IMPACT OF STUDENT EXPENDITURE DIFFERENTIALS ON ACADEMIC ACHIEVEMENT AT SECONDARY SCHOOL LEVEL IN KIKUYU DISTRICT-KENYA

BY

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E55/CE/23040/2010

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF EDUCATION IN FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION

KENYATTA UNIVERSITY

NOVEMBER, 2013
DECLARATION

This research project is my original work and has not been presented for academic award in any other university or for any other award.

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ACKNOWLEDGEMENT

I would like to thank Kenyatta University for giving me an opportunity to study for a degree in Master of Education.

Special gratitude goes to my supervisors Ms Merioth Githogori and Dr. T. O. Rugar for guiding me during the period of carrying out the research project. God bless them abundantly.

Special thanks to my father Mr. Brian Macharia who has always encouraged me to study. He deeply motivated me to study.

Above all, thanks to Almighty God for giving me good health and strength throughout this study.
ABSTRACT

The study highlighted the relationship between public secondary school inputs in terms of student expenditure and how that impact on academic achievement. The purpose of this study was to investigate the impact of secondary school student expenditure differentials on academic achievements in Kikuyu district, Kenya. The specific objectives of this study were to: establish the academic achievement, establish the student expenditure, determine the relationship between student expenditure and academic achievement and lastly to assess the impact of other determinants of students’ academic achievement in national, county and district schools in Kikuyu district. The findings may help the policy makers in statistically confirming whether or not the amount of money spent per student would make a statistically significant difference in academic performance. The study was based on production function model which is used to represent the relationship of outputs and inputs. A descriptive survey research design in quantitative approach was used in this study. The target population was all the 25 public secondary schools in Kikuyu district. The sample for the study was 22 principals since three schools were used for piloting. A questionnaire for principals and document analysis guide was used to collect data. The instruments were presented to two experts in Economics of Education from the department of Educational Management Policy and Curriculum Studies of Kenyatta University for face and content validation. Test-retest method was used for testing the reliability of the instruments. The questionnaires were delivered to schools and collected after one day. Descriptive statistics and inferential statistics such as t-test were utilized to determine the relationship between student expenditure and academic achievement by school category. Findings revealed that: national schools had the highest mean scores followed by county schools and lastly the district schools performed dismally, there are great discrepancies in the student expenditure in the three categories of schools, there was a relationship between the student expenditure and academic achievement in the national schools, county and district schools. Based on the findings, the following conclusions were made from the study: national schools had the highest mean scores followed by county schools and lastly the district schools performed dismally, there was a relationship between the student expenditure and academic achievement in the national schools, school expenditure had an effect in students’ achievement in district schools and that there were other factors that impacted on students’ academic achievement apart from the student expenditure. The study recommended that the government should monitor how school funds are allocated and how they are used in the school for improvement of students’ performance. That it may be the misallocation, which leads to wastage of funds, and the worst use or the exploitation of funds and resource inputs that is responsible for the lower academic achievement in the schools. There is need to review the amount of money that students pay in school and how much of the money benefit students directly. The study suggested that there is a need to carry out a study on the influence of government cost sharing policy on students’ academic achievement in secondary schools and another study on the influence of student expenditures on academic achievement in rural and urban schools.
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ABBREVIATIONS AND ACRONYMS

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>DDE</td>
<td>Drawing and Disbursing Officer</td>
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<td>DEO</td>
<td>District Educational Officer</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>GOK</td>
<td>Government of Kenya</td>
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<td>GOP</td>
<td>Government of Pakistan</td>
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<td>KCSE</td>
<td>Kenya Certificate of Secondary Education</td>
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<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>MOE</td>
<td>Ministry of Education</td>
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<tr>
<td>NAEP</td>
<td>National Assessment of Educational Progress</td>
</tr>
<tr>
<td>NCES</td>
<td>National Center for Education Statistics</td>
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<tr>
<td>PSE</td>
<td>Per Student Expenditure</td>
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<td>SAT</td>
<td>Scholastic Assessment Test</td>
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<td>STR</td>
<td>Student Teacher Ratio</td>
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<td>U.S</td>
<td>United States</td>
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<td>UNESCO</td>
<td>United Nations Education Scientific and Cultural Organisation</td>
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CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter presents introduction of the study. It focuses on the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations and limitations of the study, assumptions of the study, theoretical and conceptual frameworks and operational definitions of terms.

1.2 Background to the Study

Most of the governments of the world spend significant amount of their budget on resource inputs in the education sector. They make decisions about providing resource inputs to enhance student achievement and performance. However, not all these decisions are easy to take, especially in the third world countries where mismanagement makes the problem more adverse. As Tan, Lane and Coustere (1997) remarked that resources are scarce, especially in low-income countries, policy makers can ill afford errors in the choice of allocations. To reduce the scope for mistakes, the true picture of the determinants of education outcome is desirable. There are discrepancies in the policies and strategies of allocation, provision and utilization of funds provided to the education sector and then to the different sub-sectors and the levels of education. These discrepancies are based on the political pressure, the regional biases, the lack of competencies and the negligence in allocation, provision and utilization of funds. Political pressure and regional biases are the issues that are not the target of the study (Grissmer, 2000). The lack of competencies and negligence in allocation, provision and
utilization of funds leads the system to be less productive. Therefore, a poor nation that cannot afford even minor errors and omissions in allocation, provision and utilization of funds, has to suffer great losses owing to these discrepancies. Thus, there is the need to investigate this situation thoroughly.

The system and infrastructure, and the resource inputs of a country are the guarantee of its development. These are two belongings that may devise a developing country into developed, a developed into developing or make the country stable on the long run. However, Pakistan is lacking both in its system and infrastructure, and also in the availability of resource inputs. Furthermore, the level of spending is a key indicator of governments’ dedication and commitment (Greenwald, Larry, & Laine, 1996). The proper allocation, and the fast and the effective use of the resource inputs show the dedication and commitment of a nation. However, there are many discrepancies in the allocation of funds within the education sector of the country. Usually funds are misallocated with respect to the various levels of education and the various areas of the country. Recently, the allocation of government funds is skewed towards the higher education (Memom, 2007). Furthermore, the secondary education was not given the due importance in past. Likewise, the secondary education has always been neglected as compared to the primary education. There are two main categories of expenditures at the secondary stage i.e. development expenditures and non-development expenditures. All the expenditures those are spent to expand the basic physical infrastructure of the school such as expansion or construction a new building, purchase of equipments, or preparing a new playground etc are the development expenditures. Non-development expenditures are the recurrent expenditures include all types of expenditures that are incurred in the
school in addition to the development expenditures (Bano, 2007). Furthermore, pay and allowances, operating expenses, benefits to the deceased and scholarships to the students, and, repairs and maintenance all are the non development expenditures. There are departmental or administration expenditures that are 50% of the above expenditures. Therefore, total per student expenditures are 150% of the actual calculated expenditures. However, these departmental expenditures are not included in calculating per student expenditures in most of the previous studies (Bano, 2007).

Both economic and the educational development of a country affect each other. An effective education causes a positive economic development therefore the country earns more potential in the form of funds and resource inputs hence more funds and resource inputs are available for education. Likewise, the more spending on education helps in the higher growth of human capital that is an important resource input for the economic development. Funds are the most important resource inputs that direct and predetermine the provision and allocation of all other resource inputs to the educational institutions. Therefore, the quantity and the quality of all the school resource inputs depend upon the school funds. The Government of Kenya is spending a huge amount of money directly and indirectly on education. The expenditures on administration, pensions to the retired persons, refresher courses or trainings, planning and formulation of policies and plans, and implementations of plans are the indirect spending. The direct expenditures are developmental as well as non developmental. The pay and allowances to the educational personnel and staff, budget for school contingent expenditures and books provided to students are the direct expenditures on students. The study seeks to highlight the relationship between public secondary school inputs in terms of per student expenditure
and how that impacts on students’ academic achievement. Furthermore, funds are the most important resource inputs that direct and predetermine the provision and allocation of all other resource inputs to the educational institutions. Therefore, the quantity and the quality of all the school resource inputs depend upon the school funds. Figure 1 shows the total spending on education in Kenya.

![Figure 1: Public spending on education (Total percentage of GDP) in Kenya](image.png)


The public spending on education, total percentage of GDP in Kenya was last reported at 6.67 in 2010, according to a World Bank report published in 2012. Public expenditure on education consists of current and capital public expenditure on education includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities.

Per student secondary school education expenditure as indicated by the total individual unit family cost and the unit government cost in terms of financial resource inputs and the allocation of the same to unit cost of education plays a vital role in the student’s academic
performance (Pritchett, 2004). Per Student Expenditure (PSE) has been found to be a more specific indication of school expenditure than any other category of expenditure in secondary schools because it allows for the calculation of direct and indirect unit cost per student which can be comparable to the direct output in terms of academic achievement (Wobmann, 2003). The effect of private educational expenditures in South Korea on student’s academic achievement was examined by Tow (2006) as determined by the standardized test scores of students, and found that though small, there was a statistical significant effect of school funding on student’s academic achievement. There is a direct and indirect secondary school student’s expenditure. The government’s expenditure on remuneration for teachers’ salaries, educational administration, pensions to the retired teachers/ministry of education employees, teachers/ministry employees’ refresher courses, educational planning and formulation of policies, and the implementations of educational plans are some of the indirect spending (Lips et al., 2008). On the other hand the direct secondary school students’ expenditures are developmental as well as non developmental costs incurred by the school management in the normal running of the school. The salaries and allowances paid to the non-teaching educational personnel and staff, budget for school contingent expenditures and books provided to students are the direct expenditures on students. The sum of direct and indirect school expenditures divided by the number of students in a secondary school is equal to the per student expenditure in that school (PSE). Research into educational production function have revealed that variations in school expenditures are not systematically related to teachers’ educational backgrounds, teaching experiences, or class sizes, nor are the better skilled teachers paid more than lesser skilled ones. However, there are discrepancies in the
policies and strategies of allocation, provision and utilization of funds provided to the education sector and then allocated to the different sub-sectors and levels of education. These discrepancies are based to some extent on political pressure, regional biases, lack of competencies and negligence in the allocation, provision and utilization of educational funds by those persons who are in-charge in the central government (Oyugi, Riedu & Anupi, 2009).

In most of the African countries secondary education tend to be neglected with the secondary education sector, receiving on average 15-20% allocation of state financial resources (World Bank, 2005). This has escalated household’s burden of financing secondary education and it is inhibitive especially in those families where no one is employed (Levin & Caillods, 2001). The secondary school fee charged is one of the major obstacles for unequal access to this level of education thus resulting into low primary-secondary school transition rates (Oyugi, et al., 2009). In Kenya, whereas households meet only 20% of primary and 8% of University education costs, they shoulder 60% of secondary school education costs (World Bank, 2005). Therefore, it is arguable against this background that with more than half of Kenya’s population living below the poverty line along with the rising cost of secondary education, the majority households do not afford to send their children to secondary schools (Njeru & Orodho, 2003). Some researchers treated the increased expenditures as an indicator of progress. These studies concluded that there was a significant relationship between the expenditures and student achievement because more expenditure provided smaller class size with the more qualified teachers (Ahmad, 1993; Hedges, Laine, & Greenwald, 1994; Greenwald, Hedges, & Laine, 1996; Hedges & Greenwald, 1996; Eide & Showalter,
1998; Krueger, 1999; Guryan, 2000; Tow, 2006; Kang, 2007). However, many studies insisted that the relationship between the expenditures and student achievement was weak or non-existent because schools did not effectively use the funds to improve the learning environment (Hanushek, 1989a; 1989b; 1991; 1994; 1996a; 1996b; 2003; Pritchett, 2004; Wobmann, 2003; Lips, Watkins & Fleming, 2008). But some of the researchers found mixed results (Levacic et al., 2005). Therefore, still it remains the controversy among the educational researchers over this issue.

Hanushek (1989) found that there was no strong or systematic relationship between the school expenditures and the student performance. On the basis of a meta-analysis of a sub sample of the same data used by Hanushek (1989), Hedges et al. (1994) concluded that there was a strong evidence of at least some positive effects of PPE on outcome. Furthermore, school finance were subjected to the significant correlation with examination results. Likewise, a positive effect on the education standards might be obtained if suitable conditions were created in relation to this factor (Ahmad, 1993). Hanushek (1994) criticized Hedges et al. (1994) with their method of eliminating equations from the meta-analysis in which the effects of expenditures were non-significant and the direction of effects were unknown. The study concluded that this had the effect of completely ignoring 30% to 40% of the estimates. Afterwards, Hedges et al. (1994) defended their criteria for eliminating equations from Hanushek’s sample. The researchers also proved that by eliminating equations from the meta-analysis, results still showed strong evidence of positive effects and little evidence of negative effects. On the both sides, the studies concluded that expenditures did matter somehow or sometimes,
but they did not agree on the direction, strength, or consistency of the relationship between the expenditures and student achievement.

Greenwald et al. (1996) conducted a meta-analysis of studies of EPF equations. According to this study, a broad range of resource inputs were positively related to student achievement; however, the effect sizes large enough suggested that moderate increases in the expenditures might be associated with the significant increases in achievement. Hanushek (1996a) again objected to the methodology, especially the sample selection procedures. However, the study admitted that resource inputs were used effectively only in certain circumstances when coefficients were positive and significant.

Both the researchers Hanushek & Hedges et al. agreed on the effective use of the funds or the resources, the “effective resource use,” in Hanushek’s (1996a) words, and “how money matters” in the words of Hedges et al (1994). Furthermore, the main concern of the researchers and policy makers was to enlighten the mechanisms through which school expenditures could efficiently promote learning. However, the researchers of both the studies disagreed on the extent to which school expenditure improved student achievement.

The aim of having Free Day Secondary Education tuition waiver of KShs 10,265 per student from the government is to give more power to the needy children from low income-poor families and vulnerable groups to access secondary school education. However, the cost of secondary education in Kenya is higher than the KShs 10,265 per student allocation with a minimum of KShs. 15,000/= for day secondary schools in Kikuyu district exclusive of uniform. In Kikuyu District all the four categories of secondary schools exists, where Per Student Cost (PSC) in terms of fees charged in each
school category are approximately as follows: The national boarding secondary school fees is KShs. 64,900, provincial boarding secondary school fees is KShs. 41,265, district boarding secondary school fees is KShs. 31,265 and district day secondary school fees is KShs. 15,000 (DEO’s Report, Kikuyu District, 2012). However, not all students 100% from the national secondary schools would be ahead of all 100% of the students in provincial and district schools in KCSE performance even though, they would have spend more money per student than those in the provincial and district schools would do (DEO’s Report, Kikuyu District, 2012). Therefore, on the basis of contrasting the reviewed literature in the background to the study, this study was set to investigate the impact of per student expenditure differentials on student’s academic achievement at the secondary school level in Kikuyu District, Kenya.

Alluded to by the background information, lack of consistency in the previous studies on the impact of per student expenditure differentials on academic achievements exists. However, any recognizable impact of secondary school expenditure differentials on academic performance may depend largely on how the money is spent, but not on how much money is spent. The aim of this study was to establish the relationship between expenditures in a school to students’ academic performance. Previous studies in educational production functions have shown that variation in school expenditures are not systematically related to variations in students’ performance. There exists differences in teacher quality, but differences in teacher skills are not strongly related to educational backgrounds, amount of teaching experience or teaching in small classes. Also, more skilled teachers are not regularly paid more than less skilled teachers. This suggests that school decision making must move away from traditional 'input directed policies to ones
providing performance incentives. For example in Kikuyu District, Per Student Cost (PSC) in terms of fees charged by various secondary school categories are as follows: national school fees is KShs. 64,900, county school fees is KShs.41,265 and district school fees is KShs. 31265 on average.

1.3 Statement of the Problem

Despite, the high cost of national schools per student, not all students 100% from these national schools would be ahead of all 100% of the students from the county and district schools in their performance in KCSE even though, they would have spent more money per student than those in the county and district schools would do. Therefore in the district, it is not just the extra financial resources spent by a student that may be the sole factor that would improve the learner's academic output. There was need to carry out further diagnostic and thorough investigations on what impact student expenditure differentials situation may have on the student’s academic achievement. It was against this backdrop that this study sought to investigate the impact of student expenditure differentials on student’s academic achievement at the secondary school level in Kikuyu District of Kiambu county, Kenya.

1.4 Purpose of the Study

The aim of this study was to investigate the impact of per student expenditures on academic achievements at secondary school level in Kikuyu District, Kenya. The study established the per student expenditure in national, county and district schools. It also established the students’ academic achievement in national, county and district schools.
The study further determined the relationship between the per student expenditure and academic achievement in national, county and district schools and lastly it assessed the impact of other determinants apart from per student expenditure on students' academic achievement in national, county and district schools in Kikuyu district.

1.5 Objectives of the Study

The objectives of this study were to:

i. Establish the students' academic achievement in national, county and district schools in Kikuyu district

ii. Establish the per students expenditure in national, county and district schools in Kikuyu district

iii. Determine the relationship between the students expenditure and academic achievement in national, county and district schools in Kikuyu district

iv. Assess the impact of other determinants apart from students expenditure on students' academic achievement in national, county and district schools in Kikuyu district

1.6 Research Questions

To achieve the above stated objectives the study sought to answer the following questions:

i. What is the students' academic achievement in national, county and district schools in Kikuyu district?
ii. What is the per student expenditure in national, county and district schools in Kikuyu district?

iii. Is there significant relationship between student expenditure and academic achievement in national, county and district schools in Kikuyu district?

iv. How do other determinants apart from per student expenditure impact on students’ academic achievement in national, county and district schools in Kikuyu district?

1.7 Significance of the Study

The findings of this study may help in filling the research gap on whether or not money makes a difference in student’s academic performance. The findings may help the policy makers in statistically confirming whether or not the amount of money spend per student would make a statistically significant difference in academic performance. Consequently, educators and school board of governors may use the findings of this study to consider how they would use or not use large increases in funding to schools to boost performance. The public seem to be insisting that schools show dramatic improvements in exchange for continued financial support. To meet this responsibility to the taxpayers and secondary school students, this study would reveal if there are substantial differences in the way high performing schools utilize their resources compared to other schools.

The Ministry of Education (MOE) parents, guardians, donors and the government as financiers may use the findings of this study to recognize that it is important to note that although aggregate analyses of school resource allocation patterns leads to the conclusion that schools look remarkably alike, the needs of the students within those schools are
vastly different. There are considerable differences in the needs of the poor household students from those of middle and upper class in well-to-do areas across the nation. The Ministry of Education would use the findings to recognize that it is important to provide the local educators in the local district schools with the resources and tools they need to meet the specific needs of each child they serve, and at the same time allow them to design programs that specifically target each student individually.

The parents, guardians’ donors and the government as financiers would use the findings of this study to recognize that it is also important to move away from measuring the secondary school accountability through the way funds are used, and instead start measuring this accountability in terms of student’s academic achievements. In this case all stakeholders in the secondary school education sector, the student, teachers, sponsors, board of governors, parents, guardians, donors and the government as financiers, may use the findings of this study to recognize that it would not be how much money is spent to produce certain student academic achievements, but how the money is spent which matters as per student expenditure in the secondary school education sector.

1.8 Limitations of the Study

The study was confined to public secondary schools and Principals in Kikuyu district. Results of this study were limited to the Principals held opinions on the impact of student expenditure on academic performance in Kikuyu District, Kiambu County. In this study a survey design in quantitative approaches was employed. Therefore, the disadvantages associated with survey design would have been a limitation of the study. Shortage of documented information for literature review and concealing confidential information
even though the Principals were assured of their anonymity may have made the data collected to be less reliable.

1.9 Delimitations of the Study

Personal counterchecking and triangulation was used to ascertain that data collected from all participants was dependable and useful in drawing conclusions and recommendations for the study. Language for communication was not a limiting factor in the study because secondary schools Principals speak fluently in English. The study area was familiar to the researcher which is an enabling factor for carrying out the study with minimal suspicion from the Principals.

1.10 Assumptions of the Study

In this study it was assumed that all secondary school Principals in Kenya have similar access to information used in the implementation of the sector’s curriculum education policy in accordance to the provisions in the education act 2010. The study assumed that there are other influences of students’ academic performance apart from expenditure for example teacher qualifications. It was also assumed that the curriculum content also affects student performance and that in Kikuyu District there would be adequate number of schools to provide adequate representative sample to be used.

1.11 Theoretical Framework

This study was based on a production function model. A production function is a model that identifies the possible achievements that can be achieved with a given combination of inputs (Hanushek, 2007). The basic assumptions in the production function model are
that with knowledge of the quantities of inputs available, it is possible to calculate the maximum output that can be achieved. What is important to this process is how the inputs are translated into those achievements, and finding the most efficient way of doing so. Production functions are estimated through statistical or econometric techniques that rely on regression methods to measure the relationship between a mix of inputs and some identified output. However, there are difficulties with identifying production functions in education results from the complexity of the schooling process and the number of inputs that can impact on the students' academic achievements (Hanushek, 2007). Among the most common achievements used in studies of educational production functions are the results of standardized tests, graduation rates, and dropout rates. The inputs most often considered include per student expenditures, student/teacher ratios, teacher education, experience and salary, school facilities, and administrative inputs.

1.12 Conceptual Framework

The conceptual framework is built on the relationships of independent variables to the dependent variable as shown in Figure 2
Independent Variables are: Per student expenditure, type of school, that is whether national, county or district boarding or day, staffing levels, internal assessment and student entry behaviour. The dependent variable will be the students’ performance in KCSE.

1.13 Operational Definition of Terms

**Academic achievement** refers to KCSE performance.

**County school** refers to public school that admits most of the student from within the county the school is located. The fees charged lower than the fees charged in national school.
**District school** refers to public secondary school that admits students from within the district the school is located. The fees charged is relatively low compared to the one charged in county and national schools.

**Expenditure** refers to money spent by a school in order to achieve its objectives and produce results. This include fees paid by parents and any other extra money charged.

**Input** refers to all the resources put in to produce results in a school.

**National school** refers to public secondary school that admits students from all over the country. The fee charged is higher than that of provincial and district schools.

**Per student expenditure** refers to total monies paid to the school divided by the total number of students.

**Output** refers to academic performance.

**Secondary school** refers to the next cycle of formal learning after primary school with classes ranging from form one to form four.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents the literature review. The chapter focuses on conceptual issues, per student expenditure in different categories of schools, students' academic performance in different categories of schools, relationships in amount of fees charged by each secondary school category and the schools' academic achievement, relationship between students academic performance across the categories of schools and the impact of other determinants of students' academic achievement apart from cost in each secondary school category. The chapter concludes with summary of reviewed literature and gaps.

2.2 Students' academic achievement in different categories of schools

Eide & Showalter (1998) found that PSE have larger effects on math scores for the bottom tail of the math score distribution than for the rest of the distribution. Therefore, the study showed that school resource inputs had heterogeneous effects on the students of different achievement. Likewise, some experimental research suggested that a type of expenditures in the form of the small class size had a significant effect on student achievement (Krueger 1999). In addition, by using a quasi experimental research design, Guryan (2000) found that increases in school funding had increased the performance of students in the elementary schools of Massachusetts. The analysis of cross country data concluded that the relationship between the expenditures on education and the student performance was weak at best and sometimes non-existent (Hanushek, 2003; Pritchett, 2004; Wobmann, 2003). Likewise, PSE had a statistically significant positive effect on
KS3 achievement in math and science; however, it did not appear to have impact on student achievement in KS3 English (Levacic et al, 2005). Similarly, through the analysis of cross-sectional and panel data, it was found that, though small, there was significant effect of school funding on academic achievement of students (Tow, 2006).

Kang (2007) examined the effect of private educational expenditures (private tutoring expenditures in South Korea) on student achievement (standardized test scores). The study used the causal estimates based on IV methods and implied that a 10 percent increase in the expenditure on private tutoring leads to a 0.56 percentile point improvement; however, the effect of the mean value was equivalent to a 1.1 percent increase in test score. Despite the lack of consistent findings, leading researchers have recognized that any effect of PSE on student achievement depends on how the money is spent, not on how much money is spent. “Few people would recommend just dumping extra resources into existing schools. America has followed that program for several decades, with no sign that student performance has improved” (Hanushek, Lips, Watkins & Fleming, 2008).

2.3 Student expenditure in different categories of schools

There are two main categories of expenditures at the secondary level that is development expenditures and non-development expenditures. All the expenditures that are spent to expand the basic physical infrastructure of the school such as expansion or construction of a new building, purchase of equipments, or preparing a new playground etc are the development expenditures. Non-development expenditures are the recurrent expenditures and include all types of expenditures that are incurred in the school in addition to the
development expenditures. Table 2.1 shows the allocation to education by sub-sector for the financial year 2002-03 in Punjab.

**Table 2.1: Allocations to Education by Sub-sector (2002-03) in Percentage**

<table>
<thead>
<tr>
<th>Total Expenditures</th>
<th>Development</th>
<th>Recurrent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Second</td>
</tr>
<tr>
<td>Punjab</td>
<td>68</td>
<td>22</td>
</tr>
<tr>
<td>Sindh</td>
<td>50</td>
<td>29</td>
</tr>
<tr>
<td>NWFP</td>
<td>61</td>
<td>27</td>
</tr>
<tr>
<td>Balochistan</td>
<td>46</td>
<td>29</td>
</tr>
<tr>
<td>Pakistan</td>
<td>55</td>
<td>23</td>
</tr>
</tbody>
</table>

Source: Federal and Provincial Budget Documents.

As indicated in the table, the major challenge in improving quality remains the ineffective planning and management ability of the Ministry of Education at federal level. The result is that regardless of much need, less than fifty percent of the funds allocated for development expenditure are utilized (Aly, 2006). There are many factors involved in this situation. The first is that the allocation process is time consuming.

The Ministry of Education, Ministry of Finance and accounts committee respectively take approximately two months for the approval and the remittance of funds. As the funds reach the target very late, the annual budget year comes to end and the funds expire. The second is that the concerned officials mostly do not have the clear policy or strategy or do not know the rules. In case the funds reach the target project in time, the funds are left unspent owing to the weak planning capacity at grass root level. (Bano, 2007) The implementation gap between allocation and utilization affects many aspects of
governance, allocation and use of resource inputs. The fundamental causes may lie in the lack of a planning culture, planning capacity and weaknesses in the accountability mechanisms. A further nature of implementation problem lies in corruption in the allocations of funds and their diversion systematically to personal use at most levels of the allocation chain. (Govt. of Pakistan, 2009) Likewise, the low budgets allocated to the education sector at federal level are not fully spent except for the year 2001-02. However, Balochistan spends a comparatively higher percentage of the allocated education budget. This is the weak absorption capacity that only less than fifty percent of the total funds allocated for the development expenditure of the Ministry of Education at federal level are actually utilized. (Aly, 2007). Funds provided to the schools are very little to the extent that the basic provisions are still not fulfilled. Funds are provided in the form of school resource inputs and teacher salary. Likewise, for the lower income countries where considerable difference in school quality is observed, the impact of school and teacher quality factors on the student performance was comparatively greater than that of the family socioeconomic status (Heyneman & Loxley (1982, 1983). However, the study concludes that it is the misallocation and the worst use or the exploitation of funds and resource inputs that is responsible for the lower academic achievement in Punjab as Lips, Watkins and Fleming (2008) concluded that the important is how the money is spent, not on how much money is spent. Other researchers also concluded that the relationship between the expenditures and students’ academic achievements was weak or nonexistent because schools did not effectively use the funds to improve the learning environment (Hanushek, 1989a; 1989b; 1991; 1994; 1996a; 1996b; 2003; Pritchett, 2004; Wobmann, 2003).
It is evident that the highest proportions of the education budgets are spent on the recurrent activities as salaries (Aly, 2007). Salary or pay includes basic pay of officers and all other staff, and allowances include all types of allowances related to employees. Non salary expenditures are incurred in the schools on behalf of the provincial or the district government. The provincial or the district government remits amounts in the form of budget and regular payments to the drawing and disbursing officers (DDO’s). Likewise, the non salary allocation for education remained below 10% of the total funds allocated for the recurring expenditures. Operating expenses include total communication, total utilities, total travel and transport, total occupancy cost and total general expenses. Likewise, repair and maintenance expenditures of furniture and fixtures, machinery, building or others included in the repair and maintenance. Furthermore, some of the expenditures are incurred through the local income of schools in addition to the allocated money to schools.

Greenwald et al. (1996) conducted a meta-analysis of studies of EPF equations in public and private schools. According to this study, a broad range of resource inputs were positively related to student achievement; however, the effect sizes large enough suggested that moderate increases in the expenditures might be associated with the significant increases in achievement. Hanushek (1996a) again objected to the methodology, especially the sample selection procedures. However, the study admitted that resource inputs were used effectively only in certain circumstances when coefficients were positive and significant. Both the researchers Hanushek & Hedges et al. agreed on the effective use of the funds or the resources, the “effective resource use,” in Hanushek’s (1996a) words, and “how money matters” in the words of Hedges et al (1994).
Furthermore, the main concern of the researchers and policy makers was to enlighten the mechanisms through which school expenditures could efficiently promote learning. However, the researchers of both the studies disagreed on the extent to which school expenditure improved student achievement.

2.4 Relationships between student expenditure by each secondary school category and the schools’ academic achievement

In a study by Hanushek (1989) it was found that there was no strong or systematic relationship between school expenditures and student performance. However, Ahmad (1993) found that scholastic factors including school finance were subjected to a significant correlation with the examination results. Therefore, school finance played a significant role in improving educational standards. The study also found that a positive effect on education standards might be obtained if the suitable conditions were created in relation to this factor. On the basis of the same meta-analysis of a sub sample of the same data used by Hanushek (1989), Hedges et al. (1994a) rejected that conclusion. This study concluded that there was a strong evidence of at least some positive effects of PSE on outcome. Afterwards, Hanushek (1994) criticized Hedges et al. (1994) and their method of eliminating equations from the meta-analysis.

Furthermore, Greenwald et al., 1996) conducted a meta-analysis of studies of EPF equations. The study concluded that a wide series of resource inputs had positive influences on student achievement. The large effect sizes of resource inputs on student achievement were such that reasonable increases in expenditures might be linked with the significant increases in achievement.
The discussion on PSE continued. Eide & Showalter (1998) conducted a research on this issue and used the quartile regressions in estimation. The study found larger effects of PSE for the bottom end of score distribution than for the rest of distribution in math scores. Therefore, the study showed that SRIs had heterogeneous effects on students with different achievements. However, some experimental research suggested that a type of expenditures in the form of small class size had a significant effect on student achievement (Krueger 1999). Furthermore, Guryan (2000) used a quasi experimental research design. This study found that performance of the students in the elementary schools of Massachusetts increased with the increase in school funding.

The analysis of cross-country data leads to the conclusion that the correlation between expenditures and student performance was at best weak and sometimes non-existent (Hanushek, 2003; Pritchett, 2004; Wobmann, 2003). Likewise, Levacic et al, (2005) concluded that PSE had not an impact on student achievement in KS3 English. However, the study showed it had a statistically significant positive effect on KS3 achievement in math and science. Similarly, Tow (2006) found through the analysis of cross-sectional and panel data that, there was significant, though small, effect of school funds on student achievement. Afterwards, Kang (2007) examined the effect of private educational expenditures on student achievement. The study implied that a 10 percent increase in expenditure on private tutoring lead to a 0.56 percentile point improvement in the test score. This amount of effect, evaluated at the mean value, was equivalent to a 1.1 percent increase in test score.

Lips, Watkins & Fleming (2008) also discussed the PSE issue. The study described that it has been recognized that any effect of PSE on academic achievement depends on how the
money is spent, not on how much money is spent. In Hanushek’s words, few people would recommend just dumping extra resources into existing schools. America has followed that program for several decades, with no sign that student performance has improved. The study stresses on the effective use of funds. In summary, it can be said that some of the above studies treated the increased expenditures as an indicator of progress. These studies found a considerable relationship between expenditures and student achievement as more expenditure provided smaller class size and more qualified teachers (Ahmad, 1993; Hedges, Laine, & Greenwald, 1994; Greenwald, Hedges, & Laine, 1996; Hedges & Greenwald, 1996; Eide & Showalter, 1998; Krueger, 1999; Guryan, 2000; Tow, 2006; Kang, 2007). However, others insisted that the correlation between expenditures and the student achievement was weak or non-existent because schools did not effectively use the funds to improve the learning environment (Hanushek, 1989a; 1989b; 1994; 1996a; 1996b; 2003; Pritchett, 2004; Wobmann, 2003; Lips, Watkins & Fleming, 2008). Furthermore, some of the researchers found mixed results (Levacic et al., 2005). Therefore, it remains a controversy among educational researchers.

While Hedges, Laine, and Greenwald (1994) found that expenditures do matter, they found less evidence of a relationship between the other factors identified above and student performance. They suggest specific allocation of those resources may not be important in improving student performance in all situations. Further, they argue that local authorities should be given the discretion to spend funds as they think will best help the students for whom they are responsible.

Hedges, Laine, and Greenwald (1994) point out that if, for example, per pupil expenditures and student achievement were unrelated; half the studies would have
positive coefficients and half negative coefficients. Moreover, they argue if there were no systematic relationship, only 5 percent of the studies would have statistically significant results. They then argue for the studies, where the direction of the coefficient could be determined, that a higher percentage of the coefficients showed a positive sign. In fact, the three authors argue this happened more often than would be expected by chance alone. Hedges, Laine, and Greenwald also criticize the vote counting method used by Hanushek. They argue that as a procedure it has limited power in finding significant effects, and argue earlier work by Hedges and Olkin (1980) shows that as the number of studies reviewed increases, the probability that a vote count will correctly detect an effect decreases. Relying on a variety of analysis techniques, Hedges, Laine, and Greenwald (1994) re-analyzed Hanushek's study sample, and concluded that expenditures do have an impact on student achievement.

In another study, Hanushek (1993) looked at the impact of spending on student performance in Alabama as measured by the percent of students passing standardized reading, mathematics, and language tests in the third, sixth, and ninth grades. Despite that fact that his analysis did not yield statistically significant results, he concluded that if his estimates were used and spending in each school district were increased to the level of the highest spending district in the state (some $5,113 per pupil, at a cost of $1.05 billion above the current spending of $2.4 billion), student performance would only be expected to improve by approximately 4 percent, at most. In one instance, grade 6 language performance, Hanushek actually predicted that the increased spending would reduce student performance by 0.2 percent. These are not the only studies that have considered this question. A study by Ferguson (1991) looked at spending and the use of educational
resources in Texas. He concluded that "hiring teachers with stronger literacy skills, hiring more teachers (when students-per-teacher exceed 18), retaining experienced teachers, and attracting more teachers with advanced training are all measures that produce higher test scores in exchange for more money." His findings also suggest that teachers' selection of districts in which they want to teach is affected by the education level of the adults in the community, the racial composition of that community, and the salaries in other districts and alternative occupations. This implies, according to Ferguson, that better teachers will tend to move to districts with higher socioeconomic characteristics if salaries are equal. If teacher skills and knowledge have an impact on student achievement (and Ferguson, as well as others suggest that it does) then low socio-economic areas may have to offer substantially higher salaries to teachers to attract and retain high quality instructors. This would help confirm a link between expenditures and student achievement.

Education system's infrastructure and the financial resource base inputs in a country are the guarantee of its development in its education sector. These may make a developing country into a developed country. Education leads to the developing into a developed country and also makes the economy of the developing country more stable in the long run. The level of spending of both the individual and country indicates the governments' dedication and commitment to the development of its education sector.

In Pakistan the education sector enjoys the highest priority on the social sector agenda but it is poorly funded when compared to the other sectors (Government of Pakistan, 2003). Similarly, Pakistan is lacking both in its education system’s infrastructure, and also in the availability of financial resource inputs. Furthermore, this country is now on just twelve countries of the world spending less than 2 percent of GDP on education (ICG, 2004).
The proper allocation, and the fast and the effective use of the resource inputs show the dedication and commitment of a nation to its education sector. However, there are many discrepancies in the allocation of funds within the education sector of the country. Usually funds are misallocated with respect to the various levels of education and the various areas of the country. Recently, the allocation of government funds is skewed towards the higher education (Memom, 2007). Furthermore, the secondary education was not given the due importance in past. Likewise, the secondary school education sector has always been neglected as compared to the primary education sector in most of the worlds developing economies.

Allocation to the education sector at provincial level is between 20 to 30 percent of total budget. This Allocation meets greatly the recurring expenditures. The development expenditures are less than 10 percent for Sindh and Punjab whereas 15 to 20 percent are for NWFP and Balochistan. These development expenditures are necessary to generate future national assets. Likewise, the allocation of resource inputs at the districts of Punjab and Sindh show the equivalent situation as for the provincial level. (Husain, Qasim & Sheikh, 2003)

According to Government of Pakistan (2009), it is estimated that from 20% to 30% of developmental funds allocated to the sector remain unutilized. Furthermore, funds are also misallocated with respect to the rural and the urban areas. Likewise, some special grants are allocated to the specific institutions. There are the significant differences in the educational facilities provided to the rural and the urban schools; however, some special funds are allocated to the federally-funded institutions (government model colleges, cadet
colleges etc.) as compared to the ordinary schools (Government of Pakistan (GOP), 2009).

The implementation gap between allocation and utilization affects many aspects of governance, allocation and use of resource inputs. The fundamental causes may lie in the lack of a planning culture, planning capacity and weaknesses in the accountability mechanisms. A further nature of implementation problem lies in corruption in the allocations of funds and their diversion systematically to personal use at most levels of the allocation chain (Government of Pakistan, 2009). Likewise, the low budgets allocated to the education sector at federal level are not fully spent except for the year 2001-02. However, Balochistan spends a comparatively higher percentage of the allocated education budget. This is the weak absorption capacity that only less than fifty percent of the total funds allocated for the development expenditure of the Ministry of Education at federal level are actually utilized (Aly, 2007).

Factors liable for low utilization of funds and poor efficiency at the district level include political interference in recruitment, postings, and transfers, and lack of training mechanisms and accountability within the education system [Gap, 2009]. Another factor is that recurring funds are provided to the institutions or the concerned targets very late. Resultantly, the leadership or the management cannot fulfil the recurring demands and needs of schools or colleges; therefore, the quality is compromised. There is much difference in the PSE and STR. This discrepancy leads to the wastage of funds and resources.
2.5 Impact of other determinants of student's academic achievement apart from cost in each secondary school

Hanushek (1989), conducted a meta-analysis covering both expenditure and resource measures. He studied per student expenditures, teacher experience, teacher education, teacher salary, teacher-student ratio, administrative inputs and facilities. Within each category, the relationship of the input to the studied output was classified as positive and statistically significant, positive and statistically non-significant and non-significant but of unknown direction. He concluded that there is no strong or systematic relationship between school expenditures and student's performance. Present study supports the findings that PSE show very little relation to students' academic achievements if the social background and attitudes of individual students and their schoolmates were held constant. It also supports Hanushek (1989a; 1989b; 1991; 1994; 1996a; 1996b; 2003), Pritchett (2004), Wobmann (2003) and Lips, Watkins & Fleming (2008). These studies insisted that the relationship between the expenditures and students' academic achievements is weak or non-existent because schools do not effectively use the funds to improve the learning environment. The findings are not in line with those of Ahmad (1993), Hedges, Laine, & Greenwald (1994), Greenwald, Hedges, & Laine (1996), Hedges & Greenwald (1996), Eide & Showalter (1998), Krueger (1999), Guryan (2000), Tow (2006) and Kang (2007) that treated the increased expenditure as an indicator of achievement. These studies concluded that there was an insignificant relationship between the expenditures and students' academic achievements. Hedges, Laine and Greenwald (1994) applied a significant study to combine the relationships for each input into a single significance measure. They tested two hypotheses; that each input is
positively related to achievement, and that each is negatively related to achievement. They found that almost all relationships were significant in the positive direction with a few others being significant in the negative direction. Teacher experience, teacher salary, administrative inputs, facilities and class size have given a positive coefficient hence resources affect student’s achievement (Hedges, Laine and Greenwald, 1994).

Parents and students prefer the schools with the better academic environment. Therefore, student teacher ratio was higher in the urban schools. From the negative sign of PSE, it is derived that funds or resource inputs are not being used at the optimal level as Hanushek (1996a) pointed out that resource inputs were used effectively when coefficients were positive and significant. This negative sign shows the ineffective use of funds and resource inputs.

2.6 Summary of Reviewed Literature and Gaps

This chapter has presented the literature review. A review of literature has established, resource inputs in school have an impact on academic achievement. Hanushek (1996) and Eide & Showalter (1998) have established that student expenditure improved student’s academic achievement. Likewise, research by Krueger (1999) suggested that a type of school expenditure in the form of the small class size had a significant effect on student’s academic achievement. On the other hand, Guryan (2000) found out that increases in school funding had increased the performance of students.

(Heyneman (1982) and Loxley (1983) have revealed that expenditures that are spent to expand the basic physical infrastructure of the school such as expansion or construction of a new building, purchase of equipments, or preparing a new playground etc are the
development expenditures which have an impact on student learning. Lips, Watkins and Fleming (2008) on the other hand concluded that the important is how the money is spent, not on how much money is spent. Hanushek, Pritchett, 2004 and Wobmann, 2003) state that there is relationship between the expenditures and students’ academic achievements. Greenwald et al. (1996) in his study on a meta-analysis of studies of EPF equations in public and private schools observed that, a broad range of resource inputs were positively related to student achievement.

Eide & Showalter (1998) found that PSE have larger effects on math scores for the bottom tail of the math score distribution than for the rest of the distribution. In addition, by using a quasi experimental research design, Guryan (2000) found that increases in school funding had increased the performance of students in the elementary schools of Massachusetts. Hanushek, (2003), Pritchett (2004) and Wobmann (2003) established that PSE had a statistically significant positive effect on KS3 achievement in math and science. Similarly Tow (2006) revealed that there was significant effect of school funding on academic achievement of students. Hanushek (1989) was found that there was no strong or systematic relationship between school expenditures and student performance. However, Ahmad (1993) found that scholastic factors including school finance were subjected to a significant correlation with the examination results. Therefore, school finance played a significant role in improving educational standards. Greenwald (1996) revealed that a wide series of resource inputs had positive influences on student achievement.

Hedges, Laine, and Greenwald (1994) found that expenditures do matter, they found less evidence of a relationship between the other factors identified above and student
performance. Hedges, Laine, and Greenwald (1994) on the other had found out that per student expenditures and student achievement were unrelated. Hedges and Olkin (1980) have revealed that expenditures do have an impact on student achievement.

Factors liable for low utilization of funds and poor efficiency at the district level include political interference in recruitment, postings, and transfers, and lack of training mechanisms and accountability within the education system [GOP, 2009]. Another factor is that recurring funds are provided to the institutions or the concerned targets very late. Resultantly, the leadership or the management cannot fulfil the recurring demands and needs of schools or colleges; therefore, the quality is compromised. Furthermore, the management prepares the fictitious or bogus receipts to draw funds for the period funds were not spent. It is noted from the school or college audit that funds have been utilized for providing the facilities which have not been actually provided, for example the ice in winter and coal for heating in summer. Extra funds in the form of extra resource inputs are being misused, inefficiently used or remain unused.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, study variables location of the study, target population, sampling procedure and sample size, research instruments, validity, reliability, pilot study, data collection procedure, data analysis and ethical and logistical considerations of the study.

3.2 Research Design

A descriptive survey research design in quantitative approach was used in this study. Descriptive research is conducted to describe phenomena as they exist, to identify and obtain information on the characteristics of a particular problem (Orodho, 2005). Descriptive survey research design was used in this study because it goes further to examine a problem in details than the exploratory design would do. Thus, a descriptive survey is undertaken to ascertain and describe the characteristics of pertinent issues assumed to cause or affect the outcome of a process or a continuum of processes (Orodho, 2005). Quantitative data collected and analyzed using descriptive statistics such as frequency distributions, percentages and averages.

3.2.1 Study Variables

Independent variables were the factors affecting per student expenditure and how these factors link to academic performance in secondary school level. The intervening variables was the government education policy guidelines and the specific other determinants of
students academic performance apart from cost in secondary school level like teaching strategies, teacher skills and experiences. The dependent variable was student’s academic achievement caused by per student expenditure differentials in secondary school education’s Kenya Certificate of Secondary Education (KCSE) mean grade scores.

3.3 Location of the Study

This study was carried out in Kikuyu District in Kiambu County. In terms of wealth the Kikuyu District-Kiambu County has a rich socioeconomic set-up with rich agricultural base for horticulture, dairy and poultry farming due to its nearness to the market in the city of Nairobi. There are industrious farmers who grow cash crops like Coffee both in large scale and small scale land holdings (Kamau, 2011). Tourists’ sceneries in Kikuyu District-Kiambu County are hills, forests, rivers and valleys for site seeing (Kamau, 2011). According to the Kenya National Bureau of Statistics and population census of 2009, Kikuyu District, Kiambu County has a total population of 942,581 (GOK: Kenya National Bureau of Statistics (KNBS) Kikuyu District, Kiambu County Statistics on Population Census, 2009). In the context of Kenyan secondary school education’s secretariat data, Kikuyu District has 25 public secondary schools with a total of 552 secondary school teachers and a total of 12393 students, by gender as 6388 boys and 6005 girls (DEO’s record, 2011).

3.4 Target Population

The study target population for the study involved all the 25 public secondary schools in the district, where there are 2 National schools, 4 County schools and 19 District schools
(DEO's Record, 2011). The target population of the study was all the principals in all the public secondary schools in the district.

3.5 Sampling Procedures and Sample Size

The study employed census method. This refers to cases where the whole population is taken to participate in the study. The entire population is taken into account and as such it is most accurate (Mugenda & Mugenda, 2003). The study therefore involved all the 22 principals in all the schools in the district since three schools were used for piloting.

3.6 Research Instruments

A questionnaire for principals and document analysis guide was used to collect data. They were designed by the researcher to suit the data required for the success of this study. The Principals' questionnaire had closed-ended questions. In the closed-ended questions definite responses were expected. Research questions guided the construction of the questionnaire items for all areas to be addressed in the questionnaire. This ensured completeness of all the areas covered by the study. The questionnaires for principals collected data on the schools. The questionnaire had an introduction of the study to the respondents and the reasons for carrying out the study. In this section ethical values upheld by the researcher were explained to the respondents and their security and confidentiality of the information given was assured. The document analysis guide collected data on student expenditure and school academic achievement.
3.7 Validity of the instrument

Validity refers to the approximate truth of propositions, inferences, or conclusions made by the researcher after completion of a successful study. The instruments were valid depending on how the data collected were related in terms of how effective the items sampled significant aspects of the purpose of the study (Kasomo, 2006). Content validity of the instruments was used to measure the degree to which the items represented specific areas covered by the study. Therefore, content validity of the instrument was determined by experts in research methodology. The experts advised on the items to be corrected. The corrections on the identified questions were incorporated in the instrument to increase validity. Finally the face and content validity of the questionnaire was ascertained by experts in Economics of Education from the school of education at Kenyatta University who looked at the measuring technique and coverage of specific areas (objectives) covered by the study then they allowed the researcher to use the research instrument in collecting data.

3.8 Reliability of the instrument

Reliability has to do with the quality of measurements. In research, the term reliability means "repeatability" or "consistency" of measures (Kothari, 2006). A measure is considered reliable if it would give the same result over and over again assuming that what is measured is not changing (Kothari, 2006). In the piloting process split-half method was used by administering the questionnaire to a pilot sample of 3 randomly selected principals from three schools in Kikuyu District-Kiambu County. The data values collected were operationalized and the numerical scores were split into two using
odd number versus even number items process to get two sets of values which were correlated using Pearson Product Moment Correlation Coefficient to calculate the coefficient of relationship. A correlation coefficient of at least 0.70 is said to be sufficient for the questionnaire to have high pretest reliability (Kasomo, 2006). Therefore, if the correlation coefficient calculated was above 0.70 the instruments were deemed reliable and hence were used in the data collection.

3.9 Piloting

This section consists of validity and reliability of the data collection instrument. Validity is the degree to which the results obtained from the analysis of the data actually represents the phenomenon under study (Orodho, 2005). Great care was taken to ensure that the items of the questionnaire were easy to understand and that there was no ambiguity. The questionnaires were pretested as a means of a pilot study by administering them to a random sample of three Principals from the public secondary school in Kikuyu District-Kiambu County. The three schools were selected by arranging all the schools in alphabetical order and the last three were chosen.

3.10 Ethical Considerations of the Study

The respondents were assured of their identity anonymity and confidentiality of the data that they were to provide. A Research Authorization Permit was obtained from the Education Officer so as to get permission for data collection within the entire Kikuyu District-Kiambu County as the designated study area. The researcher pre-visited the public secondary schools in order to establish rapport with the Principals before the actual data collection date. By ensuring that no other study had been conducted in the
Kikuyu District-Kiambu County, aiming at investigation of the impact of student expenditure on academic achievement at the public secondary school education level, the researcher had adequately exhausted evidence towards ascertaining the originality of this research project.

3.11 Data Collection Procedures

Data collection took place over one month period tentatively in July 2013. A permit for data collection was obtained from the National Council for Science and Technology so as to get permission to collect data in Kikuyu District-Kiambu County. A copy of the permit was submitted to the District Education Officer and the District Commissioner, Kikuyu District-Kiambu County. The researcher pre-visited the selected secondary schools to establish rapport with the Principals before the actual data collection date. This made her familiar with the respondents (Kasomo, 2006).

Questionnaires were personally administered to the Principals by the researcher in all the public secondary schools in the district. The researcher made prior arrangements with the Principals of schools so that the instrument were administered and filled in after one day in each school. To ensure 100% return rates of the questionnaire, the researcher personally collected the filled questionnaires from all the public secondary school in the data collection process. The researcher filled in the document analysis guide from the documents available in the schools.
3.12 Data Analysis techniques

After the data had been collected there was cross-examination to ascertain their accuracy, competences and identify those items wrongly responded to, spelling mistakes and blank spaces. In analyzing the data collected, correlation research methods were used to describe the relationship between variables. The researcher was interested in correlating student expenditure and students' academic achievement. Quantitative descriptive statistics were used. To analyse research question one on students' academic achievement in national, county and district schools in Kikuyu district, quantitative data was used. To analyse research question two on the student expenditure in national, county and district schools in Kikuyu district, quantitative was used. To analyse research question three on the relationship between student expenditure and schools' academic achievement Pearson’s correlation coefficient was used. To answer research question four on the impact of other determinants of student’s academic achievement apart from student expenditure in each secondary school category, descriptive statistics were used. The findings were presented in frequency distribution tables preceded by explanations.
CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This study investigated the impact of student expenditures on academic achievements at secondary school level in Kikuyu District, Kenya. The study specifically investigated students' academic achievement, student expenditure in national, county and district schools, the relationship between the student expenditure and academic achievement and the impact of other determinants apart from student expenditure on students' academic achievement in national, provincial and district schools in Kikuyu district. The chapter presents the questionnaire return rate, demographic variables and then presents the analysis and discussions based on the research objectives.

4.2 Demographic data of the principals

All the 22 principals sampled filled and returned the questionnaires. The return rate was 100% and hence deemed adequate for data analysis. Demographic information of the principals was based on school category, school gender, and whether they sent their students home for fees. Asked to indicate the School category, they responded as shown in figure 3.
Figure 3: Distribution of principals according to school category

Data in figure 3 indicated that majority, 59.1% of Principals were from District day schools, 18.2% of principals from district boarding, 18.2% principals were from county schools while only 4.5% of principals were from national schools. Asked whether their students were able to pay fees in time, the principals reported that they were not able to pay in time. To establish the frequency at which the students were sent home for fees, the principals were asked to indicate the same. Figure 4 shows their responses
Figure 4: Principals’ responses on the frequency at which they sent students home for fees

As presented in Figure 4, majority 19(86.4%) of principals sent their students home often for fees, 2(9.1%) of principals sent the students very often while only 1(4.5%) of principals never sent students home for fees. Figure 5 shows the type of school in terms of gender.
Data shows that majority 15 (68.2%) of principals were in mixed schools, 2 (9.1%) of principals in boys schools while 5 (22.7%) of principals were in girls schools.

4.3 Students’ academic achievement in national, county and district schools in Kikuyu district

The study sought to establish the students’ academic achievement in national, county and district schools in kikuyu district. To establish the student academic achievement in national, county and district schools in the district, the mean scores for the three categories of schools were taken and presented in averages. The data is presented in table 4.1.
Table 4.1 Student academic achievement by school category

<table>
<thead>
<tr>
<th>Category of schools</th>
<th>School mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
</tr>
<tr>
<td>County</td>
<td>6.025</td>
</tr>
</tbody>
</table>

Data shows that national schools had the highest mean scores followed by county schools and lastly the district schools performed dismally. The school principals were asked to indicate whether there was a relationship between the amount of money paid and performance. The data showed that 13 (59.1%) indicated to the affirmative while 9 (40.9%) indicated that there was not such relationship.

The above findings are in line with Eide & Showalter (1998) found that PSE have larger effects on math scores for the bottom tail of the math score distribution than for the rest of the distribution. Therefore, the study showed that school resource inputs had heterogeneous effects on the students of different achievement. Likewise, some experimental research suggested that a type of expenditures in the form of the small class size had a significant effect on student achievement (Krueger 1999). In addition, by using a quasi experimental research design, Guryan (2000) found that increases in school
funding had increased the performance of students in the elementary schools of Massachusetts.

Kang (2007) examined the effect of private educational expenditures (private tutoring expenditures in South Korea) on student achievement (standardized test scores). The study used the causal estimates based on IV methods and implied that a 10 percent increase in the expenditure on private tutoring leads to a 0.56 percentile point improvement; however, the effect of the mean value was equivalent to a 1.1 percent increase in test score.

4.4 Student expenditure in national, county and district schools in Kikuyu district

The study sought to establish student expenditure in national, county and district schools in Kikuyu district. The study identified the data regarding expenditures per year. Table 4.2 presents the student expenditure in national, county and district schools in Kikuyu district.

Table 4.2 Student expenditure by school category

<table>
<thead>
<tr>
<th>School category</th>
<th>National school</th>
<th>County school</th>
<th>District school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average (Ksh)</td>
<td>64,900</td>
<td>41,265</td>
<td>31,265</td>
</tr>
</tbody>
</table>

The data shows that there was great discrepancies in the per students expenditure in the three categories of schools with means of 64,900, 41265 and 31,265 in the national, county and district schools respectively. The study revealed that there were three main
categories of expenditures at the secondary schools i.e. PTA account which comprised of development, motivation, activity and boarding all added up to Ksh. 30,165 on average. The other one was tuition account which handled textbooks, exercise books, laboratory equipments, teaching/learning materials, internal examinations and library which added up to Ksh. 3,600 per student. Lastly the operational account which comprised of repair and maintenance, local travelling, water and electricity, office administration, activity, personal emolument salaries and medical added up to Ksh. 6,665 per student. The tuition and operational accounts is from the government capitation of Ksh. 10,265 under free secondary education. In the national and county school there was more money charged on parents for tuition which added up to an average of Ksh. 1600 since the government allocation did not meet their needs.

Greenwald et al. (1996) conducted a meta-analysis of studies of EPF equations in public and private schools. According to this study, a broad range of resource inputs were positively related to student achievement; however, the effect sizes large enough suggested that moderate increases in the expenditures might be associated with the significant increases in achievement.

Hanushek & Hedges et al. agreed on the effective use of the funds or the resources, the “effective resource use,” in Hanushek’s (1996a) words, and “how money matters” in the words of Hedges et al (1994). Furthermore, the main concern of the researchers and policy makers was to enlighten the mechanisms through which school expenditures could efficiently promote learning. However, the researchers of both the studies disagreed on the extent to which school expenditure improved student achievement.
4.5 Relationship between the student expenditure and academic achievement

The study identified the data regarding expenditures in the 5 years period at the three categories of schools. (Year 2007 - 2011). PSE was calculated by dividing the total expenditures in the schools by the average student enrollment in the 5 years period. The study used the longitudinal data of student achievement collected through KCSE mean scores. Mean scores of the 5 years was used as the dependent variable. The result data was collected through school records and from principals' responses. The collected data was summarized at school level. Then the school level data showing the school variations were shifted into SPSS data file. Through SPSS, Linear Regression analysis was used to find out the differential impact of PSE on student achievement. The data for the differential impact of PSE on student achievement for the three categories of schools is presented in tables 3, 4, and 5.
Table 4.3 Differential Impact of student expenditure on academic achievement for the National schools

<table>
<thead>
<tr>
<th>Categories of schools</th>
<th>N = 22 Model</th>
<th>Unstand. Coefficients</th>
<th>Stand. Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-55.461</td>
<td>23.376</td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td>.987</td>
<td>.047</td>
<td>.956</td>
</tr>
<tr>
<td>Student Expenditure</td>
<td>.000</td>
<td>.000</td>
<td>-.026</td>
</tr>
</tbody>
</table>

Dependent Variable is Academic Achievement

Data in table 4.3 shows that differential impact of student expenditure on academic achievement in national schools. Data shows that the t-value is highly significant (-2.374) for achievement for the national schools. This shows that student expenditure did not have a significant effect on student performance in the national school, the insignificant t-values for the student expenditure for the national schools show that there is no impact of student expenditure on academic achievement.

The study also sought to establish the differential impact of student expenditure on academic achievement for county schools. The data is presented in table 4.4.
Table 4.4 Differential Impact of student expenditure on academic achievement for county schools

<table>
<thead>
<tr>
<th>No. Schools</th>
<th>Unstand. Coefficients</th>
<th>Stand. Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 22 Mode</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-8.532</td>
<td>36.736</td>
</tr>
<tr>
<td>Achievement</td>
<td>.906</td>
<td>.061</td>
</tr>
<tr>
<td>Student Expenditure</td>
<td>.001</td>
<td>.001</td>
</tr>
</tbody>
</table>

Dependent Variable is Academic Achievement

As indicated in table 4.4 the t-value is highly significant (2.32) for achievement for the county schools. This shows that student expenditure has a significant effect on student performance in the county school, the insignificant t-values for the student expenditure for the county schools.

To establish the impact of student expenditure on academic achievement in district schools, data is presented in Table 4.5.
Table 4.5 Differential Impact of student expenditure on academic achievement for district schools

<table>
<thead>
<tr>
<th>District schools N = 22 Model</th>
<th>Unstand. Coefficients</th>
<th>Stand. Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td></td>
<td>-35.847</td>
<td>20.601</td>
</tr>
<tr>
<td>Achievement</td>
<td>.951</td>
<td>.042</td>
</tr>
<tr>
<td>Student Expenditure</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent Variable is Academic Achievement

Data in tables 5 present the magnitude of the differential impact of student expenditure on academic achievement as measured by the Linear Regression analysis coefficient. The t-value is highly significant for prior achievement for the three categories of schools (1.740). This shows that student expenditure did not have a significant effect on academic achievement, the insignificant t-values for the student expenditure for the district schools show that there is an impact of student expenditure on academic achievement.

The findings disagree with Hanushek (1989) it was found that there was no strong or systematic relationship between school expenditures and student performance. However, Ahmad (1993) found that scholastic factors including school finance were subjected to a
significant correlation with the examination results. Therefore, school finance played a significant role in improving educational standards. The study also found that a positive effect on education standards might be obtained if the suitable conditions were created in relation to this factor. On the basis of the same meta-analysis of a sub sample of the same data used by Hanushek (1989), Hedges et al. (1994a) rejected that conclusion.

4.6 Impact of other determinants apart from student expenditure on academic achievement

To establish the factors that had an impact of students performance other than student expenditure, the researcher used a 5 point Likert type items with SA, A, U, D and SD represented by 5 points, 4 points, 3 points 2 points and 1 point respectively. These scores were merged so that SA and A were combined to A, while D and SD were combined to D. Hence A = 3; U = 2 and D = 1. For each item a mean was sought using the formula, 3+2+1 divided by 3 which is 2. Any item that had a mean of 2 and above was regarded as significant while any mean of below 2 was regarded as not significant. The data is presented in Table 4.6.
Table 4.6 Impact of other determinants other than student expenditure on academic achievement

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low staffing levels affect student achievement in this school</td>
<td>1.45</td>
<td>.858</td>
</tr>
<tr>
<td>Inadequate teaching and learning materials affect student performance in this school</td>
<td>1.55</td>
<td>.858</td>
</tr>
<tr>
<td>There is no proper supervision in this school</td>
<td>2.82*</td>
<td>.588</td>
</tr>
<tr>
<td>Teachers do not adequately teach in this school</td>
<td>2.82*</td>
<td>.588</td>
</tr>
<tr>
<td>Internal assessment help students improve performance</td>
<td>1.18</td>
<td>.588</td>
</tr>
<tr>
<td>Entry behavior is a factor that hinder good academic performance</td>
<td>1.55</td>
<td>.912</td>
</tr>
<tr>
<td>Teachers lack commitment in their work</td>
<td>2.59*</td>
<td>.734</td>
</tr>
<tr>
<td>The community around the school negatively affects learning in this school</td>
<td>1.82</td>
<td>.958</td>
</tr>
<tr>
<td>Parents are not interested in their children’s education</td>
<td>1.91</td>
<td>.971</td>
</tr>
<tr>
<td>Lack of completion of syllabus affects students performance</td>
<td>1.36</td>
<td>.658</td>
</tr>
</tbody>
</table>

*Significant
Data showed that only three items were significant in influencing student performance. These were ‘There is no proper supervision in this school with a mean of 2.82’, ‘Teachers do not adequately teach in this school’ with a mean of 2.82 and the item that ‘Teachers lack commitment in their work’ which had a mean of 2.59’. This is in line with Hanushek (1996) who found that parents and students prefer the schools with the better academic environment. Therefore, student teacher ratio was higher in the urban schools. From the negative sign of PSE, it is derived that funds or resource inputs are not being used at the optimal level as Hanushek (1996a) pointed out that resource inputs were used effectively when coefficients were positive and significant. This negative sign shows the ineffective use of funds and resource inputs.
CHAPTER FIVE

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions and recommendations. The chapter further presents the suggestions for further study.

5.2 Summary of findings

The aim of this study was to investigate the impact of per student expenditures on academic achievements at secondary school level in Kikuyu District, Kenya. Four research objectives guided the study. The research objectives sought to establish the students’ academic achievement in national, county and district schools. It also established the students’ expenditure in national, county and district schools. The study further determined the relationship between the student expenditure and academic achievement in national, county and district schools and lastly it assessed the impact of other determinants apart from student expenditure on academic achievement in national, county and district schools in Kikuyu district. A descriptive survey research design in quantitative approach was used in this study. This study was carried out in Kikuyu District-Kiambu County. In terms of wealth the Kikuyu District-Kiambu County has a rich socioeconomic set-up with rich agricultural base for horticulture, dairy and poultry farming due to its nearness to the market in the city of Nairobi. The study target population for the study involved all the 25 public secondary schools in the district, where there are 2 National schools, 4 Provincial schools and 19 District schools (DEO’s
The target population of the study was all the principals in all the public secondary schools in the district. The sample for the study was 22 principals since three schools were used for piloting. Data was collected by use of questionnaires and document analysis guide and was analysed by use of t tests to establish the influence of per student expenditure on students' academic performance.

**Research objective one: to establish the students' academic achievement in national, county and district schools in Kikuyu district**

Findings revealed that national schools had the highest mean scores (10.4) followed by county schools (6.63) and lastly the district schools performed dismally (4.13) on average over the five years. The school principals were asked to indicate whether there was a relationship between the amount of money paid and performance. The data showed that 13 (59.1%) indicated to the affirmative while 9 (40.9%) indicated that there was not such relationship.

**Research objective two: to establish the per student expenditure in national, county and district schools in Kikuyu district**

Findings also revealed that there are great discrepancies in the per students expenditure in the three categories of schools with means of 64,900, 41,265 and 31,265 shillings in the national, county and district schools respectively. The study revealed that there were three main categories of expenditures at the secondary schools i.e. PTA account which comprised of development, motivation, activity and boarding all added up to Ksh. 30,165 on average. The other one was tuition account which handled textbooks, exercise books, laboratory equipments, teaching/learning materials, internal examinations and library
which added up to Ksh. 3,600 per student. Lastly the operational account which comprised of repair and maintenance, local travelling, water and electricity, office administration, activity, personal emolument salaries and medical added up to Ksh. 6,665 per student. The tuition and operational accounts is from the government capitation of Ksh. 10,265 under free secondary education.

Research objective three: to determine the relationship between the students expenditure and academic achievement in national, county and district schools in Kikuyu district

It was also revealed that there was a relationship between the student expenditure and academic achievement in the national schools. The t-value was highly significant (-2.374) for achievement for the national schools. This shows that student expenditure did not have a significant effect on academic achievement in the national school, the insignificant t-values for the student expenditure for the national schools show that there is no impact of student expenditure on academic achievement. Findings on the impact of student expenditure on academic achievement for county schools showed that the t-value is highly significant (2.32) for achievement for the county schools. This showed that student expenditure has a significant effect on student performance in the county school, the insignificant t-values for the per student expenditure for the county schools.

It was also revealed per school expenditure had an effect on students achievement in district schools. The t-value was highly significant for the three categories of schools at 1.740. This shows that student expenditure had a significant effect on student performance.
Research objective four: assess the impact of other determinants apart from students expenditure on students' academic achievement in national, county and district schools in Kikuyu district

Findings also revealed that there were other factors that impacted on students’ academic achievement apart from the per student expenditure. Items such as 'there is no proper supervision in this school with a mean of 2.82; 'Teachers do not adequately teach in this school' with a mean of 2.82 and the item that 'Teachers lack commitment in their work' which had a mean of 2.59 were some of the factors that were found significant in influencing student performance.

5.3 Conclusions

The following were the conclusions of the study:

i. From the first research objective, national schools had the highest mean scores followed by county schools and lastly the district schools performed dismally.

ii. From the second research objective, national school had the highest per student expenditure, followed by county schools and then district schools, with an average of 64,900, 41,265 and 31,265 shillings respectively.

iii. From the third research objective, the study further concluded that per school expenditure had an effect in academic achievement in district schools. The t-value was highly significant for prior achievement for the three categories of schools at 1.740. The study concluded that there was a relationship between student expenditure and academic achievement in the national schools. This was shown
by a t-value of -2.374 for achievement for the national schools. This shows that student expenditure did not have a significant effect on academic achievement in the national school.

iv. From the fourth research objective, this study concludes that there were other factors that impacted on students' academic achievement apart from the per student expenditure.

5.4 Recommendations

Based on the conclusions of the study, the following were the recommendations:

i. That the government should have a clear policy on how much students needs to pay in every category of schools and further monitor how school funds are allocated to different vote heads.

ii. The government should ensure that there are no misallocations of funds in the schools. This is because, misallocation of funds leads to the wastage of fund in the form of extra resource inputs that are being misused, inefficiently used or remain unused.

iii. There is need to review the government funding to schools especially on tuition to improve their academic achievement.

iv. The study recommends that there is need for schools to mitigate other factors that have negative effects on students' academic achievement.
5.5 Suggestions for further research

The following areas were suggested for further research:

1. Influence of government cost sharing policy on students' academic achievement in secondary schools. This is based on the fact that the government has established free secondary education in bid to ensure that secondary school students are do not miss out school hence the need to establish whether the policy has any influence on students' academic performance.

2. Influence of the student expenditures on academic achievement in rural and urban schools. Such a study will be important in establishing whether the differences on per student expenditure in rural and urban schools translate to students academic performance.
REFERENCES


APPENDICES

APPENDIX I: QUESTIONNAIRE FOR THE PRINCIPALS

Instructions

This questionnaire is designed to gather information on the impact of per students’ expenditure differentials on students’ academic performance in Kikuyu district. You are kindly requested to tick (✓) the appropriate response or respond as indicated. Do not put your name or any other form of identification. The information you give will be confidential and will only be used for the purpose of this study. Please respond to all items.

Section A: Per student expenditure

1. What category is your school?

   National  [   ]
   Provincial [   ]
   District boarding [   ]
   District day  [   ]

2. How many students do you have in your school? ______________

3. In the following table indicate how much students are supposed to pay upon entry in Form one
<table>
<thead>
<tr>
<th>Vote head</th>
<th>Amount in Ksh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tuition</td>
<td></td>
</tr>
<tr>
<td>2 Activity fee</td>
<td></td>
</tr>
<tr>
<td>3 Medical</td>
<td></td>
</tr>
<tr>
<td>4 Boarding</td>
<td></td>
</tr>
<tr>
<td>5 Meals</td>
<td></td>
</tr>
<tr>
<td>6 Clubs and societies</td>
<td></td>
</tr>
<tr>
<td>7 Remedial teaching</td>
<td></td>
</tr>
<tr>
<td>8 Registration</td>
<td></td>
</tr>
<tr>
<td>9 Building fund</td>
<td></td>
</tr>
<tr>
<td>10 School bus</td>
<td></td>
</tr>
<tr>
<td>11 Cost of teachers</td>
<td></td>
</tr>
<tr>
<td>12 Cost of non-teaching staff</td>
<td></td>
</tr>
</tbody>
</table>
4. What other monies do students pay upon entry in form one (indicate in the table below)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What is the per student expenditure in students in Form Four

Section B: Academic performance

6. What was the mean score in your school in KCSE in the following years

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean score
Section C: Per students’ expenditure and academic achievement

7. Are students able to pay their fees in time?

Yes [ ]

No [ ]

8. How often do you send your students home for fees?

Very often [ ]

Often [ ]

Never [ ]

9. Is there a relationship between the amount of money that students pay and academic performance?

Yes [ ]

No [ ]

Explain your answer above

_____________________________________________________________________________________

_____________________________________________________________________________________

_____________________________________________________________________________________

_____________________________________________________________________________________

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**Section D: Impact of other determinants**

1. State type of your school in terms of gender

   Female [ ]    Male [ ]    Mixed [ ]

2. Indicate how you agree or disagree with the following statements using the Key:

   SA – Strongly agree; A – Agree; U – Undecided; D – Disagree; SD – Strongly disagree

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Low staffing levels affect students achievement in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Inadequate teaching and learning resources affect students performance in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 There is not proper supervision in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Teachers do not adequately teach in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Internal assessment help improve academic achievement in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Entry behaviour is a factor that hinder good academic performance in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Teachers lack commitment in their work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 The community around the school negatively affects learning in this school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Parents are not interested in their children’s education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Lack of completion of syllabus affects students performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX II: DOCUMENT ANALYSIS GUIDE

Category of school ____________________________

Section A: Per student expenditure

The researcher will indicate the various per student expenditure in the following table

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount in Ksh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Section B: School mean scores in the last 5 years

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Nancy Wangui Macharia
of (Address) Kenyatta University
P.O.Box 43844-00100, Nairobi,
has been permitted to conduct research in

Kikuyu
Location
District
Province

on the topic: Impact of student expenditure differentials on academic achievement at secondary school level in Kikuyu District, Kiambu County-Kenya.


Research Permit No. NCST/RCD/14/013/1040
Date of issue: 13th June, 2013
Fee received: KSH. 1000
Following your application dated 7th June, 2013 for authority to carry out research on “Impact of student expenditure differentials on academic achievement at secondary school level in Kikuyu District Kiambu County-Kenya.” I am pleased to inform you that you have been authorized to undertake research in Kikuyu District for a period ending 31st July, 2013.

You are advised to report to the District Commissioner and District Education Officer, Kikuyu District before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

Copy to:
The District Commissioner
The District Education Officer
Kikuyu District.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development."
MINISTRY OF EDUCATION

EMAIL:districteduofkikuy@yahoo.com
Telephone 020-8046599
When replying please quote:

KIKUYU DISTRICT EDUC. OFFICE
P.O. BOX 1913-00902
KIKUYU

REF:KIK/ED/58/VOL.II(52)

NANCY WANGUI MACHARIA
KENYATTA UNIVERSITY,
P.O. BOX 43844-00100,
NAIROBI.

DATE: 24th June, 2013.

RE: RESEARCH AUTHORIZATION

As per authority granted to you through vide ref: NCST/RCD/14/013/1040 dated 13th June, 2013 from the Deputy Council Secretary for Science and Technology, you are hereby authorized to carry out research on "Impact of student expenditure differentials on academic achievement at secondary school level in Kikuyu district Kiambu County - Kenya" for a period ending 31st July, 2013.

While on the same ensure that school's normal programme are least compromised.

Upon completion do upload a soft copy of the findings to our email. This will be of great contribution to the education fraternity in the district.

ZIPPORAH GIKAMBI(MRS)
DISTRICT EDUCATION OFFICER
KIKUYU.

CC Deputy Council Secretary,
National Council for Science and Technology.