SCHOOL FINANCING AND EDUCATION OUTCOMES: A COMPARATIVE STUDY BETWEEN SELECTED CONVENTIONAL AND COMMUNITY DAY SECONDARY SCHOOLS IN CENTRAL EAST EDUCATION DIVISION

M.Ed. (POLICY, PLANNING AND LEADERSHIP) THESIS

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UNIVERSITY OF MALAWI

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AUGUST, 2017

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M.Ed. (POLICY, PLANNING AND LEADERSHIP) THESIS

By

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AUGUST, 2017

DECLARATION

I, the undersigned, hereby declare that this thesis is my own original work which has not been submitted to any other institution for similar purposes. Where other people‘s work has been used acknowledgements have been made.

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Name

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Signature

_____

Date

CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student‘s own work and effort and has been submitted with our approval.

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DEDICATION

This thesis is dedicated to my wife Maggie Banda for endless encouragement to pursue this programme to its very end. Not forgetting, Vanessa, our daughter, mum, dad and my late brother, Davie Steve Mlagha. May his soul rest in eternal peace.

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In the first place I would like to express my gratitude and thanks to my wife, Maggie, who encouraged me to apply for the program and seeing to it that I went for it despite financial muscle that did not allow me to. Thank you for your patience throughout my study period.

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This work would also not be well completed if I had not received moral support and guidance from my classmates throughout this tiresome academic journey. Their encouragement gave me energy to go on even at times when hope seemed to have been lost. I thank you so much.

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ABSTRACT

This study investigated public school financing and educational outcome in selected Conventional Secondary Schools and Community Day Secondary Schools in Central East Education Division. It sought to establish whether there is a link between levels of funding and attainment of education outcomes as students in CDSSs have poorer pass rates than in CSSs. The research was conducted in two districts involving 12 schools and selection of participants was based on probabilistic and non-probabilistic sampling procedures. It used mixed methods approach and in particular concurrent triangulation design as both qualitative and quantitative components of the study were handled in the same phase. Data was generated through questionnaires and documentary analysis while interviews generated data for qualitative component of the study. Quantitative data was analysed using SPSS and Excel while qualitative data, coding was done where themes were obtained from interviews. The study‘s findings revealed that conventional secondary schools have higher pass rates than community day secondary schools with the difference being statistically significant at 0.001, $p < 0.05$); inequitable distribution of financial resources to CSSs and CDSSs with a Gini Coefficient value of 0.39; and a strong, positive correlation between pass rates and per pupil spending ($r = 0.942$) using multiple regression. Interviews yielded similar results from respondents involved in the study. In view of the above study findings, equitable distribution of financial resources as well as reviewing of school financing policy to benefit critically under-resourced CDSSs.

Key words: School financing, Inequality and Educational outcomes.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADF	African Development Fund
CDF	Constituency Development Fund
CDSS	Community Day Secondary School
CEED	Central East Education Division
CSCQBE	Civil Society Coalition for Quality Basic Education
CSS	Conventional Secondary School
CTS	Care, Treatment and Support
DANIDA	Danish International Development Agency
DECs	Distance Education Centres
DSS	Direct School Support
EFA	Education for All
EMIS	Education Management Information System
SIP	Education Sector Implementation Plan
FDSE	Free Day Secondary Education
FGDs	Focus Group Discussions
FPE	Free Primary Education
GDP	Gross Domestic Product
JCE	Junior Certificate of Education
LDC	Less Developed Countries
MCDE	Malawi College of Distance Education
MDGs	Millennium Development Goals
MoEST	Ministry of Education, Science and Technology
MSCE	Malawi School Certificate of Education

NESP	National Education Sector Plan
ORT	Other Related Transaction
PE	Personal Emolument
PSTC	Primary School Teaching Certificate
PTR	Pupil Teacher Ratio
SFP	School Financing Policy
SIG	School Improvement Grant
SMC	School Management Committee
SqTR	Student qualified Teacher Ratio
STR	Student Teacher Ratio
TDP	Teacher Deployment Policy
TLM	Teaching and Learning Materials
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WB	World Bank

CHAPTER 1

INTRODUCTION

1.0 Chapter overview

This chapter discusses the background to the problem, statement of the problem, purpose of the study, significance of the study and definitions of operational terms.

1.1 Background to the study

School financing concerns sourcing, allocation, deployment and accountability of funds into the education sector in general and sub-sector in particular. Financing of education at different levels varies from country to country (David-Hadar & Paulimo, 2009; Baker, 2010). Thus, it may be centralised with high public investment on education as the case with Netherlands, or decentralised with members of the community taking a leading role in financing education as the case in the United States (David-Hadar & Paulimo, 2009).

However, whether centralised or decentralised, financing system of education in most countries in the world have come up with formula funding policies that allocate financial resources per student basis in order to meet educational equity goals (Olivas & Bates, 2013; Holmlund, MacNally & Viarengo, 2009). For instance, in the United States, the state has an obligation to promote equitable student outcomes through equitable distribution of financial resources. This is against the background of different levels of wealth among states that are responsible for financing public education (Baker, 2010).

Nevertheless, Jana (2012) argues that public financing is critical in providing adequate resources for equitable expansion of education system especially at primary and secondary levels. Thus, he argues that when analysing financing of public education, look at how much and what resources are available for educational development in terms of public expenditure which can be linked to attainment of educational outcomes (UNESCO, 2011).

Financing trends indicate that countries in Sub-Saharan Africa have continued to invest a relatively large proportion of the government budget in the education sector despite relatively low GDP per capita, which ranges from 11% to 28% (UNESCO Report, 2011; Ng'ambi, 2010; Lewin & Caillods, 2001). This has resulted in SubSaharan African countries such as Malawi to have high public unit cost in GDP per capita (World Bank, 2010).

In addition, Malawi's highest public unit cost is due to the fact that funding from government is a major source of public secondary school financing accounting for 70% of the total recurrent costs (Ng'ambi, 2010). Thus, household contribution for the delivery of secondary education in Malawi accounts for 30% of the total recurrent costs, which is lower than Africa's average of 44% (World Bank, 2010; USAID Report, 2010). The World Bank report suggests that higher public contribution (70%) to secondary education in Malawi, which is more than most of the African countries, is due to the fact that there are high levels of poverty among Malawian households.

Despite the fact that Malawi government has continued to invest a relatively large proportion of its budget to education, there still exists a wide variation in quality

within various secondary school types (Mwambucha, 2015). The extreme poor quality of schooling is prevalent in secondary sub-sector especially in the Community Day Secondary Schools (CDSSs), which account for nearly 70 per cent of total enrolments (Kadzamira, 2003). Most CDSSs continue to suffer from lack of resources and are still staffed by under-qualified teachers; achievement levels are, as a result, extremely low to an extent that very few CDSS students pass the Malawi School Certificate of Examinations (MSCE) (Kadzamira, 2003).

This is against the background that such CDSSs that were originally Distance Education Centres, largely financed through parental and community contributions, have now been taken over by Malawi government (Mwambucha, 2015). The Government of Malawi has now assumed greater responsibility for the financing of these schools in an attempt to create a unified public secondary system (Ng'ambi, 2010; Mwambucha, 2015). However, despite these policy changes, the quality of education offered in such schools remains poor and below minimally acceptable standards.

As shown in the foregoing discussion, higher Malawi government investment in education culminating into about 70% of the total recurrent costs for public secondary schools with poorer attainment of education outcomes in CDSSs than in CSSs provides a fertile ground for further investigation. Therefore, the current study seeks to compare public school financing and attainment of educational outcomes between CSSs and CDSSs. Malik and Naveed (2013)'s study on *Public Financing of Education in Pakistan* argue that although assessing the impact of the public financing of education on educational outcomes is a difficult task as other factors may

have influence, public sector financing has a great potential to affect the educational outcomes. Nonetheless, a resourced constrained Malawi economy where household contribution to secondary education is low, public financing is critical to students' educational outcomes.

Contrary to the above, Lewin and Sayed (2005); Chimombo, Chibwana, Dzimadzi, Kadzamira, Kunkwezu, Kunje and Nampota (2000)'s studies found low levels of investment in secondary education sub-sector as witnessed by lack of growth in conventional government school places exacerbated by ever increasing demand for access to secondary education since Malawi gained its independence.

Thus, until the mid-1990s Malawi access to secondary school was constrained to very low levels by deliberate acts of policy such that only about 10% obtained form one places (Chimombo et al., 2000). Those students that were not selected were being enrolled in Malawi College of Distance Education (MCDE) system which was of low quality and achieved pass rates at the secondary school leaving certificate of less than 10% (Lewin & Sayed, 2005). Students in MCDE system depended on Primary qualified teachers who were paid from the primary education budget. District Education Centres' (DECs) financial muscles depended on students' fees that covered over 60% of the costs of the centres. It can be observed that government had limited role in financial well-being of DECs. As Lewin and Sayed (2005, p. 125) observe that:

> As distance learning centres, the MCDEs operated at very high pupil: teacher ratios of between 100:1 and 200:1. Some were organised in purpose-built structures, some in buildings designed for other purposes which happened to be available, and many

> functioned in primary school premises in the afternoons after regular pupils had finished school.

In order to show more commitment towards quality education, Malawi government converted MCDE centres into Community Day Secondary Schools (CDSS) in 1998. This was done to integrate them fully into the public system. Ng'ambi (2010) observes that while a CDSS is expected to provide an equivalent standard of education as the better endowed CSS, the reality is that they are extremely underfunded and the quality, as measured by examination pass rates, for example, is much lower.

Although international literature on educational outcomes has shown that increasing resource allocation to school alone does not improve educational outcomes (Taylor, 1997; Coleman Report, 1966; Hanushek, 1995, 1989), a minimum level of investment in basic infrastructure and human resources is a necessary step (Malik and Naveed, 2013). Studies also conclude that differences in resource allocation contribute greatly to differences in levels of educational outcomes among students (Baker et al., 2010; Nampota and Chiwaula, 2014; Mackenzie, 2014).

Despite different scholars holding contrary views regarding the effects of funding on students' attainment of educational outcomes, Downs' (2014) study whether education inputs influence education outcomes differently for females and males in primary schools in Malawi contends that education production function studies of developed countries tend to find that marginal increases in inputs have only very small correlations with the outcomes; whereas studies for developing countries often find that small increases in inputs have larger increases in the outcomes. Hence, the

need for investigating association between school financing and educational outcomes in conventional secondary schools and community day secondary schools in Central East Education Division.

1.2 Statement of the Problem

Malawi, as one of the developing countries, is concerned about low education achievement among students especially CDSSs. The situation continues despite government of Malawi through MoEST taking education as one of its priority areas in fostering sustainable development. This is reflected in papers such as Vision 2020, Malawi Growth and Development Strategy. Therefore continued poor performance among students especially in CDSSs is a threat to achieving sustainable development. Literature indicates that students' performance has always been different between CSSs and CDSSs at both JCE and MSCE as reflected in pass rates, with latter associated with low pass rates while the former higher pass rates (Joint Sector Review, 2011; Chakwera, 2005; USAID, 2010; WORLD BANK, 2010; Kadzamira, 2003). Poor performance in CDSSs may be linked to school financing as funding levels available to schools have a bearing on educational attainment among students (Baker et al., 2010; Nampota and Chiwaula, 2014; Mackenzie, 2014; Downs, 2014; Harris, 2004; and Al-Samarrai, 2003).

Many studies on the impact of public financing on educational outcomes in Malawi have concentrated on primary education (Maleta, 2009; Rose, 2004; Al-Samarrai, 2003; Kadzamira & Rose, 2001). Although, some studies on school financing have targeted secondary sub-sector, most of such studies have concentrated at macro level

(World Bank, 2004, 2010; USAID Report, 2010; Ng'ambi, 2010; Lewin & Caillods, 2001). Most of these studies have looked at secondary education as a homogeneous group. For instance, World Bank (2010) observes that average unit cost for secondary hides the disparities existing between conventional and Community Day Secondary Schools, at the detriment of the latter. Little is, therefore, known on how school financing associates with educational outcomes between CSSs and CDSSs in Malawi.

1.3 Purpose of the study

The purpose of this study was to investigate the association between school financing and attainment of education outcomes between selected CSSs and CDSSs in Central East Education Division (CEED).

1.4 Research Questions

The following research questions guided the study:

1.4.1 Main Research Question

This study was guided by the following main research question: What associations are there between public school financing and attainment of education outcomes with reference to Conventional and Community Day Secondary Schools.

1.4.2 Subsidiary Research Questions

(i) Is the attainment of educational outcomes different between Conventions Secondary schools and Community Day Secondary schools?

(ii) How are Conventional Secondary Schools and Community Day Secondary Schools financed?

(iii) To what extent are the resources equitably distributed between CSSs and CDSSs?

(iv) To what extent does the difference in funding levels affect students‘ performance in CSSs and CDSSs?

1.5 Significance of the study

Firstly, very little research has been done on education outcomes in relation to public school financing. The current study will add to the body of knowledge on financing of education and its linkages to educational outcomes. Thus, the study therefore, is significant because it contributes to the development of educational research and literature and aims to induce a change in policy in the area of education financing (Checchi, 2003; Ng‘ambi, 2010; World Bank Report, 2010).

Secondly, in policy, the study is extremely timely as there is big gap between CSSs and CDSSs in terms of educational outcomes revealed by national examination results since their inception in 1998. The study findings would provide insights on the association between public expenditure on secondary education and educational outcomes. This is important to policy makers for it would provide empirical evidence on which to make rational decisions on distribution of resources to all levels of the subsector (secondary education).

Finally, in practice, the study should also serve as a stepping stone for future studies on school financing and educational outcomes. Since this study involved on few schools in only one Education Divisions, therefore, other researchers can do their studies involving as many Education Divisions in Malawi as possible.

1.6 Definition of Terms

Association: Refers to the relationship (correlation) between variables, in this case, levels of funding and education outcomes.

Attainment of Educational Outcomes

There are different dimensions of educational outcomes such as completion, enrolment rates as well as academic achievement (Taylor, 1997). But this study looked at educational outcomes in terms of pass rates for CSSs and CDSSs.

Equal educational opportunity: It is based on the notion that all children should have an equal chance to succeed and that there should be no difference in educational success based on student characteristics or place of residence or level of financial resources (Berne & Stiefel, 1999).

Expenditure per student: It is a measure of the public resources that, on average, a country devotes annually to each student's education (Sherman & Poirier, 2007).

Horizontal equity: Treating equals equally. For instance, all secondary school students irrespective of school category should be treated equally (Sherman & Poirier, 2007).

Resources: Refer to public funding, teachers and some key infrastructure items such as desks, chairs, science laboratories, teachers' houses and electricity (Checchi, 2003).

School Financing: This is the sourcing, allocation, deployment and accountability of funds into the education sector in general and sub-sectors in particular. This is usually guided by a policy (Checchi, 2003).

Teacher ratios: these are calculated as the number of teachers in public education in a country or region or school divided by the respective public school enrolment in that area or school and it is a measure of resources (Sherman & Poirier, 2007).

Vertical equity: This is the recognition that students are not all the same and that their starting points relative to other students should be considered in an analysis of equity (Cavicchioni & Motivans, 2001).

1.7 Organisation of the thesis

This thesis begins with an introduction to the study in chapter 1. Chapter 2 focuses on related literature review and theoretical framework that guided the study. This is followed by chapter 3, which discusses the research design and methodology. The presentation and discussion of research findings are in chapter 4 and then finally, conclusion and recommendations are presented in chapter 5.

1.8 Chapter summary

The chapter has explained the study‘s background, statement of the problem, purpose of the study, research questions, and significance of the study as well as definition of operational terms. All points raised in this chapter are relevant to my topic of study; investigating association between school financing and educational outcomes. The next chapter discusses the related literature review and conceptual framework guiding this study.

CHAPTER 2

LITERATURE REVIEW

2.0 Chapter overview

This chapter gives detailed literature review. It gives detailed analysis of relevant literature on school financing and its related impact on attainment of educational outcomes. It concludes with a chapter summary.

2.1 Attainment of education outcomes between CSSs and CDSSs

Literature indicates that students' performance has always been different between CSSs and CDSSs at both JCE and MSCE as reflected in pass rates, with latter associated with low pass rates while the former higher pass rates (Joint Sector Review, 2011; Chakwera, 2005; USAID, 2010; World Bank, 2004, 2010; Kadzamira, 2003; Ng'ambi, 2010). Ng'ambi's (2010) study found out that there are strong variations exist among Malawi's public schools, with poorer outcomes associated with CDSSs and Open Day Secondary Schools (ODSSs). His further analysis of pass rates reveals that while JCE pass rates are the lowest among Open Day Schools (47 per cent), the CDSSs have lower MSCE pass rates, with more than two thirds of students who sit the exam failing it. At the same time, he found out that CSSs are bringing 8 out of 10 students to JCE graduation and 1 out of 2 to MSCE graduation.

Agreeing with Ng'ambi, Kadzamira (2003)'s study found that despite government of Malawi assuming greater responsibility for financing of CDSSs, the quality of education offered continue to be poor and below minimal acceptable standards. She

found that achievement levels are extremely low as very few CDSS students pass the Malawi School Certificate of Examinations (MSCE).

Additionally, World Bank (2004) observes that the low pass rate in the CDSSs is not surprising since, in general, the CDSSs are under-funded and staffed by unqualified teachers and the expenditures per student are about one-fifth of the expenditures in CSSs.

2.2 Sources of school funding

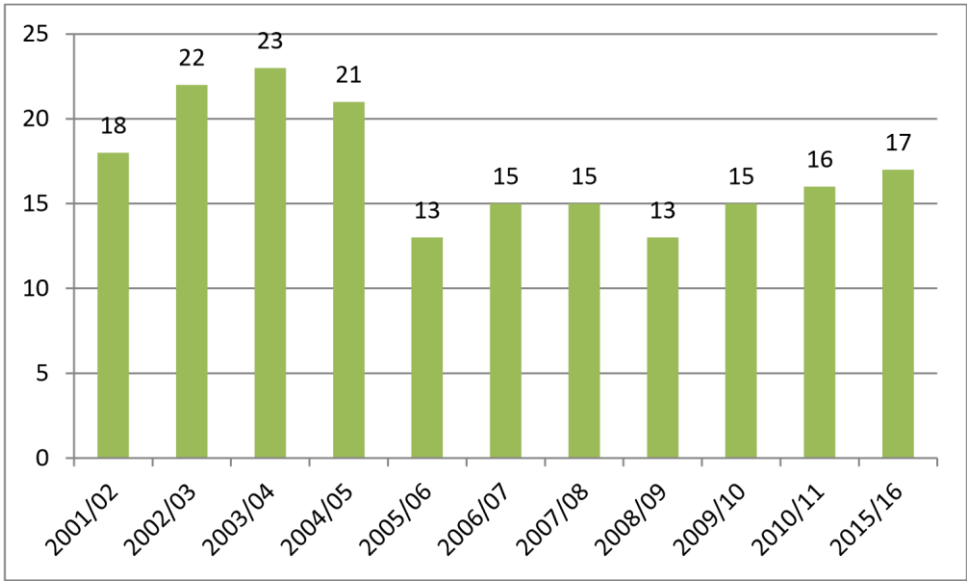
In Malawi, there are different sources of funding for education sector (Ng'ambi, 2010; UNESCO, 2011; World Bank, 2010). These include national revenue, beneficiary contributions (fees) and donor-funded projects. Contribution of each source of funding differs in both magnitude and level of education in Malawi (World Bank, 2010; UDAID, 2010; World Bank, 2004; Oslo Education Summit, 2016).

A study by World Bank (2010) shows that, in Malawi, national revenues are a source of public education sector recurrent and development expenditures. The study findings indicate that recurrent expenditures, which are divided into personal emoluments (PE) and other recurrent transactions (ORT), are financed by domestic revenues from taxes and non-tax sources as well as budget support grants while the development budget comprises spending under multilateral loans and government local contribution.

Similarly, Oslo Education Summit (2016) observes that over the years, public spending in the education has grown sharply in Malawi kwacha terms and that the Malawi government has been increasing the share of the total government budget

allocated to the education sector. For instance, ADF Education Project Appraisal Report (2001) found that Malawi government is strongly committed to education sector to an extent that in 2000/01 it allocated 28% of its total recurrent budget, one of the highest in Sub-Saharan Africa representing 5% of GDP. Graph 1 shows trends in government allocation to education sector as a percentage of total government budget from 2000/01 to 2015/16.

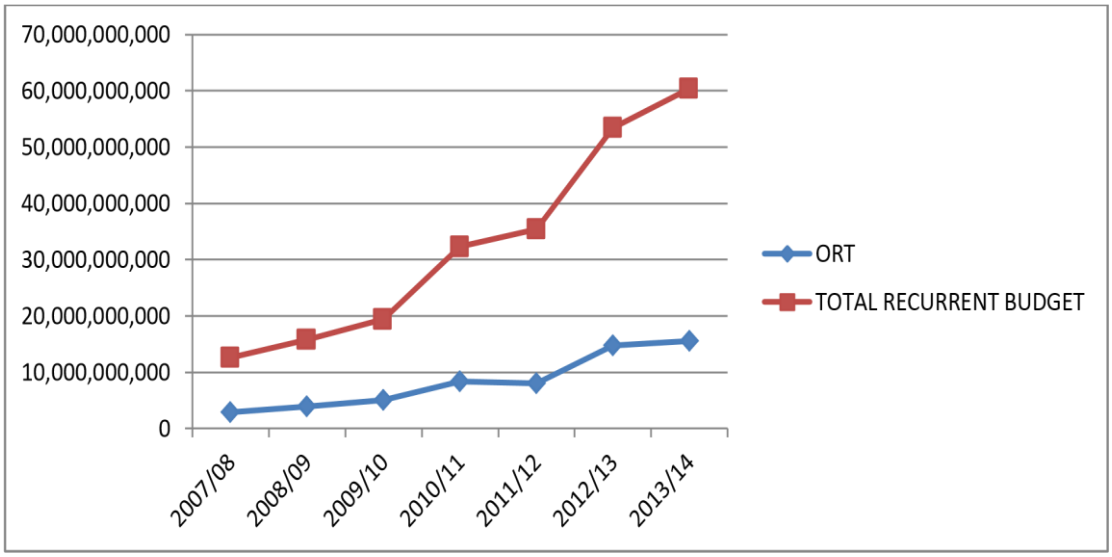
Graph 1: Education Budget as a percentage of total Government Budget



Source: Education Statistics Reports (EMIS) 2001-2016

On the graph, one observes that government allocation to education sector has been fluctuating over the years with 18% in 2000/01 and 17% in 2015/16. This indicates that public financing of education has been considerable due to the fact that Malawi is a developing country with limited resources stretched to several ministries and departments. As UNESCO (2011) observes, Sub-Saharan countries tend to invest a relatively large proportion of the government budget in the education sector, which is between 11% and 28% despite their relatively low GDPs per capita. Graph 2 shows public financing of education, the recurrent budget.

Graph 2: Public Financing of Education in Malawi (Recurrent Budget)



Source: **Education Statistics Reports (EMIS) 2007-2014**

On the graph, one observes that total recurrent budget has been on the increase with little growth on ORT. Which means such increase in recurrent budget covers mostly Personal Emoluments (PE). This is in tandem with World Bank (2004) report findings that the real growth in recurrent expenditures for Ministry of Education, Science and Technology has largely been driven by the increase in personal emoluments as a result of the increase in the number of teachers after the introduction of FPE. The Bank's report further contends that the increase in real expenditure on non-salary expenditures had been modest up to 1999–2000 (and thereafter only unreliable estimates are available). Thus, expenditures on other inputs required to improve education quality have not kept pace.

The other source of funding for education in Malawi is local community and parents' contribution through paying user fees, textbooks, uniforms as well as construction and maintenance of schools (ADF Education Project Appraisal Report, 2001; Ng'ambi, 2010; World Bank, 2004; Oslo Education Summit, 2016). Thus, World Bank (2010, p. 46) points out that:

> The household education expenditure includes both the monetary (for example fees and other financial contributions by parents) and nonmonetary support that communities are encouraged to contribute for rehabilitating schools and other building projects.

Nevertheless, Oslo Education Summit (2016) observes that despite Malawi having a policy of cost sharing at secondary and tertiary levels which requires students to contribute to their education, the policy has not contributed significantly to reducing government expenditure on these sub-sectors as tuitions are well below unit cost.

Similarly, World Bank (2010) study, found that household contributions for the delivery of secondary education accounts for 30 per cent of the total recurrent cost well below Africa's average of 44 per cent attributable to the relative poverty of Malawian households. It also revealed that the share of education expenditures accounts for only 1.7 per cent of total household expenditures, compared to SSA average of 3.6 per cent. This is due to the fact that for many households there is very little left after subsistence spending, in particular for food.

In addition to the foregoing, Ng'ambi (2010) contends that Malawi's gross domestic product (GDP) per capita is low and therefore it relies heavily on donors to finance the national budget especially those working under the Common Approach to Budget Support (CABS), contributed 30% to 40%. According to World Bank (2010), donors who are active in the education sector include the African Development Bank (ADB), the Canadian International Development Agency (CIDA), the British Department for International Development (DFID), the German Development Bank (GDB) and cooperation enterprise (GIZ), the Danish International Development Agency (DANIDA), the Japanese International Cooperation Agency (JICA), the UN
Children's Fund (UNICEF) and Population Fund (UNFPA), the US Agency for International Development (USAID), the World Bank and the World Food
Programme (WFP).

However, Oslo Education Summit (2016) observes that between 2008/09 and 2012/13 donor direct budgetary support to education sector grew but was suspended in 2013 due to mismanagement of financial resources dubbed cash gate.

Elsewhere, Gongera and Okoth (2013)'s study findings revealed that the dominant sources of financing secondary education comes from service-based income (20%), commercial-based income (35%) and agricultural based (45%). Earnings from these sources enhanced management in secondary schools through salary remuneration for BOG teachers, support staff, and student motivation. Part of the revenue was also used to purchase more teaching and learning materials and improvement of physical

facilities.

2.3 Distribution of resources between CSSs and CDSSs

Equity may be defined as one dimensional objective of a narrower achievement gap among students or schools. For instance, some students will require more funding and some will require less to learn the same curriculum, which means that states and schools may need to evaluate and customize the education finance system to fit the individual needs of children in a particular school (Harris, 2004). Similarly, AlSamarrai (2003) argues that once children are in school, the quality of education they receive and their levels of achievement are also potentially influenced by the level of resources available in the schools they attend.

From global perspective, School Financing Policies (SFPs) have been formulated in such a way that they embody dimensions of vertical equity evolving around the special background features that individuals or groups of students bring to the educational system, namely students starting points (David-Hadar & Paulino, 2009). They argue that SFPs that consider vertical equity are premised on compensation for low starting points such that as students' needs increases, the funding increases too.

Reschovsky (2006*),* investigating financing schools in the new South Africa, found out that although since 1994 funding and resource inequalities in the public education system have been dramatically reduced, significant inequalities still remain. He observes that while some schools have highly qualified teachers and a full range of education facilities, such as science laboratories and well-stocked libraries, other schools must rely on many unqualified teachers and lack even basic facilities and

supplies such as working toilets and sufficient number of classrooms for their students.

Similarly, Fedderke et al. (2002) note that financing public education in South Africa during the apartheid there was a persistent and wide disparities between the education provided to white children and that to black children to an extent that every year real expenditure per white pupil far exceeded expenditure per black pupil. For instance, between 1983 and 1993 spending per pupil was nearly seven times greater for white compared to black pupils. Such spending differences translated into dramatic differences in teacher salaries, physical facilities and supplies. Given the differences in resources devoted to black education and white education, there were large racial differences in education attainment.

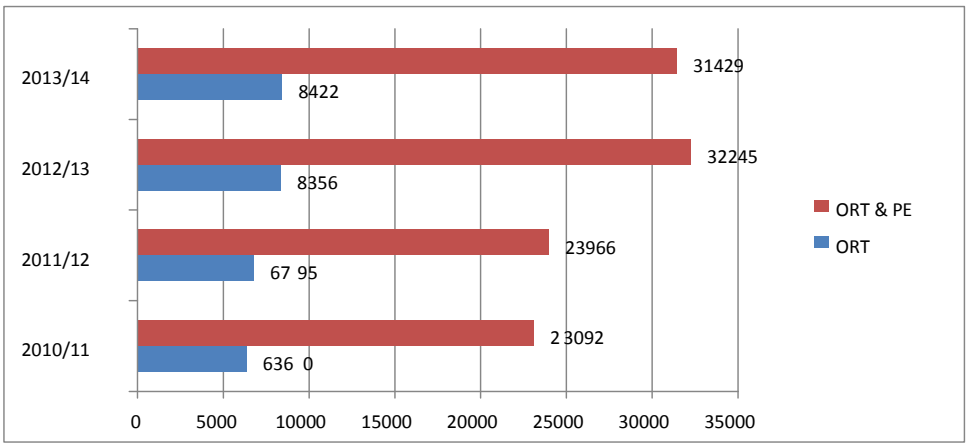
Research indicates, just like in many developing countries, that in Malawi resources are inequitably distributed in the education sector in general and among sub-sectors in particular (Lewin and Caillods, 2001; Malawi Government, 2006; World Bank, 2010; Al-Samarrai, 2003; Castel et al., 2010; Lewin & Sayed, 2005; MacJessie-Mbewe, 2004; UNESCO, 2010).

MacJessie-Mbewe's (2004) study found that generally, disparities between Conventional and Community day schools in terms of physical and human resources are large. Agreeing with MacJessie-Mbewe, Mwambucha (2015) argues that despite policy changes where government has assumed greater responsibility for financing CDSSs to create a unified public secondary system, most CDSSs continue to suffer from lack of resources and are staffed by under-qualified teachers.

UNESCO (2010) found that ORT funding is inequitably distributed to secondary schools with reference to CSSs and CDSSs, with an allocation based on a set formula where the number of students is not taken into account when allocating such funds. Such funding distribution relies more on the types of expenses borne by the schools. For example, CSSs that have more facilities and higher utility bills get more money, as they also have more maintenance work than less well-endowed schools (for example, CDSSs). However, such a study has not looked at association between levels of funding and educational outcomes in CSSs and CDSSs, which is the focus of the current study.

Nonetheless, Department of Planning in the Ministry of Education produces annually, education management information system (EMIS) reports which have education budget and financing. However, such annual reports do not indicate disaggregated data on financing and consider secondary sub-sector as a homogeneous group as shown in a graph below shows average per student spending based on ORT and PE.

Graph 3: average per student spending (in Malawi kwacha) based on ORT and PE for Central East Education Division (CEED)



Source: Education Statistics Reports 2010-2014

From the graph, one observes that education statistics reports indicate per student spending by public financing but they fall short of not disaggregating. That is, CSSs and CDSSs are considered as homogeneous group. Therefore the current study will disaggregate public funding to CSSs and CDSSs and find out if such distribution of funding may be associated with attainment of educational outcomes in terms of pass rates.

Furthermore, World Bank (2010) observes that in secondary education as a whole, per pupil expenditure has decreased dramatically due to that fact that the sub-sector has seen enormous increase in enrolment at CDSSs, but with little additional resources allocated. The Bank continues by advising that the discrepancy in the level of funding of CDSSs and CSSs needs to be addressed if the quality in Malawi in particular and Africa as a whole is to improve.

Ng'ambi (2010) suggests that those discrepancies could be due to some in-school factors. He argues that CDSSs are globally less well provided for than other schools. They generally have under-qualified teachers, a poorer learning environment, and lack appropriate teaching and learning materials and equipment. Ng'ambi further observes that CDSSs are severely under resourced, receiving only about 15 per cent of government funds allocated to national schools. Ng'ambi concurs with World Bank (2004) which asserts that globally, CDSSs have fewer resources than other schools although they enroll nearly have of the secondary student population. World Bank sums it that CDSSs are generally understaffed, have under-qualified teachers, a poor learning environment, and lack teaching and learning materials and equipment.

Similarly, World Bank (2004) suggests that the meagre learning outcomes achieved by CDSS students probably reflect two factors. Firstly, the best primary school graduates tend to enroll in the better-resourced CSSs leaving the CDSSs with weaker students who will require more concentrated and skilled instruction to achieve MSCE passing level. Secondly, there is very significant under-funding of CDSSs relative to other public schools, including the calibre and qualifications of teachers, the availability of teaching and learning materials, and available operational budgets; thereby negatively affecting these CDSSs in particular and secondary education in general.

Additionally, Oxfam International's (2015) study revealed that inequalities in Malawi have and continue to worsen including education sector. The study found that during the same period, Malawi's distribution of financial resources education sector included jumped from a Gini coefficient value of 0.39 to 0.45. Since zero value corresponds to perfect unit cost meaning that everyone has equal share from government resources while one corresponds to perfect inequality meaning that when one has all the resources while others have none (Sherman & Poirier, 2007).

The study findings by Oxfam International agrees with the study findings by Mussa (2009) who found that when the Ministry of Education gives out teaching and learning materials, priority is given to schools that already have enough and well resourced , leaving out the more deserving to suffer. She observes that ministry misallocates resources that are sourced and that materials distribution is not guided by

data reports from inspection of schools. Thus, MoEST and UNESCO (2008, p.19) in their report titled *the national development of education in Malawi* observe that:

> The lack of sufficient number of classrooms, science-teaching facilities and libraries, principally, at CDSSs, undermines the quality of teaching. Generally, the condition of classrooms and science teaching and learning facilities (if at all they exist) in CDSSs does not provide conducive environment for teaching and learning to take place.

However, contrary to the above assertion, World Bank (2010) observes that the Education system in Malawi is suffering from serious problems of pedagogical management insofar as some schools with higher than average expenditures show poorer results. They suggest that the way resources are used seems to be a major factor influencing the level of learning outcomes. It argues that improving supervision, transparency, and accountability mechanisms at the local level are known to be effective interventions.

2.4 Funding levels and attainment of educational outcomes

Empirical studies have found that there is a strong positive relation between levels of financial expenditures and education outcomes especially those related to test scores (Mackenzie, 2014; Downs, 2014; Leclercq, 2005; Holmlund et al., 2009; Munda & Odebero, 2014; Maleta, 2009; Baker, 1997). However, Taylor (1997) observes that such findings from these studies are as mixed as their empirical approaches are varied such that some of them have found large, positive effects of school inputs on student outcomes while others find little or no effect.

With reference to empirical evidence already discussed, Maleta's (2009) study, investigating linkages between budget and internal efficiency in Malawi, found that there is positive relationship between enrolment and repetition rates on one hand and recurrent budget on the other. Although he observes that it is retrogressive on repetition rates as ideal situation would be that an increase in recurrent expenditures has to reduce repetition rates.

Contrary to Malet's study, Al-Samarrai's (2003) study revealed that the link between expenditure and educational outcomes is very weak across the three countries Malawi, Uganda and Botswana. He interprets that public spending on education is inefficient and that public expenditure management systems need to be improved in order to improve the efficiency of resource use in the education sector.

However, studies by Nampota and Chiwawula (2014); Anyanwu and Erhijakpor (2007) found that increased public funding to schools result in increased enrolments. For example, Nampota and Chiwawula (2014) undertaking evaluative study on the use and usefulness of school grants in Malawi found that Direct School Support (DSS) and School Improvement Grants (SIG) made resources available such as flip charts, exercise books as well as basic maintenance materials such as cement, timber and paints. The intervention resulted in increased enrolments as an educational outcome.

In addition to the foregoing studies, Al-Samarrai and Zaman's (2002) study entitled the changing distribution of public education in Malawi, found that remarkable increases in enrolment over the period and again poorer groups within Malawi have

increased their enrolment rates than the richer groups, largely through a rapid expansion in MCDE through their DECs. Thus, within the same period, CSS places doubled while at DECs quadrupled making DECs the largest provider of secondary schooling opportunities by this time (MOE, 1997). Al-Samarrai and Zaman (2002) argue that performance on national examinations is correlated with socio-economic status which suggests that secondary school students in their richest quintiles are more likely to be attending CSSs than students in the poorer quintiles.

In addition to increased enrolments, public school funding has also a bearing on academic achievements of students (Baird et al., 2009; Munda & Odebero, 2014). The studies reveal that increase in per-pupil funding yielded huge point increase in test score. For instance, $1000 increase in per-pupil funding yielded a 9.28-point increase in combined SAT 1 scores (Baird et al., 2009).

In line with the aforementioned, Holmlund et al. (2009) found that school expenditure has a consistently positive and significant effect on all national tests taken at the end of primary school and has a higher effect for students who are economically disadvantaged. That is, for disadvantaged pupils, the average effect of increasing expenditure by £1,000 was found to be an increase in attainment by 0.063, 0.073 and 0.071 standard deviation in English, Mathematics and Science respectively.

In contrary, Kigaya and Orodho's (2014) study found that the major challenges faced by schools in financing projects included inadequate funding and the inconsistent flow of free primary schooling funds and that delaying disbursement of such funds being released hampered planning; interference by politicians (in SMCs) and other

partisan groups; and indifference among school managers. Such findings were reflected in similar study by Nyambeche et al. (2014) in the same country.

Although international literature on educational outcomes has shown that increasing resource allocations to schools alone does not improve educational outcome (Hanushek, 1995, 2003), a minimum level of investment in basic infrastructure and human resources in low income countries is deemed a necessary first step. The link between outcomes and financing, albeit indirect, exists. Colclough with Lewin (1993) predicted that slower progress towards (or non-achievement) of universal primary education (UPE) is more likely among poorer countries.

Landau (1986) in his study found, contrary to his expectation, a weak correlation between public expenditures on education and actual education produced. He concluded that public expenditure on education in LDCs is inefficient. However, Ogbu and Gallagher (1991) found out that Landau's analysis fell short for two reasons: he used a measure of output (an income-weighted total of enrolment ratios at all levels of education) that is too aggregative, and he ignored resource allocation indicating methodological flaws in his analysis. They conclude financial resources have positive statistically significant contribution to educational outcomes of students in schools.

Confirming Ogbu and Gallagher (1991), Mlangeni et al. (2015) study in Lilongwe Rural West district in Malawi revealed that students' performance in un-approved CDSSs were significantly poor and different from approved CDSSs, day secondary schools and national secondary schools in Lilongwe. Students' performance in

CDSSs without subject specialist was significantly low and different from CDSSs with subject specialist.

In a nutshell, the entire related literature reviewed therein indicates, among others, that inequalities in distribution of financial related resources have a bearing on the attainment of educational outcomes. Studies done in countries such as South Africa, United States of America and Kenya have revealed the same. For instance, in South Africa during apartheid era, whites were given more resources than blacks translating into huge disparities in attainment of educational outcomes between them (Mackenzie, 2014; Downs, 2014; Leclercq, 2005; Holmlund et al., 2009; Munda & Odebero, 2014; Maleta, 2009; Baker, 1997; Reschovsky 2006).

Literature further reveals that in Malawi, generally, poorer performance is associated with CDSSs as compared to CSSs. At the same time, government is a major provider of financial related resources in schools up to 70% (World Bank, 2010; Mwambucha, 2015; Ng'ambi, 2010; Kadzamira, 2003). Hence the need to launch a study to investigate if there is a link between levels of funding and attainment of educational outcomes between CSSs and CDSSs.

2.5 Conceptual Framework

The study is based on seminal work of Berne and Stiefel (1984) whose framework for measuring educational equity was used by Sherman and Poirier (2007) who undertook a study entitled *Educational Equity and Public Policy: Comparing Results from 16 Countries.* This framework has four components, namely target for equity concerns, objects, equity principles and measuring equity. The current study will

adopt the third and fourth framework components, that is, equity principles and measuring equity.

The third component of equity framework as suggested by Berne and Stiefel contains three equity principles, which include horizontal equity, vertical equity and equal educational opportunity, are used to determine whether distribution of educational resources is equitable (Sherman & Poirier, 2007). The current study is aimed at establishing whether the three principles are being respected the way financial resources are being distributed between CSSs and CDSSs.

The fourth and final component of equity framework as suggested by Berne and Stiefel (1984) is measuring equity consisting of the quantitative measures that are used to evaluate the extent to which an education system is either horizontally or vertically equitable. Berne and Stiefel (1984) came up with a number of empirical measures such as Range ratio, Coefficient of variation, Gini coefficient, Adjusted McLoone Index and McLoone Index that are useful for equity analysis but this study will use Gini coefficient. The Gini coefficient measures the difference between the line of perfect equity and the Lorenz curve. This is preferred to other measures because it is less complicated and it can be represented diagrammatically as output from Excel software.

Therefore, data analysis based on this equity framework will use Gini Coefficient, which is also based on Lorenz curve where among others per pupil spending and pupil-Teacher Ratios will be calculated. These measure distribution of resources, which in this case, to CSSs and CDSSs (Sherman and Poirier, 2007). The framework

also asks the four guiding questions about Equity: for whom, what, how and how much? Thus, the equity framework will help the study to answer question such as who gets what amount of funding from government between CSSs and CDSSs.

Since the study was on school financing and attainment of educational outcomes, it adopted equity conceptual framework, which guided the study in finding out fairness in distribution of public funds between CSSs and CDSSs. That is, while investigating the association between funding levels and educational outcomes, it possible to apply equity framework to find out the distribution of the same between the two aforementioned groups of secondary schools in question to ascertain fairness.

2.6 Chapter summary

This chapter has discussed relevant literature on education financing relating to plans the country has implemented over time. It has reviews literature on school financing and educational outcomes among students within Malawi and beyond. The chapter has equally discussed on human rights and principles of social justice as well as equity framework to give a comprehensive conceptual framework to study linkages between school financing and educational outcomes among students in CSSs and CDSSs. The chapter has also discussed relevant literature on each and every research question so as to have a clear understanding of the study. Lastly, the theoretical framework and how it informs the study has been presented From the above literature review, generally studies conducted in Malawi have not looked at the association between public school financing and attainment of educational outcomes in CSSs and CDSSs in Central East Education Division. Most of the studies carried out in Malawi have concentrated in primary sub-sector whereas the current one will investigate

financing education in secondary with respect to CSSs and CDSSs. It is important to understand education financing with respect to CSSs and CDSSs due to the fact that attainment of education in CDSSs has always been below that of the CSSs, hence the need to investigate if differences in funding level may explain differences in attainment of educational outcomes. Additionally, public funding level available to school is one of the most critical determinants of educational outcomes, as shown in the literature review in the preceding chapter. The next chapter discusses research design and methodology used in this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 Chapter overview

This chapter focuses on the design and methods of the study. Thus, covers the study‘s overall approach, research design, sampling techniques, location, data analysis, and piloting of instruments, limitation and delimitation as well as ethical considerations.

3.1 Overall research approach

The study used mixed methods paradigm, which involves both qualitative and quantitative analysis leaning more on quantitative part with qualitative part playing a supplementary role. By definition, mixed method is a procedure for collecting, analysing, and mixing or integrating both quantitative and qualitative data at some stage of the research process within a single study for the purpose of gaining a better understanding of the research problem (Tashakkori & Teddlie 2003; Creswell, 2005). Creswell (2007) argues that recognizing that both methods (qualitative and quantitative) have limitations biases inherent in any single method could neutralize or cancel the biases of other methods. This involves triangulating data sources-a means for seeking convergence a cross qualitative and quantitative methods (Jack, 1979). Green, Caracelli and Graham (1989) argue that the results form one method can help develop or inform the other method. Thus, nesting one method within another method provides insight into different levels or units of analysis (Tashakkori & Teddlie,

1989). Quantitative methods were used to investigate the extent to which school funding levels affect students' performance in CSSs and CDSSs. While qualitative methods were used to explore factors that are considered when allocating funds to CSSs and CDSSs; the role stakeholders play in the management of financial resources involved in running CSSs and CDSSs; and identifying sources of financing CSSs and CDSSs in Malawi.

3.2 Research Design

The study used concurrent triangulation design. In this design, priority was given to the quantitative component, because the study was aimed at establishing the association between funding levels and attainment of education outcomes. Therefore, qualitative component will played supplementary role on quantitative component.

3.2.1 Concurrent Triangulation Design

This study made use of concurrent triangulation design. It is a one-phase design in which researcher implements the qualitative and quantitative methods during the same timeframe and with or without equal weight. As Creswell et al. (2003) contend that the design is a single-phase timing and this is the reason it is referred to as concurrent triangulation. It involves the concurrent, but separate, generation and analysis of quantitative and qualitative data so that the research problem at hand may best be understood. Creswell (2009, p.213) point out that in this design, the researcher collects both quantitative and qualitative data concurrently and then compares the two datasets to determine if there is convergence, difference or some combination. He further argues that the results emanating from concurrent triangulation where quantitative and qualitative methods are used as means to offset the weaknesses

inherent within one method with the strengths of the other; and therefore, the strength of one adds to the strength of the other.

Thus, the rationale for this approach is that the quantitative data and their subsequent analysis provided a general understanding of my research problem. The qualitative data and their analysis not only refined but also explained those statistical results by exploring participants' views in more depth (Rossman & Wilson, 1985; Tashakkori & Teddlie, 1998; Creswell 2003). The strengths and weaknesses of this mixed-methods design have been extensively discussed in the literature consulted (Creswell, Goodchild & Turner, 1996; Green & Caracelli, 1997; Creswell, 2003, 2005; Moghaddam, Walker & Harre, 2003). Its strengths include but not limited to straightforwardness and opportunities for the exploration of the quantitative results in more detail. Morse (1991) contends that this design may be particularly useful when unexpected results arise from a quantitative study. The limitations of this design are lengthy time and feasibility of resources to generate and analyse both types of data.

3.2.2 Quantitative component of the study

The goal of the quantitative phase was to investigate the extent to which the resources are equitably distributed between CSSs and CDSSs; and how the difference in funding levels affects students' performance in CSSs and CDSSs. Since quantitative component of this study was a non-experimental research where independent variables were not manipulated, the researcher was aimed at studying the relationships (correlation) between quantitative independent variables and quantitative dependent variables. The researcher identified three quantitative independent variables (per student spending, student-teacher ratio and student-

qualified teacher ration) and one quantitative variable (student education outcome: pass rates). Creswell (2007) argues that quantitative component of the study is equally important in a mixed methods design as it helps found out the relationship among variables, posed in terms of research questions or hypotheses. Similarly, Hans et al. (2005) point out that quantitative component provides numeric trends; identify variables or constructs and statistical data which can be used to identify individuals who may expand on the results through qualitative component of the study.

3.2.3 Qualitative component of the study

Qualitative part of this study was used to generate data from teachers and head teachers in face-to-face interviews to get their side of story with respect to issues of public school financing and education outcomes in CSSs and CDSSs. For instance, how funding levels available to CSSs and CDSSs affect their school operations, consequently students' attainment of education outcomes. Thus, it aims at supplementing on the quantitative part of the study. Merriam (1998) points out that qualitative study tries to explore bounded system over time through detailed, in-depth data generation involving multiple sources of information and rich in context. Additionally, this study design may consist of more than one case, and the analysis is performed at different levels: within each case and across the cases (Stake, 1995; Yin, 2003). The study also attempted to investigate sources of funding for CSSs and CDSSs in Malawi.

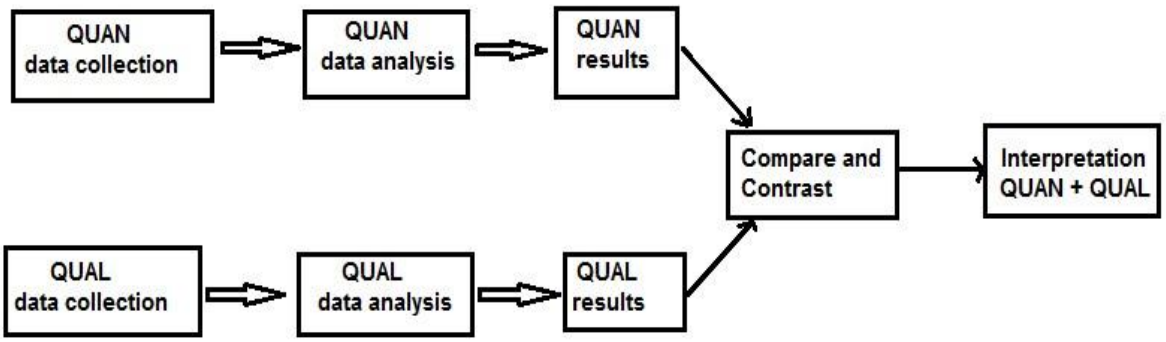
3.2.4 The Convergent Model

The study utilised the convergent model as a variant of the triangulation design where the researcher generated and analysed quantitative and qualitative data separately on

the same phenomenon at the same time and then the different results were mingled by comparing and contrasting different results during interpretation. As Morse (2001) points out, researchers use this model when they want to compare results or validate, confirm, or corroborate quantitative results with qualitative findings. Therefore, it can be argued that with this model, researchers can come up with valid and wellsubstantiated conclusions about a single phenomenon.

3.2.5 Symbolic representation of research design employed

Figure 1: Symbolic representation of the research design



Source: **Creswell and Clark (2007)**

3.3 Sampling

The study used both probability sampling and non-probability sampling methods. Convenience non-probability sampling will be used to select districts where the researcher works. According to Bryman (2008), convenience sampling is the one that is simply available to the researcher by virtue of its accessibility. Thus, financial and time constraints may not allow me generate data from districts in CEED that are far away from my work place.

3.3.1 Location

As postulated earlier on, Central East Education Division (CEED) as well as the two Districts of Ntchisi and Kasungu where my study was carried out were selected because of proximity reasons. When selecting districts and schools in those selected districts I had to be realistic by including those that could be easily reached to make my study as much practicable as possible due to challenges mentioned above.

3.3.2 Selection of schools within the districts

Stratified probability sampling technique was used which allows representation of all types of secondary schools, in this case, CSSs and CDSSs (Frankael &Wallen, 2000). Further to this, CDSs are divided into approved and non-approved which require each type to be represented in the study. A simple random selection of participating schools was used so that each stratum was represented.

Selection of schools for the study

Kasungu District has a total of 38 secondary schools fully government owned, of which 11 are cost centres and 27 are non-cost centres. Out of conventional boarding secondary schools in Kasungu, 1 triple stream and 1 double stream and the rest (4) single stream CDSSs were selected. In Ntchisi District, there are 14 government owned secondary schools of which 2 are CSSs, 8 are cost centres CDSSs and 4 noncost centres CDSSs. Out of these schools, 2 double stream boarding secondary schools and 4 single stream CDSSs were selected. In total, 12 schools were sampled in the two Districts.

3.4 Sample size (Selection of study participants)

The sample is discussed under the following headings.

3.4.1 Head teachers

All the 12 head teachers in the selected schools were automatically selected for the study. They were given a questionnaire which they were asked to complete after which interviews were conducted at a later date when the questionnaires were being collected from them. Head teachers are not only in-charge but also pivotal around which several aspects of the school revolves, be it academic, motivation of teachers as well as development and implementation of school development plans (Bakhda, 2004).

3.4.2 Teachers

From each school, 10 teachers were targeted to be involved in my study making a total of 120 teachers in 12 schools. However, some schools had as low as 4 teachers making attainment of 120 teachers from the 12 schools a nightmare; instead I distributed 90 questionnaires to all the 12 schools. For those schools that had more than 10 teachers, a simple random sampling was conducted to choose participants. Three teachers were randomly selected from those teachers who took part in completion of questionnaires for each of the twelve schools to give a total of 36 interviews.

3.4 Data generation

What follows is the discussion of data generation methods and instruments.

3.4.1 Data generation methods

The study used mixed methods paradigm, which involves both qualitative and quantitative analysis.

3.4.2 Instruments/tools

3.4.2.1. Questionnaire

Self-completion questionnaires were used in the study as it has a number of advantages, which include cheapness, quick to administer, absence of interview effects, no interviewer variability as well as convenience for respondents (Bryman, 2008). For instance, with questionnaires as tool for data generation, it is quicker as compared to interviews in the sense that they can be sent out through the post or otherwise distributed in very large quantities at the same time (Bryman, 2008). In other words, data can be generated from head teachers and teachers at a school at the same time. Head teachers and teachers were given these questionnaires which they were asked to complete within agreed upon timeframe which differed from one school to the other and from one participant to the other. In total they were 102 questionnaires, 90 of them for teachers and 12 for the Head teachers.

The Data collected included performance data from 2010/11 to 2014/15; actual school enrolment; funding data (approved and received funding from 2010/11 to 2014/15); number of teachers and their qualifications; and key infrastructure items. The intended purpose of the data generated through questionnaires, would among others, enable the researcher to find out if differences in distribution of financial resources have a bearing on students' attainment of education outcomes between CSSs and CDSSs. One of the challenges faced included inadequate financial resources due to the fact that the researcher had to visit more than twice to some schools that enabled collection of completely filled questionnaires. It was encountered by borrowing money from the bank.

3.4.2.2 Interviewing

In-depth face-to-face interviews were conducted with teachers and head teachers in order to get deeper understanding of how funding levels available to schools, that is, CSSs and CDSSs, may affect students' education outcomes. According to Frankael and Wallen (2000), interviewing is a very important method used by qualitative researchers as it enables them to check the accuracy of—to verify or refute—the impressions gained through observation or other methods of data generation.

The study sought to find out from participants at school level on financing of CDDSs and CSSs in Malawi. Patton (1990) quoted in Frankael and Wallen (2000) point out the purpose in interviewing people:

> We interview people to find out from them those things we cannot directly observe. The issue is not whether observational data is more desirable, valid, or meaningful than self-report data. The fact of the matter is that we cannot observe everything. We cannot observe feelings, thoughts, and intentions. We cannot observe behaviour that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organised the world and the meanings they attach what goes on in the world. We have to ask people questions about those things‖ (p.210).

More specifically, a semi-structured interview was used. Bryman (2008) argues that semi-structured interview covers a wide range of instances including an interviewer having a series of questions that are in the general form of an interview schedule but is able to vary the sequence of questions. He further points out that the questions are more often general in their frame of reference from typically found in structured interview guide. At each of the twelve schools, head teachers and teachers were

interviewed. Challenges that were encountered in course of conducting interviews included some teachers were unwilling to participate because they thought I was doing auditing. I countered by explaining to them the importance of their participation in my study and data generated was only for academic purposes. In some cases I visited schools more than once, although at a cost.

3.4.2.3 Documentary sources

The study used document collected from schools containing revised salaries for employees in the Civil service by Government of Malawi effected on 1st October, 2014 (Circular from The Secretary for Human resource Management and Development, 2014, Re. No. HRM/RS/01/43) which enabled calculation of unit cost based on Personal Emoluments (PE) of the students in schools under study.

3.5 Data Analysis

This study used a Parallel mixed data analysis which involves two separate processes, namely quantitative and qualitative data analyses.

On quantitative data analysis, it involved inferential statistics for variables relevant to the study while qualitative data analysis used thematic analysis related to narrative data obtained through interviews. Despite the fact that the two datasets for analysis are independent, each played a complementary role in order to fully understand phenomena under investigation. According to Teddlie and Tashakkori (2009), quantitative and qualitative datasets are linked, combined or integrated into meta inferences thereby providing a better understanding of a particular phenomenon. Since the study used mixed methods approach, this type of analysis was preferred.

Thus, to measure whether financial resources are equitably distributed between CSSs and CDSSs, Gini coefficient based on Lorenz curve was calculated based on ORT. According to Poirier and Sherman (2007), the Gini coefficient measures how far resources such as teachers and funding are equitably distributed. This assisted in analysing the extent to which resources are distributed within and across categories of secondary schools in Central East Education Division (CEED).

SPSS analysis programme was used to analyse quantitative data. Data were entered into the software, automatically processed and produced outputs, which included crosstabs and regression involving variables that were identified by the researcher for this study. The aim of SPSS software was, among others, to establish quantified statistical relationship between levels of public funding and attainment of educational outcomes between conventional and community day secondary schools. According to Cohen and Holliday (1996), regression analysis enables the researcher to predict the specific value of one variable when we know or assume values of the other variables. The researcher identified three variables that are associated with the attainment of education outcomes (output variable), which included per student spending, pupilqualified teacher ratio, and pupil teacher ratio. These identified in line with other researchers such as Gustafssons (2006) and Hanushek (2007) who found that pupil teacher ratio, teacher qualification and expenditure per student had a significant effect on student outcomes.

To analysed qualitative data, the following steps were followed:

3.5.1 Documentation

All qualitative data that was generated through IC recorder were first of all downloaded onto the computer, listened to, transcribed and documented. The typed data was then printed and hard copies red over and over in order to come up with themes and ideas that were brought out by individual semi-structured interviews with the school head teachers and the teachers.

3.5.2 Coding

Coding of the data collected is central to effective qualitative studies as it reduces data into categories (Miles & Huberman, 1994; Glaser & Strauss, 1967). Good documentation of multiple data sources enables incidents of phenomena in the data to be coded into categories. Partington (2000) argues that by comparing each incident with previous incidents in the same category, the researcher develops theoretical properties of categories and the dimension of these properties. Strauss and Corbin (1990) point out that the researchers who use the coding scheme follow three steps.

The first step is open coding where data is fragmented or taken apart. In this step, individual observations, concepts, sentences, ideas, events are given names and then regrouped into sub-categories which in turn can be grouped as categories. The second step is to regroup and link categories into each other in a systematic, rational manner. The third step involves selective coding where core categories are selected and related to each other. Coding of data was systematic to an extent that that the researcher could easily trace where, who provided what type of data. The coding equally assisted to analyse quantitatively using SPSS. Cording and documenting were among

challenges encountered which demanded more time and concentration. The researcher overcame this challenge by working very hard, even during old hours of the night. Another challenge was related to documentation. As interviewing were audio recorded, it was not easy to listen and type the audio voices. The researcher, after listening and scribing on a piece of paper, typed the coded data into the computer. Thus, the necessary data were documented and analysed.

3.6 Piloting of instruments

For me to be able to ascertain the trustworthiness of my data generation tools (questionnaires and interview guides), they were field-tested at two nearby schools, which enabled me to fine tune these tools. Field-testing enables researchers to engage with the real situation to assess the feasibility of what is being studied in term of time, effort and resources (Blaxter, 2001; Robson, 1993). There were some amendments that were effected as a result of such pre-testing of instruments.

3.7 Ethical Consideration

First and foremost is the issue of confidentiality. According to Zimpita (2008), confidentiality must be kept at all cost aiming at ensuring anonymity and privacy of information. This means that the identities and records of individuals should be maintained as confidential (Bryman, 2008, p. 118). He further maintains that a great care should be taken when the researcher publishes the findings that the participants are not identified or identifiable. In line with aforementioned confidentiality principle, the study will not in any way reveal identities of the participants, thus none will be harmed.

Third is the issue of deception. The study will be conducted using methods that do not need deception. As Frankael and Wallen (2000) point out that if participants are deceived, the researcher must ensure that the participants are provided with sufficient explanation as soon as possible. They also argue that if people in general are made to believe that scientists and researchers are liars or as people who misrepresent what they are about, the overall image of science will suffer as a results less and less people may have interest in taking part in research investigation thereby negatively affecting the search for reliable knowledge concerning our world.

3.7.1 Access Negotiations

In order to be granted permission to conduct research in selected Conventional and Community Day Secondary Schools in Central East Education Division, the researcher wrote the Ministry of Education, Science and Technology through Central East Education Division (CEED) requesting permission to conduct this study. Thus, letter was written Central East Education Division Manager requesting him to grant the researcher permission to conduct his study in his division. Letters of permission were granted to the researcher, which acted as a proof of authorisation from the relevant ministry officials. Phone conversations were made before paying visits to each secondary school between Head teachers and the researcher. Clear instructions were given to the Head teachers regarding who the respondents to the questionnaires as well as interviews would be. This researcher also made sure to seek informed consent from the research participants. For example, during qualitative data generation, the researcher used the IC Sony audio recorder to record all the interviews that were being done with the sampled interviewees. Individuals were requested if they could allow the interviews to be recorded and all the interviewees gave consent to that request without

hesitations for they understood that the purpose of the research was purely academic and not for any other reason.

Cohen, Manion and Morrison (2005) point out that the informed consent should be sought at the initial stage of the research project. Thus, informed consent involves seeking access to the institution or organisation where research is to be conducted and acceptance by those whose permission one needs before embarking on data generation. Similarly, Bell (1987) quoted by Cohen et al.2005 advises that permission to carry out an investigation must always be sought at an early stage and that it is advisable to make a formal written approach to the individuals and organisations concerned, outlining researcher‘s plans.

3.8 Delimitation and Limitation of the Study

The study involved 12 schools out of 52 schools in the two districts (Kasungu and Ntchisi). This may pause challenges in terms of generalizability of the research findings to the whole Central East Education Division in particular and whole nation in general. This calls for a study that would cover all the six Education Divisions extending to as many districts as possible.

Additionally, it was not possible to achieve a 100% response from the sampled respondents such that out of the 90 questionnaires that were given out to teachers in their respective schools, 79 were responded to representing 87% response rate. This response rate does not prevent the trustworthiness of the results as it is well above 50% of the total sample. Similarly, on the qualitative part, there were no 100%

responses. Out of 36 teachers 30 were interviewed meaning only 6 teachers were not interviewed.

In this study, funding levels available to schools affect level of students‘ educational achievement in terms of pass rates as shown by regression analysis which indicates a positive statistically significant relationship between level of funding and educational outcomes but they are other factors that could be responsible for differences in pass rates between CSSs and CDSSs other than funding levels. These factors would include social-economic status, talent and pre-school attendance (UNESCO, 2005; Checchi, 2003; Nannyonjo, 2007).

Despite the aforementioned challenges, a number of steps were taken to ensure credibility and trustworthiness of the study, which included the following: First, triangulation of methods and data sources (Guba, 1981). Since study used mixed methods approach, each played a complementary role making research work credible. Polif and Hungler (1999) argue that designing multi-method research enhances validity of the findings. Similarly, the researcher interviewed teachers and head teachers in order to obtain varied data sources on public school financing. Secondly, frequent debriefing sessions. In such meetings, there was close collaboration with supervisors, who are experts, throughout the study period critiqued my work and provided direction. Hence, credible research works. In addition, the researcher took part in all the processes in academic research, which were concept paper, proposal presentation and preliminary findings presentation. All these made my work credible. Shenton (2003) argues that:

> Through discussions, the vision of the investigator may be widened as others bring to bear their experiences and perceptions. Such collaborative sessions can be used by the researcher to discuss alternative approaches, and others who are responsible for the work in a more supervisory capacity may draw attention to flaws in the proposed course of action (p.67).

3.9 Chapter summary

Chapter three has explained as much as possible the research methodology employed in this study. The mixed method approach of which concurrent triangulation has been used and justified for its selection with quantitative having an upper hand. In addition, the issues of sample and sample size, negotiations for access to data generation points, data analysis, and ethical consideration have been explained and justified. The next chapter provides the presentation and discussion of the study findings.

CHAPTER 4

DISCUSSION OF FINDINGS

4.0 Chapter overview

This chapter presents and discusses findings on association between public school financing and education outcomes between conventional and community day secondary schools in the context of the theoretical framework and literature. Presentation and discussion of findings, which follow the four research questions, are guided by the lens of equity framework. Thus, the discussion is in line with the following research questions: Is the attainment of educational outcomes different between Conventions Secondary schools and Community Day Secondary schools? How are Conventional Secondary Schools and Community Day Secondary Schools financed? To what extent are the resources equitably distributed between CSSs and CDSSs? To what extent does the difference in funding levels affect students' performance in CSSs and CDSSs?

4.1 Attainment of educational outcomes between CSSs and CDSSs

The study found that pass rates are much higher in conventional secondary schools than in community day secondary schools. The Table 1 shows distribution of these pass rates.

Table 1: MSCE average pass rates from 2010/11 to 2014/15

School type	CSSs	CDSSs (Cost Centres)	CDSSs (Non-cost Centres)
Pass Rates (%)	79.9	42.85	34

Source: Calculations from Appendix 1

In the Table 1, it is observed that on average pass rates for conventional secondary schools are better than those for either cost centre CDSSs or non-cost centre CDSSs. As a matter of fact, as shown on the table 1, average pass rate of 79.9% is recorded for conventional secondary schools; 42.85% for cost centre CDSSs; and 34% for noncost centre CDSSs. This suggests that from equity framework point of view, distribution of educational results is inequitable with better pass rates associated with CSSs than CDSSs. However, there is a need of conducting statistical tests in order to establish the difference in pass rates between CSSs and CDSSs

Pass rates for CSSs and CDSSs were subjected to regression analysis using SPSS to test if there is statistically significant difference between CSSs and CDSS. The study found that there is statistically significance different in pass rates between CSSs and CDSSs as shown by the output of one-way ANOVA in Tables 2 and 3.

Table 2: Results of One-way ANOVA analysis using SPSS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4905.617	2	2452.808	42.649	.000
Within Groups	460.092	8	57.512		
Total	5365.709	10			

Source: **Head teachers' Questionnaire**

Based on table 2, it is indicated that there statistically significant difference in pass rates between the three groups (at 0.000, p<0.05). This indicates higher levels of differences among the groups. Thus, Table 2 tells us there is a difference in pass rates between groups of schools but it does not us whether all the three groups are different from each other, therefore Tukey HSD test was run so as to establish multiple comparisons between the three groups of secondary schools. This is shown in Table 3.

Table 3: Multiple comparisons between CSSs and CDSSs in terms of MSCE pass rates

(I) Category of The school	(J) category of the school	Mean Difference (I-J)	Std Error	Sig.
Conventional Boarding	Cost Centre CDSS	37.07500	6.56762	.001
	Non cost centre CDSS	45.92500	5.08726	.000
Cost Centre CDSS	Conventional Boarding	-37.07500	6.56762	.001
	Non cost centre CDSS	8.85000	6.34493	.388
Non cost centre CDSS	Conventional Boarding	-45.92500	5.08726	.000
	Cost Centre CDSS	-8.85000	6.34493	.388

The mean difference is significant at 0.05 level.

Source: Head teacher's Questionnaire

From Table 3, there is statistically significant difference between conventional boarding schools and cost centre CDSSs with a mean difference of 37%, which is at significance level of 0.001 (p< 0.05). Statistically, this is a big difference between these two groups of secondary schools. Similarly, there is also a statistically significant difference in pass rates between conventional boarding and non-cost centre CDSSs, with a mean difference of 45.9% at a significance level of 0.000 (p< 0.05). This significance level of 0.000 indicates that the difference is even bigger

between conventional boarding secondary schools and non-cost centre CDSSs than it is between conventional boarding and cost centre CDSSs. Hence, need for a study investigating to establish if there is an association between public financing and attainment of educational outcomes in CSSs and CDSSs.

However, there is statistically insignificant difference between cost centre and non-cost CDSSs with a mean difference of 8.85% at significance level of 0.388 ($p > 0.05$). This means that, though pass rates between cost centre and non-cost centre CDSSs are different, the difference is statistically insignificant. Therefore, from statistical point of view there is no difference in pass rates between cost centre and non-cost centre CDSSs at MSCE level.

The study findings are in tandem with Ng'ambi (2010) whose study entitled *Malawi: Effective Delivery of Public Education Services* found out that there are strong variations exist among Malawi's public schools, with poorer outcomes associated with CDSSs. His further analysis of pass rates revealed that CDSSs have lower MSCE pass rates, with more than two thirds of students who sit the exam failing it. At the same time he also found out that CSSs are bringing 8 out of 10 students to JCE graduation and 1 out of 2 to MSCE graduation. Similar study findings are reported in studies by World Bank (2010); Joint Sector review (2011); Kadzamira (2003); USAID (2010) that, generally, students in CDSSs are poorly performing as compared to students in CSSs.

Based on Berne and Stiefel (1984) equity framework, study finding of poor pass rates in CDSSs indicate that students in this group of public secondary schools are differently situated as compared to CSSs. As such, they require special attention in as far as financial resources distribution is concerned to achieve educational equity to make results more equal.

4.2 Sources of funding for CSSs and CDSSs

The study found that in conventional secondary schools, apart from receiving ORT and internal generated revenue, have other means of sourcing additional financial resources through hiring out school facilities such as students' chairs and school halls while community day secondary schools rely on ORT and internally generated revenue. However, the study revealed internally generated revenue is shared among teachers and not for the welfare of the students. For instance, one of the teachers at a CSS in an interview hinted that:

> Apart from ORT and internally generated revenues, our school is able to generate extra money. This is made possible because we have infrastructure, especially school hall, which is made available for community activities such as weddings and religious conferences at a fee. Our compass is big enough to accommodate such activities that tend to have large numbers of people. However, funds realised from such activities are being shared among teachers, especially those in control of the school. Thus, it does not necessarily benefit students directly such as procuring teaching and learning materials for the school. If such funds were properly accounted for, they would go a long way in alleviating some of the problems the school is facing. **(Interviews with a teacher 1 at a CSS J on 9th October, 2015)**

From interviews the researcher hard on sources of funding for schools, it is clear that most of the schools rely on ORT and internally generate revenues for their operations. Similarly, data was generated from teachers using a questionnaire about the sources of funds to financing their school operations whose responses are presented in Table 4 below.

Table 4: Teachers' responses on sources of funds to finance school operations

Name of the School	Source of funding		Total
	ORT and internal collections	ORT, internal collections and other means	
G	0	10	10
L	6	0	6
M	2	0	2
N	3	0	3
F	0	9	9
H	0	10	10
J	6	0	6
O	9	0	9
I	0	5	5
K	9	0	9
P	5	0	5
Q	0	4	4
Total	40	38	78

Key: F, G, H and I are CSSs; J, K, L, M, N, O, P and Q are CDSSs
Source: Teachers' Questionnaire

In Table 4, one observes that all 40 teachers (100%) in CSSs who took part in this study indicated that their schools, apart from getting ORT from government as well as school fund (school fees paid by students), they also have other means of soliciting funds for their operations while all but one CDSSs reported that their schools depend solely on ORT and school funds for their school operations. Thus, while CSSs are enjoying higher per pupil spending as shown, their schools have other means of generating extra funds while CDSSs, with much smaller per pupil

spending, do not have such opportunity. This is due to the fact that in CSSs key infrastructure items such as school hall are available.

Just like the case with teachers, data on sources of funds that finance school operations was sought from head teachers in a quest to cross check with the responses from teachers.

Table 5: Head teachers' responses on sources of funds for school operations

Name of the School	Source of funding		Total
	ORT and internal collections	ORT, internal collections and other means	
G	0	1	1
L	1	0	1
M	1	0	1
N	1	0	1
F	0	1	1
H	1	0	1
J	1	0	1
O	1	0	1
I	0	1	1
K	1	0	1
P	1	0	1
Total	8	3	11

Key: F, G, H and I are CSSs; J, K, L, M, N, O AND P are CDSSs

Source: **Head teacher Questionnaire**

In Table 5, one observes that 7 out 7 head teachers (100%) in CDSSs reported that their schools solely depend on ORT and school fund while 3 out of 4 head teachers (75%) in CSSs reported that their schools have ways of sourcing extra funds to finance their school operations. This is in tandem with the responses from teachers on the sources of fund for their schools. Extra funds are generated from hiring out school facilities namely chairs and school halls as indicated in Table 5. However, all

teachers who were involved in interviews revealed that the extra money realised from hiring out equipment is meant for staff members who share and does not benefit students directly; like buying basic necessities such as teaching and learning materials.

Table 6: Funding source that accounts for larger part of school financial resources

Name of the School	Source of funding		Total
	Internal collections	ORT	
G	1	0	1
L	1	0	1
M	1	0	1
N	1	0	1
F	1	0	1
H	1	0	1
J	1	0	1
O	1	0	1
I	1	0	1
K	1	0	1
P	1	0	1
Total	11	0	11

Key: F, G, H and I are CSSs; J, K, L, M, N, O and P are CDSSs

Source: **Head Teacher's Questionnaire**

As may be seen from the Table 6, all the 11 head teachers agreed unanimously that internal collections account for a bigger part of financial resources available to schools. In interviews, which I had with the head teachers they observed that much as school fund is bigger than ORT, but they experience massive problems if ORT funds are not made available to schools especially in CDSSs. For instance, one of the head teachers at a non-cost centre CDSS highlighted that:

> For us in CDSSs Government funding has been increasing at the snail‘s pace and at the same time quite unpredictable such that we go as much as six months without receiving anything. This trend impacts negatively on pupil performance as we are unable to procure teaching and learning resources such as pen markers, exercise books for teachers, pens, charts, chalk name it as well as administer end of term examinations and continuous assessments for students to get used to national examinations in terms of techniques required by examiners to pass colourfully. **(Interview with the Head teacher 9 at a CDSS N on 4th October, 2015)**

Another head teacher at yet another non-cost center CDSS had similar sentiments when he hinted that:

> Due to low levels of funding from government, one of the school operations that suffer most is the administration of tests. As a coping strategy, subjects that have two or more papers are combined to one paper and in extreme situations marks for each paper are drastically reduced than expected just to cut costs unlike our friends in CSSs, this does not happen due to higher levels of funding they get from government. **(Interviews with the Head teachers at a CDSS on 8th October, 2015)**

In sharp contrast with these sentiments made by head teachers in CDSSs, in CSSs it seems they enjoy higher funding levels and at the same time government tries as much as possible to remit ORT though at times it delays. For instance, one of the head teachers at conventional boarding secondary school observed that,

> “Funding has been increasing though at a minimal amount but it is regularly given. However, the concern is that at times we are given lower than what is expected in some months affecting operations of the school but issues related to teaching and learning resources as

well as examinations do not suffer". **(Interviews with Head teacher 4 at a CSS I on 9th October 2015).**

Such sentiments from teachers clearly indicate public school financing system that is insensitive to the plight of those schools, in this case CDSSs, which are struggling to provide conducive, learning environment to their students. It can be argued that the observed differences in attainment of educational outcomes between CSSs and CDSSs may be due to differences in funding levels available to these two groups of government secondary school in Malawi.

4.3 The distribution of resources between CSSs and CDSSs

The study found that the resources, which in this case include teachers and funding levels, are inequitably distributed between CSSs and CDSSs. This is shown in the following analysis, beginning with distribution of teachers and then funding levels which include other recurrent transactions (ORT)) and personal emoluments (PE).

4.3.1 Distribution of teachers between CSSs and CDSSs

The study found that teachers are inequitably distributed between conventional secondary schools and community day secondary schools for the five year period for this study. Distribution of teachers is a financial matter in the sense that lowering pupil to qualified teacher ratio requires finances. For instance, training teachers to diploma and degree level to meet the demand as well as paying for their services requires more financial resources. Table 7 shows average number of teachers and their qualification at CSSs and CDSSs.

Table 7: Average distribution of teachers and their qualifications

	Conventional Secondary School			Community Day Secondary School		
Year	**PSTC**	**Diploma**	**Degree**	**PSTC**	**Diploma**	**Degree**
2010/11	**0**	**9**	**14**	**5**	**1**	**0**
2011/12	**0**	**9**	**16**	**5**	**1**	**1**
2012/13	**0**	**9**	**17**	**5**	**1**	**1**
2013/14	**0**	**8**	**18**	**4**	**1**	**1**
2014/15	**0**	**7**	**18**	**4**	**2**	**1**

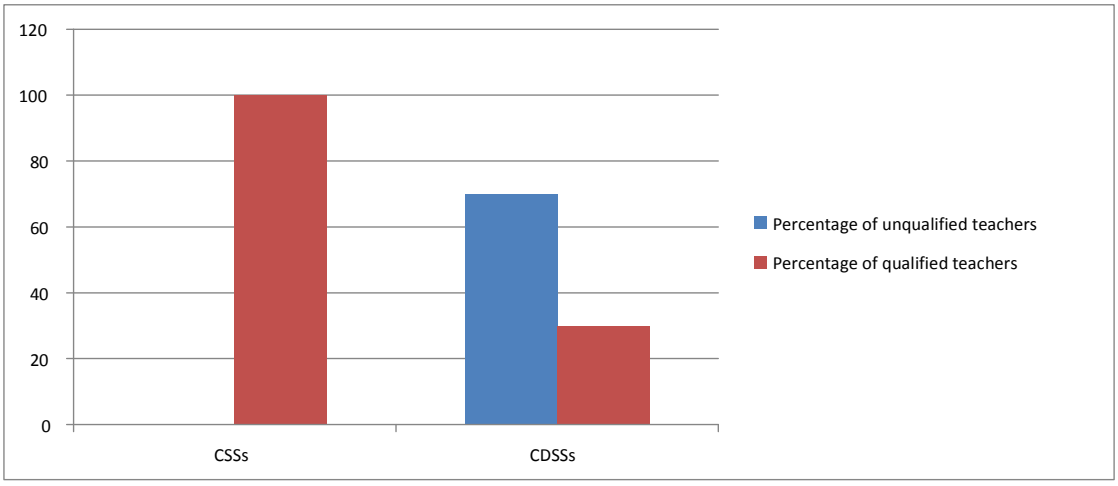
Source: Calculations from Appendix 4

Table 7 shows that there is inequitable distribution of teachers between CSSs and CDSSs. By qualification, almost all teachers in CSSs are qualified as shown by absence of teachers with primary school qualification whereas in CDSSs majority of teachers are primary school teachers. For instance, while the average number of teachers with degrees at each CSS has increased from 14 in 2010/2011 to 18 in 2014/15, the average number of teachers with similar qualification for CDSS in the same period has increased from 0 to 1. The same trend is observed for teachers with diploma qualification.

This confirms research findings done by Mlangeni et al. (2015) who studied on why community day secondary schools performance in physical science examination is poor in Lilongwe Rural West district in Malawi. The study revealed that students' performance in non-cost centre CDSSs was significantly poor and different from cost centre CDSSs, day secondary schools and national secondary schools in Lilongwe. They found out that students' performance in CDSSs without subject specialists was significantly low and different from CDSSs with subject specialists.

Thus, the study found huge disparities in distribution of teachers by qualification between CSSs and CDSSs in terms of percentage. This is shown in Graph 4.

Graph 4: Percentage of teachers who are qualified and unqualified



Source: **Head Teacher's Questionnaire**

From Graph 4, it is quite vivid that conventional secondary schools are characterised with presence of well qualified teachers while their counterparts, the community day secondary schools are the opposite. As shown on the graph, on average, conventional secondary schools have no unqualified teacher representing 0%, and they have qualified teachers representing 100% qualified teachers. In contrast, CDSSs indicate 70% of the teachers are unqualified while qualified teachers account for 30%.

Distribution of teachers is a financial matter in the sense that lowering pupil to qualified teacher ratio in most CDSSs requires finances. For instance, training teachers to diploma and degree level to meet the demand as well as paying for their services requires more financial resources.

The statistics revealed were reflected in the interviews I had with the head teachers who acknowledged the challenges posed by under-qualified teachers in CDSSs while in CSSs head teachers expressed contentment with their workforce. For instance, one of the head teachers at a non-cost centre CDSS said that:

> Some of us are unqualified including me. We find problems in delivering especially in some subjects that need sound technical knowledge gained in training institutions like universities. For the qualified teachers they do not find problems in teaching. How we wish we were upgraded by being sent to universities or colleges that train secondary school teachers. A combination of unqualified teachers and a very small number of us has far reaching consequences on pupil outcomes hence we have poor pass rates at national level. **(Interview with the Head teacher 7 at CDSS L on 12th October 2015).**

This was in sharp contrast to what head teachers said regarding their teaching workforce at conventional boarding secondary schools. For instance, one of the head teachers at a conventional boarding school said that:

> In terms of numbers, almost all departments are well-staffed and in terms of qualifications, all teachers are qualified with majority of them holding bachelor degrees, one with a master degree and very few are holders of diploma in education. **(Interview with the Head teacher 2 at CSS H on 13th October 2015).**

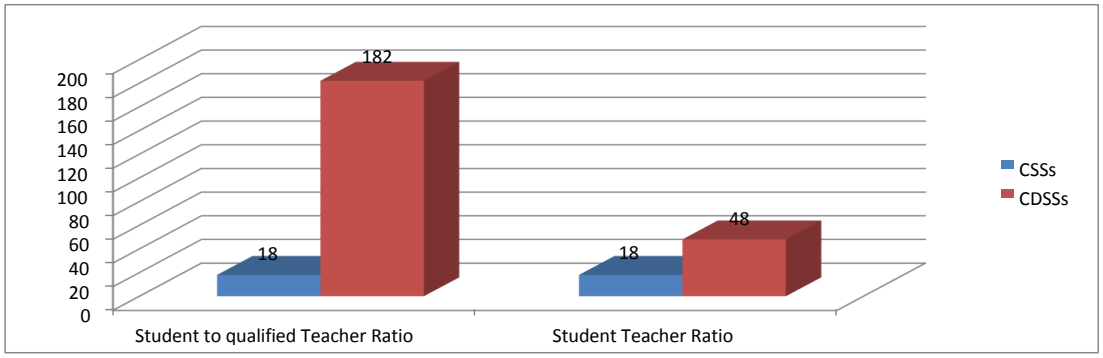
This confirms research findings conducted by MacJessie-Mbewe (2004), titled Analysis of a Complex Policy Domain: Access to secondary education in Malawi, found that generally, disparities between Conventional and Community day schools

in terms of physical and human resources are large. Agreeing with MacJessie-Mbewe, Mwambucha (2015) argues that despite policy changes where government has assumed greater responsibility for financing CDSSs to create a unified public secondary system, most CDSSs continue to suffer from lack of resources and are staffed by under-qualified teachers.

Similarly, research findings are in tandem with Reschovsky (2006) *investigating financing schools in the new South Africa* who found out that although since 1994 funding and resource inequalities in the public education system have been dramatically reduced, significant inequalities still remain. He observed that while some schools have highly qualified teachers and a full range of education facilities, such as science laboratories and well-stocked libraries; other schools must rely on many unqualified teachers and lack even basic facilities as well as supplies such as working toilets and sufficient number of classrooms for their students.

To show the level of inequality, student-teacher ratio as indicator has been calculated. The study found that on average Student to qualified Teacher Ratio (SqTR) for a CSS is very low whereas for CDSSs it is incredibly very high; while on PTR, it is the same for CSSs whereas it is relatively low for CDSSs as shown by the Graph 5.

Graph 5: Average Student-Teacher Ratios from 2010/11 to 2014/15



Source: **Head Teacher's Questionnaire**

Graph 5 depicts, on average, the following: PqTR for a CSS is 18:1 whereas for a CDSS it is 182:1; on PTR, 18 for CSSs and 48:1 for CDSSs. The analysis indicates that for both indicators (SqTR and STR), CDSSs have higher as compared to CSSs. Nevertheless, statistics suggest that distribution of teachers from equity framework as proposed by Berne and Stiefel (1984) lacks equity. This is in tandem with the observation made by Joint Sector Review (2011) that most of the students in CDSSs are less endowed owing to government selection policy from primary cycle into secondary sub-sector where the best performers go to CSSs. Equity framework recognises that students are not all the same and that their starting points relative to other students should be considered in the formulation and implementation of SFP. Thus, vertical equity would be achieved if bigger government expenditure per student were channelled to CDSSs with less endowed students, which is not the case with the current SFP.

The findings confirm study by Ng'ambi (2010) who found out that at the secondary level, the average student teacher ratio is 20:1; but the student to qualified teacher ratio is high in CDSSs where only 26.7% of the teachers are qualified while the

student to qualified teacher ratio is 105:1 in non-approved CDSS and 68:1 in approved CDSS. He also observed that at the same time in the CDSS, instructional materials are severely lacking and half of the infrastructure is not suitable for teaching and learning. The same sentiments have also been echoed in studies by Mwambucha (2015), World Bank (2010), Oslo Education Summit (2015), and USAID (2010) revealed similar findings.

4.3.2 Distribution of funding to CSSs and CDSSs

The study found that the distribution of funding to CSSs and CDSSs is inequitable as shown by per pupil spending with a Gini coefficient value of 0.39. This applies to both Other Recurrent Transactions (ORT) and Personal Emoluments (PE).

4.3.2.1 Other Recurrent Transactions (ORT)

The study found that there is a wide gap between the way community day secondary schools and conventional secondary schools are financed. They do not only differ in the level of funding but also how much of the approved funding is made available to these groups of secondary schools. Table 8 shows distribution of ORT funding to CSSs and CDSSs.

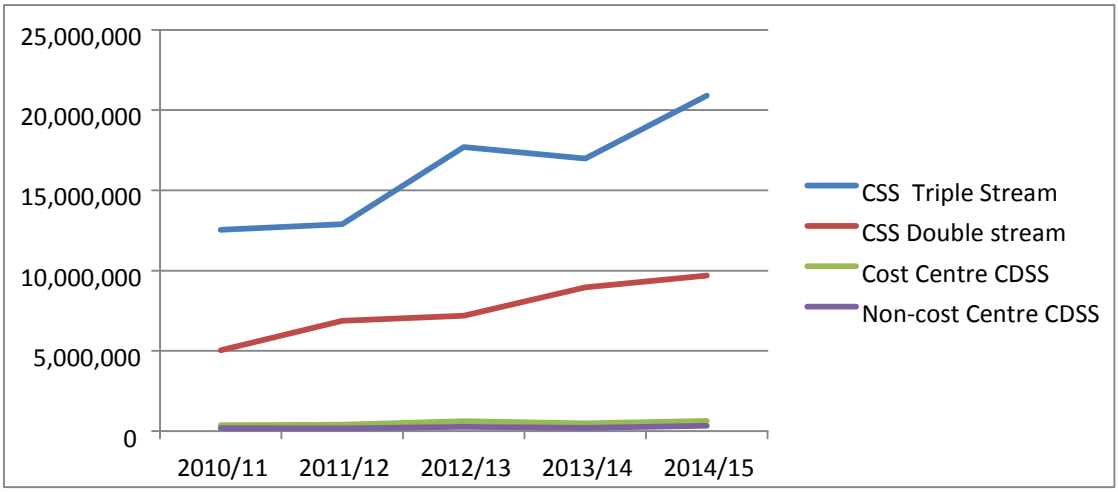
Table 8: Average actual level of ORT funding (MK) received by CSSs and

Year	CSS Triple Stream	CSS Double Stream	Cost Centre CDSS	Non-cost Centre CDSS
2010/11	12,550,000	5,033,335	375,000	190,018
2011/12	12,900,000	6,881,988	400,000	171,920
2012/13	17,696,224	7,201,590	620,000	274,000
2013/14	16,978,926	8,966,121	495,000	202,200
2014/15	20,898,960	9,694,961	645,000	334,000

Source: **Calculations from Appendix 5**

In Table 8, one observes that much higher funding levels have been made available to conventional secondary schools than to community day secondary schools as shown by the figures. For a conventional secondary school that is triple stream, received on average MK12, 550,000 in 2010/11 which was revised upwards to MK20 million in 2014/15; for double stream conventional secondary school which received MK5 million in 2010/11 had it raised to just over MK9 million; whereas for a cost centre community day secondary school which received MK375 thousand in 2010/11 was raised to MK645 thousand; and a non-cost CDSS which received only MK 190 thousand in 2010/11 was raised to MK334 thousand. The funding levels are shown clearly on Graph 6.

Graph 6: Level of funding (ORT) received by CSSs and CDSSs from 2010/11 to 2014/15



Source: Questionnaire

From Graph 6, one observes that funding levels available to conventional secondary schools are incredibly high and they have been increasing as shown by graphs of triple and double stream CSSs whereas community day secondary schools, funding levels received are low and have stagnated for the five-year period of study as shown by flattened graphs for cost and non-cost centre CDSSs.

This suggests that the poor performance in CDSSs over the period may be explained by low levels of financial resources available to them as compared to conventional secondary schools that enjoy higher levels of funding as shown by Graph 6.

However, CSSs and CDSSs differ in terms of enrolments, therefore to show differences in level of school financing, per student spending was calculated. The study found that there is a big difference on per student spending between CSSs and CDSSs as shown in Table 9.

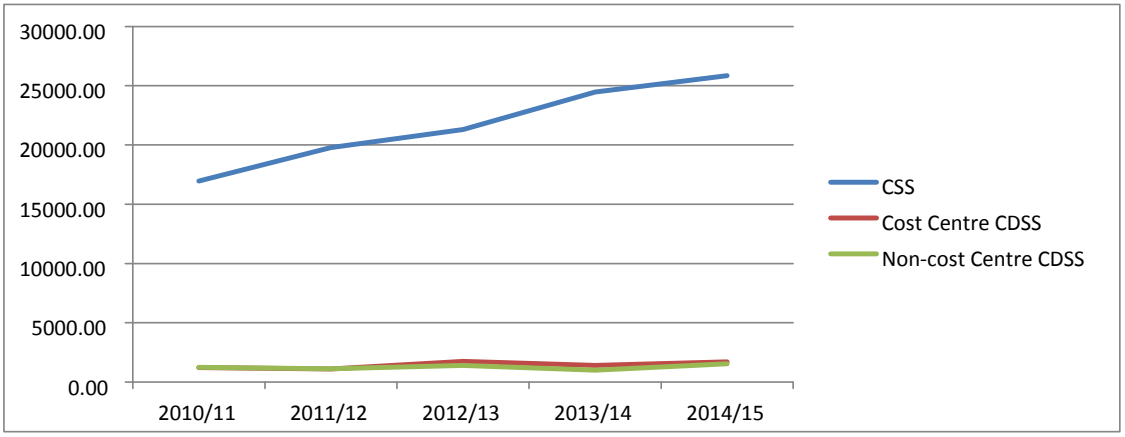
Table 9: ORT average per student spending (MK) from 2010/11 to 2014/15

Year	CSSs	Cost Centre CDSSs	Non-Cost Centre CDSSs
2010/11	16,952.76	1,222.86	1,245.48
2011/2012	19,773.94	1,097.29	1,128.17
2012/2013	21,300.83	1,746.90	1,405+.47
2013/2014	24,470.16	1,400.85	995.83
2014/2015	25,841.07	1,699.99	1,547.60

Source: **Researcher's calculated from Appendix 4**

In Table 9, one observes that students in CSSs are given more financial resources than their counterparts in CDSSs as far as per student spending is concerned. For instance, at conventional secondary school a student received over MK16 thousand in 2010/11 which was revived upwards to over MK 25 thousand in 2014/15. Whereas at a cost and a non-cost centre CDSS, a student received as little as MK1, 222.86 and MK1, 245.48 respectively in 2010/11, raised to MK 1, 699.99 and MK1, 547.60 in 2014/15 respectively. This is shown on Graph 7.

Graph 7: Average per student spending (MK) based on ORT 2010/11 to 2014/15

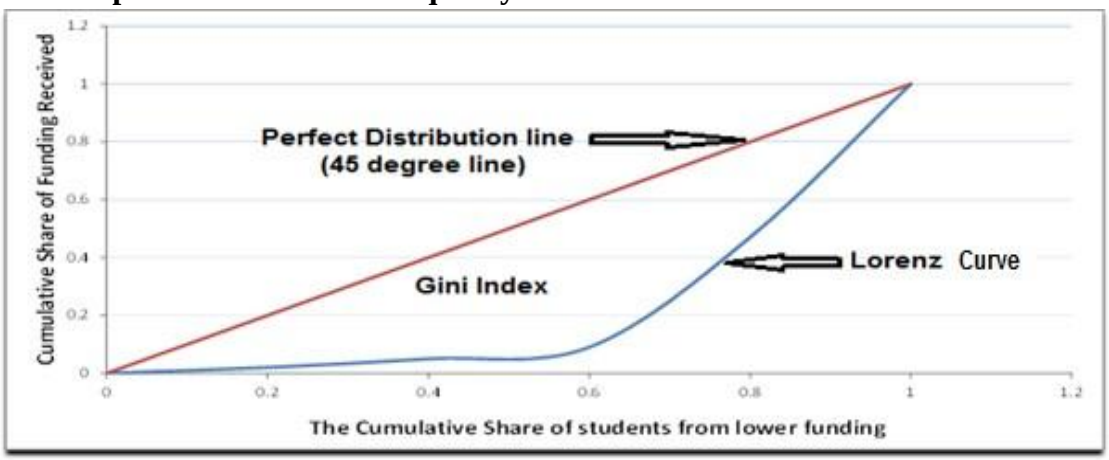


Source: Head Teacher's Questionnaire

In Graph 7, one observes that government spent much more on a student at a CSS than at a CDSS. Graph for CSSs is high up and funding levels steadily increased while funding levels for CDSSs are low and flat graph indicates stagnation of public financing of CDSSs for the five-year period of study.

The study found GINI coefficient value of 0.39 to establish the extent of the inequality between CSSs and CDSSs, which is shown on Graph 8.

Graph 8: The extent of inequality: the Gini on a Lorenz curve



Source: Researcher's calculation from a questionnaire

On Graph 8, one observes that distribution of financial resources is inequitable as shown by the Lorenz Curve away from perfect distribution line. Since the value the Gini coefficient is 0.39 indicates that financial resources (ORT) are not equally distributed among students in CSSs and CDSSs. The value is toward 0.5 showing considerable level in disparity in as far financial resources (ORT) are concerned. Since zero corresponds to perfect unit cost (per pupil spending) meaning that every student has equal share of ORT from government while 1 corresponds to perfect inequality. Therefore, government is biased in the way it distributes its financial resources to students in secondary sub-sector, the effects being more pronounced in CDSSs than in CSSs.

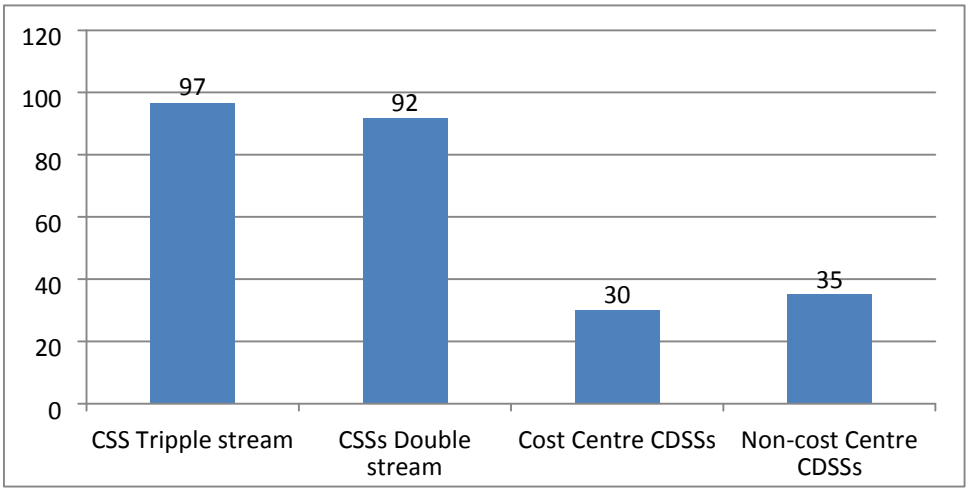
The differences in financial allocation to CSSs and CDSSs contribute to differences in attainment of educational outcomes. This was reflected in interviews the researcher had with teachers. For instance, one of the head teachers at a CDSS said that:

> The money government gives us is inadequate. Additionally, we are always promised to receive ORT but money is not forthcoming. For example, since May 2015 up to now October 2015, no funding from government and to run a school like this one becomes a big problem. We are unable to procure teaching and learning resources as well as administer continuous assessment and quality end of term examinations. If government were providing us with enough funds, performance in CDSSs would be as good as those in CDSSs because presently we have had hard working teachers, but what we are lacking are adequate funds. **(Interview with the Head teacher 11, CDSS P on 19th October 2015).**

Further ORT analysis on trends of how government has been remitting budgetary allocations (ORT) to CSSs and CDSSs reveals that, CSSs have

been receiving a higher percentage of their approved budget than CDSSs in the five-year period for this study.

Graph 9: Average received funding as a percentage of approved funding (ORT)



Source: Head Teacher's Questionnaire

In Graph 9, one observes that CSSs have been receiving a higher percentage of their approved budget such that in the five-year period for this study, conventional secondary school that is triple stream received an average of 97% of the approved budgetary allocation; a conventional secondary school that is a double stream an average of 92% of its approved budgetary allocation (ORT). In contrast, CDSSs that are cost centres were the hardest hit with an average percentage received of 30% while for the non-cost center CDSSs, received an average of 35%. In a nutshell, CSSs in general, received much more of the approved funding (ORT) than their counterparts in CDSSs.

The gap between funding levels approved and received between CSSs and CDSSs was confirmed during interviews by head teachers. For instance, head teacher at a

non-cost center had this to say in response to the question whether they make follow ups and what responses they get from division office:

> Whenever I make follow-ups on ORT with relevant authorities at the division office, I am told that government has not released money for noncost centres yours is no exceptional and I was advised to go back to my school and patiently waiting for my school‘s allocation. Once this money comes it is very little to cover all the debts or problems that accumulate for months when we are not receiving money while our friends in CSSs, they are given every month. **(Interview with the Head teacher 8, on 13th October 2015 at CDSS N).**

The study findings on ORT funds confirm the findings contained in UNESCO Report (2010) describing ORT funding to secondary schools in CSSs and CDSSs as biased, with an allocation based on a set formula where the number of students is not taken into account when allocating such funds. From equal opportunity in the conceptual framework, students are not given equal chances to excel as those in CSSs are given more financial resources than their counterparts in CDSSs. This, would to some extent, help explain differences in attainment of educational outcomes between them.

Thus, the difference in financial allocation to CSSs and CDSSs was vindicated by teachers' responses on a questionnaire who were asked to choose between conventional boarding and CDSS where they would prefer to teach given chance and give reason for their choice in an open-ended question and themes from their responses were obtained, coded and then entered into SPSS as shown in the Table 10 with cross-tabulation between "where to teach" and reason for teachers' choice.

Table 10: Teachers' choice where to teach and their reasons

Reason for your choice	Type of school		Total
	CSS	CDSS	
Adequate resources in CSSs than in CDSSs	51	0	51
Students are more intelligent in CSSs than in CDSSs	6	0	6
Less workload in CSSs than in CDSSs	2	0	2
Equitable access to quality education	0	7	7
Am under qualified	0	8	8
Total	59	15	74

Source: Teacher's Questionnaire

As shown in Table 10 as an output of the analysis, 51 out of 74 teachers (69%) chose teaching at a CSS as opposed to a CDSS simply because in CSSs there are adequate resources available and mostly mentioned included TLM, science laboratories and equipment, library and its stocks, classroom furniture among other items; 6 teachers (8%) chose CSSs but justified that in CSSs students are more intelligent than in CDSSs as such they would not like to teach in CDSSs owing to government student selection policy where the better performers at the end of primary school cycle get selected to CSSs (Sector Joint Review, 2011; Chakwera, 2005; Ng'ambi, 2010); 2 teachers (3%) they chose to teach at CSSs due to the fact that in CSSs there is less workload as opposed to CDSSs where to teachers have bigger workload; while 7 teachers (9%) would prefer to teach at CDSSs due to the fact that this would ensure equal access to quality education by all students irrespective of type of school; and interestingly 8 teachers (11%) reported that they would prefer to teach at CDSSs because they are under-qualified to teach at CSSs.

The analysis indicates that 59 out of 74 teachers (80%) in this study would prefer teaching at CSSs to CDSSs for reasons mainly of TLMs and intelligence of the students while only 15 teachers (20%) would prefer CDSSs to CSSs. From these revelations, it can be suggested that CDSSs are the neediest type of secondary schools which require more resources to be allocated to them than CSSs as was the case as shown by per student spending based on ORT and PE. Such reallocation would result in improvement in student educational outcomes. It can further be argued that poor funding to CDSSs is the major culprit responsible for poor educational outcomes among students. This observation is in line with the study findings done by Holmlund et al. (2009) who found out that school expenditure had a consistently positive and significant effect on all national tests taken at the end of primary school and had a higher effect for students who are economically disadvantaged. The study findings indicated that for disadvantaged pupils, the average effect of increasing expenditure by £1,000 was the increase in attainment by 0.063, 0.073 and 0.071 standard deviation in English, Mathematics and Science respectively.

David-Hadar and Paulino (2009) agrees by pointing out that School Financing Policies (SFPs) should be formulated in such a way that they capture dimensions of vertical equity evolving around the special characteristic background features that individuals or groups of students bring to the educational system, namely; students starting points. They argue that SFPs that consider vertical equity are premised on compensation for low starting points such that as students‘ needs increase, the funding increases too.

Based on the analysis, the distribution of financial resources from equity framework as proposed by Berne and Stiefel (1984) lacks vertical equity. It recognises that students are not all the same and that their starting points relative to other students should be considered in the formulation and implementation of SFP. The study revealed that some teachers cannot teach in CDSSs due to the fact that students are less endowed owing to government selection policy from primary cycle into secondary sub-sector where the best performers go to CSSs. Thus, vertical equity would be achieved if bigger government expenditure per student were channelled to CDSSs with less endowed students, which is not the case with the current SFP.

Sherman and Poirier (2007, p.24) point out:

> In this case, providing children who (or regions that) are differently situated with different levels of resources may be considered fair. In this regard, an education system is made fairer because unique resources, for instance, specialised support staff or after-school programmes are provided to achieve similar results such as school completion for a particular group of children or a specific region. For example, if regions with high poverty tend to have poor educational results, increased resources targeting these regions may be seen as an improvement to educational equity because the intention is to make results more equal across the regions.

Thus, from vertical equity point of view, financing of education is inequitable. The above statements from teachers imply that inequitable distribution of financial resources have a bearing on attainment of educational outcomes in conventional and community day secondary schools.

4.3.2.2 Distribution of Personal Emoluments (PE) between CSSs and CDSSs

The study found that teachers with good grades (P5, P6, P7, P8 and I) are concentrated in conventional secondary schools while in CDSSs are those teachers with lower grades (J, K and L) mostly associated with primary school teaching qualification. Table 11 shows the distribution of civil servants with their grades in schools under study.

Table 11: Number of civil servants in each grade in schools for 2014/15

	GRADES													
School	TF (P5)	TF (P6)	TG (P7)	TH (P8)	TI	TJ	K	L	M	O	P	Q	R	Total
F	-	1		4	18	9	1		1		5	3		41
G	1		1	4	17	7	-	-	3	-	4	1	2	40
H	1	-	-	-	13	5	-	-	1	1	4	2	-	27
I	-	-	3	2	7	5	-	-	1	-	4	-	-	22
J	-	-	-	-	2	4	1	1	-	-	-	-	1	9
K	-	-	-	1	2	4	1	2	1	-	-	-	-	11
L	-	-	-	-	-	5	4	1	-	-	-	-	-	10
M	-	-	-	-	-	2	1	2	-	-	-	-	-	5
N	-	-	-	-	1	3	1	-	-	-	-	-	-	5
O	-	-	-	-	-	1	1	1	-	-	-	-	-	3
P	-	-	-	1	-	-	1	8	-	-	1	-	-	10

Key: F, G, H and I are CSSs; J, K, L, M, N, O and P are CDSSs

Source: Appendix 8

In Table 11, one observes that teachers with good grades (P5, P6, P7, P8 and I) are concentrated in conventional secondary schools while in CDSSs are those teachers with lower grades (J, K and L) mostly associated with primary school teaching qualification. At the same time, in conventional secondary schools, support staff members (M, O, P, Q and R) are available at least in a good number while in CDSSs there are either only one (in each of the three schools) or none at all (in five schools).

This suggests that government spends more in CSSs than in CDSSs through PE that may help explain differences in levels of students' attainment of educational outcomes. However, it is important to calculate exactly how much government spent for each school based on PE. This is done by using Table 11 and Appendix 8, which shows average annual salaries for different grades for civil servants in schools (Civil Service Circular dated 14th October, 2014, Ref. No. HRM/RS/01/43). Calculations for each and every school are shown in Table 12.

Table 12: Total Personal Emoluments (in Malawi Kwacha) for schools and enrolments 2014/15

School	Personal emoluments (MK)	School enrolment
F	79, 921, 826	636
G	72, 563, 901	460
H	45, 669, 792	423
I	40, 468, 104	366
J	12, 652, 010	352
K	16, 276, 764	412
L	12, 167, 304	206
M	5, 540, 208	124
N	7, 614, 096	194
O	3, 304, 596	400
P	10, 806, 372	400

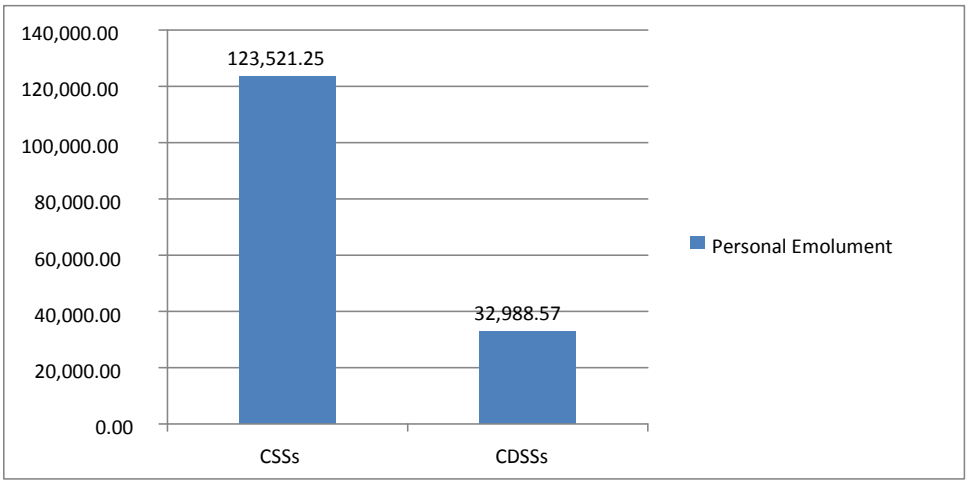
Key: F, G, H and I are CSSs; J, K, L, M, N, O and P are CDSSs

Source: Civil Service Circular dated 14th October, 2014

From the Table 12, it is self-evident that CSSs are better off than CDSSs in terms of quality of workforce as reflected by the level of government expenditure on personal emoluments. For instance, government spends, annually, between MK40 million and MK75 million on a conventional secondary school while it spends between MK3 million and MK16 million on a Community Day Secondary School which is a cost centre or not.

Nevertheless, CSSs and CDSSs are different in that some of them are single stream and others are double stream even others are triple stream. Therefore for us to be able to find out how much government spends (PE) on students in schools, a unit cost is calculated considering that the actual enrolments for each school were collected and total emoluments (Appendix 5)for each school as shown on Table 12. Average per pupil spending based on PE was calculated for CSSs and CDSSs, which is shown on graph 10.

Graph 10: Average unit cost (MK) for CSSs and CDSSs based on PE 2014/15



Source: **Civil Service Circular dated 14th October, 2014**

In Graph 10, it is overtly shown that there is a greater disparity in unit cost for CSSs and CDSSs by government spending based on Personal Emoluments (PE). Thus, on average, a student at a conventional secondary school gets MK123, 521 while for a student at a Community Day Secondary School gets between Mk32, 988.

This suggests that government per pupil expenditure is about 4 times greater for students in CSSs compared to students in CDSSs based on PE. Thus, less per pupil spending in CDSSs suggests fewer and less qualified teachers and lack of support

staff thereby impacting negatively on teaching and learning process while higher per pupil spending in CSSs reflects well trained and experienced teachers and support staff members who are adequate to perform their duties thereby impacting positively on teaching and learning process and hence achieve better educational outcomes than in CDSSs. For instance, one of the teachers at a non-cost centre CDSS, had this to say:

> Just imagine school does not have even bursar [*accounts officer*] as such it pleased the head teacher to appoint me as a teacher bursar meaning that I perform two duties that of teaching and accounts. This is a big problem for me because I miss a lot of periods thereby negatively affecting education of students unlike in CSSs where government ensures that they have accounts officers with relevant skills and that teachers concentrate on teaching and learning process. This may help explain differences in pass rates in CSSs and CDSSs‖. **(Interview with teacher 30, CDSS K on 12th October, 2015 at a non-cost centre CDSS N).**

This suggests that the distribution of financial resources from equity framework as proposed by Berne and Stiefel (1984) lacks horizontal equity. CSSs and CDSSs are public entities as such they should be treated equally. Nonetheless, unit cost is much bigger for CSSs than CDSSs and yet all are public institutions; students write the same standardised national examinations. Sherman and Poirier (2007, p.24) further point out that,

> "Horizontal equity requires equal treatment of those who are equally situated. A horizontally equitable education system would treat students who are alike equally and ensure that they experience similar levels of educational resources and achieve similar results. Horizontal equity requires little or no variation in the dispersion of access, resources and results – no dispersion suggests perfect equity".

Thus, from horizontal equity point of view, financing of education is inequitable in the sampled schools between CSSs and CDSSs as shown in the analysis. The finding on unit cost based on Personal Emoluments (PE) are in tandem with the research findings of Fedderke et al. (2002) who note that financing public education in South Africa during the apartheid there was a persistent and wide disparities between the education provided to white children and that to black children to an extent that every year real expenditure per white pupil far exceeded expenditure per black pupil. For instance, through their analysis they found out that between 1983 and 1993 spending per pupil was nearly seven times greater for white compared to black pupils. The researchers concluded that such spending differences translated into dramatic differences in teacher salaries, physical facilities and supplies. Nonetheless, given the differences in resources devoted to black education and white education, it is not surprising that there were large racial differences in education attainment.

4.3.2.3 Distribution of key infrastructure items in schools

The study found that there is inequitable distribution of key infrastructure items between CSSs and CDSSs. Conventional secondary schools have almost all of these whereas most of the community day secondary schools do not have, if they do then infrastructure items are of sub-standard. For instance, teachers houses mostly built through community self-help projects are small and of low quality. Table 13 shows the distribution of key infrastructure.

Table 13: Presence of key infrastructure items in schools under study

Schools	F	G	H	I	J	K	L	M	N	O	P
Science Lab	✓	✓	✓	✓	X	✓	✓	X	X	X	X
Computers	✓	✓	✓	✓	X	✓	✓	X	X	X	X
Desks	✓	✓	✓	✓	X	✓	✓	X	X	X	✓
Student chairs	✓	✓	✓	✓	X	✓	✓	X	X	X	✓
Library	✓	✓	✓	✓	X	✓	X	X	X	X	✓
Printers	✓	✓	✓	✓	X	✓	X	X	X	X	X
Photocopier	✓	✓	✓	✓	X	✓	X	X	X	X	X
H/T Office	✓	✓	✓	✓	X	✓	✓	✓	✓	X	✓
Staff Room	✓	✓	✓	✓	X	✓	X	X	X	X	✓
electricity	✓	✓	✓	✓	X	✓	X	X	X	X	X
T/Houses	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓

Key: F, G, H and I are CSSs; J, K, L, M, N, O and P are CDSSs

Source: Teacher's Questionnaire

In Table 13, one observes that there is inequitable distribution of key infrastructure items in Community day Secondary Schools and Conventional boarding secondary schools. The table reveals that in all the 4 CSSs (100%) are equipped with key infrastructure items while 1 out of 7 CDSSs (14.3%) has all such items, and again 4 out of 7 CDSSs (57%) reported critical absence of such important infrastructure such as science laboratory, library, student' chairs, desks, staff room, teachers' houses and electricity in any form such as solar or hydro-electricity power. In most of the CDSSs involved in my study where I went to during data generation, I observed most of the students were sitting on the floor and few lucky ones were sitting on the benches with no table or chair for the teachers in front while in CSSs it was different as almost all the students were either seated on a desk or chair. As one of the head teachers at a community day secondary school pointed out that:

> Since this school opened its doors in 2000 up to now we have never received desks let alone chairs and students do not know how a desk looks like here. What is disheartening is that when these students are at primary they sat on desks but when they come here they sit on benches and some on the floor

while their counterparts in conventional boarding schools sit on chairs and use tables or at least sit on desks. This may greatly affect student educational outcomes as they look at it as a torture and hardly pay any attention to what teachers are trying to offer to them. **(Interviews with Head teacher 8 on 24th October, 2015 at a CDSS M)**

In the same vein, head teachers and teachers were asked in a questionnaire to choose between CSS and CDSS and, based on five-point likert scale, head teachers were also asked to choose if their choice would be partly influenced by level of funding available to these two types of secondary schools. But teachers were given spaces to give reason for their choice in a questionnaire. Analysis using SPSS, the following cross-tabulation tables give a summary of responses that were given in Table 14.

Table 14: Head teachers' choice to head which type of school and their reasons

Type of secondary school	Reason partly influenced by funding level				Total
	Agree	Strongly agree	Disagree	Strongly disagree	
Conventional	4	4	1	0	9
CDSS	0	0	1	1	2
Total	4	4	2	1	11

Source:Head Teacher's Questionnaire

From Table 14, it is revealed that 4 head teachers (36%) chose to head CSS as opposed to a CDSS and agreed that their choice would partly be influenced by funding levels available to these two types of secondary schools; 4 head teachers (36%) also chose to head CSS as opposed to a CDSS and strongly agreed with the reason behind their choice being influenced by level of funding available to these

two types of schools; while 1 head teacher (9%) chose to head CSS but disagreed with the assertion that their decision would be influenced by funding levels; and 1 head teacher (9%) chose to head a CDSS and that he strongly disagreed that his decision would equally be influenced by funding levels. Nine out of eleven head teachers (82%) chose to head a CSS and that all but one either agreed or strongly agreed that their choice would be influenced by funding levels available to these two types of secondary schools while 2 head teachers (18%) chose a CDSS to head and that they either disagreed or strongly disagreed that their decision would be partly be due to funding levels.

Thus, from what the head teachers responded, it is a clear manifestation that CDSSs are not liked due to the fact that they are being side-lined in allocation of resources that cost money, government being a bigger culprit as shown by per student allocation to CSSs and CDSSs both on Other Related Transactions (ORT) as well as Personal Emoluments (PE). This was confirmed by head teachers in interviews, for instance, one of the head teachers at a CSS had this to say:

> With my grade [P5] can I be sent to head a community day secondary school (CDSS)? That will mean demotion. I don't think teachers of our calibre can be deployed to head CDSSs especially in typical rural areas as headship becomes headless due to the fact that most of these schools are experiencing critical bottlenecks as a result of unavailability of basic resources to keep these institutions running smoothly. Therefore, I would turn down such an offer. **(Interviews with Head teacher 3 on 29th October, 2015 at a CSS H)**

Such responses in interviews with the head teachers were mirrored in teachers' responses in a questionnaire who were asked to choose between teaching at a CSS or CDSS and table 9 shows cross tabulation between 'where to teach' and 'reason for the choice'. It shows the results of cross-tabulation where teachers were given chance to choose teaching at a CSS or CDSS and in an open question to give a reason for their choice. From their responses, five themes were identified, coded and then entered into SPSS computer package and analysed.

4.4 Funding levels and attainment of educational outcomes

The study found strong positive correlation between funding levels available to school and the attainment of educational outcomes between CSSs and CDSSs. Pearson r value of +0.942 was found, which indicates a very strong -- nearly perfect – positive correlation between predictor variables and outcome variable. Using regression analysis, study found a strong positive association between per student spending and pass rates; negative association between student-qualified teacher ratio and pass rate; and positive correlation between student-teacher ratios and pass rates. Therefore, it can be suggested that the level of funding the school gets can help explain differences in levels of educational outcomes in terms of pass rates in CSSs and CDSSs. The more financial resources a particular school gets the better the results, *ceteris paribus.*

Using entering method, regression analysis with SPSS is as follows based on per student, student-teacher ratio and student-qualified teacher ratio as independent variables with attainment of educational outcomes (pass rates) as dependent variable.

Table 15: Fit of the Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.942	.887	.839	9.30785	2.063

Source: Head Teacher's Questionnaire

From Table 15, one observes that the adjusted R square is 0.839, and this again, shows that, in the regression model that has been constructed, the independent variables account for 83.9 per cent of the variance in the dependent variable which is high. This means that the regression model is robust. Muijs (2004, p.165) points out that a model with the adjusted R square value greater than 0.5 indicates strong fit. This indicates that the model is useful necessitating the researcher to proceed with the analysis. The problem of multicollinearity is not experienced as the model indicates a Durbin-Watson value of approximately 2, which according to Theresa (2012), it means that the residuals are uncorrelated and the independent error assumption is satisfied. The R value in the model indicates Pearson's r correlation with a value of +0.942, which is high, between predictor variables and outcome variable.

Table 16: The analysis of variance

Model		Sum of Square	df	Mean Square	F	Sig.
1	Regression	4759.257	3	1586.419	18.311	.001
	Residual	606.452	7	86.636		
	Total	5365.709	10			

Source: Head Teacher's Questionnaire

Similarly, in Table 16, one observes that the analysis of variance is highly statistically significant at 0.001 ($p < 0.05$), indicating that the relationship between independent and dependent variables is very strong. In this case, a combination of independent

variables (per pupils spending, pupil teacher ratio (qualified teachers) and pupil teacher ratio (teachers irrespective of qualification) have effect on dependent variable (educational outcomes, which are the pass rates). Cohen et al. (2007, p.538) states that when there is statistically significant relationship between independent variables and dependent variable, as shown by analysis of variance in Table 16, it is useful to proceed with the analysis, as it contains important results.

Table 17: Contribution of each predictor to the dependent variable

Model	Unstandardised coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tole-rance	VIF
1 (Constant)	33.749	6.551		5.152	.001		
Per Pupil Spending (ORT)	.002	.000	.930	5.866	.001	.642	1.558
Pupil-qualified Teacher Ratio	-.017	.034	-.106	-.500	.633	.359	2.782
Pupil-Teacher Ratio	.080	.131	.118	.614	.558	.436	2.291

Source: **Head Teacher's Questionnaire**

Table 17 shows that the beta weightings are 0.930, -0.106 and 0.118 for independent variables per pupil spending, pupil-qualified teacher ratio and pupil teacher ratio respectively. This tells us that, for every standard deviation unit in independent variable (per pupil spending), the dependent variable (attainment of student outcomes) will rise by 0.930 (93%) of one standard deviation unit, which is statistically significant at 0.001 ($p < 0.05$); for independent variable, pupil-qualified

teacher ratio, it contributes a rise of 0.106 (10.6%) of standard deviation in dependent variable, which is statistically insignificant at 0.633 ($p > 0.05$). However, a beta weight with a negative sign indicates that the lower the pupil-qualified teacher ratio the better the attainment of educational outcomes, which is expected; and for independent variable, pupil teacher ratio, it contributes a rise of 0.118 (11.8%) of standard deviation in the dependent variable, which is statistically insignificant at 0.436 ($p > 0.05$). Nevertheless, this is against the expectation in the sense that as the pupil-teacher ratio decreases, attainment of education outcome should increase.

Based on Table 17, relative to each of the three predictor variables:

- The independent variable 'per pupil spending (ORT)' has the strongest positive effect on educational outcomes in terms of pass rates ($\beta = .903$), and that this is statistically Significant since the level of significance is at 0.001($p < 0.05$). This means that the higher the per pupil spending, the higher the educational outcomes in terms of pass rates for schools.

- The predictor variable 'pupil-qualified teacher ratio' has a negative effect on educational outcomes (pass rates) as shown by the negative sign ($\beta = -.106$). However, this is statistically insignificant at 0.633 ($p > 0.05$). What it means here is that the smaller the pupil teacher ratio, the better the educational outcomes in terms of pass rates for schools, and vice-a-versa. But the variable has very limited effect on pass rates.

- The independent variable 'pupil-teacher ratio' irrespective of qualification has a positive effect on the educational outcomes in this case pass rates ($\beta = 0.118$), but that this is statistically insignificant at 0.558 ($p > 0.05$). This means that the higher the number of teachers, irrespective of their qualification, the better the educational outcomes in terms of pass rates, though its effect is small.

Thus, in a quest to answer the question, to what extent does funding level affect students' outcomes in CSSs and CDSSs?, multiple regression was used, and the results include the following: the adjusted R square (0.787), ANOVA (0.001, $p < 0.05$), and the standardised beta coefficients of each of the three independent variables, namely, per pupils spending, pupil teacher ratio (qualified teachers) and pupil teacher ratio (teachers irrespective of qualification) are $\beta = .930$, at 0.001($p < 0.05$); $\beta = -.106$, at 0.633, $p > 0.05$); and $\beta = 0.118$, at 0.558, $p > 0.05$ respectively.

Overall, it was observed that, relative to each other, 'per pupil spending' exerted the greatest influence on educational outcomes (pass rates), that 'pupil teacher ratio (qualified teachers)' exerted a negative but statistically insignificant influence on educational outcomes (pass rates), and that pupil-teacher ratio, irrespective of qualification, exerted a small and statistically insignificant influence on the educational outcomes (pass rates) of the students under study.

Table 18: Testing for multicollinearity

Coefficient Correlations

Model		Pupil Teacher Ratio	Per Pupil Spending (ORT)	Pupil qualified Teacher Ratio
Correlations	Pupil Teacher Ratio	1.000	0.038	-0.664
	Per Pupil Spending (ORT)	0.038	1.000	0.422
	Pupil-qualified Teacher Ratio	-0.664	0.422	1.000

a. Dependent Variable: MSCE pass rates

Source: Head Teacher's Questionnaire

In Table 18, it is observed that all the three predictor variables do correlate among themselves but not strongly. They have correlation coefficient values less than 0.80. Gorard (2001) states that if correlation coefficients in a collinearity coefficients box are no higher than 0.80, there is no multicollinearity but if correlation coefficients between variables are higher than .80 then one can either remove one of the variables or create a new variable that combines the previous two that were highly intercorrelated. Implication of the study findings is that differences in public funding levels available to CDSSs and CSSs contribute greatly to differences in attainment of educational outcomes as evidenced by the regression analysis, *ceteris paribus.* This calls for equalisation of educational opportunities by relevant authorities, which in this case, is the government that has the controlling power on distribution of financial resources. Similarly, qualification of teachers equally contributes to the overall performance of students

The study findings that less per pupil spending having an effect on CDSS students' educational outcomes is in tandem with Mackenzie (2014) study on *public school funding and outcomes in Delaware in USA* reveal a significant positive relationship between overall per-pupil funding and average NAEP scores. He further reveals that $1000 increase in per-pupil funding yielded a 9.28-point increase in combined SAT 1 scores. Similarly, the study findings further confirm World Bank (2004) findings contending that the meagre learning outcomes achieved by CDSS especially at MSCE level students probably reflects significant under-funding of CDSSs relative to other public schools, including the calibre and qualifications of teachers, the availability of teaching and learning materials, and available operational budgets, thereby negatively

affecting these CDSSs in particular and secondary education in general. Similarly, it also confirms research work done by Munda and Odebero (2014); Mackenzie (2014); Bird et al. (2009); Al-Samarrai (2007); Anyanwu and Erhijakpor (2007).

The results of regression were confirmed by teachers' responses in a questionnaire on whether academic performance of the students can be attributed to the funding levels schools get from government. The results shown in a cross tabulation indicate that teachers generally believe that funding levels available to a particular school have a bearing on students' academic performance as shown by the Table 19.

Table 19: Level of government funding and students' academic performance

	Would you attribute academic performance of students to the funding level the school gets from government?		
Category of the school	yes	no	Total
Conventional Boarding	25	9	34
Cost centre CDSS	10	7	17
Non-cost centre CDSS	14	7	21
Total	49	23	72

Source: Teacher's Questionnaire

Table 19 reveals that levels of funding available to schools may help explain differences in attainment of education outcomes as shown by the responses of teachers. In both convention and community day secondary schools, 49 teachers out of 72 teachers (68%) indicated that students' academic performance is dependent on government funding levels while 23 out of 72 teachers (32%) indicated to the

contrary. This suggests that the higher the funding levels the school receives the better the educational outcomes *ceteris paribus* as shown by 68% of teachers.

The study finding was further confirmed by teachers in interviews. For instance, one of the head teachers said that:

> Yes, to some extent, students' academic performance depends on levels of funding the schools gets from the government because its money that enables us procure teaching and learning materials, its money that help us monitor students and teachers. For example, when teachers travel for official duties, they need allowances. If we cannot provide them they will be demotivated as a result they will not be committed to their duties. The same for the students, if we cannot provide books, as the case with teaching and learning materials such as chalk, chart papers, et cetera, students may not learn well; some higher achievers are rewarded every term (top 10 in all four classes) it's because of money that is available. **(Interview with the Head teacher 7 at a CDSS L on 13th October, 2015).**

Once again the above study findings are in tandem with World Bank (2004) findings contending that the meagre learning outcomes achieved by CDSS especially at MSCE level students probably reflect significant under-funding of CDSSs relative to other public schools, including the calibre and qualifications of teachers, the availability of teaching and learning materials, and available operational budgets, thereby negatively affecting these CDSSs in particular, and secondary education in general. Similarly, it also confirms research work done by Munda and Odebero (2014); Mackenzie (2014);

Bird et al. (2009); Anyanwu and Erhijakpor (2007).

4.5 Chapter summary

All in all, analysis of the data for the study found the following: there is substantial difference in attainment of outcomes between Conventional and Community Day Secondary Schools in terms of pass rates. This has been shown by One-way ANOVA, which shows statistically significance between CSSs and CDSSs. Both CSSs and CDSSs have ORT and internally collected revenues as the primary sources of funds to finance their school operations. However, CSSs tend to raise extra revenue through lending out school facilities such as students chairs and school halls. There is inequitable distribution of funding and financial related resources between CSSs and CDSSs. A Gini coefficient value of 0.39 indicates inequitable distribution of financial resources between CSSS and CDSSs. Thus, distribution of ORT, PE and key infrastructure items is skewed towards conventional secondary schools. This was further confirmed by responses in interviews with teachers and head teachers. Regression analysis found strong positive correlation between funding levels and attainment of education outcomes with r value of 0.97 between CSSs and CDSSs. The next chapter discusses conclusions and recommendations of the study.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.0 Chapter overview

This chapter presents conclusions and recommendations of the findings discussed in chapter four. The study was aimed at investigating the association between school financing and attainment of educational outcomes in selected conventional secondary schools and community day secondary schools in Central East Education Division. The chapter also has made some recommendations and proposed possible areas for further research.

5.1 Conclusions

The conclusions are in line with each of the four research questions as follows. The first research question was to find out if there is a difference in attainment of educational outcomes in terms of pass rates between CSSs and CDSSs. The study found statistically significant differences between CSSs and CDSSs at MSCE level with a mean difference of 37 at 0.001($p<0.05$). This indicates that students in CDSSs are far behind those in CSSs as such they need special attention. This would mean directing more government funding to CDSSs than it is the case with the current school financing policy where more funding is allocated to CSSs.

The second research question was to find out the sources of funds to finance school operations. The study revealed that almost all of the schools involved in this study depend on two sources of funding, namely internal collections (school fund) and

ORT. However, some CSSs tend to generate extra funds through hiring out school equipment such as chairs and school hall to the community. This means that for a smooth running of the school, there is a need of substantial, continuous in-flow of both ORT and internally generated revenue. As revealed, schools mainly depend on these two sources of funding to an extent that if, for instance, ORT is not increased substantially or not honoured to schools, operations would greatly suffer. Government should monitor extra revenue generated by CSSs so that it maximally benefits students directly like buying text books and other teaching and learning resources.

The third research question was set to find out the extent to which resources are equitably distributed between CSSs and CDSSs. The study found inequitable distribution of financial resources based on Other Recurrent Transaction (ORT) and Personal Emoluments (PE) as well as financing related resources such as teachers and key infrastructure items. The study found that the majority of teachers with diploma and degrees are concentrated in CSSs while in CDSSs there are either very few or none at all. It also found low public unit cost (per pupil spending) at CDSSs than CSSs with a Gini coefficient value of .39, which indicates financial resources are inequitably distributed between CSSs and CDSSs. It can be argued that these substantial disparities in resources distribution between CSSs and CDSSs would result in enormous differences in academic achievement by students. It can further be argued that the playing field is not levelled where students are subjected to different learning conditions and are expected to perform equally in the national standardised examinations. Unless we reverse the way CSSs and CDSSs are funded, the gap between the two types of secondary schools will continue to exist and even widen in terms of students' academic achievement.

The fourth research question was set to investigate if differences in funding levels affect students' educational outcomes in CSSs and CDSSs. The study found that the higher the funding level (ORT) available to a particular school the better the educational outcomes in terms of pass rates *ceteris paribus.* Thus, the funding levels given to school helped explain differences in pass rates between CSSs and CDSSs. This would suggest that raising funding levels available to CDSSs could subsequently raise education outcomes in CDSSs. The raising funding levels would mean equipping CDSSs with adequate teaching and learning materials as well as furniture such as students' chairs and desks.

Further to the above, the researcher identified three independent variables (unit cost based on ORT, PqTR and PTR) and dependent variable (pass rates) and then a multiple regression was run with the following revelations: the independent variable 'per pupil spending (ORT)' had the strongest positive effect on educational outcomes in terms of pass rates. The independent 'variable pupil teacher ratio (qualified teachers)' had a negative effect on educational outcomes (pass rates). And the independent variable 'pupil teacher ratio' irrespective of qualification has a positive effect on the educational outcomes.

In general, as regards what prevails in conventional and community day secondary schools, the study findings revealed the following:

Firstly, conventional boarding secondary schools have better educational utcomes in terms of pass rates at MSCE level than community day secondary schools as shown by results of one-way ANOVA showing statistically significance difference between CSSs and CDSSs

Secondly, disparity in resource allocation to CSSs and CDSSs, that is, government funding in terms of expenditure per student based on ORT and PE as well as key infrastructure items such as library, science lab, desks, student chairs. All these have a bearing on student educational outcomes as revealed by the interviews the researcher had with teachers and head teachers.

Thirdly, disparity in resource allocation among students secondary sub-sector was confirmed by Gini Coefficient, correlation and regression. All this indicated a strong relationship between funding levels and educational outcomes in terms of pass rates. Thus, the higher the funding level the better the pass rates and it was confirmed in interviews the study carried out to support Gini coefficient, correlation and regression analyses.

5.2 Implications

Thus, unless issues of fairness in financial resources distribution between CSSs and CDSSs are addressed inequalities will remain deep rooted in our society. This undermines achievement of Sustainable Development Goals where education is considered the hub of socio-economic transformation of the country.

Thus, the study findings revealed therein that, for instance, the higher the per pupil spending, the higher the educational outcomes in terms of pass rates for schools calls for a comprehensive review of school financing policy (SFP) so as to benefit the less privileged CDSSs students.

5.3 Recommendations

Based on the study findings, the following are the recommendations:

- To ensure that School Financing Policy furthers the goal of equitable education development in the country, the Ministry of Education should consider reviewing its School Financing Policy that funding should not only be based on enrolment but also sensitive to level of need by different groups of secondary schools.
- To address the problem of limited or shortage of qualified teachers in CDSSs, the Ministry of Education should take affirmative action in distributing teachers irrespective of school type, especially qualified teachers who are concentrated in CSSs.
- To address the problem of teachers being unqualified in CDSSs, MoEST should scale up capacity building in teachers, that is, Continuous Professional Development (CPD) of those under-qualified teachers in CDSSs through programmes such as the Malawi Teacher Professional Development Support (MTPDS) being implemented by Ministry of Education Science and Technology, which has largely targeted primary school teachers, should be extensively extended to secondary sub-sector as outlined in Education Sector Implementation Plan 2014/15 to 2017/18 (ESIP II, 2014, p.34).

5.4 Suggested areas for further research

First, research findings reveal financial resource distribution skewed towards conventional secondary schools but the study has not considered gender aspect. Nonetheless, it could be very interesting to conduct a parallel study to find out how

differences in financing secondary education affect educational outcomes between girls and boys in CSSs and CDSSs in Malawi.

Additionally, since the study concentrated in government secondary schools, that is, CSSs and CDSSs, another study can be conducted targeting policy makers on public school financing at divisional and national levels. Policy makers would include Principal Secretary for Ministry of Education, Science and Technology, Director of Planning and Education Division Managers. Since this study was looking at the association between funding levels and attainment of educational outcomes, therefore, there is a gap to be filled of getting information from policy makers on financing of education. The information gathered will complement the current study.

Lastly, but not least, considering that this study was conducted in CEED, other studies can be carried out that would cover as many of the six education divisions in Malawi as possible so that findings may be compared with the current study‘s findings.

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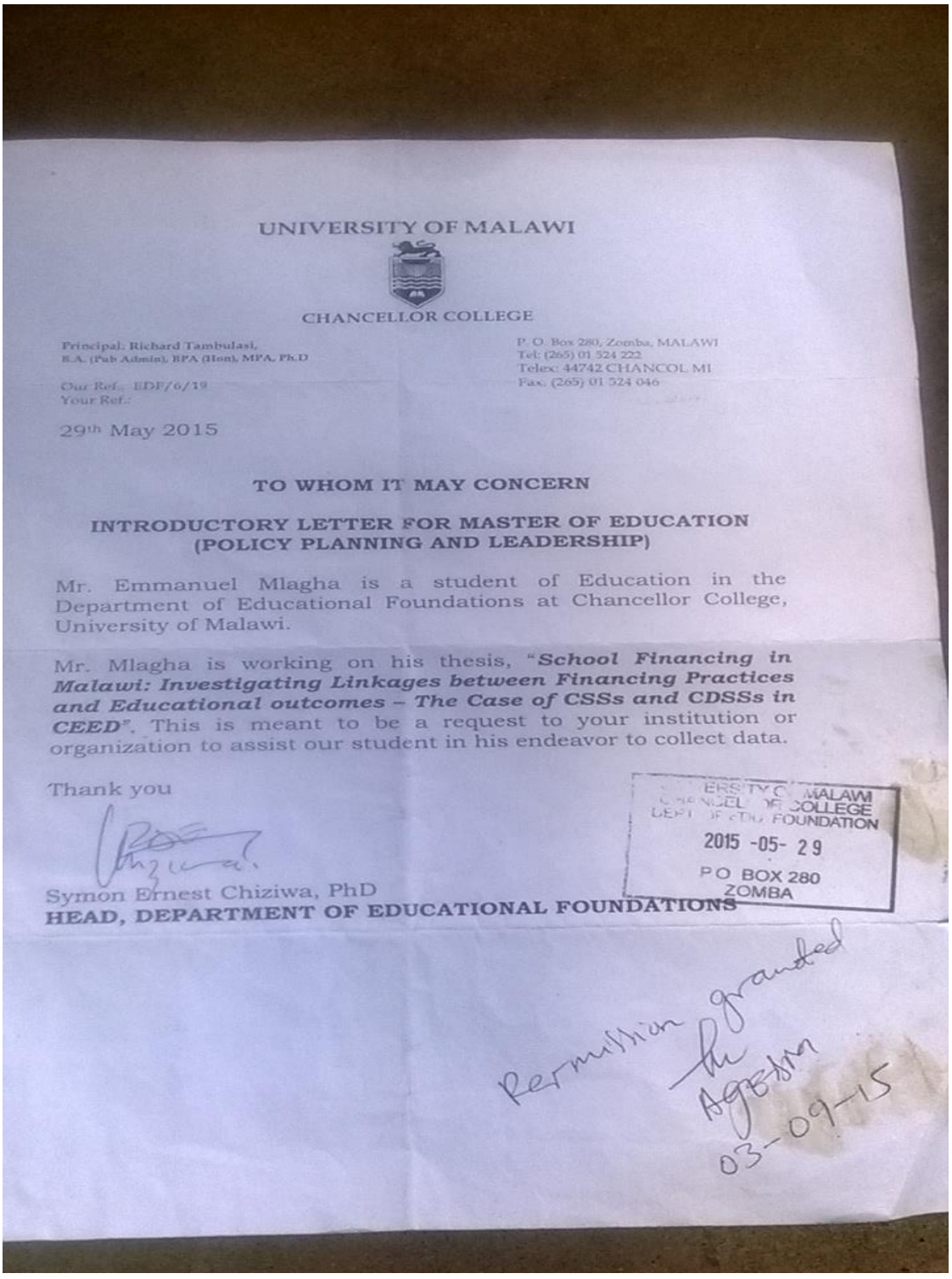
APPENDICES

Appendix 1: University letter of authorisation to do research



UNIVERSITY OF MALAWI

CHANCELLOR COLLEGE

Principal: Richard Tambulasi,
B.A. (Pub Admin), BPA (Hon), MPA, Ph.D

P. O. Box 280, Zomba, MALAWI
Tel: (265) 01 524 222
Telex: 44742 CHANCOL MI
Fax. (265) 01 524 046

Our Ref.: EDF/6/19
Your Ref.:

29th May 2015

TO WHOM IT MAY CONCERN

INTRODUCTORY LETTER FOR MASTER OF EDUCATION (POLICY PLANNING AND LEADERSHIP)

Mr. Emmanuel Mlagha is a student of Education in the Department of Educational Foundations at Chancellor College, University of Malawi.

Mr. Mlagha is working on his thesis, "***School Financing in Malawi: Investigating Linkages between Financing Practices and Educational outcomes – The Case of CSSs and CDSSs in CEED***". This is meant to be a request to your institution or organization to assist our student in his endeavor to collect data.

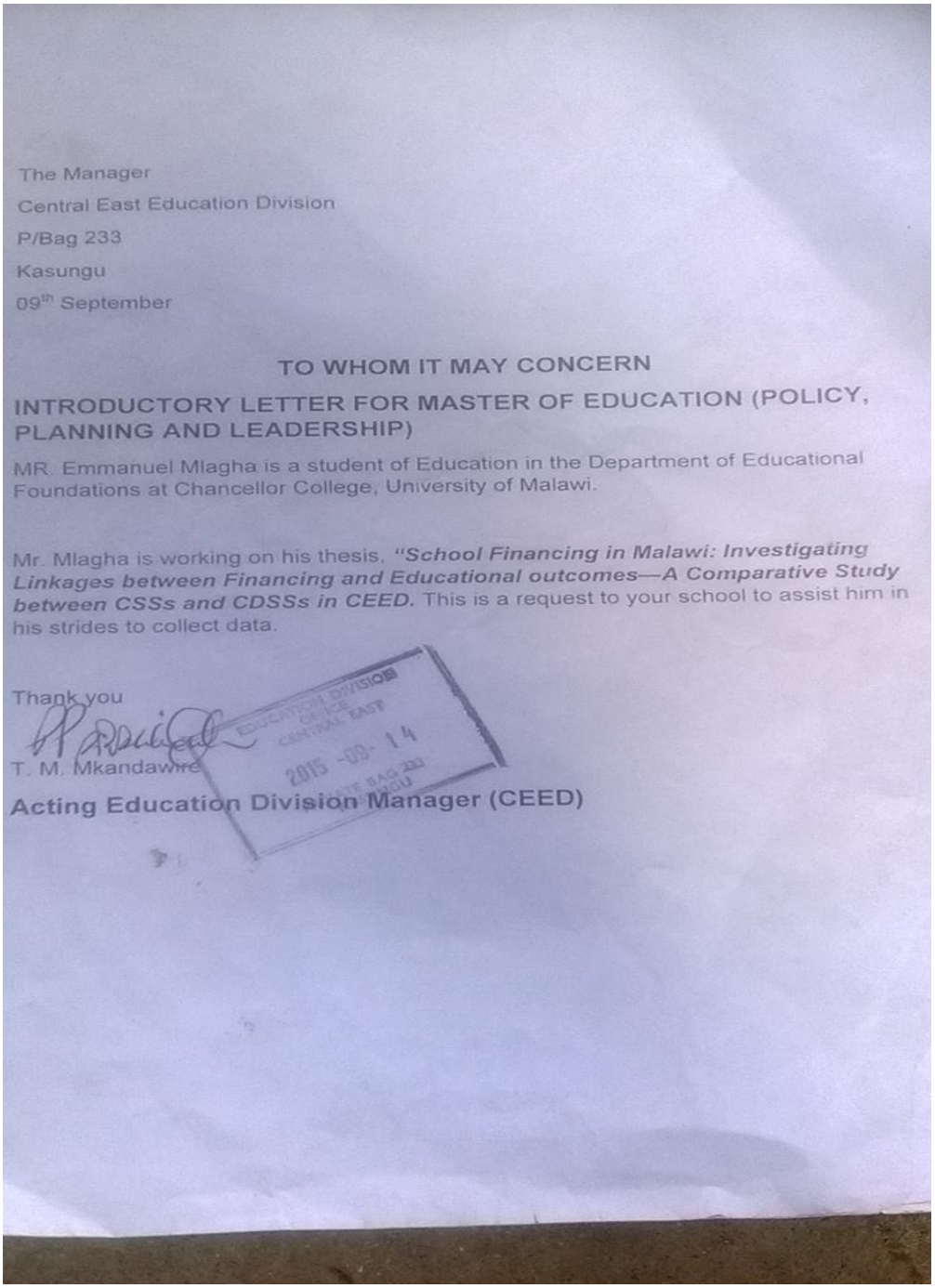
Thank you

Symon Ernest Chiziwa, PhD
HEAD, DEPARTMENT OF EDUCATIONAL FOUNDATIONS

UNIVERSITY OF MALAWI
CHANCELLOR COLLEGE
DEPT OF EDU FOUNDATION
2015 -05- 29
PO BOX 280
ZOMBA

Permission granted
03-09-15

Appendix 2: A letter of approval from Central East Education Division



The Manager
Central East Education Division
P/Bag 233
Kasungu
09th September

TO WHOM IT MAY CONCERN

INTRODUCTORY LETTER FOR MASTER OF EDUCATION (POLICY, PLANNING AND LEADERSHIP)

MR. Emmanuel Mlagha is a student of Education in the Department of Educational Foundations at Chancellor College, University of Malawi.

Mr. Mlagha is working on his thesis, ***"School Financing in Malawi: Investigating Linkages between Financing and Educational outcomes—A Comparative Study between CSSs and CDSSs in CEED.*** This is a request to your school to assist him in his strides to collect data.

Thank you

EDUCATION DIVISION OFFICE CENTRAL EAST 2015 -09- 14 P/BAG 233 KASUNGU

T. M. Mkandawire
Acting Education Division Manager (CEED)

Appendix 3: MSCE Pass Rates from 2010/11 to 2014/15

	F	G	H	I	J	K	L	M	N	O	P
2010/11	83	87	83	58	43	19	47	10	13	17.2	30
2011/12	82	81	81	80	44	46	55	20	63	54.3	39
2012/13	86	84	78	72	46	45	36	26	44	22.5	40
2013/14	84	85	88	72	38	51	31	15	32	39	29
2014/15	82	81	74	80	44	53	35	14	45	52.5	41

Key: F, G, H and I (CSSs); J, K (cost centre CDSSs), L, M, N, O and P (non-cost centre CDSSs)

Appendix 4: Number and qualifications of teachers

		SCHOOLs										
		F	G	H	I	J	K	L	M	N	O	P
YEAR	QUALIFICATION	0	0	0	0	2	6	7	4	5	3	7
	Diploma	11	7	8	8	3	2	0	1	1	0	1
2010/11	Degree	15	15	13	14	2	0	0	0	0	0	0
	PSTC	2	1	0	0	2	5	7	4	4	3	10
	Diploma	11	9	8	6	3	0	2	1	1	0	1
2011/12	Degree	15	17	17	14	2	2	0	0	0	0	0
	PSTC	0	0	0	1	2	6	7	4	3	2	10
	Diploma	12	5	8	10	2	1	3	1	2	0	1
2012/13	Degree	15	18	15	18	2	2	0	0	0	1	0
	PSTC	0	0	0	1	2	6	4	4	3	2	10
	Diploma	15	5	5	8	2	1	4	1	2	1	1
2013/14	Degree	15	25	17	16	2	2	0	0	0	0	0
	PSTC	0	0	0	0	2	6	5	4	2	3	9
	Diploma	9	7	5	5	4	1	5	1	2	0	1
2014/15	Degree	22	23	14	12	2	3	0	0	1	0	0

Key: F, G, H and I (CSSs); J, K (cost centre CDSSs), L, M, N, O and P (non-cost centre CDSSs)

Appendix 5: Approved and Receive Funding (ORT) (in Malawi kwacha) to schools from 2010/11 to 2014/15

		F	G	H	I	J	K	L	M	N	O	P
2010/11	Approved	13,000,000	5,000,006	5,495,433	5,100,000	1,320,000	840,000	324,000	324,000	324,000	324,000	324,000
	Received	12,550,000	5,000,006	5,000,000	5,100,000	400,000	350,000	297,088	124,000	189,000	180,000	160,000
2011/12	Approved	13,000,000	6,500,000	6,500,000	8,500,000	1,320,000	840,000	324,000	324,000	324,000	324,000	324,000
	Received	12,900,000	6,050,965	6,500,000	8,095,000	380,000	420,000	300,000	150,000	124,000	130,600	155,000
2012/13	Approved	18,000,000	7,000,000	7,150,000	8,500,000	1,320,000	1,080,000	324,000	324,000	324,000	324,000	324,000
	Received	17,696,224	7,000,000	6,624,769	7,980,000	700,000	540,000	385,000	175,000	270,000	280,000	260,000
2013/14	Approved	18,000,000	11,500,000	10,010,000	9,100,000	1,600,000	1,080,000	360,000	360,000	360,000	360,000	360,000
	Received	16,978,026	11,500,000	6,678,362	8,720,000	500,000	490,000	360,000	143,000	180,000	160,000	168,000
2014/15	Approved	22,000,000	11,500,000	12,000,000	11,500,000	1,600,000	1,080,000	660,000	660,000	660,000	660,000	660,000
	Received	20,898,960	11,500,000	6,903,884	10,681,000	650,000	640,000	450,000	240,000	440,000	260,000	280,000
2015/16	Approved	22,000,000	11,500,000	12,000,000	11,500,000	1,600,000	2,000,000	660,000	660,000	660,000	660,000	660,000
	Received											

Key: F, G, H and I (CSSs); J, K (cost centre CDSSs), L, M, N, O and P (non-cost centre CDSSs)

Appendix 6: Public education Financing—Per Student Spending (ORT)

	F	G	H	I	J	K	L	M	N	O	P
2010/11	**25302.42**	**14749.28**	**13513.51**	**14245.81**	**1149.43**	**1296.30**	**2285.29**	**1059.83**	**2032.26**	**450.00**	**400.00**
2011/12	21608.04	17796.96	17015.71	22675.07	1117.65	1076.92	2631.58	1102.94	1192.31	326.50	387.50
2012/13	30669.37	17241.38	16237.18	21055.41	2153.85	1339.95	2436.71	1325.76	1914.89	700.00	650.00
2013/14	28972.74	25959.37	17301.46	25647.06	1618.12	1183.57	1988.95	1153.23	1016.95	400.00	420.00
2014/15	32860.00	25000.00	16321.24	29183.06	1846.59	1553.40	2184.47	1935.48	2268.04	650.00	700.00

Key: F, G, H and I (CSSs); J, K (cost centre CDSSs), L, M, N, O and P (non-cost centre CDSSs)

Appendix 7: Actual school enrolments from 2010/11 to 2014/15

	F	G	H	I	J	K	L	M	N	O	P
2010/11	496	339	370	358	348	270	130	117	93	400	400
2011/12	597	340	382	357	340	390	114	136	104	400	400
2012/13	577	406	408	379	325	403	158	132	141	400	400
2013/14	586	443	386	340	309	414	181	124	177	400	400
2014/15	636	460	423	366	352	412	206	124	194	400	400

Key: F, G, H and I (CSSs); J, K (cost centre CDSSs), L, M, N, O and P (non-cost centre CDSSs)

Appendix 8: Average annual salaries for each grade in schools under study

GRADE	ANNUAL SALARY (MK)
TF (P5)	4, 244, 784
TF (P6)	3, 916, 752
TG (P7)	3, 067, 800
TH (P8)	2, 626, 620
TI	2, 304, 270
TJ	1, 413, 414
TK	1, 069, 584
TL	821, 898
M	674, 568
O	551, 988
P	534, 984
Q	517, 968
R	498, 372

Source: **Revision of Salaries in Civil Service Circular dated 14th October, 2014, Ref. No. HRM/RS/01/43**

Appendix 9: Questionnaire for the Head Teacher

Instruction: this questionnaire is aimed at getting vital information about your school please answer all questions as honest as possible. All your responses will be accorded with the highest degree of confidentiality.

PART I: PERSONAL INFORMATION *(Tick what is applicable)*

1.Sex: Male ☐ Female ☐

2.Age: ☐

PART II: ACADEMIC QUALIFICATION AND WORK EXPERIENCE (Tick what is applicable)

3.Highest qualification:

Degree ☐ Diploma ☐ Teaching Certificate ☐

4.How long have you been teaching? _____

5.How long have you been a head teacher? _____

PART III: INSTITUTIONAL INFORMATION

6.Name of the school: _____

7.Category of the school:

Conventional Day ☐ Conventional Boarding

Cost centre CDSS ☐ Non-cost Centre CDSS ☐

Non-Approved CDSS ☐

8.District: _____

To what extent are the resources equitably distributed between CSSs and CDSSs in Malawi?

9.Number of teachers with the following qualifications at this school for the past 5 years.

2013			
2014			

i. Degree

year	Males	Females	Total
2010			
2011			
2012			

ii. Diploma

year	Males	Females	Total
2010			
2011			
2012			
2013			
2014			

iii. Primary school teaching certificate

year	Males	Females	Total
2010			
2011			
2012			
2013			
2014			

10. What is the capacity of this school (number of students who are supposed to be enrolled at this school):_____
11. The actual number of students enrolled at this school for the past five years

Year	**Boys**	**Girls**	**Total**
2010/11			
2011/2012			
2012/2013			
2013/2014			
2014/2015			

12. Number of classrooms at this school:_____
12. What is the classroom capacity at this school? _____

Key infrastructure items (tick **YES** if present and **NO** if absent)

Science Laboratory	Yes	No
Computers	yes	No
Desks	Yes	No
Chairs for the students	Yes	No
School Library	Yes	No
Printer	Yes	No
Photocopier Machine	Yes	No
Head teachers‘ office	Yes	No
Staff Room	Yes	No
Electricity	Yes	No

Is the attainment of educational outcomes different between Conventions

Secondary schools and Community Day Secondary schools?

14. JCE and MSCE Pass rates for this school for the past five years

i. JCE pass rates

year	Pass rate
2010/11	
2011/12	
2012/13	
2013/14	
2014/15	

ii. MSCE pass rates

year	Pass Rate
2010/11	
2011/12	
2012/13	
2013/14	
2014/15	

To what extent does funding level affect students’ outcomes in CDSSs and CSSs?

15. Are there problems which are experienced as a result of level of financial resources available to the school? If any please state them.

_____

_ _____

16. Would you attribute academic performance of the students to the level of funding the school gets from government? Yes No

    Explain how?

    _____

    _____

17. What relationship there exists between the level of funding and students' performance at the school?

    _____

    _____

18. In times of critical financial problems, what school operations suffer most?

    _____

    –

    _____

19. How such operations that suffer as a result of critical financial problems affect pupils' outcomes at this school?

    _____

What are the sources of funding for CSSs and CDSSs?

20. What are the sources of funding to finance your operations at your school?

    Funding from government Internal collections

    Any other(s), please specify_____

THANK YOU VERY MUCH

Appendix 10: Interview Guide for the Head Teacher

Instruction: This interview is aimed at getting vital information about your school please answer all questions as honest as possible. All your responses will be accorded with the highest degree of confidentiality.

1. Name of the school:
   _____
2. Category of the school:
   Conventional Day ☐ Conventional Boarding
   Cost centre CDSS ☐ Non-cost Centre CDSS ☐
   Non-Approved CDSS ☐
3. District: _____

To what extent are the resources equitably distributed between CSSs and CDSSs?

4. How would you describe your work force (teachers) at your school it terms of:
   i. Numbers
   ii. Qualifications
5. What impact does the work force described in Q.4 above have on pupil performance at your school?
6. How would you describe pupil/teacher ratio and its impact on student educational outcomes?
7. How would you describe JCE and MSCE Pass rates for this school for the past five years.
8. How would you describe the trends in level of government funding and/or its remittance for this school for the past five years or so? What impact does it have on pupil performance at this school?
9. What has been the breakdown of the funding this school has been receiving from government as well as internally collected revenues for the past five years
10. What items are prioritised in the budget and get bigger share of the financial resources available to the school? Explain why?

To what extent does funding level affect students' outcomes in CDSSs and CSSs?

11. Are there problems which are experienced as a result of level of financial resources available to the school? If any please state them.

12. How satisfied are you with the academic performance of this school in both JCE and MSCE at national level.
13. Would you attribute academic performance of the students to the level of funding the school gets from government?
14. In times of critical financial problems, what school operations suffer most?
15. How such operations that suffer as a result of critical financial problems affect pupils‘ outcomes at this school?

What are the sources of funding for CSSs and CDSSs?

16. What are the sources of funding to finance your operations at your school?

THANK YOU VERY MUCH FOR TAKING PART MAY GOD BLESS YOU

Appendix 11: Questionnaire for the Teacher

Instruction: this questionnaire is aimed at getting vital information about your school please answer all questions as honest as possible. All your responses will be accorded with the highest degree of confidentiality.

***PART I: PERSONAL INFORMATION* (Tick what is applicable)**

1. Sex: Male ☐ Female ☐
2. Age: ☐

PART II: ACADEMIC QUALIFICATION AND WORK EXPERIENCE (Tick what is applicable)

3. Highest qualification:
4. Degree ☐ Diploma ☐ Teaching Certificate ☐
5. How long have you been teaching? _____
6. How long have you been a head teacher? _____

PART III: INSTITUTIONAL INFORMATION

Name of the school: _____

7. Category of the school:
   Conventional Day ☐ Conventional Boarding
   Cost centre CDSS ☐ Non-cost Centre CDSS ☐
   Non-Approved CDSS ☐
8. District: _____

To what extent are the resources equitably distributed between CSSs and CDSSs?

9. How would describe students enrolment at this school for the past five years.
   Tick
   1. To capacity ☐ 2. Below capacity ☐ 3. Beyond capacity ☐

10. Key infrastructure items (tick **YES** if present and **NO** if absent)

Science Laboratory	Yes	No
Computers	yes	No
Desks	Yes	No
Chairs for the students	Yes	No
School Library	Yes	No
Printer	Yes	No
Photocopier Machine	Yes	No
Head teachers‘ office	Yes	No
Staff Room	Yes	No
Electricity	Yes	No

11. What has been the approved budget and/or how much has been remitted as well as internal collections for this school for the past five years and this year 2015?

To what extent does funding level affect students' outcomes in CDSSs and CSSs?

12. Are there problems which are experienced as a result of level of financial resources available to the school? If any please state them.

_____

13. Would you attribute academic performance of the students to the level of funding the school gets from government? Yes No
14. Explain how?

_____

15. Are the financial resources used for maximum benefit of the students at this school?

Yes No

16. If yes, explain how.

_____

17. What relationship there exists between the level of funding and students‘ performance at school?

_____

18. In times of critical financial problems, what school operations suffer most?

_____

19. How such operations that suffer as a result of critical financial problems affect pupils‘ outcomes at this school?

What are the sources of funding for CSSs and CDSSs?

20. What are the sources of funding to finance your operations at your school?

Funding from government ☐ Internal collections ☐ Any other(s), please specify:

_____

THANK YOU VERY MUCH

MAY GOD BLESS

Appendix 12: Interview Guide for the Teacher

The purpose of this study is to **investigate the association between school financing and educational outcomes in CSSs and CDSSs in CEED**. This study is for academic purposes only and the results will be treated with much needed confidentiality. Therefore, be assured that no names will be mentioned in the process of this study.

Thank you very much for taking part.

PART I: PERSONAL INFORMATION (tick what is applicable)

1. Sex
2. Age

PART II: ACADEMIC QUALIFICATION AND WORK EXPERIENCE **(Tick what is applicable)**

3. Highest qualification
4. How long have you been teaching?

PART III: INSTITUTIONAL INFORMATION

5. Name of the school
6. Category of the school
7. District
8. What are sources of funding to finance your operations at your school?
9. Are the financial resources used for maximum benefit of the students at your school?
10. Would you attribute academic performance of the students at your school to the level of funding the school gets from government?
11. What relationship there exists between the level of funding and students' academic performance at school?
12. In times of critical financial problems, what school operations suffer most?
13. How such school operations that suffer as a result of critical financial problems affect students' educational outcomes at your school?

THANK YOU VERY MUCH FOR TAKING PART

MAY GOD BLESS YOU