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

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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 6.00pm). 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. 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 stud 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 of 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.

Key Words: *horticultural farming, academic performance, pupils in primary schools, Timau Division, Buuri District, Kenya*

INTRODUCTION

Education has come to 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 persondays 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).

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 Ontilili, 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.

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.

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

SPECIFIC OBJECTIVES OF THE STUDY

1. To determine the influence of child labour in horticultural farming on academic performance of primary schools pupils in Timau division.
2. To establish the influence of income from horticulture to the parent on academic performance of primary schools pupils in Timau division.
3. To examine the influence of parents involvement in horticultural farming on academic performance of primary schools pupils in Timau division.
4. To establish the influence of teachers involvement in horticultural farming on academic performance of primary schools pupils in Timau division.

LITERATURE REVIEW

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.

THEORETICAL REVIEW

The theory of concerted cultivation by Annet Lareuae, (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.

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.

RESEARCH METHODOLGY

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.

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.

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:

$$n = \frac{Z^2PQ}{\alpha^2}$$

Where: Z is the Z – value = 1.96

P Population proportion 0.50

Q = 1-P

α = *level of significance* = 5%

$$n=\frac{1.96^2 \text{ x } 0.5 \text{ x } 0.5}{0.5^2}$$

n= 384

Adjusted sample size

n.'= 384/ [1+ (384/3156)]

Approx = 342 respondents

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.

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.

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:

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

Where Y was academic performance of primary schools, X1 was child labour, X2 was horticultural income, and X3 was teachers' participation and X4 was parents' involvement.

RESEARCH RESULTS

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, X1 was child labour, X2 was horticultural income, and X3 was teachers' participation and X4 was parents' involvement.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.861	0.742	0.639	.52236

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 R2. This therefore means that other factors not studied in this research contribute 27.6% of the academic performance of primary schools.

Table 2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.127	5	.532	5.949	.016
	Residual	14.189	52	.273		
	Total	16.316	57			

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

b. Dependent Variable: 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 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.476	.868		4.003	.020
	Child labour	-.638	.090	.067	3.419	.021
	Horticultural income	-.340	.083	.074	4.484	.023
	Teachers' participation	-.191	.083	.367	4.303	.025
	Parents' involvement	-.131	.154	.119	3.848	.019

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:

H_1: Child labour involvement in horticulture farming affects academic performance of primary schools pupils in Timau division.

H_2: Income from horticulture affects academic performance of primary schools pupils in Timau division.

H_3: Parent's involvement in horticulture farming influences the performance of primary schools pupils in Timau division.

H_4: 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).

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.

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%).

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 (M=4.6842). The study also found that few hours in school affect the academic performance of primary schools (M=4.1579). It was also established that tiredness affects the academic performance of primary schools (M=3.6140). In addition, the study found that hunger affects the academic performance of primary schools (M=3.6140). Lastly, the study found that sickness and illnesses affects the academic performance of primary schools (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.

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 (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 persist 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.

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.

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.

CONCLUSIONS

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 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. 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.

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 t 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.

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