INFLUENCE OF HORTICULTURAL FARMING ON ACADEMIC PERFORMANCE OF PUPILS IN PRIMARY SCHOOLS IN TIMAU DIVISION OF BUURI DISTRICT

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2012
DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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Date: 18/7/2012

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L50/66257/2010

This research project has been submitted for examination with our approval as the University Supervisors.

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DEDICATION

This research project is in memory of my late Dad Mr. Kirimi Rutere for his unending motivation and cultivating in me the culture of hard work for the fourteen years we spent together.

I equally dedicate it to my dear wife Fridah Makena and my children Felister, Lenah and Christian for their understanding and providing the right environment as I worked on this project.
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<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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<td>ANPPCAN</td>
<td>African Network for the Prevention and Protection against Child Abuse and Neglect</td>
</tr>
<tr>
<td>CBS</td>
<td>Central Bureau of Statistics</td>
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<td>D.EO</td>
<td>District Educational Officer</td>
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<td>ECLS</td>
<td>Early Childhood Longitudinal Study</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HCDA</td>
<td>Horticultural Crops Development Authority</td>
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<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
</tr>
<tr>
<td>IGA</td>
<td>Income Generating Activity</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monitory Fund</td>
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<tr>
<td>K.C.P.E</td>
<td>Kenya Certificate Primary Education</td>
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<tr>
<td>LICs</td>
<td>Lusaka International Community School</td>
</tr>
<tr>
<td>SAP</td>
<td>Structural Adjustment Programme</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
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ABSTRACT

The horticultural industry provides an important source of foreign exchange, generates substantial employment, and has contributed to the upgrading of agricultural skills. A number of studies have raised concerns about the benefits that export horticulture provides to employees and the wider economy. However, most people in the horticultural farming areas are paid in wages since they cannot afford to buy farms. Their wages range from Ksh 100 to 200 in a day. Further these people work for long hours in a day (6.00 am to 6.00 pm). Parents working in these farms barely spend time with their children. In addition, most of the children in these areas accompany their parents to these horticultural farms; mostly over the weekends. Despite all the laid down strategies by the education stakeholders in Timau division to ensure students perform well in KCPE examinations, many students still continue to perform dismally. The purpose of the study was to establish the influence of horticultural farming on academic performance of pupils in primary schools in Timau Division of Buuri District. This study used descriptive research design. The target population for this study was teachers, students and parents in primary schools located in Timau division. The target population of this study was therefore 3156. The researcher used a stratified sampling to select teachers' pupils and parents from each of the schools. The sample size of this study was therefore 342 respondents. This study used both secondary and primary data. Primary data was collected by use of questionnaires. Each of the primary schools had one group to discuss the questions in the focus group discussion guide. Descriptive statistics was used to analyse quantitative data while content analysis was used in processing qualitative data. The researcher also used a multivariate regression model. The study found that there is a negative relationship between child labour, horticultural income, teachers' participation and parents' involvement and academic performance of primary schools. The study also established that hunger was highly affecting academic performance of pupils in Timau division. This study therefore recommends that schools in Timau division should create a program where children will be eating in schools. The study also established that parents were not attending school functions and activities. The study also recommends that parents should spare time and show their commitment to the academic performance of their children by attending school meetings and by following up their children's performance.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Education has come to be regarded as a vehicle that promote social, economic and political development an investment that opens new horizon, a means to empower both men women, and provides for active participation in development programmes and projects. It is important because, it instils knowledge skills and attitudes that are compatible with sustainable development.

International trade in Fresh Horticultural and Floricultural Products (FHFP) is growing at a rate of 7% per year, compared with only 2% for staple crops. According to the World Bank, high-value products provide an opportunity for farmers in developing countries to compete for a share of this lucrative export market. Trade in horticultural products is often considered an example of successful exports in some African countries, with some of them managing to gain access into the horticultural value chains (Maxwell, 2004).

Proponents of small farm development as a strategy to poverty reduction argue that the labor advantages of smallholder farms can continue to give them the competitive edge over larger farms if there exist effective and efficient services to assist them to raise labor and land productivity plus intermediaries to link them to remunerative output market opportunities. Opponents of this view (Maxwell, 2004) suggest that smallholder agricultural growth will depend on competitive engagement with very demanding produce markets, and that small farms face transaction costs in these markets that are too high to be overcome even with the assistance of intermediaries.

Shifting from cereal production to horticultural production generates additional employment. Joshi et al. (2003) estimate that in India, a shift of production from coarse cereals to high-value vegetables, such as cauliflower, eggplant and tomato, would on average generate additional employment of 70 person days per hectare. Often, additional labor requirements are met through hired labor, benefiting small farmers and landless laborers. Greater employment opportunities result in greater incomes for poor households. In Bangladesh, total value added in wages is approximately US$400 per ha. 7.5 times higher than valued added
through hired labor in rice (Weinberger and Genova, 2005). But where labor is scarce, availability of hired labor may actually be a limiting factor to vegetable production as a study of determinants of horticultural production in Kenya has shown (McCulloch and Ota, 2002). To this effect most small scale farmers as in Timau division end up involving their children in horticultural farming thus barring them from attending school hence influencing their performance negatively.

According to Soares (2002), the determinants of students' academic progress can be classified into three groups of variables: those related to students' individual and family characteristics, those related to the socioeconomic context of the school, and those related to the processes and pedagogical practices of schools (Tyler, 2003). Woods (1990) further observes that poor performance in primary schools is generally associated with illiteracy, unemployment, low earning, poor health and persistent poverty. More so, poor performance and illiteracy is a formidable obstacle to development. As the relationship between work and school involves decisions about the child's time allocation, the possibility exists that the low quality of schools, aligned with the disinterest in school of children and their parents, explains weak academic performance and induces poor families to prefer work to school. The low levels of educational achievement can result in two problems: the existence of a strong conflict between work and school and the perception that the benefits to schooling are low.

Kenya, as a developing nation, looks forward to being fully industrialized by the year 2020 (Munya, 2003). The vision 2030 which aims to turn Kenya into a middle-income economy by the year 2030 is anchored in the national education system. For this reason, examinations are viewed as an important tool for achieving these objectives.

The assessment of student's attainment in learning is therefore an integral part of any educational process (Bongonko, 1992). Thus, thousands of students in both, primary and secondary schools sit for national examinations every year. Primary schools students sit for Kenya Certificate Primary Education (K.C.P.E) at the end of 8 years. Surprisingly, there has been a lot of variation in the performance of students in the examinations among and within schools in the country. This is real, despite the fact that these students follow a common syllabus and are of comparable abilities and have studied together in the same class throughout, perhaps both in primary and secondary schools.
According to Muola (1990) poor performance of students has drawn the attention of the government educationists, teachers, administrators, researchers, and even students. This is because good academic performance, is anticipated by parents, teachers and the community at large. Whatever the purpose and objectives of education are, academic performance is undoubtedly a vital aspect of it. It is not merely an academic exercise but a subject of great interest and concern, to all thinkers and administrators in the field of education.

Despite free and compulsory primary education and the fact that the majority of school-age children in the research locations were actually enrolled in school, there are still several obstacles preventing children from attaining a good performance in their schools. While the introduction of FPE freed parents from the burden of school fees, there are still costs that persist: school uniforms, examination fees and contributions to the school’s maintenance and infrastructure (Benninga and Berkowitz, 2003). Further, most of the parents are so busy to have time to their children; to help them in their homework. Teachers on the other hand are doing teaching and horticultural farming at the same time. This makes them to be absent in schools for several days in a week and hence they cannot finish the syllabus. Moreover, instead of being in schools pupils have been found working in horticultural farms which reduces the time a child is found in school.

The relative profitability of horticultural crops compared to cereals has been shown to be a determining factor for crop diversification into horticultural production in India (Joshi et al., 2003). The production of horticultural products offers opportunities for poverty alleviation, because it is usually more labor intensive than the production of staple crops. Often, horticultural production requires twice as much, sometimes up to four times as much labor than the production of cereal crops. In Kenya, the production of snow peas and French beans, the two most widely grown horticultural export crops, require 600 and 500 labor days per ha, respectively (Dolan, 2002).

1.1.1 Timau Division

Timau Division is located in Buuri District. Buuri district—which is curved from Imenti North County, comprises of 2 administrative divisions, namely Timau and Buuri. Timau division is subdivided into four other locations, namely Ontulili, Ntirimiti, Kisima and Ngusishi. Buuri district has a total area of 919 Km² with Timau accounting for nearly 74% of the area and
Buuri covering the rest 26% of the area. The human population in Timau division is approximately 82,000 which is around 30% of the total population in Buuri district (Karuga, 2009).

Timau division is characterized by arid to semi-arid agro-ecological conditions as it lies on the leeward side of Mount Kenya. The division is also occupied predominantly by the large scale beef and wheat farmers with the average size being in the order of 1,700 acres. The division lies between 3,000-5,199 meters Above Sea Level (summit of Mount Kenya). While the south eastern slopes of Mount Kenya (Meru North and Imenti North), receive ample rainfall amounting to between 1250 mm and 2,500 mm per year, the leeward side of Mount Kenya, which includes nearly the whole of Timau Division receive low rainfall amounting to between 380 mm and 1,000 mm annually.

Agriculture is the main stay of Timau Division. The typical family in Timau division grows crops and keeps 2-3 cross-breed daily cows. Growing horticultural crops (fresh beans, onions, snow peas etc) is however an important source of livelihood in Timau. In 2002, approximately 50% of the population in Timau division were living below the poverty line of 1 US$ per day. According to recent estimates, the proportion of people living below the poverty line has probably increased to 60% (Karuga, 2009).

The central feature of the education system in Kenya is the academic performance. When examination results are released by the ministry of education every year, the school’s worth is perceived from the number of students who appear among the top hundred either in the province or nationally. This is because good performance leads to higher educational opportunities which in turn become essential in securing jobs in both the public and private sectors of our economy. However, few students manage to meet the minimum requirements of entry to secondary education in Timau compared to the large number of students who sit for national examinations every year as depicted by a low mean score of 215 marks in the last five years (Appendix III). In order to improve academic performance, education stakeholders, have tried to come up with different approaches and strategies such as extra tuition, extrinsic motivation of teachers and students, maintenance of high discipline among students, proper training and supervising of teachers and counselling programmes to help the students adjust well in the school work and environment. The poor academic performance of pupils in the region has been a concern over the past few years.

4
1.2 Statement of the Problem

Governments of developing countries across the world have adopted poverty reduction strategies with the explicit aim of achieving substantial reductions in the proportion of their population falling below nationally set poverty lines. Horticultural exports have grown dramatically in many Sub-Saharan African countries, especially in Kenya, while many other agricultural commodities have faced stagnation and declining world prices.

In addition, the horticultural industry provides an important source of foreign exchange, generates substantial employment, and has contributed to the upgrading of agricultural skills. In an effort to make increase their earnings at peak time parents involve their children in horticultural farming. This leads to an increase in students’ absenteeism in schools which subsequently influences their performance. In addition, students start getting little money at an early age which causes them to drop out of schools. A number of studies have raised concerns about the benefits that export horticulture provides to employees and the wider economy. However, most people in the horticultural farming areas are paid in wages since they cannot afford to buy farms. Their wages range from Ksh 100 to 200 in a day. Further these people work for long hours in a day (6.00 am to 6.00pm). Parents working in these farms barely spend time with their children. In addition, most of the children in these areas accompany their parents to these horticultural farms; mostly over the weekends. Due to the fact that they have a better economic capability, teachers are capable of buying land in which they employ people to work for wages but on their supervision.

Several research studies have been carried out on the horticultural industry in Kenya. For instance, Harris (1992) did a survey on “Kenya Horticultural subsector”; Dijkstra and Magori (1995) conducted a study on “horticultural production and marketing in Kenya” while Dolan (2001) carried out a study on “The good wife: struggles over resources in the Kenyan horticultural sector”. Therefore there is need to do a study on the influence of horticultural farming on the academic performance of primary schools.

Despite all the laid down strategies by the education stakeholders in Timau division to ensure students perform well in KCPE examinations, many students still continue to perform dismally. Aziza (2008) observes that the percentage of Pre-Primary children attending schools in Meru town is 50.4% for boys, and 49.6% for girls. The percentage of Primary children attending schools is 48.4% for boys and 51.6 % who also perform poorly in their
exam. As shown in appendix III, the division has been performing poorly for the last five years as it has never been below position 10 out of 15 zones with an average mean score of 215 marks. This continued poor performance is therefore a likely indication that not all possible avenues of improvement have been explored. With many of the community members turning to horticultural farming, this study investigated the effects of child labour in horticultural farming, horticulture income to the parent, parents’ involvement in horticulture farming and teachers involvement in horticulture farming on the academic performance of pupils in primary schools in Timau division.

1.3 Objectives of the Study
The following were the objectives guiding the study:

1.3.1 General Objective
The general objective of the study was to establish the influence of horticultural farming on academic performance of pupils in primary schools in Timau Division of Buuri District

1.3.2 Specific objectives of the Study
The specific objectives of this study were;

i. To determine the influence of child labour in horticultural farming on academic performance of primary schools pupils in Timau division.

ii. To establish the influence of income from horticulture to the parent on academic performance of primary schools pupils in Timau division.

iii. To examine the influence of parents involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

iv. To establish the influence of teachers involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

1.4 Research Hypotheses
This study sought to test the following hypotheses:
H₁: Child labour involvement in horticulture farming affects academic performance of primary schools pupils in Timau division.

H₂: Income from horticulture affects academic performance of primary schools pupils in Timau division.

H₃: Parent's involvement in horticulture farming influences the performance of primary schools pupils in Timau division.

H₄: Teacher's involvement in horticulture farming influences academic performance of primary schools pupils in Timau division.

1.5 Significance of the Study

The management of large scale horticultural farmers in Kenya the study provided information in relation to the influence of horticultural farming on academic performance of primary school. The findings of the study helped the D.E.O.s in making decisions related to parents' involvement in the academic performance of pupils and teachers' commitment and absenteeism. The local administrators the study provided information that they can use to reduce the incidences of child labour.

The government of Kenya, the study was of great importance since it provided information on how horticultural farming is affecting the academic performance in Kenya. Despite the many policy documents, national legislations, international conventions protecting children, and the UN charter on the rights of children which was adopted by the UN Assembly in 1989 and to which Kenya is a signatory, the study provided information to prove that child labor in Kenya is still rampant.

The researchers and academicians, the study provided a base upon which secondary material on the influence of horticultural farming on academic performance can be drawn. The study also provided good literature on horticultural farming and academic performance in Kenya. The general academic fraternity the study formed a base for further studies on the influence of horticultural farming on academic performance of primary schools children.

1.6 Delimitations of the Study

This study focused on the influence of horticultural farming on academic performance of primary schools in Timau division. The study further limited to four factors which were the independent variables in this study; child labour in horticultural farming, horticulture income
to the parent, parents involvement in horticulture farming and teachers involvement in horticulture farming.

1.7 Limitations of the Study

The researcher may encounter unwillingness by respondents to reveal information as it is on the ground. To counteract this, the researcher assured respondents of confidentiality for any information given. The researcher further assured the respondents that the study is purely academic endeavour and therefore the information given was not revealed to any other authority but used to meet an academic requirement.

1.8 Definition of Significant Terms

Academic: Relating to education

Child labour: Employment of children who are under a minimum legal age in farming, industry or business.

Farming: The activity or business of growing crops

Horticulture: Science and art of gardening and of cultivating fruits, vegetables, flowers, and ornamental plants

Income: The amount of money or its equivalent received during a period of time in exchange for labour or services, from the sale of goods or property

Parental involvement: Refers to the amount of participation a parent has when it comes to schooling and her child's life.

Performance: Any recognized accomplishment

Primary schools: A school usually including the first three or four grades of elementary school and sometimes kindergarten.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter presents the literature review on the subject matter. It summarizes the information from other researchers who have carried out their research in the same field of study. The various areas of literature reviewed include the concept horticultural farming, theoretical review (the theory of cultural capital, the theory of concerted cultivation and the theory of credentialism), the empirical review (child labor in horticultural farming, horticultural income, teachers' participation in horticultural farming and the parents' involvement) and the conceptual framework.

2.2 Horticultural Farming
Agriculture accounts for about 24% of Kenya’s GDP with an estimated 75% of the population depending on the sector either directly or indirectly. Much of the intermittent strength and overall weakness in GDP and income growth in Kenya can be attributed to changes in agricultural performance (Basu, 2000).

The horticulture sub-sector of agriculture has grown in the last decade to become a major foreign exchange earner, employer and contributor to food needs in the country (Bjorkman, 2005). Currently the horticulture industry is the fastest growing agricultural subsector in the country and is ranked third in terms of foreign exchange earnings from exports after tourism and tea. Fruits, vegetable and cut flower production are the main aspects of horticultural production in Kenya.

Kenya has a long history of growing horticultural crops for both domestic and export markets. Kenya's ideal tropical and temperate climatic condition makes it favourable for horticulture production and development (Akanle, 2007). The climate is highly varied supporting the growth of a wide range of horticultural crops. Horticulture in Kenya is mainly rain fed though a number of farms, especially the ones growing horticultural crops for export, also use irrigation. The sub-sector is characterized by a tremendous diversity in terms of farm sizes, variety of produce, and geographical area of production. Farm sizes range from large-scale estates with substantial investments in irrigation and high level use of inputs, hired
labour and skilled management to small-scale farms, usually under one acre. The sub-sector generates over US$ 300 million in foreign exchange earnings. The total horticultural production is close to 3 million tonnes making Kenya one of the major producers and exporters of horticultural products in the world. Europe is the main market for Kenyan fresh horticultural produce with the main importing countries being United Kingdom, Germany, France, Switzerland, Belgium, Holland and Italy (Basu and Pham, 1998).

Other importing countries include Saudi Arabia and South Africa. The industry has had remarkable growth, with exports climbing steadily from 200.6 thousand tonnes in 1999 to 346.1 thousand tonnes in 2003. The sub-sector earned Kenya KShs 36.5 billion in 2003 with cut flowers dominating horticulture exports, followed by a variety of fruits and vegetables. Kenya exported KShs 16.5 billion worth of cut flowers, KShs 1.8 billion worth of fruits, and KShs 18.2 billion worth of vegetables in 2003 (Bugembe et al, 2005). The increase in exports was mainly attributed to good weather, improved crop husbandry and conducive horticulture export environment, as well as increased markets for fruits and flowers in Europe.

A well-developed and dynamic private sector has profitably marketed a wide range of horticultural products to diverse international markets. Government intervention in this area has been minimal, mainly facilitating the sectoral growth through infrastructure development, incentives and support services (Shirom and Rosenblatt, 2006). Structural and macroeconomic reforms, plus the introduction of more liberal trading environment has also provided a major boost to the country’s horticultural prospects.

Kenya’s horticultural export expansion has also been aided by the country’s preferential duty-free access to EU markets under the Lome Agreement, which currently runs through 2008. If this agreement is not renewed, or if other developing countries obtain similar benefits, Kenya can expect to face even stiffer competition in these markets (Scott et al., 2007). Kenya currently faces major competition in its horticulture industry from Cote d’Ivoire, Morocco, Zimbabwe, South Africa and Cameroon. The Horticultural Crops Development Authority (HCDA) is a parastatal established by the Government under the Agricultural Act 1967 with the aim of developing and regulating the horticultural industry (Angrist and Krueger, 1991).

The organization does this through the provision of technical and marketing services to farmers and other stakeholders in the horticulture industry. The tremendous performance of
the horticulture sub-sector presents an ideal investment opportunity for potential investors with a range of investment opportunities available and with ready markets for their produce.

2.3 Theoretical Review

The theory of concerted cultivation by Annet Lareau, (2003) which stated that lower income families have children who do not succeed to the level of the middle income children. Annette Lareau 2003 stated that lower income families have children who do not succeed to the level of the middle income children who feel entitled, are argumentative, and better prepared for life.

According to Jeremy Suizo(2010) analysis of Lareau's book, 'Unequal Childhoods: Class, Race, and Family Life', there is a clear distinction between the parenting styles of the working class families and the middle class families. The middle class, practices a method she dubs "concerted cultivation" while the working class use a style called the accomplishment of natural growth.

Lareau observed that, middle class parents had a greater presence in the lives of their children: primarily through organizing the child's daily life. For middle class families, there was a heavy emphasis on scheduling and participating in various extracurricular activities and sports. Middle class parents also encouraged their children to ask questions and to be self-reliant. Children under the concerted cultivation method tended to participate in sibling rivalry and because of the heavy scheduling, middle class children rarely visited extended family and had little free time.

The mantra of concerted cultivation is to prepare the children for the future, a sort of 'work hard, play later' mentality where the children can have their fun once they have grown up, gotten a job, and have the money to indulge. The mantra of the natural growth style of parenting is to let the children play and have fun in youth because adulthood will be hard. Working class parents favored letting their children play freely compared to the middle class children who had lives scheduled around extracurricular activities.

As a result of the financial and material issues surrounding working class families, parents were most concerned with providing basic survival needs like food and shelter. Extended family was more present in working class families so as to help raise the children together. At
home, children are spoken to with directives rather than discussions or requests and sometimes, the youngsters are forced to learn to fend for themselves.

This finding is similar to the concept of cultural capital as presented by French sociologist Pierre Bourdieu, which is concerned with the social skills and knowledge passed onto children and give them advantages over others into navigating through society successfully.

2.4 Empirical Review

There are several reasons why the experience of older working students may not extend to the experience of young children working in developing countries. Young children may be less physically able to combine work with school, so that working children may be too tired to learn efficiently in school or to study afterwards. Children who are tired are also more prone to illness or injury that can retard academic development. It is possible that working at a young age disrupts the attainment of basic skills more than it disrupts the acquisition of applied skills for older students. School and work, which may be complementary activities once a student has mastered literacy and numeracy, may not be compatible before those basic skills are mastered. Past research on the consequences of child labor on schooling in developing countries has concentrated on the impact of child labor on school enrollment or attendance. Here the evidence is mixed. Psacharopoulos (1997) and Ravallion and Wodon (2000) found that child labor and school enrollment were not mutually exclusive activities and could even be complementary activities. However, Rosenzweig and Evenson (1977) and Levy (1985) found evidence that stronger child labor markets lowered school enrollment. There is stronger evidence that child labor lowers time spent in human capital production, even if it does not lower enrollment per se. Psacharopoulos (1997) and Sedlacek et al. (2005) reported that child labor lowered years of school completed and Akabayashi and Psacharopoulos (1999) discovered that child labor lowered study time.

Nevertheless, school enrollment and attendance are not ideal measures of the potential harm of child labor on learning because they are merely indicators of the time input into schooling and not the learning outcomes. Even if child labor lowers time in school, it may not hinder human capital production if children can use their limited time in school efficiently. This is particularly true if the schools are of such poor quality that not much learning occurs in the first place. On the other hand, the common finding that most working children are enrolled in
school may miss the adverse consequences of child labor on learning if child labor is not complementary with the learning process at the lower grades. A more accurate assessment of the impact of child labor on human capital production requires measures of learning outcomes, such as test scores rather than time in school, to determine whether child labor limits or enhances human capital production. Moreover, evidence suggests that cognitive skills, rather than years of schooling, are the fundamental determinants of adult wages in developing countries (Glewwe 1996; Moll 1998). Therefore, identifying the impact of child labor on school achievement will yield more direct implications for child labor's longer term impacts on earnings and poverty status later in the child's life.

Direct evidence of child labor on primary school achievement is quite rare. Heady (2003) found that child work had little effect on school attendance but had a substantial effect on learning achievement in reading and mathematics in Ghana. Rosati and Rossi (2003) report that in Pakistan and Nicaragua, rising hours of child labor is associated with poorer test scores. Both of these studies have weaknesses related to data limitations. Heady treated child labor as exogenous, but it is plausible that parents send their children to work in part because of poor academic performance. Rosati and Rossi had no information on teacher or school characteristics, although these are likely to be correlated with the strength of local child labor markets.

2.4.1 Child Labor in Horticultural Farming

Child labor has emerged as one of the most intolerable form of child exploitation and abuse in most parts of the world. In Kenya, the history of child labor dates back to pre-independence days when Africans in the periphery of white settlements sent their children to work in the farms and homes of settlers as a source of money income for paying the poll tax imposed on them. To-date, information available indicates that child labor is widespread and the escalating number of children subjected to it in rural and urban areas is a threat to the social and economic fabric of the country. This disturbing trend is closely linked to the increasing incidence of poverty and is exacerbated by the changing family structures and value systems emanating from economic pressures in families and in the government (Ray, 2000).
Majorities of the working children in Kenya are in the agricultural and related activities. According to the 1999 CBS study, 34% of all working children are in commercial agriculture and fishing while 23.6% work in subsistence agriculture and fishing. These figures are confirmed by other studies that indicate those children constitute between 20 and 30 percent of the casual labor force in the casual labor force in all types of plantation farming (Oyuga, 1997).

Children working in commercial agriculture are often subjected to a number of hazards. These include long working hours, extreme weather conditions, injuries from tools and equipment falls and carrying heavy loads. They are also subjected to dangers of insect and snakebites, handling of agrochemical products as well as coming in contact with chemical residue in soil or in the plants. Besides being denied the opportunity to grow up as children and attending school, studies have shown that children working in commercial agriculture are at risk of infections, injuries and other forms of exploitation including poor pay and sexual exploitation. 18.9% of children interviewed reported falling sick or getting injured in their place of work while 79.2% of the children reported low pay, 14.6% tiring or hard work while 2.9% long working hours (Little and Dellangela, 2008).

The phenomenon of child labour in commercial agriculture in Kenya is lied to a myriad of factors including poverty, inaccessibility and high cost of education. Historical factors such as colonialism, cultural attitudes, lack of policies and poor performance as well as low awareness on child rights. The Structural Adjustment Programme (SAP) introduced in Kenya by the World Bank and IMF and the accompanying policies of cost sharing policies in use of social services including education has become increasingly difficult for the poor to access basic services. It is therefore not surprising that a study done on child labour between 1982 and 1985 found many Kenyan children working in domestic labour. An update of the study in 1991 found some 12,000 Kenyan children working in coffee estates in Kiambu district (Miller, Mumane and Willett, 2008). With the AIDS pandemic, the number of AIDS related orphans have magnified from 600,000 to over 1 million. These are the children who are exposed to risks of joining street life and being exploited in all sectors employing children.

Experience in the districts currently under the programme show that there is districts specific child labour in the different commercial agriculture activities in each district. Coffee and Tea is a major employer of children in Kiambu districts, mostly plantation farms. In Makuyu
division, the community members noted that during coffee picking seasons, some mothers withdraw their children from school to accompany them to coffee plantation or small holder farms, so as to increase output. The mothers may ask the children to stay out of school to watch over the other siblings. Most of these children are aged between 6-10 years old and work from 6.00am to 10.00pm. Many children in the division also accompany their parents or self seek casual job in the nearby plantation farms belonging to multinational firm trading in coffee, tea, horticulture, fruits and vegetable farming for both domestic and export market. In Homa Bay district, most children are employed in fishing, sugarcane, and sisal plantations. The prevalence of the forms of child labour differ from one area to the other in Homa Bay district such as fishing in Asego and kochia divisions and sugarcane cutting in Ndhiwa and Riana divisions (Little and Dellangela, 2008).

The schools in plantation farms present unique social and economic problems that require special attention. Given the current downward trend in the productivity and profitability of cash crops in Kenya, poverty in the rural area has increased by an alarming rate. This has posed a great challenge to the efforts on child labor elimination by the ANPPCAN child labor programme through the IGA initiation in the schools. These problems include the lack of separate entity from the plantation in ownership of the land by the school, which has hampered the progress of the IGA in schools located within the plantation farms; long-term projects are not guaranteed security. Most of the workers in the plantations are migrants’ families from different communities who range from second to third generation, they have nowhere to go and many do not know their home of origin (Ilahi et al., 2003).

With the poor performance of the Kenyan economy, unpredictable weather conditions, poor management and marketing of the cash crops, poverty level is increasingly rising among the families in the plantations. For example, workers in Mboi-Kamiti cooperative society coffee plantations in Kiambu district, which is currently faced with management problems and the low coffee sales are migrants and have lived in the farm for more than three generations. They have lived in the farm for so long that they are not able to trace back their homes of origin. With negative turn around in the coffee sector, the workers have not been paid salaries for the last three years. Some parents particularly the women have been forced to look for odd jobs such as laundry work from teachers and business persons in Kiambu town, to provide for the family needs. However, these jobs are hard to come by and do not generate enough money to provide for two meals for the families. The teachers have on many
occasions been forced to share their packed lunch with a pupil who had gone without supper and breakfast. They have had to contribute from their own pockets money to pay for examination fees for some candidate pupils, buy uniforms or pay for school levies for children from needy families, sometimes even to buy the families food (Akanle, 2007). Theft cases have increased with many of them carried out by children from the migrant workers families who have dropped from school; they steal even the schoolbooks from the school office and storeroom. Many of the children have dropped out of school to accompany their parents in search of the odd jobs or their own jobs; some older ones have turned to crime and prostitution in Kiambu or in Nairobi City.

Chairperson of the school testifies to the personal knowledge of 10 children who have dropped out of school in a coffee estate that he manages, there are a total of 7 estates in the farm. As a result the school which used to enjoy considerable financial support from the parents has seen its revenues from parents contribution in form of school fees and development levies gone to almost zero. This has led to increased school dropout and consequent rise in the number of children joining child labor (Huffman, Wallace and Orazem. 2005).

The numerical figures turn the child into a mere statistic. However, each child out of school and in labor market has far reaching implication on the society at large. The children mature into adults with proper skills for employment thus propelling the vicious cycle of poverty, decay in moral standards, poor psychological and social well being development of the child leading to increased delinquency and crime rate and underdevelopment of the economies of such countries affecting international trade. Therefore child labor problem in one region of the world has no limitation to that population but has far reaching consequence on each of us, more so in with the current globalization trends. This calls for concerted efforts among all adults and children to stem out this vice (Ilahi et al., 2003).

2.4.2 Horticultural Income

Agriculture accounts for about 24% of Kenya’s GDP with an estimated 75% of the population depending on farming either directly or indirectly. The sub-sector employs approximately 4.5 million people countrywide directly in production, processing, and marketing, while another 3.5 million people benefit indirectly through trade and other
activities. Up to 80% of this population lives in the rural areas with poverty level of up to 56% (Bugembe et al. 2005).

One of the most dramatic changes in education over the last decade has been the “massification” of primary education. However there is still poor performance among the poor. According to Kakuru (2001) and Kasente, (2003), decisions still get taken that deny some boys and girls of school going age from getting access to primary school education. At higher levels most girls that access secondary education tend to come from middle and above wealth quintile families. The children themselves hardly make these decisions but rather it is their parents, guardians and relatives. For the children who are not enrolled in school, there are explanations for what drives the decision taken by their parents and guardians. For example some studies found investment in children to be related to household income. Bjorkman (2005) depicted the correlation between district income and girls and boys enrolment as follows: For low levels of income very few girls attended education and there is a large gap between boys and girls enrolment. The differential treatment of children’s education was explained by the returns to education, and the share of the children’s income transferred to his or her parents. On the other hand, the differential treatment of girls’ verses boys is related to the fact that parents’ values of child labor where girls bear the bulk of the additional work required at home.

Income shocks do not only affect investment in children’s education but also children’s performance. When families are constrained by fewer resources and there are differences in boys and girls access to resources, children’s learning is consequently affected. According to Bjorkman (2005), a negative income shock has two effects on the female student’s performance: marginal girls will be withdrawn from school than boys and the resources (food) provided will fall more for girls than for boys. As such only brighter girls reach grade seven. On the other hand, as girls are provided with less resources within the household, or alternatively, have to spend more time on domestic work as compared to boys and this effect causes girls to perform worse on the test as compared to boys.

According to Alissa (2010), Children’s test scores are lowest when poverty persist across the generations, and highest when material advantage is long-lasting. On the other hand, while good social skills also appeared to be linked across generations, these do not make a significant direct contribution to the current gap in cognitive test scores between rich and
poor children. Alisa found that the gap in attainment between children from the poorest and richest backgrounds grew particularly fast during the primary school years. By age eleven, only around three-quarters of children from the poorest fifth of families reached the expected level at Key Stage 2, compared with 97 per cent of children from the richest fifth, according to Alisa. Poorer children who performed well in Key Stage tests at age seven were more likely than better-off children to fall behind by age eleven, and poorer children who performed badly at seven were less likely to improve their ranking compared with children from better-off backgrounds – an important factor behind the widening gap.

Akanle (2007) identified Parental income in this work to be a cogent factor upon which the academic/vocational successes of secondary school students lie. He found Parental income not to be sufficient to sustain the academic and personal social life of the student in sub rural school areas. This to a large extent affects the psychological balance or homeostatic balance in the class room, which causes low concentration, low perception, frustration, sickness and emotional disability in academic performance of the students. Therefore when a child is deprived of the essential needs he may be found to perform poorly in his school work. This is consistent with Bugembe et al (2005) finding that child welfare at school is a determinant of child retention and also incorporates the rights of children to adequate living standards (shelter, nutrition and healthcare, water, and sanitation services) that are vital for child growth and development. Bugembe explained that In urban areas, most poor families can hardly afford the cost of water, resulting in children from poor families being sent on long treks in search of water, often having to stand in long queues and consequently being late or absent from school.

A study conducted by Sum and Fogg (1991) found that poor students are ranked in the 19th percentile on assessments while students from a mid-upper income family are ranked in the 66th percentile on assessments. In data from the Early Childhood Longitudinal Study (ECLS) measuring kindergarten students achievement on the ECLS reading achievement assessment, low-income students scored at about the 30th percentile, middle-income students scored at about the 45th percentile, and upper-income students scores at about the 70th percentile (Stem, 1997).

Students from low income families consistently, regardless of ethnicity or race, score well below average (Shirom and Rosenblatt, 2006). For example, in one study, 43.5% of low-
income students did not successfully meet any of the required subject area assessments while only 13.2% of low-income students met all of the required subject area assessments (Shirom and Rosenblatt, 2006). Similar studies have found comparable results (Bergeson, 2006). Poverty effects on the child increase with the duration of poverty. “Children who lived in persistently poor families scored 6 to 9 points lower on the various assessments than children who were never poor. The extent of poverty has a significant effect.

Children from very poor households, income below 50% of the poverty line scored 7 to 12 points lower than children from near-poor households while children in poor households, income between 50 to 100% of poverty line, scored 4 to 7 points lower (Scott, 1998). Through multiple studies on various age groups, middle adolescents tend to display the effects of poverty most prominently (Halpern-Felscher, et al., 1997). For middle adolescent students, the family economic risk and the level of neighborhood risk predicted behavior risk factors for all subgroups. Family income level was a predictor of school completion for all subgroups as well. By contrast, a few studies have found little correlation between income and academic achievement.

A study conducted by Mayer (1997) tested students in reading and mathematics prior to an increase in income followed by a post-test after the increase in income. The findings indicate the effect on reading scores ranges from a small negative effect to a small positive effect while the effect on mathematics scores is slightly greater. An additional study conducted by Mayer (1997) studied the test scores of siblings, testing one sibling prior to an increase in parental income and one sibling after an increase in parental income. The study found that “changes in income between siblings have a very small and statistically insignificant effect on children’s test scores and educational attainment. Thus, studies showed that there is no correlation between student’s test scores and income level. The occasional lack of correlation between income and achievement in some studies may be due to the source of the income.

2.4.3 Teachers’ Participation in Horticultural Farming

Work motivation refers to the psychological processes that influence individual behavior with respect to the attainment of workplace goals and tasks (Shirom and Rosenblatt, 2006). The received wisdom among occupational psychologists is that “pay on its own does not increase motivation” However, pecuniary motives are likely to be dominant among teachers in
countries where pay and other material benefits are too low for individual and household survival needs to be met.

Only when these basic needs have been met is it possible for ‘higher-order’ needs, which are the basis of true job satisfaction, to be realized. There is a wide range of views about teacher motivation in Africa and South Asia, most of which are country specific. However, there appear to be mounting concerns that unacceptably high proportions of teachers working in public school systems in many countries are poorly motivated due to a combination of low morale and job satisfaction, poor incentives, and inadequate controls and other behavioral sanctions. Consequently, standards of professional conduct and performance are low and falling in many countries (Scott et al., 2007).

The excessive politicization of public education has had a profound impact on levels of accountability in many education systems, which has, in turn, seriously affected teacher commitment and motivation (Bugembe et al., 2005). The poor and declining quality of public education has led to growing numbers of parents sending their children to non-state schools. In some countries, particularly in South Asia, this amounts to a mass exodus.

Incentives for schools and teachers in the public education system to perform well are frequently weak due to ineffective incentives and sanctions. Very low pay forces large proportions of teachers to earn secondary income from private tutoring and other activities and hence they start doing some other jobs concurrently. Poor human resource management also seriously de-motivates employees (Basu, 2000). Teacher management at the national and sub-national levels is nothing short of chaotic in many countries. Where teachers pay large bribes to secure employment and desired postings, this may impact on job commitment and overall motivation. In these situations, teaching positions are little more than sinecures, which means that teachers do not feel accountable to school managements, parents or the wider community. Being posted to a rural school is likely to de-motivating for most teachers.

Increasing hours of work, larger class sizes, more subjects, and constantly changing curricula are cited as major de-motivators in many countries. What is expected from teachers (the ‘social contract’) is not pitched at a realistic level in many countries given material rewards, workloads, and work and living environments. In many countries, teachers are being asked to take on more responsibilities, including HIV/AIDS education, counseling and community development (Basu, 2000).
The work and living environments for many teachers are poor, which tends to lower self-esteem and is generally de-motivating. Housing is a major issue for nearly all teachers. The "struggling teacher" is an all too common sight, especially in primary schools. High proportions of teachers remain untrained in many LICs, which adversely affects 'can-do' motivation.

Too often, teachers are 'thrown in at the deep end' with little or no induction. Multi-grade teaching is common in LICs, but most teachers are not adequately prepared for the special demands of this type of teaching (Rusk, 2002). This low self esteem and lack of motivation has made many teachers in Kenya to start doing others jobs concurrently. Many teachers have started business in their areas of work while others have ventured in horticultural farming which increases their absenteeism.

Research has already shown that teacher absenteeism can have a negative affect on learning. Research conducted by Miller (2002) has shown that after using a substitute, teachers often have to re-teach material, restore order, and rebuild relationships with students. Researchers also found that when a teacher is absent ten days from class, student performance in math is significantly reduced (Miller et al.). Studies also show that teachers are absent more often in elementary schools, which has a significant impact on these students who are developing their knowledge and skills at an increased pace during these years (Pitkoff, 1993). Another important finding in a study by Clotfelter et al. (2001) was that higher teacher absenteeism is associated with more student absenteeism, which will also lead to poor student performance as the student is not present in class to participate and learn. It seems reasonable to conclude that a student may not view school attendance as important if their classroom teacher is absent from class regularly.

Secondly, teacher absenteeism has been shown to be more prevalent in lower income schools. In studies conducted at Duke University in 2007, Charles Clotfelter et al. found that schools having more low socioeconomic and minority students also had higher teacher absence rates and lower student test scores. They found that the teachers in the poorest schools in North Carolina took an average of one extra sick day per year when compared to wealthier schools and also found that teacher absences are also a problem in developing countries, where absence rates were found to range from 20 to 44 percent in Kenya and India (Clotfelter et al., 2007). This study found that teacher absences in the United States are around five percent.
which is significantly lower than the absenteeism rates in developing countries, but compared to the absenteeism rates of United States workers in other occupations at less than three percent, the rate of teacher absences in the United States is fairly high (Clotfelter et al., 2007). This study drew a commonsense conclusion, supported by statistical evidence, showing that students whose teacher takes more days off of work score lower on state achievement tests. Of particular concern in this study was the finding that absences occur with greater frequency in lower-income schools.

In a 2002 study of California Charter Schools serving low socioeconomic status students, researchers concluded that student performance on standardized tests is influenced by their socioeconomic status (Slovacek, Kunnan, and Kim, 2002). David Rusk, former mayor of Albuquerque, (2001) gave a speech about the importance of education and the relationship between economic status and performance. He discussed a 1966 study conducted by the then U.S. Office of Education that found that the economic status of a student’s family as well as that of the other students in that school were the strongest predictors of academic achievement. The study also found that low-income students learn best when they are surrounded by middle-class students in middle-class schools. Rusk conducted a study of sixty elementary schools in Madison and Dane County in New Mexico and found that a student’s socioeconomic status was the most important factor affecting academic performance as measured by standardized tests.

2.4.4 Parents’ Involvement

It is widely recognized that if pupils are to maximize their potential from schooling they will need the full support of their parents. Attempts to enhance parental involvement in education occupy governments, administrators, educators and parents’ organizations across North America, Australasia, continental Europe, Scandinavia and the UK. It is anticipated that parents should play a role not only in the promotion of their own children’s achievements but more broadly in school improvement and the democratization of school governance. The European Commission, for example, holds that the degree of parental participation is a significant indicator of the quality of schooling. Sacker et al (2002) set out to examine how inequalities in educational achievement and adjustment come about. It has been well known for decades that pupils’ educational achievement is related to parents’ social class yet the mechanisms that form this relationship are not well understood.
The present interest in this model is the presumed role for parental involvement. Involvement is assumed to be a working link between social class and pupil achievement and adjustment (Basu, 2000). In this process, involvement is assumed to be influenced by material deprivation and parental aspiration. The poorer are people's circumstances the more difficult it is assumed to be to support a child's educational development. The latter, parental aspiration is in turn influenced by the child's evident achievement. The more the child achieves, the greater is the parental expectation. It is assumed here that social class has its influence through the four intervening variables (parental involvement, material deprivation, parental aspiration and school composition). Additionally, it is assumed that social class influences achievement and adjustment in ways not specified in the model, hence the direct arrows from class to achievement and adjustment (Chiang, 2003).

Checchi and Salvi (2010) found that in Ghana some negative correlation emerged with the probability of enrolment and low income jobs. In Mauritania they found that, there is also positive association with household head working as public employee, which is typically associated with less volatile higher earnings. For Uganda, the coefficients of both father and mother education exhibited a nicely increasing trend, suggesting an increasing pressure on educating the offspring, especially when the main source of income comes from 'transfer', which helps to raise school attendance. However one third of Ugandans classified as unemployed were actually taking up unpaid family jobs, thus agreeing with Okumu et al (2008), finding that a large percentage of the economically active persons are economically unproductive, thereby vindicating the household's dependence burden implying that educated workers accept only high quality jobs and possibly experience long spells of unemployment and or migration. This squeezes out the household's resources, resulting into pupils in the family dropping out of school. Another problem is that Dr Dunne and her colleagues, who presented their findings to the British Educational Research Association's annual conference, examined pupil-placement decisions in English and Math in 44 secondary schools and 124 primaries. Their analysis included information on pupils' prior attainment, gender, ethnicity and home neighbourhood and found that working-class pupils are more likely to be placed in lower sets than middle-class pupils who have the same test results, and that, pupils from middle-class backgrounds more likely to be assigned to higher sets, irrespective of their prior attainment. The schools said that prior attainment and perceived ability were the main criteria on which setting decisions were based. However, over half the pupils with low prior
attainment in English ended up in middle or high sets. Setting decisions were therefore clearly not made on this basis alone (Akanle, 2007). Teacher judgments and pupil behaviour influenced setting decisions but social class was more important. This phenomenon is present in Uganda where pupils who wish to transfer from a rural school to urban schools are often placed in lower classes due to perceived low attainment in their previous schools.

To conclude this review, there is a huge complexity of reasons why students from low socioeconomic status are less likely to excel in education. These range from family and community expectations due to possible returns of education for the family, financial hardship, parents ambivalent attitudes to education, poor attendance patterns due to need for child labour (Bugembe et al, 2005). Likewise there are also many reasons why pupils from high socioeconomic status excel in education. These include ability of literate parents to support pupils with home and school work, monitoring and supervision of children’s school work and access to information and social networks necessary for their children’s success in life.

Parents practicing horticultural farming at times are too busy to get time for their children. They at times get too tired to help their children in their homework or participate in their feelings. Scott et al., (2007) have also found that intensive horticulture often requires agri-inputs such as fungicides, insecticides and manure. Use of these products can cause a variety of health and environmental risks if applied inappropriately. Often, mishandling is associated with a lack of understanding of instructions such as application interval charts for chemical products. Spraying using a backpack comprised one common application method of pesticides that was reported by 42 percent of the respondents. Studies on the use of backpacks for manual spraying of pesticides showed that parts of the operator’s body are exposed to a great deal of residue (Bulacio et al, 2001), with higher levels of chemical concentration showing on the feet, legs and thighs. Parents often get sick after using agri-inputs such as fungicides and insecticides and leave the family burden to their children. Other parents may die after using the fungicides and insecticides leaving their children with the burden of catering for their young ones.
2.5 Conceptual Framework

This research study is motivated to investigate on the influence of horticultural farming on academic performance of primary schools in Timau division. The independent variables in this study were child labour in horticultural farming, horticulture income to the parent, parents involvement in horticulture farming and teachers involvement in horticulture farming. The study therefore seeks to determine the relationship between the dependent variable (academic performance in primary schools) and the independent variables.

![Figure 1: Conceptual framework](image)

**Intervening variable**

- Child labour in horticultural farming
- Horticultural parents' income
- Teachers' involvement in horticultural farming
- Parents' involvement in horticultural farming

**Dependent variable**

- Academic performance in primary schools

**Moderating variables**

- Government policy
- Demographic factors
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the research design, the study variables, the study area, the study population, sampling techniques and sample size determination, construction of research instruments, pilot study, validity and reliability of the instruments, methods of data collection and data analysis.

3.2 Research Design

This study used descriptive research design. This design is appropriate because it aims at gathering facts, knowledge, opinions and attitudes about people, events or procedures. Descriptive research studies are designed to obtain pertinent and precise information concerning the status of phenomena and whenever possible to draw valid conclusions from the facts discovered.

3.3 Target Population

Target population in statistics is the specific population about which information is desired. A population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. This definition ensures that population of interest is homogeneous. Population studies are more representative because everyone has equal chance to be included in the final sample that is drawn. The target population for this study was teachers, students and parents in primary schools located in Timau division. There are 12 primary schools in Timau division. The target population of this study was therefore 3156.

Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Target population in 12 schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>2269</td>
</tr>
<tr>
<td>Teachers</td>
<td>101</td>
</tr>
<tr>
<td>Parents</td>
<td>786</td>
</tr>
<tr>
<td>Total</td>
<td>3156</td>
</tr>
</tbody>
</table>
3.4 Sampling Techniques and Sample Size

A sample is a set of entities drawn from a population with the aim of estimating characteristic of the population. It is a fraction or portion of a population selected such that the selected portion represents the population adequately. Cooper and Schindler (2003) explained that the basic idea of sampling is, selecting some of the elements in a population, so that the same conclusions can be drawn about the entire population. 10-30% is a good representation of the target population.

According to Mugenda and Mugenda (1999) from normal distribution the population proportion can be estimated to be

\[ n = \frac{Z^2 P Q}{\alpha^2} \]

Where: \( Z \) is the \( Z \)-value = 1.96

\( P \) Population proportion 0.50

\( Q = 1 - P \)

\( \alpha = \text{level of significance} = 5\% \)

\[ n = \frac{1.96^2 \times 0.5 \times 0.5}{0.5^2} \]

\[ n = 384 \]

Adjusted sample size

\[ n' = \frac{384}{1 + (384/3156)} \]

Approx = 342 respondents

The sample size was 342 respondents as shown in the table below.
Table 3.2: Sampling Frame

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Target population in 12 schools</th>
<th>Ratio</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>2269</td>
<td>0.108</td>
<td>246</td>
</tr>
<tr>
<td>Teachers</td>
<td>101</td>
<td>0.108</td>
<td>11</td>
</tr>
<tr>
<td>Parents</td>
<td>786</td>
<td>0.108</td>
<td>85</td>
</tr>
<tr>
<td>Total</td>
<td>3156</td>
<td>0.108</td>
<td>342</td>
</tr>
</tbody>
</table>

The researcher used a stratified sampling to select teachers, pupils and parents from each of the schools. Stratified samplings are a method applied if the population from which a sample is to be drawn does not constitute a homogeneous group, and hence requires comparisons between various sub-groups. The procedure assures the researcher that the sample was representative of the population in terms of certain critical factors that have been used as a basis for stratification.

3.5 Data Collection

This study used both secondary and primary data. Primary data was collected by use of questionnaires; the questionnaires included structured and unstructured questions. The structured questions were used in an effort to conserve time and money as well as to facilitate an easier analysis as they are in immediate usable form; while the unstructured questions were used as they encouraged the respondent to give an in-depth and felt response without feeling held back in revealing of any information. With unstructured questions, a respondent's response gives an insight to his or her feelings, background, hidden motivation, interests and decisions. The researcher then obtained end of year results from the 12 schools for pupils in classes 6, 7 and 8. These pupils are more susceptible by virtue of their age, understanding and body stature which make them likely to be attracted to horticultural practices. Further, the researcher used focus group discussions to collect data from the pupils. Each of the primary schools had one group to discuss the questions in the focus group discussion guide. The pupils were selected from classes six, seven and eight since the researcher believes that they have the required information in relation to the objectives of the study.
3.6 Validity

Validity of a questionnaire refers to the extent to which it measures what it claims to measure. Validity is the degree to which result obtained from the analysis of the data actually represents the phenomenon under study. Validity was ensured by having objective questions included in the questionnaire. This was achieved by, pre-testing the instrument to be used to identify and change any ambiguous, awkward, or offensive questions and technique.

3.7 Reliability

Reliability on the other hand refers to a measure of the degree to which research instruments yield consistent results. In this study, reliability was ensured by pre-testing the questionnaire with a selected sample from standard eight students which was not included in the actual data collection. The pre-test was conducted by both the principal researcher and the research assistants to enhance clarity of the questionnaires. The pre-test exercise took place at the convenience of both the researcher and the research assistance.

3.8 Data Analysis

This study was both quantitative and qualitative in nature. Once the data was collected it was checked for completeness ready for analysis. The data from the field was first coded according to the themes researched on the study. Analysis was done with aid of the statistical package for social sciences (SPSS V 19.0) package. Descriptive statistics generated such as percentages, mean scores and proportions was presented in tables and figures. Qualitative data collected was checked for completeness and cleaned ready for data analysis. Content analysis was used in processing of this data and results were presented in prose form. Content analysis is a summarizing, qualitative analysis of messages that relies on the scientific method (including attention to objectivity, intersubjectivity, a priori design, reliability, validity, generalisability and replicability) and is not limited as to the types of variables that may be measured or the context in which the messages are created or presented.

The researcher also used a multivariate regression model. The independent variables of this study are child labour, horticultural income, teachers’ participation and parents’ involvement. The multivariate regression model for this study was:

\[ Y = A + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 \]
When Y was academic performance of primary schools, X1 was child labour, X2 was agricultural income, and X3 was teachers' participation and X4 was parents' involvement.

1.9 Ethical Issues

Due to sensitivity of some information collected, the researcher holds a moral obligation to use the information with utmost propriety. Since the respondents might be reluctant to disclose some information, the researcher needs to reassure the respondents of use and confidentiality of the information given.
### 3.10 Operational Definition of Variables

<table>
<thead>
<tr>
<th>Research Objectives</th>
<th>Type Of Variable</th>
<th>Indicator</th>
<th>Measuring of Indicators</th>
<th>Data Collection Methods</th>
<th>Level of Scale</th>
<th>Types of Analysis</th>
<th>Level of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>To determine the influence of child labour in horticultural farming on academic performance of pupils of primary schools in Timau division.</td>
<td>Independent</td>
<td>Child labour</td>
<td>Absenteeism, Few hours in school, Tiredness, Sickness and illnesses, Hunger</td>
<td>Questionnaire, focus group discussion</td>
<td>Ordinal</td>
<td>Nominal</td>
<td>Descriptive</td>
</tr>
<tr>
<td>To establish the influence of horticultural income to the parent on academic performance of pupils of primary schools in Timau division.</td>
<td>Independent</td>
<td>Horticultural income to the parent</td>
<td>Lack of basic school necessities, Fewer learning resources</td>
<td>Questionnaire, records, self assessment, focus group discussion</td>
<td>Ordinal</td>
<td>Nominal</td>
<td>Descriptive</td>
</tr>
<tr>
<td>To examine the effect of parents involvement in</td>
<td>Independent</td>
<td>Parents involvement</td>
<td>Material deprivation Parental</td>
<td>Questionnaire document</td>
<td>Ordinal</td>
<td>Nominal</td>
<td>Descriptive</td>
</tr>
</tbody>
</table>
horticultural farming on academic performance of pupils of primary schools in Timau division.

To find out the effects of teachers involvement in horticultural farming on academic performance of pupils of primary schools in Timau division.

<table>
<thead>
<tr>
<th>Academic performance</th>
<th>Independent Teachers involvement in horticultural farming</th>
<th>Absenteeism Lack of commitment Lack of completing syllabus</th>
<th>Questionnaire focus group discussion</th>
<th>Ordinal Nominalel Non-Parametric Descriptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government policy</td>
<td>Intervening Policies Rules Regulation</td>
<td>Questionnaire focus group discussion</td>
<td>Ordinal Nominalel Non-Parametric Descriptive</td>
<td></td>
</tr>
<tr>
<td>Demographic factors</td>
<td>Moderating Gender, age</td>
<td>Questionnaire</td>
<td>Ordinal Nominalel Non-Parametric Descriptive</td>
<td></td>
</tr>
</tbody>
</table>

To find out the effects of teachers involvement in horticultural farming on academic performance of pupils of primary schools in Timau division.

<table>
<thead>
<tr>
<th>Academic performance</th>
<th>Independent Teachers involvement in horticultural farming</th>
<th>Absenteeism Lack of commitment Lack of completing syllabus</th>
<th>Questionnaire focus group discussion</th>
<th>Ordinal Nominalel Non-Parametric Descriptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government policy</td>
<td>Intervening Policies Rules Regulation</td>
<td>Questionnaire focus group discussion</td>
<td>Ordinal Nominalel Non-Parametric Descriptive</td>
<td></td>
</tr>
<tr>
<td>Demographic factors</td>
<td>Moderating Gender, age</td>
<td>Questionnaire</td>
<td>Ordinal Nominalel Non-Parametric Descriptive</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter focused on interpretation and presentation of the findings. The general objective of the study is to establish the influence of horticultural farming on academic performance of pupils in primary schools in Timau Division of Buuri District. The study also sought to determine the influence of child labour in horticultural farming, income from horticulture to the parent, parents' involvement in horticultural farming and teachers' involvement in horticultural farming on academic performance of primary schools pupils in Timau Division. The researcher made use of frequency, percentages, mean and standard deviation to present data.

4.2 The Response Rate

The sample size of this study was 342 out of which 246 were students. 85 were parents and 11 were teachers. Out of this 276 responses were obtained which represents an 80.70% response rate. According to Babbie (2002) any response of 50% and above is adequate for analysis thus 80.70% is even better.

4.3 General Information

This section of general information covered the gender, age bracket, level of education and duration in the school.
Table 4.1: Gender and age bracket of the respondents

<table>
<thead>
<tr>
<th>Category</th>
<th>Parent</th>
<th>Teacher</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Count</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>44.8%</td>
<td>46.4%</td>
</tr>
<tr>
<td>Male</td>
<td>Count</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>55.2%</td>
<td>53.6%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Age bracket</td>
<td>Count</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>41-50 yrs</td>
<td>percent</td>
<td>6.9%</td>
<td>35.7%</td>
</tr>
<tr>
<td>31-40 yrs</td>
<td>Count</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>13.8%</td>
<td>14.3%</td>
</tr>
<tr>
<td>20-30 yrs</td>
<td>Count</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>79.3%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

From the findings in Table 4.1, 54.4% of the respondents indicated that they were male while 45.6% indicated that they were female. Further, 53.6% of the teachers were male and 46.4% were female. In addition, 55.2% of the parents were male and 44.8% were female. In relation to their age bracket, 64.9% of the respondents indicated that they were aged between 20 and 30 years, 21.1% were aged between 41 and 50 years and 14% were aged between 31 and 40 years. Although most of the respondents in this study were male, the difference between the two groups (male and female) was 8.8%. This is a result of more males migrating to the area to provide labour as horticultural farming is labour intensive.
Table 4.2: Level of education and duration in school

<table>
<thead>
<tr>
<th>Category</th>
<th>Parent</th>
<th>Teacher</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>highest level of</td>
<td>University</td>
<td>Count</td>
<td>2</td>
</tr>
<tr>
<td>education</td>
<td>percent</td>
<td>3.4%</td>
<td>14.3%</td>
</tr>
<tr>
<td>College</td>
<td>Count</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>percent</td>
<td>34.5%</td>
<td>67.9%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Secondary level</td>
<td>Count</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>percent</td>
<td>51.7%</td>
<td>10.7%</td>
<td>43.9%</td>
</tr>
<tr>
<td>Primary level</td>
<td>Count</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>percent</td>
<td>10.3%</td>
<td>7.1%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td>percent</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Duration in the</td>
<td>Above 12 years</td>
<td>Count</td>
<td>11</td>
</tr>
<tr>
<td>school</td>
<td>percent</td>
<td>24.1%</td>
<td>53.6%</td>
</tr>
<tr>
<td>3 to 9 years</td>
<td>Count</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>percent</td>
<td>41.4%</td>
<td>10.7%</td>
<td>35.1%</td>
</tr>
<tr>
<td>Less than 3 years</td>
<td>Count</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>percent</td>
<td>34.5%</td>
<td>35.7%</td>
<td>35.1%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td>percent</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

In relation to their highest level of education, the findings in Table 4.2 show that 50.9% of the respondents indicated that they were college graduates, 31.6% indicated that they had secondary education, 8.8% indicated that they were university graduates and the same percentage had primary education. In addition, 38.6% of the respondents indicated that they had been in the school for above 12 years. This shows that 53.6% of the teachers had been teaching in their school for above 12 years and 24.1% of the parents had children in the school for above 12 years. Further, 35.1% of the respondents indicated that they had been in
the school for less than 3 years and 26.3% of the respondents indicated that they had been in the school for between 3 and 9 years.

4.3 Child Labour and Horticultural Farming

This study sought to determine the influence of child labour in horticultural farming on academic performance of primary schools pupils in Timau division.

Table 4.3: Child labour and academic performance

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>To no extent at all</td>
<td>7</td>
</tr>
<tr>
<td>To a low extent</td>
<td>2</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>16</td>
</tr>
<tr>
<td>To a great extent</td>
<td>25</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

As indicated above in table 4.3, 43.9% of the respondents indicated that they child labour affects the academic performance of primary schools in Timau division to a great extent. 28.1% indicated to a moderate extent. 12.3% indicated to a very great extent. 12.3% indicated to no extent at all and 3.5% indicated to a moderate extent. This clearly shows that child labour affects the academic performance of primary schools in Timau division to a great extent.

Table 4.4: Horticultural farms and child employment

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

On whether horticultural farms in Timau division were employing children, the findings in Table 4.4 show that 70.2% of the respondents indicated that they were not while 29.8%
indicated that horticultural farms were employing children. This clearly shows that child labour was taking place in Timau division but was not very rampant.

Table 4.5: Academic performance

<table>
<thead>
<tr>
<th>Performance</th>
<th>Frequency (n)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor performance</td>
<td>47</td>
<td>82.5</td>
</tr>
<tr>
<td>Bad performance</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Moderate performance</td>
<td>7</td>
<td>12.3</td>
</tr>
<tr>
<td>Good performance</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The rating of the academic performance of pupils working in horticultural farms in Timau division by teachers is shown in Table 4.5. From the findings, 82.5% of the respondents indicated that they had a poor performance, 12.3% indicated that they had moderate performance, 3.5% indicated that they had a bad performance and 1.8% indicated that they had good performance. This clearly shows that the academic performance of pupils working in horticultural farms in Timau division is poor.

Table 4.6: Child labour and opportunity to attend school

<table>
<thead>
<tr>
<th>Extent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>To no extent at all</td>
<td>3</td>
<td>5.3</td>
</tr>
<tr>
<td>To a low extent</td>
<td>6</td>
<td>10.5</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>13</td>
<td>22.8</td>
</tr>
<tr>
<td>To a great extent</td>
<td>21</td>
<td>36.8</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>14</td>
<td>24.6</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
</tr>
</tbody>
</table>

According to the findings as shown by Table 4.6 above, 36.8% of the respondents agreed to a great extent that child labour in horticultural farming denies children the opportunity to grow up as children and attending school. 24.6% indicated to a very great extent, 22.8% indicated to a moderate extent, 10.5% indicated to a low extent and 5.3% indicated to no
This shows that child labour in horticultural farming denies children the opportunity to grow up as children and attending school.

Table 4.7: Child labour affects the academic performance of primary schools

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism</td>
<td>4.6842</td>
<td>.53977</td>
</tr>
<tr>
<td>Few hours in school</td>
<td>4.1579</td>
<td>.49242</td>
</tr>
<tr>
<td>Tiredness</td>
<td>3.6140</td>
<td>.99560</td>
</tr>
<tr>
<td>Sickness and illnesses</td>
<td>3.5263</td>
<td>1.03691</td>
</tr>
<tr>
<td>Hunger</td>
<td>3.6140</td>
<td>.95906</td>
</tr>
</tbody>
</table>

The extent to which the respondents agreed that the stated aspects of child labour affect the academic performance of primary schools in Timau division is shown in Table 4.7. A five point Likert scale was used to interpret the data. According to the scale, those aspects which were disagreed 1 while those which were strongly agreed were awarded 5. Within the continuum are 2 for disagree, 3 for moderate agree and 4 for agree. Mean (weighted average) and standard deviation were used to analyse the data. According to the researcher those aspects with a mean close to 4.0 were rated as to a very great extent while those with a mean close to 3.0 were rated to a low extent or even not considered at all. According to the findings the respondents agreed with a mean of 4.6842 that absenteeism affects the academic performance of primary schools. Further, the respondents agreed with a mean of 4.1579 that few hours in school affect the academic performance of primary schools. In addition, the respondents agreed with a mean of 3.6140 that tiredness affects the academic performance of primary schools. The respondents also agreed with a mean of 3.6140 that hunger affects the academic performance of primary schools. Lastly, the respondents agreed with a mean of 3.5263 that sickness and illnesses affects the academic performance of primary schools.

4.4 Horticultural Income

The study also sought to establish the influence of income from horticulture to the parent on academic performance of primary schools pupils in Timau division.
The extent to which the income of parents working in horticultural farms affects the academic performance of primary schools in Timau division is shown in Table 4.8. From the findings, 33.3% of the respondents indicated that the income of parents working in horticultural farms affects the academic performance of primary schools in Timau division to a moderate extent. 29.8% indicated to a low extent, 26.3% indicated to a great extent, 5.3% indicated to a very great extent and the same percentage indicated to no extent at all. This shows that the income of parents working in horticultural farms affects the academic performance of primary schools in Timau division to a moderate extent.

The rating of the academic performance of pupils whose parents work in horticultural farms are shown in Table 4.9. From the findings, 64.9% of the respondents rated the performance as moderate, 15.8% rated the performance as poor, 10.5% rated the performance as good, 5.3% of the respondents rated the performance as bad and 3.5% rated the performance as excellent.
From these findings we can deduce that the academic performance of children whose parents work in horticultural farms were moderate.

**Table 4.10: Incapability of parents (poverty)**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>To no extent at all</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>To a low extent</td>
<td>4</td>
<td>7.0</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>16</td>
<td>28.1</td>
</tr>
<tr>
<td>To a great extent</td>
<td>22</td>
<td>38.6</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>14</td>
<td>24.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The extent to which the respondents agreed with the statement that "Incapability of parents (poverty) affects the psychological balance or homeostatic balance in the classroom, which causes low concentration, low perception, frustration, sickness and emotional disability" is shown in Table 4.10. From the findings, 38.6% of the respondents reported to a great extent, 28.1% reported to a moderate extent, 24.6% reported to a very great extent, 7.0% reported to a low extent and 1.8% reported to no extent at all. This clearly shows that incapability of parents (poverty) affects the psychological balance or homeostatic balance in the classroom, which causes low concentration, low perception, frustration, sickness and emotional disability.

**Table 4.11: Aspects of the income of parents and academic performance**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of basic school necessities</td>
<td>3.7895</td>
<td>.90113</td>
</tr>
<tr>
<td>Fewer learning resources</td>
<td>3.4561</td>
<td>.94624</td>
</tr>
</tbody>
</table>

The extent to which the respondents agreed that the stated aspects of income of parents in horticultural farming affect the academic performance of primary schools in Timau division is shown in Table 4.11. From the findings, the respondents agreed with a mean of 3.7895 that lack of basic school necessities affects the academic performance of primary schools in Timau division. The respondents also agreed with a mean of 3.4561 that fewer learning resources affect the academic performance of primary schools in Timau division.
4.5 Teacher’s Involvement in Horticultural Farming

The study also sought to establish the influence of teachers’ involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

Table 4.12: Teacher’s participation and academic performance

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>To no extent at all</td>
<td>4</td>
</tr>
<tr>
<td>To a low extent</td>
<td>17</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>16</td>
</tr>
<tr>
<td>To a great extent</td>
<td>14</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

As indicated in Table 4.12 above, 29.8% of the respondents indicated that teacher’s participation in horticultural farming affect the academic performance of primary schools in Timau division to a low extent, 28.1% indicated to a moderate extent, 24.6% indicated to a great extent, 10.5% indicated to a very great extent and 7.0% indicated to no extent at all. From these findings we can deduce that teacher’s participation in horticultural farming affect the academic performance of primary schools in Timau division to a low extent.

Table 4.13: Teachers motivation in Timau division

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very poor</td>
<td>19</td>
</tr>
<tr>
<td>Poor</td>
<td>15</td>
</tr>
<tr>
<td>moderate</td>
<td>20</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
</tbody>
</table>

As indicated in Table 4.13 above, 35.1% of the respondents rated motivation of teachers in Timau division as moderate, 33.3% rated it as very poor, 26.3% rated it as poor and 5.3% rated it as good. From these findings we can deduce that teachers in Timau division were moderately motivated.
Table 4.14: Aspects of involvement of teachers in horticultural farming

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism</td>
<td>4.0175</td>
<td>6.97314</td>
</tr>
<tr>
<td>Lack of commitment</td>
<td>3.0702</td>
<td>0.99749</td>
</tr>
<tr>
<td>Failure to complete the syllabus</td>
<td>2.9298</td>
<td>1.47430</td>
</tr>
</tbody>
</table>

Table 4.14 above shows the extent to which the respondents agreed that the stated aspects of involvement of teachers in horticultural farming affect the academic performance of primary schools in Timau division. According to the findings, the respondents agreed with a mean of 4.0175 that absenteeism affects the academic performance of primary schools in Timau division. In addition, the respondents agreed with a mean of 3.0702 that lack of commitment affects the academic performance of primary schools in Timau division. Further, the respondents agreed with a mean of 2.9298 that failure to complete the syllabus affects the academic performance of primary schools in Timau division.

4.6 Parents' Involvement in Horticultural Farming

The study also sought to examine the influence of parents' involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

Table 4.15: Involvement of parents in horticultural farming

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>48</td>
<td>84.2</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As indicated in Table 4.15, 84.2% of the respondents indicated that involvement of parents in horticultural farming affects the academic performance of primary schools in Timau division while 15.8% disagreed. This clearly shows that that involvement of parents in horticultural farming affects the academic performance of primary schools in Timau division.
Table 4.16: Aspects of parents’ involvement in horticultural farming

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material deprivation</td>
<td>3.2807</td>
<td>.97750</td>
</tr>
<tr>
<td>Insufficient parental aspirations</td>
<td>3.9123</td>
<td>.93122</td>
</tr>
<tr>
<td>School composition</td>
<td>3.2807</td>
<td>.75010</td>
</tr>
<tr>
<td>Social class</td>
<td>3.1053</td>
<td>.93892</td>
</tr>
</tbody>
</table>

Table 4.16 above shows the extent to which the respondents agreed that the stated aspects of parents’ involvement in horticultural farming affect the academic performance of primary schools in Timau division. From the findings, the respondents agreed with a mean of 3.9123 that insufficient parental aspirations affect the academic performance of primary schools in Timau division. The respondents also agreed with a mean of 3.2807 that material deprivation affects the academic performance of primary schools in Timau division. In addition, the respondents agreed with a mean of 3.2807 that school composition affects the academic performance of primary schools in Timau division. Further, the respondents agreed with a mean of 3.1053 that social class affects the academic performance of primary schools in Timau division.

4.6.1 Effects of parents’ involvement in horticultural farming on the academic performance

On the effects of parents’ involvement in horticultural farming on the academic performance of primary schools in Timau Division, the study found that parents’ involvement in horticultural farming led to absenteeism of children, lack of participation in school activities, poor performance in class work, consumption of illicit brew and lack of cooperation between parents causing divorces. The respondents also indicated that horticultural farming has so much labour whereby the parent has no time with the child. It was also indicated that horticultural farming led ignorance of the performance of his or her child, teachers tend to miss classes and attend to their work, encourages child labour due to large labour required in horticultural farming, Polygamous and deletion in generation continuity. The study also found that parents concentrate on horticultural farming and forget the needs of their children, no follow up of pupils’ work, leads to little material support if needed and leads to lack of school basic necessities.
However, the respondents indicated that parents benefit from horticultural farming where they get money to cater for their children in schools.

4.7 Regression Analysis

The researcher used a multivariate regression model to establish the relationship between independent variable (child labour, horticultural income, teachers' participation and parents' involvement) and the dependent variable which was academic performance of primary schools. The multivariate regression model for this study was:

$$Y = A + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$$

Where $Y$ was academic performance of primary schools, $X_1$ was child labour, $X_2$ was horticultural income, and $X_3$ was teachers' participation and $X_4$ was parents' involvement.

Table 4.17: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.861</td>
<td>0.724</td>
<td>0.639</td>
<td>.52236</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), parents' involvement, horticultural income, teachers' participation, child labour

The four independent variables that were studied, explain 72.4% of the academic performance of primary schools as represented by the $R^2$. This therefore means that other factors not studied in this research contribute 27.6% of the academic performance of primary schools.
The significance value is 0.016 which is less that 0.05 thus the model is statistically significance in predicting how parents’ involvement, horticultural income, teachers’ participation, child labour affect academic performance of primary schools. The F critical at 5% level of significance was 5.949. Since F calculated is greater than the F critical (value = 1.964), this shows that the overall model was significant.

**Table 4. 18: ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.127</td>
<td>5</td>
<td>.532</td>
<td>5.949</td>
<td>.016</td>
</tr>
<tr>
<td>Residual</td>
<td>14.189</td>
<td>52</td>
<td>.273</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16.316</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), parents’ involvement, horticultural income, teachers’ participation, child labour

b. Dependent Variable: academic performance of primary schools

**Table 4. 19: Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.476</td>
<td>.868</td>
</tr>
<tr>
<td>Child labour</td>
<td>-.638</td>
<td>.090</td>
</tr>
<tr>
<td>Horticultural income</td>
<td>-.340</td>
<td>.083</td>
</tr>
<tr>
<td>Teachers’ participation</td>
<td>-.191</td>
<td>.083</td>
</tr>
<tr>
<td>Parents’ involvement</td>
<td>-.131</td>
<td>.154</td>
</tr>
</tbody>
</table>

a. Dependent Variable: academic performance of primary schools
According to the findings, the multivariate regression was:

\[ Y = 3.476 - 0.638X_1 - 0.340X_2 - 0.191X_3 - 0.131X_4 \]

As shown in the findings, the study found that there is a negative relationship between child labour and academic performance of primary schools. A unit increase in the scores child labour would lead to a 0.638 decrease in the scores of academic performance of primary schools. The study also found that a unit increase in the scores of horticultural income would lead to a 0.340 decrease in the scores of academic performance of primary schools. The findings also show that a unit increase in the scores of teachers’ participation would lead to a 0.191 decrease in the scores of academic performance of primary schools. The study also found that a unit increase in the scores of parents’ involvement would lead to a 0.131 decrease in the scores of academic performance of primary schools.

The hypotheses of the study were:

H₁: Child labour involvement in horticulture farming affects academic performance of primary schools pupils in Timau division.

H₂: Income from horticulture affects academic performance of primary schools pupils in Timau division.

H₃: Parent’s involvement in horticulture farming influences the performance of primary schools pupils in Timau division.

H₄: Teacher’s involvement in horticulture farming influences academic performance of primary schools pupils in Timau division.

As shown in regression coefficients in Table 19, hypotheses H₁, H₂, H₃ and H₄ were all supported to be significant with coefficients at \( p < 0.05 \) however, the hypothesized sign for the four variables were found to be negative (parents' involvement, horticultural income, teachers' participation, child labour).

4.8 Focus Group Discussions

The pupils indicated that the major factors affecting the academic performance in Timau Division include absenteeism, failure to complete the syllabus at all and teacher absence most of the times. The pupils also indicated that children are employed in the horticultural farms hence no time for studies. Involvement of parents in horticultural farming makes them lack
time for their children. Some teachers get involved in the horticultural business hence have little time for school.

In addition, child labour affects the academic performance of pupils since they get too tired to learn, leads to absenteeism from school, exposes them to injuries, makes them sick and leads to lack of interest in school due to easy money.

On how horticultural income influences the academic performance of children in primary schools, the pupils indicated that it leads to negative attitude towards education due to easy money, tends to copy successful horticultural farmers hence lack of interest for school and makes them seek employment in the horticultural farms. The pupils also indicated that the income is too little to support children in school and they are unable to provide the basic needs for the children.

In relation to teachers' involvement in horticultural farming, the pupils indicated that this leads to teachers absenteeism from school, leads incomplete syllabus, leads to lack of concern towards students. The respondents also indicated that teachers lack interest in extra tuition thus lack of enough contact hours with the students and teachers get sick due to exposure in the farming.

On whether their parents were available to guide them the pupils indicated that they do not attend to school functions and activities, academic follow ups not effected or not there at all and they were unable to provide required materials for the students.
CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the findings, conclusions drawn from the findings, recommendations for practice and further research on the problem. The general objective of the study is to establish the influence of horticultural farming on academic performance of pupils in primary schools in Timau Division of Buuri District. The study also sought to determine the influence of child labour in horticultural farming, income from horticulture to the parent, parents’ involvement in horticultural farming and teachers’ involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

5.2 Summary of findings

5.2.1 Child Labor and Horticultural Farming

The study established that child labour affects the academic performance of primary schools in Timau division to a great extent. The study also established that the academic performance of pupils working in horticultural farms in Timau division was poor. In addition, child labour in horticultural farming denies children the opportunity to grow up as children and attending school. Absenteeism, few hours in school, tiredness and hunger affects the academic performance of primary schools. Sickness and illnesses affects the academic performance of primary schools.

5.2.2 Horticultural Income

The study found that the income of parents working in horticultural farms affects the academic performance of primary schools in Timau division to a moderate extent. The study also found that the academic performance of children whose parents work in horticultural farms were moderate. Incapability of parents (poverty) affects the psychological balance or homeostatic balance in the class room, which causes low concentration, low perception, frustration, sickness and emotional disability. The study also found that lack of basic school
necessities and fewer learning resources affect the academic performance of primary schools in Timau division.

5.2.3 Teacher's Involvement in Horticultural Farming

The study also established that teacher's participation in horticultural farming affect the academic performance of primary schools in Timau division to a low extent. The study also revealed that teachers in Timau division were moderately motivated. It was also revealed that absenteeism, lack of commitment and failure to complete the syllabus affects the academic performance of primary schools in Timau division. In relation to teachers' involvement in horticultural farming, the study found that it leads to teachers' absenteeism from school, leads incomplete syllabus, leads to lack of concern towards students. The study also found that teachers lack interest in extra tuition thus lack of enough contact hours with the students and teachers get sick due to exposure in the farming.

5.2.4 Parents' Involvement in Horticultural Farming

The study revealed that involvement of parents in horticultural farming affects the academic performance of primary schools in Timau division. The study also found that insufficient parental aspirations, material deprivation, school composition and social class affects the academic performance of primary schools in Timau division. On the effects of parents' involvement in horticultural farming on the academic performance of primary schools in Timau Division, the study found that parents' involvement in horticultural farming led to absentism of children, lack of participation in school activities, poor performance in class work, consumption of illicit brew and lack of corporation between parents causing divorces.

5.3 Discussion of the Findings

Among the teachers and the parents most of the respondents (54.4%) were male. In relation to their age bracket, most of the teachers and parents (64.9%) were aged between 20 and 30 years. In relation to their highest level of education, most of the respondents (50.9%) were college graduates. In addition, most of the teachers had been teaching in their school for above 12 years (53.6%) and most of the parents had children in the school for above 12 years (24.1%).
5.3.1 Child Labor and Horticultural Farming

The study established that child labour affects the academic performance of primary schools in Timau division to a great extent (43.9%). On whether horticultural farms in Timau division were employing children, the study found that horticultural farms in Timau division were not employing children (70.2%). The study also established that the academic performance of pupils working in horticultural farms in Timau division was poor (82.5%). The study also found that child labour in horticultural farming denies children the opportunity to grow up as children and attending school (36.8%). Little and Dellangela (2008) had earlier indicated that children working in agriculture are denied the opportunity to grow up as children and attend school.

The study also established that absenteeism affects the academic performance of primary schools ($\bar{M}=4.6842$). The study also found that few hours in school affect the academic performance of primary schools ($\bar{M}=4.1579$). It was also established that tiredness affects the academic performance of primary schools ($\bar{M}=3.6140$). In addition, the study found that hunger affects the academic performance of primary schools ($\bar{M}=3.6140$). Lastly, the study found that sickness and illnesses affects the academic performance of primary schools ($\bar{M}=3.5263$). According to Little and Dellangela (2008), children subjected to dangers of insect and snakebites, handling of agrochemical products as well as coming in contact with chemical residue in soil or in the plants.

The study also found that major factors affecting the academic performance in Timau Division include absenteeism, failure to complete the syllabus at all and teacher absence most of the times. The study also found that children are employed in the horticultural farms hence no time for studies. Involvement of parents in horticultural farming makes them lack time for their children. Some teachers get involved in the horticultural business hence have little time for school.

In addition, child labour affects the academic performance of pupils since they get too tired to learn, leads to absenteeism from school, exposes them to injuries, makes them sick and leads to lack of interest in school due to easy money.
The study found that the income of parents working in horticultural farms affects the academic performance of primary schools in Timau division to a moderate extent (33.3%). Bjorkman (2005) had earlier depicted that the correlation between district income and girls and boys performance as follows: For low levels of income very few girls attended education and there is a large gap between boys and girls enrolment. The study also found that the academic performance of children whose parents work in horticultural farms were moderate (64.9%). According to Alissa (2010), children's test scores are lowest when poverty persists across the generations, and highest when material advantage is long-lasting. However, the findings contradicts Shirom and Rosenblatt (2006) argument that students from low income families consistently, regardless of ethnicity or race, score well below average. It was also revealed that incapability of parents (poverty) affects the psychological balance or homeostatic balance in the class room, which causes low concentration, low perception, frustration, sickness and emotional disability (38.6%).

The study also found that lack of basic school necessities affects the academic performance of primary schools in Timau division (M=3.7895). The study also found that fewer learning resources affect the academic performance of primary schools in Timau division (M=3.4561).

On how horticultural income influences the academic performance of children in primary schools, the study found that it leads to negative attitude towards education due to easy money, tends to copy successful horticultural farmers hence lack of interest for school and makes them seek employment in the horticultural farms. The pupils also indicated that the income is too little to support children in school and they are unable to provide the basic needs for the children. These findings agree with Akanle (2007) argument that parental income in this work to be a cogent factor upon which the academic/vocational successes of secondary school students lie. This is also consistent with Bugembe et al (2005) who argued that parental income is not sufficient to sustain the academic and personal social life of the student in sub rural school areas. This to a large extent affects the psychological balance or homeostatic balance in the class room, which causes low concentration, low perception, frustration, sickness and emotional disability in academic performance of the students. Therefore when a child is deprived of the essential needs he may be found to perform poorly in his school work.
5.3.3 Teacher's Involvement in Horticultural Farming

The study also established that teacher's participation in horticultural farming affect the academic performance of primary schools in Timau division to a low extent (29.8%). The study also revealed that teachers in Timau division were moderately motivated (35.1%). According to Shirom and Rosenblatt, (2006), work motivation refers to the psychological processes that influence individual behavior with respect to the attainment of workplace goals and tasks.

It was also revealed that absenteeism affects the academic performance of primary schools in Timau division (M=4.0175). In addition, the study found that lack of commitment affects the academic performance of primary schools in Timau division (M=3.0702). Further, the study established that failure to complete the syllabus affects the academic performance of primary schools in Timau division (M=2.9298). Scott et al., (2007) had earlier argued that there appear to be mounting concerns that unacceptably high proportions of teachers working in public school systems in many countries are poorly motivated due to a combination of low morale and job satisfaction, poor incentives, and inadequate controls and other behavioral sanctions.

In relation to teachers' involvement in horticultural farming, the study found that it leads to teachers' absenteeism from school, leads incomplete syllabus, leads to lack of concern towards students. The study also found that teachers lack interest in extra tuition thus lack of enough contact hours with the students and teachers get sick due to exposure in the farming. In line with this, Clotfelter et al. (2001) had earlier found that higher teacher absenteeism is associated with more student absenteeism, which will also lead to poor student performance as the student is not present in class to participate and learn.

5.3.4 Parents' Involvement in Horticultural Farming

The study revealed that involvement of parents in horticultural farming affects the academic performance of primary schools in Timau division (84.2%). These findings correlate with Sacker et al (2002) argument that it is widely recognized that if pupils are to maximize their potential from schooling they will need the full support of their parents.
The study also found that insufficient parental aspirations affect the academic performance of primary schools in Timau division (M=3.9123). The study also revealed that material deprivation affects the academic performance of primary schools in Timau division (M=3.2807). In addition, the study found that school composition affects the academic performance of primary schools in Timau division (M=3.2807). Further, the study revealed that social class affects the academic performance of primary schools in Timau division (M=3.1053).

Basu, (2000) had earlier indicated that the present interest in this model is the presumed role for parental involvement. Involvement is assumed to be a working link between social class and pupil achievement and adjustment (In this process, involvement is assumed to be influenced by material deprivation and parental aspiration. The poorer are people’s circumstances the more difficult it is assumed to be to support a child’s educational development. The latter, parental aspiration is in turn influenced by the child’s evident achievement. The more the child achieves, the greater is the parental expectation. It is assumed here that social class has its influence through the four intervening variables (parental involvement, material deprivation, parental aspiration and school composition).

The study also found that parents were not attending school functions and activities, academic follow ups not effected or not there at all and they were unable to provide required materials for the students. Sacker et al (2002) had earlier indicated that it is anticipated that parents should play a role not only in the promotion of their own children’s achievements but more broadly in school improvement and the democratization of school governance.

On the effects of parents’ involvement in horticultural farming on the academic performance of primary schools in Timau Division, the study found that parents’ involvement in horticultural farming led to absentism of children, lack of participation in school activities, poor performance in class work, consumption of illicit brew and lack of corporation between parents causing divorces. The respondents also indicated that horticultural farming has so much labour whereby the parent has no time with the child. It was also indicated that horticultural farming led ignorance of the performance of his or her child, teachers tend to miss classes and attend to their work, encourages child labour due to large labour required in horticultural farming. Polygamous and deletion in generation continuity. The study also found that parents concentrate on horticultural farming and forget the needs of their children.
no follow up of pupils’ work, leads to little material support if needed and leads to lack of school basic necessities.

5.4 Conclusion

This study concludes that there is a negative relationship between child labour and academic performance of primary schools. A unit increase in the scores child labour would lead to a 0.638 decrease in the scores of academic performance of primary schools. The academic performance of pupils working in horticultural farms in Timau division was poor. Child labour in horticultural farming denies children the opportunity to grow up as children and attending school. The study also found that absenteeism, few hours in school, tiredness, hunger, sickness and illnesses affects the academic performance of primary schools to a great extent.

The study also concludes that a unit increase in the scores of horticultural income would lead to a 0.340 decrease in the scores of academic performance of primary schools. Incapability of parents (poverty) affects the psychological balance or homeostatic balance in the classroom, which causes low concentration, low perception, frustration, sickness and emotional disability. The study also found that lack of basic school necessities and fewer learning resources affect the academic performance of primary schools in Timau division.

The study found that a unit increase in the scores of teachers’ participation would lead to a 0.191 decrease in the scores of academic performance of primary schools. Teachers in Timau division were moderately motivated. It was also revealed that absenteeism, lack of commitment and failure to complete the syllabus affects the academic performance of primary schools in Timau division.

The study also found that a unit increase in the scores of parents’ involvement would lead to a 0.131 decrease in the scores of academic performance of primary schools. The study also found that insufficient parental aspirations, material deprivation, school composition and social class affect the academic performance of primary schools in Timau division. The study also found that parents were not attending school functions and activities, academic follow ups not effected or not there at all and they were unable to provide required materials for the students.
5.5 Recommendations

The study also revealed that teachers in Timau division were moderately motivated. This study therefore recommends that parents should motivate teachers by helping their children to work on homework and by attending school functions and activities. In addition, the government of Kenya should motivate teachers by giving them incentives when their children pass exams.

The study also established that hunger was highly affecting academic performance of pupils in Timau division. This study therefore recommends that schools in Timau division should create a program where children will be eating in schools.

The study also established that parents were not attending school functions and activities. The study therefore recommends that parents should spare time and show their commitment to the academic performance of their children by attending school meetings and by following up their children's performance.

The study also found that horticultural farmers were employing children in their farms. The study also established that child labour affects the academic performance of primary schools in Timau division to a great extent. This study therefore recommends that the administration of Timau division should take a step forward and condemn child labour in the division.

5.6 Recommendations for Further Studies

This research study focused on the influence of horticultural farming on academic performance of pupils in primary schools in Timau Division. This study therefore recommends further studies in the area of the effects of child labour on academic performance of pupils in primary schools in other areas other than Timau division.
REFERENCES


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APPENDICES

Appendix 1: Questionnaires

1. Please select your category
   Parent [ ] Teacher [ ]

2. Please indicate your gender
   Female [ ] Male [ ]

3. Indicate your age bracket
   20-30 yrs [ ] 31-40 yrs [ ]
   41-50 yrs [ ] 51 and above [ ]

4. State your highest level of education
   Primary level [ ] Secondary level [ ]
   College [ ] University [ ]
   Postgraduate [ ]

5. For how long have you been working in your organization?
   Less than 3 years [ ] 3 to 9 years [ ]
   9 to 12 years [ ] Above 12 years [ ]

Child labour and horticultural farming

6. To what extent does child labour affect the academic performance of primary schools in Timau division?
   To a very great extent [ ] To a great extent [ ]
   To a moderate extent [ ] To a low extent [ ]
   To no extent at all [ ]

7. Do horticultural farms in Timau division employ child?
   Yes [ ] No [ ]

8. How do you rate the academic performance of pupils working in horticultural farms in Timau division?
9. To what extent do you agree with the statement that “child labour in horticultural farming denies children the opportunity to grow up as children and attending school”?

   To a very great extent   |   To a great extent
   To a moderate extent   |   To a low extent
   To no extent at all    |   

10. To what extent do the following factors related to child labour affect the academic performance of primary schools in Timau division?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Strongly agree</th>
<th>agree</th>
<th>neutral</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Few hours in school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiredness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sickness and illnesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Horticultural income**

11. To what extent does the income of parents working in horticultural farms affect the academic performance of primary schools in Timau division?

   To a very great extent   |   To a great extent
   To a moderate extent    |   To a low extent
   To no extent at all     |   

63
12. How do you rate the academic performance of pupils whose parents work in horticultural farms?

- Excellent performance
- Good performance
- Moderate performance
- Bad performance
- Poor performance

13. To what extent do you agree with the statement that “incapability of parents (poverty) affects the psychological balance or homeostatic balance in the classroom, which causes low concentration, low perception, frustration, sickness and emotional disability in academic performance of the students?”

- To a very great extent
- To a great extent
- To a moderate extent
- To a low extent
- To no extent at all

14. To what extent do the following factors related to the income of parents in horticultural farming affect the academic performance of primary schools in Timau division?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Strongly agree</th>
<th>agree</th>
<th>neutral</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of basic school necessities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer learning resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teacher’s involvement in horticultural farming
15. To what extent does teacher’s participation in horticultural farming affect the academic performance of primary schools in Timau division?

To a very great extent | | To a great extent | |
To a moderate extent | | To a low extent | |
To no extent at all | |

16. How do you rate the motivation of teachers in Timau division?

Excellent | | Good | |
Moderate | | Poor | |
Very poor | |

17. To what extent do the following factors related to involvement of teachers in horticultural farming affect the academic performance of primary schools in Timau division?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Very great extent</th>
<th>Great extent</th>
<th>Moderate extent</th>
<th>Low extent</th>
<th>No extent at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure to complete the syllabus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parents’ involvement in horticultural farming

18. In your own opinion does the involvement of parents in horticultural farming affect the academic performance of primary schools in Timau division?

Yes | | No | |
9. To what extent do the following factors related to parents' involvement in horticultural farming affect the academic performance of primary schools in Timau division?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Very great extent</th>
<th>Great extent</th>
<th>Moderate extent</th>
<th>Low extent</th>
<th>No extent at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material deprivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insufficient parental aspirations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social class</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20. What are the effects of parents' involvement in horticultural farming on the academic performance of primary schools in Timau Division?
Appendix II: Focus Group Discussion Guide

1. Which are the major factors affecting the academic performance of pupils in Timau division?

2. How does horticultural farming affect the academic performance of pupils in Timau division?

3. Does child labor affect the academic performance of pupils? If yes How?

4. How does horticultural income influence the academic performance of pupils in Timau division?

5. How does teachers' participation in horticultural farming affect the academic performance of primary schools in Timau division?

6. What role do parents play in the academic performance of their children in Timau division?
<table>
<thead>
<tr>
<th>Year</th>
<th>Points</th>
<th>Position out of 15 zones in Meru central district</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>214</td>
<td>13</td>
</tr>
<tr>
<td>2008</td>
<td>210</td>
<td>10</td>
</tr>
<tr>
<td>2009</td>
<td>215</td>
<td>12</td>
</tr>
<tr>
<td>2010</td>
<td>216</td>
<td>11</td>
</tr>
<tr>
<td>2011</td>
<td>228</td>
<td>13</td>
</tr>
</tbody>
</table>

DEO records Meru central district. (2011)
Appendix IV: Distribution of the Respondents in the Division

<table>
<thead>
<tr>
<th>Primary School</th>
<th>Students</th>
<th>Teachers</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirimara</td>
<td>165</td>
<td>8</td>
<td>59</td>
</tr>
<tr>
<td>Kiambogo</td>
<td>178</td>
<td>7</td>
<td>62</td>
</tr>
<tr>
<td>Ngusishi</td>
<td>201</td>
<td>10</td>
<td>72</td>
</tr>
<tr>
<td>Maritati</td>
<td>213</td>
<td>9</td>
<td>80</td>
</tr>
<tr>
<td>Madaraka</td>
<td>157</td>
<td>7</td>
<td>54</td>
</tr>
<tr>
<td>Mutethia</td>
<td>197</td>
<td>8</td>
<td>66</td>
</tr>
<tr>
<td>CCM Ontulili</td>
<td>173</td>
<td>8</td>
<td>60</td>
</tr>
<tr>
<td>Kithithina</td>
<td>221</td>
<td>11</td>
<td>86</td>
</tr>
<tr>
<td>Demu</td>
<td>193</td>
<td>8</td>
<td>62</td>
</tr>
<tr>
<td>Exlewa</td>
<td>213</td>
<td>9</td>
<td>71</td>
</tr>
<tr>
<td>Bunju</td>
<td>167</td>
<td>6</td>
<td>51</td>
</tr>
<tr>
<td>CCM Angaine</td>
<td>191</td>
<td>10</td>
<td>63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2269</td>
<td>101</td>
<td>786</td>
</tr>
</tbody>
</table>

Source: DEO office Timau