
MS. NKABI NASSORO MAJIBU **Date Of Issue: 12th December, 2018**
of KENYATTA UNIVERSITY, 0-80110 **Fee Received :Ksh 1000**
Mombasa, has been permitted to
conduct research in Kwale County
on the topic: INFLUENCE OF PARENTS
DEMOGRAPHIC CHARACTERISTICS ON
THEIR INVOLVEMENT IN LOWER
PRIMARY SCHOOL CHILDREN'S
LEARNING OF MATHEMATICS IN KWALE
COUNTY, KENYA
for the period ending:
12th December, 2019

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Applicant's **Signature** **Director General**
National Commission for Science, Technology & Innovation

