Determining Predictors of Internal Efficiency of Public Universities: Case of Selected Universities in Malawi

By

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DECLARATION

I, Biston Chitope, declare that I am the sole author of this thesis and that during the period of registration, it will remain as such. This thesis is a product of my own research work and where other people's work was used, it was duly acknowledged.

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DEDICATION

This work is dedicated to my mother Mrs. Mavis Mulinde and my sister Charity Netsai Chitope for financial and moral support without which it would not have commenced and been completed.

ABSTRACT

The purpose of the study was to determine the predictors of internal efficiency in the Malawian Public Universities. Four research questions were formulated to guide the study. Specifically, the study sought to investigate the effect of lecturer student ratio, teaching/learning materials and physical facilities on internal efficiency of public universities in three selected public universities in Malawi. The three public universities were selected using simple random sampling technique in order to have a representative sample of the population. The study adopted a descriptive survey and exploratory sequential design. Such being the case, it used questionnaires and interviews. In the first phase, university managers and senior lecturers were interviewed. The qualitative data from the first phase informed the quantitative data which was collected in the second phase of the study which targeted student participants. There were six public universities in the country and from these, a sample of three universities were drawn using simple random sampling technique. In addition to this, 15 university managers were sampled, three from each of the three universities using snow ball sampling while 9 senior lecturers, 3 from each university were sampled using availability sampling. University managers and senior lecturers were used to solicit data in the first phase. From the three universities, 393 students who were selected using stratified systematic random sampling technique using programmes as strata were involved in the study. Data was collected through the use of questionnaires which were administered to lecturers and students, open ended interviews were conducted to solicit data from registrars, quality control officers and deans; documentary analysis and observation was used for triangulation and verification. Qualitative data was analysed using thematic content analysis while quantitative data was analysed using SPSS version 22. The study revealed that in Malawian public universities internal efficiency was overally low. The study revealed variables that potentially impact on internal efficiency such as high lecturer to student ratio, teaching/learning materials, library capacity, laboratory

capacity and unbearable workloads as main factors that affect internal efficiency in public universities. The study revealed library capacity as the major predictor of internal efficiency in Malawian public universities.

The study recommended Government to prioritise the availability of adequate library facilities in public universities for efficiency and effective learning. Government should consider university capacity when enrolling students. Loans given to needy students should be adequate to cater for their needs throughout the academic semester and should be reviewed periodically and adjusted in line with cost of living. Proper modalities should be put in place to recover the money and to ensure that the loans are given to the deserving students. Government should consider going back to the cafeteria providing system so that students can be guaranteed decent meals at a subsidised cost. The study is significant to the Ministry of Education Science and Technology and other education stakeholders as it will reveal factors which affect the internal efficiency of public universities. This will help the Ministry of Education Science and Technology to come up with better ways to address the issue of shortage of space in public universities while maintaining the efficiency and quality of education. Findings of the study will inform Government on Higher Education policy formulation.

GLOSSARY OF ACRONYMS/ABBREVIATIONS

EGENCO	Electricity Generation Company
ESCOM	Electricity Supply Corporation of Malawi
KUHES	Kamuzu University of Health Sciences
LUANAR	Lilongwe University of Agriculture and Natural Resources
MANEB	Malawi National Examinations Board
MoEST	Ministry of Education Science and Technology
MSCE	Malawi School Certificate of Education
MUST	Malawi University of Science and Technology
MZUNI	Mzuzu University
NCHE	National Council for Higher Education
SHEAMA	Strengthening Higher Education Access in Malawi Activity
SPSS	Statistical Packages for Social Sciences
UN	United Nations
UNIMA	University of Malawi
VTC	Vocational Training Colleges

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CHAPTER ONE: INTRODUCTION

1.1 Chapter overview

This chapter focuses on background of the study, statement of the problem, main objective, specific objectives, research questions, hypothesis, purpose of the study, justification of the study, expected results, significance of the study and theoretical framework.

1.2 The study background

In Malawi, higher education just as is the case with all other countries, is crucial not only for personal benefits but also for the gross development of the country. Although this is the case, Malawi has seven public universities which are University of Malawi popularly known as UNIMA, Mzuzu University abbreviated MZUNI, Malawi University of Science and Technology (MUST), Lilongwe University of Agriculture and Natural Resources (LUANAR), University of Malawi, Malawi University of Business and Applied Sciences and Kamuzu University of Health Sciences, were established by converting the constituent colleges of the prestigious University of Malawi into fully fledged public universities (Ministry of Education Science and Technology, 2020). What used to be Chancellor College is now University of Malawi, Malawi Polytechnic has been turned to Malawi University of Business and Applied Sciences whereas Kamuzu College of Nursing and Malawi College of Medicine have been bound into Kamuzu University of Health Science (KUHES).

These universities are against a population of 17,563,749 people in the country (National Statistics Office, 2018). Such being the case, universities fail to take on board all the deserving students due to inadequacy of space. For instance, the Ministry of Education, on July, 18 2023 in a public release made a pronouncement that 8552 students had been selected into public universities for that year representing 46% of the total legible students. This number was against the total number of 18471 who eligible but could not be selected due to lack of space

which means about 10000 legible candidates were left out (Chitete, 2023). MoEST (2020) admitted that there was low access for secondary graduates to higher education due to limited space in public universities. However, the Ministry of Education promised that it had set, shortage of space in public universities and lack of ODL/e-learning programmes as one of the key priority issues the Ministry of Education was aiming to address in the 2020-2030 National Education Sector Investment Plan (NESIP).

Lilongwe University of Agriculture and Natural Resources took 1945 students abode, representing 10.5% of those who were qualifying for entry into the public universities in 2023. Mzuzu University took 1386 (7.5%), Malawi University of Science and Technology got 613 (3.3%), Malawi University of Business and Applied Science, took 1605 (8.7%), University of Malawi got 2090 (11.3%), and Kamuzu University of Health Sciences got 743 (4%), (Chitete, 2023).

With government intervention mechanisms, there has been a tremendous increase with regards to admissions into public universities. Malawi government has achieved this by constructing MUST and increased intakes for all public universities. For instance in 2019, 46,771 passed MSCE and out of this number, 30232 were absorbed into the available four public universities through different programmes such as generic, upgrading and ODL, representing 64.6%. In 2020, out of 138 310 students who sat for MANEB examinations, 57293 passed. Out of this number 19772 were admitted into the available four public universities representing 34.5% (Malawi Education Statistics, 2020). These figures show that there has been a rapid increase in enrolment from the 0.3% enrolment in 2010 (World Bank, 2016).

Although public universities have increased intake of students tremendously, little has been done to ensure that public universities can cope with massive enrollments. Very little has been done to increase human and non-human resources to handle large volumes of students.

Lecturer-student ratio has gone up, the same lecturers are being used to teach various programmes resulting in heavy workloads. There is shortage of infrastructure such as laboratories, classrooms, teaching equipment and student accommodation. This has an impact on internal efficiency of an institution such as a university.

World Bank (2016) observed that this rapid increase of the size of student intake to address the issue of shortage of space in public universities has a negative impact on quality of service provision. The government has failed to provide both human and material resources to keep in pace with the increment in student numbers. This has resulted in unbearable workload on the part of the teaching staff.

To make matters worse, the country has shortage of skilled labour force to warrant them to take up teaching posts in institutions of higher learning (World Bank, 2016). The situation has forced in some instances the universities to employ under qualified personnel to bail them out in addition to hiring lecturers from other universities to teach on part-time basis during their spare time to beef up their academic staff. The hiring of adjunct lecturers from other universities to work on part-time basis has resulted in students being taught during the weekends and at times, during awkward hours. This has the potential of impacting on the internal efficiency since lecturers play a pivotal role in insuring and maintaining quality outcomes at the end of the day.

Academic staff numbers have not been increased to ensure that the number of lecturers is adequate enough to maintain the recommended lecturer -student ratio. Most of the public universities have stopped or minimised using external examiners from other countries as a way of quality assurance due to lack of funding although it is an established practice in almost all the common wealth countries (World Bank, 2016).

Huge sums of money are pumped into public universities inform of investments by government and the private sector. A good example is the provision of scholarships which is both, from external and national sources. Some of the organisations which fund MZUNI students, for instance, include National Bank of Malawi, Standard Bank, Camfed, Ministry of Education, First Capital Bank, Soko Fund, MZUNI Student Scholarship Fund, Alima Hommed Trust Scholarship, SHEAMA, Medic to Medic and MZUNI Trust Fund.

During 2019/2020 Financial Year, about 22% of the education sector programme recurrent budget was allocated and the approved 2019/2020 Financial Year to the tune of MK49.5 Billion to be spent on developmental projects in the education sector. Out of this amount Higher Education was allocated the largest proportion of the development budget of about 39%. Some of the projects which are being implemented, are the construction of the burnt Mzuzu University Library, provision of support to Higher Education Science and Technology, as well as building Eastern and Southern Africa Education Centre of Excellence Project (Malawi Education Statistics, 2020). Since a lot of money is required to train a student, huge sums of money are allocated to higher education there is need for universities to be internally efficient to make sure that the scarce resources they are allocated from both public and private investors are being optimally utilized.

Institutions of higher education worldwide are going through difficult financial crisis hard to deal with especially following the global economic meltdown of 2008. The situation has led European policy makers and institutions of higher education to focus their attention on internal efficiency of universities as funding patterns are changing (EUA, 2019). Reduction in funding patterns has resulted in student fees hikes and reduction of student subsidies on physical facilities (Hirsch & Weber, 1999).

African countries have not been spared by the funding challenge to institutions of higher education as most African countries depend on European countries of budget support. In sub-Saharan countries, higher education is underfunded (Experton & Fevre, 2010). In Malawi, although the government spend about 28% of its education budget on higher education, the amount is not adequate to support the ever growing enrolments. In addition to that, the universities cannot rely on student tuition fees to effectively supplement low funding as the amount of tuition fess is too low since it is set by the government (World Bank, 2014). The situation calls for universities and other institutions of higher learning be efficient in their operations so that the little resources they get can be put to good use thus to achieve their goals. However, Kenny (2008) warns that over-emphasising on internal efficiency can have a negative impact on the end product. The emphasis to produce more using less inputs can potentially compromise teaching and learning quality.

There is a lot that has been written globally on internal efficiency in education institutions, however, not much of the available studies has focused on internal efficiency of public universities. Some of the few studies that were conducted on internal efficiency in higher education institutions include a study that was done by Ileuma Senimetu in South Nigeria on "school related factors as predictors of internal efficiency of public university students" (Senimetu, 2017).The results revealed that there is a significant relationship between school organisational climate and internal efficiency as well as a joint effect between school related factors and internal efficiency. Another related study was done in Kenya by Okunyi, Nyerere and Kariuki on " internal efficiency of public vocational training centres in Kenya, " in which it was found that internal efficiency was low owing to low enrolment, low tutor utilisation, high dropout rate and low completion rate (Okinyi, Nyerere and Kariuki, 2021). The study on internal efficiency of higher learning institutions is crucial as it provides an insight into improving internal efficiency in higher learning institutions in developing countries. Since such

studies were conducted in very few countries, Ithuta (2014) suggested that they be done in other places to establish whether similar or different results will be realised.

1.3 Statement of the problem

Government has been rapidly increasing enrolment in public universities in Malawi and little has been done to proportionally increase human and non-human resources. For example, from 2018 to 2019, MZUNI increased enrolment from 6826 to 7933 students, representing a 16% increase. For the same period, MUST increased its enrolment from 1221 to 1984 students, representing 62% increment. The 2020 Education Statistics Report in support revealed that enrollments in universities had really increased immensely especially from the year 2018. Overally, an increase of 14.3% was registered in the academic year 2019/2020 alone (MOEST, 2020).

The minimum standards for higher education institutions lecturer to student ratio is supposed to be 1:18 per programme as stipulated by Malawi Council for Higher Education, the board established by the act of parliament of no.15 of 2011 under section (j) and mandated to oversee the functions of public universities in Malawi. In the same vein, UN News and World Report (2021) recommended the best student: lecturer ratio of less than 20 students per lecturer in a class. The report explained that next to this ratio is 20 to 25, while having above 50 students in a class to be taught by one lecturer would result in reduced achievement. Due to the rapid increase in number of students per intake, lecturer to student ratio has by far been bloated. A cross check on the ground shows that the number of students in classes in universities is by far more than doubled. This has the potential negative impact on internal efficiency of public universities which in turn affects the management of the quality of education. Although Government has made significant strides of tackling the issue of shortage of space in Public

Universities, the issue of internal efficiency in the Malawian Public Universities is yet to be addressed.

To develop education and training, there is need for the government and all stakeholders to make sure that higher education is efficiently managed so that the already constricted allocated resources are also not wasted. Since the country has a long list of candidates waiting to access the same Public Universities, issues of drop outs and repetition should be addressed with haste apart from increasing enrollments. Government and various other stake-holders pumps in large sums of money inform of both financial and non-financial resources in Public Universities (Malawi Education Sector Investment Plan, 2008-2018 & 2020-2030). Such being the case, there is a dire need to determine the level of internal efficiency in Public Universities to make sure that the scarce resources the nation allocates to them are being efficiently used.

Related research was conducted on internal efficiency of public universities by Ileuma Senimetu in South Nigeria on "school related factors as predictors of internal efficiency of public university students" (Seminetu, 2017). Another related study was conducted in Kenya by Okunyi, Nyerere and Kariuki. The study focused on" internal efficiency of public vocational training centres in Kenya" (Okunyi, Nyerere & Kariuki, 2021). In Malawi, no study on internal efficiency of public universities has been done. The researcher would therefore, like to fill the gap by carrying out a study to determine predictors and levels of internal efficiency in public universities.

1.4. Main objective

To establish the major predictors of internal efficiency in Public Universities.

1.4.1 Specific objectives

Specifically, the study was guided by the following objectives:

(i) identify predictors of internal efficiency in order to establish levels of internal efficiency in public universities

(ii) establish the best predictor of internal efficiency in Public Universities

(iii) explore views of university managers (including some senior lecturers) on factors that affect internal efficiency in Public Universities

(iii) analyse views of university managers on strategies that can be implemented to improve the internal efficiency of Public Universities

1.5 Research questions

The study sought to answer the following research questions:

1. What are the levels of internal efficiency of public universities for the period 2015-2018?

2. What is the best predictor of internal efficiency in public universities?

3. What are the university managers' views of factors which affect the internal efficiency of public universities?

4. What are university managers' views on how to improve internal efficiency of public universities?

1.6 Hypothesis

1. There is no relationship between predictors of internal efficiency (e.g. Lecturer: student ratio) and internal efficiency in public universities.

Ha: There is a relationship between predictors of internal efficiency and internal efficiency in public universities.

1.7 Purpose of the study

The purpose of the study was to find out the major predictors of internal efficiency in the Malawian public universities and recommend improvement strategies.

1.8 Justification of the study

For a long time, Malawi has been battling with the issues of shortage of space to accommodate MSCE graduates from both public and private universities into public universities. However, instead of building additional public universities, the government resorted to increasing the number of students per intake in public universities without taking care of the proportionality of the amount of resources required to cater for the additional students. This has had a negative impact on the internal efficiency of public universities. A revelation of predictors of internal efficiency in public universities will help to enlighten responsible authorities of the effects of not proportionally increasing human and non-human resources to match with the increased numbers of students in public universities and to suggest corrective measures.

1.9 Expected results

The study was expected to reveal variables such as lecturer/student ratio, teaching /learning materials, library capacity, laboratory capacity and unbearable workloads as major predictors of internal efficiency in public universities.

1.10 Significance of the study

The study is significant in that it will reveal factors which affect the internal efficiency of public universities which when over looked, can be counterproductive. This will help the Ministry of Education Science and Technology, its partners and other stakeholders to come up with better

ways of addressing the issue of shortage of space in public universities while maintaining the efficiency and quality of education in such public universities.

1.11 Theoretical framework

The study was guided by the education production function theory. The theory was propounded by Mace in 1979. The theory explains the process of producing the end product of the education process. It shows the relationship between education inputs and the resultant outputs after the education process. According to Mace (1979) in Ithuta (2014), the process of producing graduates use people and other resources as its raw materials. In the case of public universities, these people include lecturers and other academic and non-academic staff members who serve students directly or indirectly to achieve their academic goals of which, the teaching staff is the most crucial in this process. On the other hand, other resources include teaching/learning materials, library and learning resource centres, classrooms, laboratories, cafeteria and hostels, among many others as shown in the conceptual framework figure 1.1. The output of the process is internal efficiency and the indicators of this internal efficiency are survival rates, dropout rates, withdrawal rates and repetition rates.

Using this theory, the study was designed to show that there would be the impact of predictors of internal efficiency such as lecturer to student ratio, teaching/learning materials and overwhelming workloads on the university's internal efficiency if not well balanced.

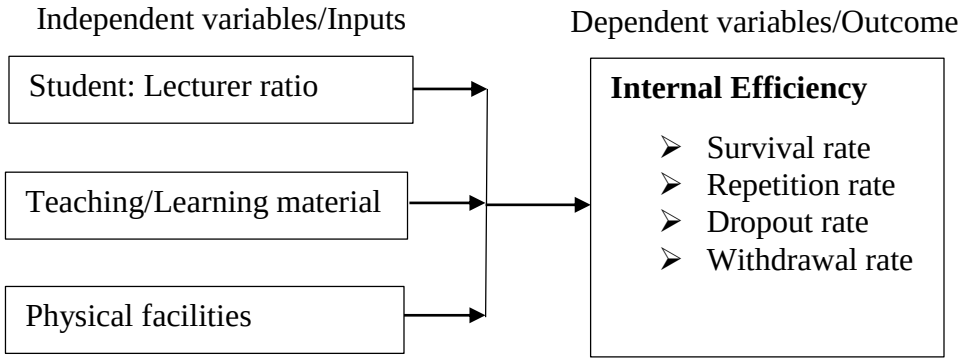

Figure 1.1: Conceptual framework

CHAPTER TWO: LITERATURE REVIEW

2.1 Chapter overview

Literature review helps to inform the researcher on what others have written concerning the researcher's area of interest, especially the topic of study. It serves as a guide to the researcher as he/she digs deeper into the research. This chapter will mainly focus on the literature review which is more related to the researcher's study which is the internal efficiency of universities.

This study aimed at determining the predictors of internal efficiency of public universities in Malawi: A case study of selected public universities in Malawi. This chapter presents an overview of crucial literature by examining factors which affect the internal efficiency of a higher education institution, particularly public universities. In addition to the presentation of related literature, the chapter will also present the theoretical framework guiding the study clearly stating how the study will be guided by the theory.

2.2 The concept of efficiency

The term efficiency is frequently used in economics in the production model where it means getting the most output from the invested inputs (Nasib, 2017). A system is said to be efficient when it results in getting more returns after injecting less resources. Economic efficiency refers to a situation whereby resources are used in the most possible way that will result in maximisation of output and eradicating of wastage (Investopedia, 2020). It is also a measure of "how well an activity or operation is performed" (Viljoen, 1994:9). This implies that efficiency is the measurement of an organisation's ability to do well what it is established to be doing thus using the few available resources in such a way as to produce more products or to achieve more objectives.

2.3 Education efficiency

Kosor (2013) applied the concept of efficiency to education. However, he observed that this application is complicated because an institution of education, unlike a production firm, has a multiple of both inputs and outputs. Inputs are divided into three categorical types which are endogenous, exogenous and financial inputs (Ntawiha, 2011) in Bwalya (2022).

Endogenous inputs refers to the resources which the university can control. It includes lecturer characteristics, student-lecturer ratio, classroom space, physical facilities, teaching-learning materials and the institution's management (Ntawiha, 2011) in Bwalya (2022). Exogenous inputs refers to inputs which the institution has little or no control over. These include family economic status, geographical location and the student's academic foundation. Financial inputs is the amount of money which is spent in order to produce the output. It includes expenses incurred on paying lecturers, support staff and expenses incurred on students (Ntawiha, 2011) in Bwalya (2022).

Outputs of education production include graduates, skills and attitudes (Barzozowski & Keyolar, 2017). An education production system is efficient when it produces many graduates while having less repetition, less dropouts and fewer or no withdrawals on academic grounds (Ghose, 2017).

Education efficiency can be divided into two broad categories which are internal and external efficiency. Internal efficiency is the ability of a teaching and learning institution to train students into graduates within a specific period of time (Abbah eta.l, 2022). It is the institution's ability to retain the students it started with at the beginning of the study cycle up to the end of the study period (Mutegi, 2019). Internal efficiency tracks the students flow from the time they are enrolled to the time they complete their studies to ensure that there is minimum dropout and repetition (Ngesa et al, 2017). An education institution is said to be internally efficient

when it turns out its students into graduates in the most efficient way, thus without wasting, delaying or repeating students (Ngesa et al, 2017). An internally efficient university produces its graduates at the least cost (McCormick, 1981).

External efficiency refers to the gains, returns or payback that is obtained for investing in education which can be measured by the personal social and economic benefits (UNESCO. International Bureau of Education, 2022).

2.4 Enrolment and internal efficiency

Increasing student enrolment irresponsibly, thus without bothering to take care of the required resources has a negative implication on almost if not all the determinant factors of internal efficiency in an education institution, such as a public university. This is because an increase in enrolment has an impact on other inputs into the education production system such as teacher: pupil ratio, adequacy of teaching and learning material, lecturer workloads, adequacy of infrastructure such as libraries, laboratories, classrooms, hostels, cafeteria and other facilities which in turn impact on the internal efficiency of the system which can be seen through efficiency indicators such as dropout rate, withdrawal rate and repetition rate.

Adimonyemma, Akachukwu, and Igboabuchi. (2018) in their study on the impact of class size on student performance explained that at global level as the population grows, class sizes are negatively affected and large class size has a negative effect on students' performance. This is because when enrolment is raised, it implies an increase on universities expenditure on consumables such as water, electricity, internet bills, increased bills on teaching and learning materials, increased wage bill to cater for additional lecturers be it permanent or adjunct, increased non-academic support and non-support staff such as library assistants, cleaners, security guards, cafeteria personnel and so on. This as Owoeye and Yara (2011) point out has an impact not only on students but the whole system thus administration, budget quality and

then student performance. Increased enrollments if not properly planned strain institutions' budgets resulting in poor acquisition of resources which in turn, has undesirable effects on internal efficiency of the institution.

Lecturer-student ratio is normally associated with class size. The general belief is that smaller class size necessitate better teaching and learning. This belief is globally shared by many nations such as USA, European countries, China, Japan and African nations (Blatchford & Lai, 2012).

According to Adimonyemma, Akachukwu, and Igboachi (2018), class size is one of the crucial determining factors of students' academic achievements which lecturers have not much control. Class size is defined as the number of students in a class which the lecturer is responsible for (Ajayi et al, 2017). Class size is one factor which can be used to predict efficiency of an education institution such as a public university. Several writers have alluded to the fact that smaller class size are desirable for effective teaching and knowledge acquisition, while larger classes have been faulted for their contribution to low internal efficiency in education institutions. Some researchers such as Kedney (2013) have supported the idea that class size be used as an instrument to measure the internal efficiency of an education institution. Imoke (2006) supports this assertion saying that when an education institution has adequate classes in which students are not crowded, internal efficiency is likely to be high due to a conducive teaching and learning environment. Sizable classes mean high lecturer: student ratio and more student: lecturer interaction time which promotes high students achievement and hence, high internal efficiency.

Doyle (2014) observes that present day education advocates for a conducive learning environment which caters for student interests, comfortability and fulfilling the student's basic needs. This can be attained through the provision of a classroom environment where learners

learn without disturbing one another which can be done by the management of class size (Garret, 2008).

Although many studies have gone in favour of small classes, there are some studies which have criticised the use of small classes dismissing it as having very little effect on student internal efficiency. For instance, Azigwe, Kyriakides, Panayiotou, and Creemers (2016) argue that students learn better in groups such that they see no problem with having large classes which promotes the use of group work. They state that the belief that small classes result in better students' achievement is based on unrealistic evidence. The argument holds that large classes are actually advantageous in that they help education institutions to spend less in that many students can be taught by the same lecturer which saves money to employ and pay more if classes are small. It also cuts on the cost of constructing additional classes to accommodate learners in the event of having small classes (Adimonyemma, Akachukwu, & Igboachi, 2018).

However, in most developing countries such as the Sub-Saharan countries, class size is problematic. It puts a lot of pressure on teachers in such a way that their effectiveness is not possible. For instance, due to overwhelming lecturer/student ratio, lecturers are not able to provide adequate assistance to students such as individualised attention. According to Adimonyemma, Akachukwu, and Igboachi (2018) in Nigeria, the situation of class size has gone to an extent that students who sit at the back of the class can have their own groups discussing other issues not related to the class whilst teaching is in progress without the teacher knowing. Due to the number of students, lecturers refrain from giving students a lot of work for the fear of the number of scripts to mark. This greatly reduces very much internal efficiency in universities. This notion is supported by Rubin (2012) who concluded that students' achievement decreases with class size increase.

2.5 Physical facilities

According to Akungu (2014), physical facilities make a difference in students' academic performance. The absence of inadequacy of physical facilities in universities has a negative impact on the academic performance of its students. Physical facilities in universities include libraries, classrooms, lecture theatres, hostels, cafeteria, and power back up facilities, toilets and the clinic. DFID (2007) posits that students learn better when there are adequate and quality physical resources. The shortage of physical facilities such as laboratories and classrooms cause a lot of inconvenience to both lecturers and students

2.6 Teaching-learning materials

Adalikwu and Iorkpilgh (2013) observed that students who are taught with the aid of an instructional material have better performance compared to those who are taught without. In universities, these include things like laptops, projectors, chalk, chats and models. According to Adalikwu and Iorkpilgh (2013) the advancement in the field of technology has brought in another dimension of materials which make it simple to create devices which help the teacher to minimise rote learning by engaging them through exciting and explicit means. That can be achieved by incorporating graphics which include chats, posters, sketches, cartoons, graphs and drawings (Soetan, 2010). The use of graphics is advantageous in that it incorporates words, drawings and pictures. These help students to visualise and grasp concepts easily as well as to be able to remember what was taught more easily. Students will perform better if they learn in laboratories where they have equipment, chemicals rather than in laboratories without.

2.7 Review of related studies

Okinyi et al. (2021) came to the realisation that Vocational Training Centres in Kenya were wasteful of the nation's resources through high drop outs, low enrolment and low completion rate. In other words, there was low internal efficiency in public vocational training centres.

Internal efficiency according to Durosaro (1988) in Seminetu (2017), is an institution's ability to train students into graduates at a lower cost while not wasting much resources by having many drop outs, many repeaters and many failures. Fabunmi (2003) in Seninetu (2017) agrees with this by saying that in order for an institution to be considered efficient, it is supposed to train its students within the course's time frame. This helps the institution to save government resources because if students repeat, it means both government and the parents will spend additional funds on the student. If students drop out after learning for some time, it means funds spent on him would have been thrown to the drains as the person will not be going to serve the nation as required. Time would have been wasted together with other resources.

In the Malawian situation, instead of low enrolment being an indicator of low internal efficiency as it is the case in Kenyan VTCs, public universities are overloaded with students. It is one factor which has caused one of the predictors of internal efficiency lecturer to student ratio to be very high as the government is increasing enrolment without proportionally taking care of the other vital inputs.

The other indicator which is not accounted for in the two papers which is an indicator of internal efficiency in Malawi is student withdrawal on academic grounds. This is an indicator which can show that there is low efficiency in an academic institution such as a public university. For instance, if the withdrawal rate is very high, it is obvious that in that institution, efficiency is low in terms of producing graduates. Similarly, resources will be wasted just as in the case of dropouts. The lesser evil would probably be following the option provided by (NCHE, 2015) that instead of totally withdrawing students who fail, the suggestion is that such students be given a chance to complete their education by transferring them to other programmes within the same faculty or university as long as they meet the requirements for the programmes they are being transferred to. This can really help the students, especially given that in Malawi, students are selected not only on their first option but they can be picked on their second or

even third choice of courses during the selection process. Chances are high that students may not be doing well because they are pursuing an area they are not good at due to the selection choice they were picked on.

The study by Okinyi et al. (2021) found that the cause of dropout, low enrolment and low completion rate, was due to lack of both tuition and examination fees. As an intervention mechanism Nganga (2018b) cited by Okinyi et al. (2021) pointed out that the Kenyan government revised downwards school fees for VCTs to cab the issue of dropout and low enrolment, and has embarked on giving students loans, trained more tutors and increased funds for the capitation of students. Malawi can also learn from this. For instance, the government may as well put more funds in the coffers of the loans board as well as subsidising fees and building more hostels so that drop out can be lessened. The Malawian government can also deal with the issue of low completion rates by providing more funds for training and employment of more teaching staff to reduce lecturer student ratio which has a direct impact on student completion rate.

According to Seminetu (2017) lecturer: student ratio can show the size of workload each lecturer has. He points out that the Nigerian Policy on Education (1981) stipulates that the teacher: pupil ratio at primary school should be 1:40 while that of secondary school should be 1:35. Although it is not clear as to how many should be for public universities, in Malawi the recommended lecturer: student ratio is 1:18, according to Malawi minimum standards for higher education institutions as stipulated by (NCHE, 2015). A lower lecturer: student ratio is desirable as it gives students more time to interact with their lecturer on one to one basis, assisting learners with tutorial support time when they do not understand in class. This as Seminetu points out, has a potential of raising students' performance thereby improving survival rates, lowering dropouts and repetition in public universities. The researcher agrees with this because when a lecturer has a manageable class, she will have more time to provide

individual support to students, has adequate time to make assignments, prepare for next presentations and rest. This makes her to perform better and hence improved internal efficiency in public universities.

Seminetu (2017) found that there was a strong relationship between school organisational climate and student internal efficiency in Nigerian public universities. He alluded to the fact that poor internal efficiency is dependent on curriculum deficiency. He found that in South-West Nigeria, curriculum deficiency was as a result of not involving lecturers in the development process of the curriculum. If lecturers are not involved in the development of the curriculum, they may not be able to give the best to their students. In the case of Malawi, the National Council for Higher Education (NCHE) set as one of the minimum standards for higher education institutions the requirement to involve students, lecturers, alumni, professional boards, future employers and other interested parties and committees in designing new or revising existing educational programmes. This helps to reduce the effects curriculum deficiency has on internal efficiency. However, although curriculum deficiency is one of the predictors of internal efficiency, this study will focus on other predictors.

The study by Seminetu revealed that there is a strong relationship between school organisational climate and internal efficiency (dropout rate, survival rate, repetition rate and withdrawal rate) (Seminetu, 2017). He found that even students themselves explain that a library is one of the most crucial resources which help to improve their internal efficiency. Without a library, students are likely to fail exams and not to complete their courses. In Malawian public universities, libraries may gradually be overwhelmed by the number of students wanting to access books and other reference materials due to increased enrollments without expanding libraries or constructing additional ones. The libraries which are in most public universities are the ones which were constructed when the number of students was small. In the case of VCTs in Kenya in Okinyi et al. (2021), the issue of library space is not a problem

since their worry is low enrolment, meaning that resources such as libraries are being underutilised.

In a related study, Seiler, Jone, Landy, Olds, and Young (2006) in Seminetu (2017) realised that teaching and learning materials and facilities are a necessity to learning. These include things like markers, chalk, projectors, and laptops for lecturers, laboratory equipment and stationery. These materials are very crucial because when they are put to good use, they aid learning and understanding of concepts being taught as well as make lesson delivery easier for the lecturers. Effective lesson delivery in turn means improved student performance and hence, improved internal efficiency (reduced dropout rate, withdrawal rate and repetition rate).

Fubunmi (2000) in Seminetu (2017) bemoaned the condition of university physical infrastructure in developing countries pointing out that some had leaking roofs, no doors and window panes, cracked walls and lacking instructional facilities. Infrastructure aids to internal efficiency of an education institution. NCHE (2015) require that all universities in Malawi should have universal access infrastructure which can help the physically challenged students to have access to classes and other buildings in the university. This includes putting ramps for wheel chairs and fixing toilets with handle rails and ensuring that toilet doors open from outside. This helps to improve internal efficiency on the part of physically challenged students. The examination of different literature shows that there is a link between education institutions such as public universities inclusivity and internal efficiency.

Seminetu (2021) in his study used random sampling technique to choose both subjects of the study and public universities which he used for the study while Okinyi et al. (2017) used purposive sampling technique. In this study, snowball sampling was used to select registrars, lecturers, deans and quality control officers, while stratified random sampling technique was used to select the student participants. This is because the researcher would like to cater for

both, male and female participants as well as generic and ODL students. The researcher used snowball sampling technique because he would like the first participant to direct him to the next person who can provide similar information for use in the study (Creswell, 2012). The reason why the researcher used random sampling technique is to give equal opportunities to students of being selected and included into the study (Cohen, Manion, and Morrison, 2011).

Seminetu (2017) in his study used descriptive survey whereby no single variable was manipulated, instead he analysed the data basing on the responses he got from the participants on the variables which were being studied. Okinyi et al. (2021) in their study used just as in Seminetu, a descriptive survey. They measured the variables under study using documentary analysis, and SPSS to carryout descriptive statistical analysis of demographic data and linear regression, thus between tutor utilisation and internal efficiency. In his study, Seminetu analysed data using inferential statistics, correlation coefficient and multiple regression analysis. In this study, data was analysed using SPSS to carryout inferential statistics and multiple regression analysis.

The two papers are addressing the same issue but from different poles. They are both addressing the issue of internal efficiency but from two different ends. Okinyi et al. (2021) are measuring internal efficiency using the indicators of efficiency (dropout rate, repetition rate and survival rate) in higher education institutions targeting public vocational training colleges while Seminetu (2017) is looking at school based predictors of internal efficiency which are the determinant factors of internal efficiency. Although the two studies are not all that different, what is more related to this study is the study by Seminetu. It's only that his study was looking at predictors of internal efficiency under the umbrella term school related factors, while this study was seeking to determine the major predictors of internal efficiency based on the data which was going to be collected from the selected universities and as spelled out in the minimum standards for higher education institutions by the Malawi Council of Higher

Education. Although the study by Okinyi et al. (2021) is not directly related to this study, it is crucial to my study. It has widened my understanding of the concept of internal efficiency in context. It has also provided rich and current literature and insights into predictors of internal efficiency. I have come out of the paper review richer than before.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Chapter overview

This chapter presents the research methodology and design and has the following sections and sub-sections: research paradigm, research design, research approach, study site, population and sampling, sample size determination and sampling frame, data collection and instrumentation, data collection instrument validation; measures, indicators and efficiency factors, outcomes and data analysis, ethical consideration and conclusion.

3.2 Research paradigm

This study took a mixed methods approach. It used both quantitative as well as qualitative methods. Such being the case, it was guided by a combination of research paradigms. These are constructivism and post-positivism. Constructivism, according to Henebein (1996), is a research paradigm which states that people come up with their own ways of knowing their surrounding by experiencing things happening in their surrounding and through meditation of those experiences. Adom, Yeboah, and Ankrah, (2016) conclude that learning in constructivism is nothing else but making meaning.

The researcher chose to use constructivism which focuses on narratives and subjective reality because he wanted to construct knowledge by interacting and collecting data from different participants of the study and scrutinising their views and experiences. This was done by interviewing university managers to solicit their views through the qualitative open ended questions.

According to E-Relations (2021), post-positivism is a research paradigm which contends that the researcher cannot be detached from what he observes to become an independent observer. Rather, his perception of the world has an impact on what he concludes. The researcher used post-positivism in his attempt to pursue objective answers by working with data which is prone

to biases which he collected from self-reports, taking cognisant of the fact that there is no absolute truth rather than positivism, which focuses on numbers and objective reality.

3.3 Research design

This study used descriptive survey and exploratory sequential design. Descriptive survey design according to Creswell (2012), is a research design in which the researcher makes use of interviews and questionnaires to gather quantitative data from the respondents in order to make a descriptive analysis, as well as to test hypotheses.

The researcher chose to use this design because he wanted not only to relate variables but also to learn about the population of the study (Creswell, 2012). In this study, the design was used as the researcher conducted interviews to amass data which was used to answer research questions 3 and 4. Registrars, deans, senior lecturers and quality control officers were interviewed to provide data on the factors which affect internal efficiency in public universities and to give their suggestions on how to improve internal efficiency in public universities.

Questionnaires were administered to students to collect quantitative data and to solicit perspectives of participants on what the predictors of internal efficiency in public universities are. A questionnaire is a research instrument which contains a list of questions for the respondent to answer so that the researcher can collect the required data (Abawi, 2017). It has the merit of enabling the researcher to collect large amounts of quantitative data accurately and in a fast way (Krosnick, 2018). The researcher used questionnaires because he wanted to collect data from a large student population.

According to Creswell (2012), exploratory sequential design is when you first collect qualitative data followed by the collection of quantitative data. In agreement with Creswell (2012), Metler, (2014) exploratory mixed methods research aims to gather data in the initial stage, qualitatively to explore the topic under study. He further explains that the collection of

quantitative data that follows is intended to provide a further explanation of the relationship which would have been revealed by the qualitative data. This helps the researcher to gain an insight about the subject which helps the researcher to develop a more refined instrument with which to collect quantitative data that will be used to test the hypothesis (Creswell and Clark, 2018). While others would proceed to develop a model followed by an intervention to test that model, this study just made predictions and associations that other researchers might use in future research to develop such models into efficacy testable interventions.

3.4 Research approach

The researcher used a combination of quantitative and qualitative designs. The use of mixed methods approaches in research has a merit of yielding comprehensive and rich data (Metler, 2014).

Qualitative data was collected using open ended questionnaires as the researcher was soliciting university managers, quality controllers, and deans' views of what predictors of internal efficiency of public universities are and what they think can be done in order to improve internal efficiency in public universities. Quantifiable data was collected from students using structured questionnaires.

Post-positivism was used during data analysis to acknowledge the fact that there is no one objective truth, but rather there is a multiplicity of truths. Therefore, the same data can have different meanings.

3.5 Study sites

The study was conducted in three selected public universities in Malawi.

One in the Eastern region, one in the central region and one in the northern region of the country.

3.6 Population and sampling

In this study, population implied all students, teaching staff and management of all the 6 Public Universities in Malawi. It was however, not possible to use all the Public Universities due to time and resources limitation, so a sample was used.

Population in the actual sense is a group of people with similar features (Creswell, 2014 p.142). By implication, a target population or a sampling frame is a collection of people with similar features which one would like to carry out a research on. Walford (2011, p. 24) while not arguing with Creswell (2012), goes further to define a sample as a subset of the target population or sampling frame. In this study, a simple random probability and stratified random probability sampling was used.

The 3 Public Universities were selected using simple random sampling technique so as to have a representative sample of the population under study. The reason why the researcher used random sampling technique was to give an equal opportunity to all public universities of being selected and of being included into the study (Cohen, Manion, & Morrison, 2011). Snowball sampling technique was used to select registrars, deans and quality control officers. The researcher used snowball sampling technique because he wanted the first participant to direct him to the next person who could provide similar information for use in the study (Creswell, 2012). Stratified systematic random sampling technique was used to select student participants. Programmes were used as the strata. The rationale being that the researcher wanted to cater for both, male and female participants, and reduce gender bias. Student participants were composed of generic bachelor's degree students.

3.6.1 Sample size determination and sampling frame

The sample size was derived from the target population using Taro Yamane's 1967 sample size calculation formula. This formula was chosen for its simplicity and can be used to calculate a sample size for a known population like that of a university. The formula takes the form:

$n = N/1+N*(e)^2$, where:

n - The sample size

N-the population size

e-the acceptable sampling error

*95% confidence level and **p** = 0.5 are assumed

n = 22724/ (1 + 22724 * $(0.05)^2$) = 22724/1 + 22724 * 0.0025

n = 22724/57.81

n = 393

The sampling frame consisted of 3 public universities drawn from the populace of 6 public universities in Malawi. Chancellor College has a population of 5000 students, LUANAR consists of 9224 students while MZUNI has reached 8500 students. All in all, the sampling frame consists of 22724 students. From each university, the study targeted registrars, dean of students, senior lecturers, and quality assurance officers. The first phase consisted of 15 university managers comprising of 3 registrars, 9 deans, 3 quality assurance officers and 9 senior lecturers drawn equally from the three universities. The quantitative phase consisted of 160 students from LUANAR, 86 students from UNIMA and 147 students from MZUNI, making a total population of 393, thus 393 students. Out of this composition, there were 236 male students, 157 female students, 9 male lecturers and 9 female lecturers. The population of male to female students was in the ratio 3:2 since there are more male students in public

universities. Respondents were involved to give their views of what the predictors of internal efficiency in a university are and what they think can be done to improve internal efficiency of public universities.

3.7 Data collection and instrumentation

An instrument is a means or a tool which one uses to collect data for analysis in a research (Creswell, 2012). This can include an interview guide, observer checklist and questionnaires.

The study used questionnaires, observation checklist and interview guide to collect data. Questionnaires were issued to students to collect quantitative data on what are the predictors of internal efficiency in public universities. The researcher used an observation checklist to personally isolate the predictors of internal efficiency in public universities. Registrars, quality control officers and deans were interviewed using an interview guide to solicit their views on factors which affect the internal efficiency of public universities and how they think internal efficiency can be improved in public universities. Qualitative data was collected by interviewing 3 quality control officers, one from each of the three universities, 3 registrars, one from each of the three universities, 9 deans, three from each of the 3 universities, and 3 senior lecturers, thus one from each of the three universities, making a total of 18 respondents. The researcher was guided by an interview guide. Qualitative data from students was collected through focus group discussions. Each focus group consisted of 10 participants, randomly selected and each session of the focus group discussion lasted for an hour. One focus group discussion was administered for each of the three universities, making a total of 3 focus group discussions. This brought the total number of participants to 30 for the three universities. The researcher was assisted by a research assistant in the administration of focus group discussions which were video recorded.

A questionnaire is a data collection instrument which consists of questions prompting the respondent to answer, which enables the researcher to get information he needs to answer research questions (Naqvi, 2012). Cohen (2011) goes further to explain that the researcher has the liberty to choose the type of questions to use in the construction of a questionnaire. In this regard, the researcher used both open and closed-ended questions to collect data. This strategy has the merit of enabling the researcher to explore the reasons for the closed ended answers (Creswell, 2012). It also enables the researcher to obtain data which the participants may have apart from the answers they would have given in closed ended answers. The researcher used a questionnaire because of its high degree of anonymity, lower construction and administration cost, and its ability to provide large volumes of data within a short time.

Observation is helpful for triangulation to ascertain how reliable and consistent the data that has been collected through interviews and questionnaires is, which is applicable to both, qualitative and quantitative data collection (World Bank, 2016). The researcher chose to triangulate so that the two approaches, qualitative and quantitative, can complement each other. The researcher used observation to verify and check on the truthfulness of data being collected during interviews and on the questionnaires. In order to do this systematically, the researcher used an observer checklist.

An interview is a data collection method in which a researcher asks interviewees open-ended questions whilst recording their answers, thereafter transcribing and storing the data in a computer file (Creswell, 2012). The researcher chose to make use of this one-on-one data collection instrument to collect qualitative data because it affords the researcher an opportunity to get firsthand information, direct from the actual participant who is a stakeholder on the issue being investigated.

The other advantage is that it gives the researcher a more reliable information as the interviewee has to think over the issue and provide the required information to avoid exposing his/her ignorance, unlike in questionnaires where the interviewee at times can just tick the questionnaires without thinking especially when the interviewee is in a hurry. Interviews also accord high face validity. It has however, the disadvantage that the interviewee may sometimes lie, over report, or under report to cover up information he/she may have which he/she may not be comfortable to disclose or would want to exaggerate. To ensure the validity of the information, the researcher paid attention to gestures and body language such as the interviewee's facial expression and asked probing and follow up questions.

3.7.1 Data collection instrument validation

Validity is the degree to which an instrument collects the data it is designed to and reliability is the consistency of the instrument in data collection (Tavakol, & Dennick, 2011). To ensure the validity and reliability of instruments, the instruments were pilot tested in one public university to test whether the instruments would collect the required data. This helped the researcher to see whether the respondents would easily understand the questions on the questionnaires and interviews as expected by the researcher. The pilot work also enlightened the researcher on the actual time which was required to collect data during the actual exercise which helped the researcher to plan appropriately.

3.8 Measures, indicators and efficiency factors

Some of the measures which predict internal efficiency in public universities as set by Malawi Council for Higher Education (NCHE, 2015) as minimum standards for all higher education institutions in Malawi are: lecturer/student ratio, adequate lecturers, adequacy of classrooms, teaching/learning materials, library, laboratories, ICT facilities, cafeteria, accommodation and universal access buildings.

Indicators of internal efficiency include: repetition rate, withdrawal rate, dropout rate and survival rate.

3.9 Outcomes

The primary outcome is the level of internal efficiency measured through an index of efficiency where internal efficiency is low or high depending on indicators as established through a checklist.

3.10 Data analysis

The collected data was analysed using descriptive statistics and inferential statistics such as regression analysis using SPSS at 95% confidence level. Quantitative data was analysed through descriptive statistical analysis and inferential statistical analysis. Specifically frequencies and percentages were computed on diverse responses to items. This involved the use of tables and cross tabulations. The chi square statistic was used to draw associations, for example, between students: lecturer ratio and internal efficiency.

The researcher used the multiple regression analysis to determine through a variate or composite index, the impact of diverse independent/predictor variables as a vector on internal efficiency. The same was also used to determine which specific predictor variable was the best predictor of internal efficiency in the model among the diverse variables or factors impacting on internal efficiency. Confound variables were controlled by using randomisation as a sampling technique.

Qualitative data collected through interviews and focus group discussions was translated for some respondents who used vernacular language, then transcribed and coded for interpretation. Specifically, thematic content analysis was used in which data was transcribed using excel to map out the coding frame or structure, mapping matrices and to subsequently develop theory.

3.11 Ethical considerations

The researcher considered ethical issues and problems as follows: Firstly, approval was sought from Mzuzu University Human Ethics Committee before approaching registrars for Lilongwe University of Agriculture and Natural Resources (LUANAR) and University of Malawi, previously known as Chancellor College, to seek permission to collect data. Modifications were done where the Ethics Committee deemed it necessary to do so to ensure that individuals' rights in the study area were not infringed upon by the study. Participants were told in advance about the objectives of the study and were told that confidentiality of the subjects and the information given would be treated as private, personal and would not be revealed to the public.

In support to this, Creswell (2012) urges researchers to respect individuals and data collection rights. The implication is that in the event, for instance, that an individual is not interested to talk about issues which they do not want to expose, they should not be forced to do so. The researcher ensured independence from possible attempts by interested parties or bodies to bias or alter results and ensuring security of data during and after research completion. Creswell (2012) concurs with this by alluding that data collected should be treated with confidentiality. People who are not participating in the study should not be allowed to have access to the data.

In light of this, the researcher made sure that only he and the supervisor had access to the data. Participants were allowed to withdraw from the research whenever they wished to, however, they were not allowed to edit or censor the final dissertation as long as the identity of their institution was not being revealed nor had there been any other breach of the agreement. However, all efforts were made to ensure that no right is infringed upon so that no respondent would prematurely withdraw from the study.

3.12 Conclusion

This chapter has presented the methodologies which were used to determine the internal efficiency of Malawian Public Universities. It has given a detailed account of the paradigm which was used for the study, highlighted other aspects such as design and strategy, and study population and setting. It has also hinted on how sampling and data collection was done. The data validation of instruments which were used for collecting data, how data was analysed as well as how participants' rights were protected have also been explained.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 Chapter Overview

This chapter presents and discusses the analysis of the data obtained in the study. The essence of this data analysis was to test the hypothesis of the study. Various techniques were used to test the hypothesis: That there is no relationship between internal efficiency and predictors of internal efficiency in public universities in Malawi.

The presentation of findings were guided by the following objectives: (i) to identify indicators of internal efficiency in order to determine levels of internal efficiency in public universities (ii) to establish major predictors of internal efficiency in public universities (iii) to explore views of university managers on factors which affect internal efficiency in public universities (iv) analyse university managers' views on suggestions on how to improve internal efficiency in public universities.

4.2 Demographic information

4.2.1 Demographic information for students

Table 4. 1: Respondent's gender

	Frequency	Percent
Male	241	61.3
Female	152	38.7
Total	393	100

Table 4.1 shows that There were 393 respondents who participated in the study. Out of this number 241 (61%) were male while 152 (39%) were female.

Table 4. 2: Respondents' study level

	Frequency	Percent
Level 3	260	66.2
Level 4	133	33.8
Total	393	100.0

Table 4.2 shows that 260 (66%) of the respondents were from level 3 and 133 (34%) level 4.

Table 4. 3: Respondent's university

	Frequency	Percent
University A	86	21.9
University B	160	40.7
University C	147	37.4
Total	393	100

Table 4.3 shows that 86 (22%) of the respondents were from university A, 160 (41%) from university B and 147 (37%) from university C.

4.3. Main findings

4.3.1. University internal efficiency levels

Internal efficiency levels were determined using an observation checklist on predictors of internal efficiency with a rating scale efficiency index of out of 10 scores where the score 0 was rated as no efficiency, the score 1-4 low efficiency, the score 5-6 moderate efficiency and the score 7-10 was rated as high internal efficiency and the table below documents the levels.

Table 4. 4: University internal efficiency levels

	Frequency	Percent
45	147	37.4
46	160	40.7
51	86	21.9
Total	393	100

Table 4.4 shows that 147 (37%) of the respondents came from a university with 45% internal efficiency, 160 (41%) from a university with 46% internal efficiency and 86 (22%) from a university with 51% internal efficiency. This translates to 47% internal efficiency on average, which is an indicator that internal efficiency in public universities is below 50%.

4.3.1.1 Binary internal efficiency

Binary internal efficiency refers to whether internal efficiency for each university as measured against the predictors of internal efficiency is high or low. Binary internal efficiency was determined through a rated observation indexed scaled checklist where a score of 0-4 was rated as low internal efficiency while a score of 5-10 was rated as high internal efficiency. The table below documents binary internal efficiency for the three universities. In essence, low and high or 0 & 1 for analysis purposes.

Table 4. 5: University binary internal efficiency

	Frequency	Percent
Low	310	78.9
High	83	21.1
Total	393	100

Table 4.5 shows that 310 (79%) of the respondents came from low efficient universities while 83 (21%) were from high internal efficiency university. This shows that on average, overally internal efficiency in public universities is low.

4.3.2. Predictors of internal efficiency

Predictors of internal efficiency were isolated and categorised.

4.3.2.1 Predictor 1: student/lecturer ratio

Data to determine student/lecturer ratio in public universities was collected through prepared questionnaires which were administered to students and lecturers to find out whether student/lecturer ratio was high or low by ticking in an appropriate box. The collected data was then computed using SPSS and the outcome is documented in the table below.

Table 4. 6: Student lecturer ratio

	Frequency	Percent
High	310	79
Low	83	21
Total	393	100

Table 4.6 shows that 310 (79%) of the respondents indicated that student lecturer ratio was high in the Malawian public universities while 83 (21%) responded that it was low. This shows that student/lecturer ratio is high in public universities.

4.3.2.2 Number of students per class

To determine the exact number of students per class, respondents were asked to tick in an appropriate box in the questionnaires which were administered to them in which 0-50 was rated as low student/lecturer ratio while above 50 was rated as high student/lecturer ratio. The collected data was computed using SPSS and the table below documents the outcome.

Table 4. 7: Number of students in respondents' classes

	Frequency	Percent
=<50	90	22.9
>50	303	77.1
Total	393	100

Table 4.7 shows that 303 of the respondents indicated that the number of students per class was above 50 while 90 indicated that it was less than or equal to 50. This is an indication of high student/lecturer ratio.

4.3.2.3 Predictor 2: adequacy of library facility

To determine the adequacy of libraries in public universities, data was collected from students and lecturers through prepared questionnaires in which the respondents were required to tick in the box to indicate whether the library facility was in their view, adequate for the student population or not. The collected data was computed using SPSS and the table below documents the outcome.

Table 4. 8: Adequacy of library facility

	Frequency	Percent
Adequate	143	36.4
Not Adequate	250	63.6
Total	393	100

Table 4.8 shows that 143 (36%) respondents indicated that library facility in their university was adequate while 250 (64%) indicated that their university library was not adequate in terms of space, material stock and other library service provisions. This shows that overall, public universities do not have adequate library facilities.

4.3.2.4 Predictor 3: availability of adequate classroom facility

To determine the adequacy of classroom facilities, data was collected from students and lecturers through questionnaires which were administered to find out from them whether the institutions had adequate classrooms or not. The collected data was entered into SPSS for computation and tabulation as shown in the table below.

Table 4. 9: Availability of classroom facilities

	Frequency	Percent
Adequate	150	38.2
Not Adequate	243	61.8
Total	393	100

Table 4.9 shows that 150 (38%) respondents indicated that classrooms were adequate while 243 (62%) indicated that classrooms were not adequate in their universities. This shows that overally, public universities do not have sufficient classrooms.

4.3.2.5 Predictor 4: adequacy of laboratory facilities

A questionnaire was administered to students and lecturers asking them to indicate whether their institution had adequate laboratories or not. The collected data was entered into SPSS for computation and the outcome is as shown in the table below.

Table 4. 10: Laboratory facility adequacy

	Frequency	Percent
Adequate	218	55.5
Not adequate	175	44.5
Total	393	100

Table 4.10 shows that 218 (56%) of the respondents indicated that laboratory facilities in their universities are adequate while 175 (44%) indicated that they are not adequate. This shows that generally, public universities have adequate laboratory facilities.

4.3.2.6 Predictor 5: adequacy of hostel facilities

Questionnaires were administered to both students and lecturers in which they were asked to indicate whether there were adequate hostel facilities in their institution or not, in order to establish whether universities have adequate hostels to cater for the student population. The collected data was computed using SPSS and the outcome is as shown in the table below.

Table 4. 11: Hostel facility adequacy

	Frequency	Percent
Adequate	24	6.1
Not Adequate	369	93.9
Total	393	100

Table 4.11 shows that 24 (6%) of the respondents indicated that hostels were adequate in their university while 369 (94%) indicated that they were not adequate. This shows that there is inadequate accommodation in public universities.

4.3.2.7 Predictor 6: adequacy of cafeteria facility

To establish adequacy and availability of cafeteria in public universities, the researcher administered questionnaires to students and lecturers to get firsthand information from those who are supposed to benefit from the cafeteria facility. The purpose of the questionnaire was to ask them whether the university was adequately offering cafeteria services to students. The collected data was then computed using SPSS and the outcome is presented in tabular a form as shown below.

Table 4. 12: Cafeteria availability

	Frequency	Percent
Adequate	27	6.9
Not Available	366	93.1
Total	393	100

Table 4.12 shows that 27 (7%) of the respondents indicated that cafeteria was adequate in their university while 353 (93%) indicated that it was not available. This shows that there are no adequate university run cafeteria facilities to adequately serve students within the campus in the public universities.

4.3.2.8 Predictor 7: adequacy of power backup facilities

To determine whether public universities have adequate power back up facilities to provide an alternate source of power in the event that there is an unexpected power outage for use especially in the study areas such as supporting online service providing devices, Wi-Fi devices, laboratories, library and student hostels as well as students printing service providers, the researcher administered questionnaires to students and lecturers to indicate whether the university had adequate power back up facilities such as generators and solar energy to fill the gap or not. SPSS was used to compute the collected data and the outcome is as shown in the table below.

Table 4. 13: Power backup adequacy

	Frequency	Percent
Adequate	134	34.1
Not Adequate	259	65.9
Total	393	100

Table 4.13 shows that 134 (34%) respondents indicated that power backup facility was adequately supplying power in the event that ESCOM/EGENCO switched off their power due

to faults or load shedding, while 259 (66%) indicated that power back up in public universities is not adequate. This shows overally, public universities do not have adequate power backup facilities to support them during sudden power outage such as blackouts.

4.3.2.9 Predictor 8: adequacy of clean and safe water

To ascertain whether students in public universities have access to adequate and safe water facilities, the researcher used a questionnaire to collect data from students and lecturers. In these questionnaires, the respondents were required to indicate whether they had adequate clean and water sources within their universities. The data collected was then processed using SPSS and the outcomes are as shown in the table below.

Table 4. 14: Access to clean and safe water adequacy

	Frequency	Percent
Adequate	244	62.1
Not Adequate	149	37.9
Total	393	100

Table 4.14 shows that 244 (62%) indicated that access to clean and safe water was adequate while 149 (38%) indicated that they did not have adequate supply of safe and clean water. This shows that on average, most of the public universities have clean and safe water within their campuses.

4.3.2.10 Predictor 9: adequacy of nearby clinic

To establish the adequacy of nearby clinics in public universities, the researcher administered questionnaires to students and lecturers in order for them to indicate whether their universities had adequate nearby clinics or not. The data the researcher collected through the questionnaires was processed using SPSS software and the outcome is as shown in the table below.

Table 4. 15: Nearby clinic adequacy

	Frequency	Percent
Adequate	296	75.3
Not Adequate	97	24.7
Total	393	100

Table 4.15 shows that 296 respondents (75%) indicated that their university had an adequate nearby clinic to support students in the event of illness and related medical attention, while 97 (25%) indicated that the facility was not adequate. This shows that public universities have adequate nearby clinics to give medical attention to students should need arise.

4.3.2.11 Predictor 10: availability of adequate toilets

A questionnaire was administered to students and lecturers to establish whether public universities have adequate toilet facilities. The questionnaire was designed to enable respondents to indicate whether toilets were adequate or not in their institution. The data which was collected was entered into SPSS and computed. The outcome is shown in the table below.

Table 4. 16: Toilets adequacy

	Frequency	Percent
Adequate	244	62.1
Not Adequate	149	37.9
Total	393	100

Table 4.16 shows that 244 (62%) of the respondents indicated that they had adequate toilets in their university, while 149 (38%) indicated that the facilities were not adequate. This shows that generally, public universities have adequate toilet facilities to conveniently meet the needs of the student population.

4.3.2.12 Predictor 11: availability of teaching and learning resources

To collect data as to whether teaching and learning resources are adequately available in public universities, the researcher administered questionnaires which required that students and lecturers indicate whether they were adequate or not. The collected data was then computed using SPSS software and the outcome is as shown in the table below.

Table 4. 17: Teaching and learning resources adequacy

	Frequency	Percent
Adequate	99	25.2
Not Adequate	294	74.8
Total	393	100

Table 4.17 shows that 99 (25%) of the respondents indicated that teaching and learning in their university was adequate while 294 (75%) indicated that they were not adequate. This shows that teaching and learning resources though they are a crucial component is an institution of higher learning, public universities do not have adequate resources.

4.3.3. Determining internal efficiency level: objective 1

To establish the university standing with regard to internal efficiency, whether it is high or low for each individual university, the researcher used an observation checklist with 10 predictors of internal efficiency. Each university was rated out of 10 for each of the 10 predictors using a scaled efficiency index to make a total of 100 scores which represent 100%. A score of 0-4 as low efficiency while 7-10 was rated as high internal efficiency. Table 4.3.8 and Table 4.3.9,

Table 4.3.9 and Table 4.3.10 below show efficiency index and level of internal efficiency for each of the 3 public universities used.

Table 4. 18: Efficiency index

Index	Description
0 to 4	Low Efficiency
5 to 10	High Efficiency

Table 4.18 shows binary rating for each of the 3 universities. The table shows that if a university scores a score between 0 and 4, its efficiency for that predictor was rated low, while it was ranked high when its score for that predictor was in-between 5 to 10.

Table 4. 19: Level of internal efficiency: University A

Serial no	Predictor	Score	Efficiency Level
1	Student/ Lecturer Ratio	4	Low
2	Teaching/Learning Resources	6	High
3	Adequate well Furnished classrooms	6	High
4	Availability of well stocked library	6	High
5	Availability of well-equipped laboratory	6	High
6	Availability of adequate standard hostels	4	Low
7	Availability of cafeteria	1	Low
8	Availability of adequate power backup facilities	4	Low
9	Availability of nearby clinic	9	High
10	Availability of adequate clean water facilities	6	High
	Rating	51%	High

Table 4.19 shows that for university-A, efficiency is low with regard to student/lecturer ratio as it was rated a score of 4 out of 10 due to high student lecturer ratio. Kedney (2013) supports the idea that student lecturer ratio be used to measure an education institution's internal efficiency. This is because low lecturer/student ratio results in more lecturer/student interaction which in turn promotes high student achievement which leads to high internal efficiency. The table shows that the university scored a score of 6 out of 10 on teaching and learning resources

which was rated high efficiency. Adaliku, and Lockpilgh (2013) pointed out that students who are taught with the aid of instructional materials have better performance than those who are taught without. The university had a reasonable amount of teaching and learning materials. For instance, to cater for online lessons which were to a large extent necessitated by the coming of COVID 19, the university procured brand new laptops for its lecturers, they also procured a good number of LCD projectors for use during lesson delivery just to mention a few.

University A scored highly on adequacy of well-furnished classrooms. It was rated a score of 6 out of 10, indicating high efficiency on this predictor. DFID (2007) posits that students learn better when there are adequate quality physical facilities, one of which is well furnished classrooms. The university was rated highly in this area because in response to the ever growing enrolment, it constructed a lot of laboratories and lecture theaters large enough to accommodate a lot of students. They were also in the process of building more as work in progress could be seen.

On the availability of a well-stocked library, the university scored 6 out of 10. Although their library is small compared to the student population, it was stocked with most of the essential books though, those of newly introduced programmes were a challenge. The library was equipped with Wi-Fi access points which can be accessed from many points around the campus. This helped students to access online libraries and materials which aid learning.

University A had a good number of modern facility laboratories spacious to accommodate students in each class. Laboratory space was eased because of these magnificent facilities. The table shows that it was rated 6 out of 10 scores, which is high efficiency. However, the challenge was that some of the equipment were old fashioned and some chemicals were not available to an extent that only experiments considered essential were being conducted. This has a problem of producing partially backed graduates.

University A was rated 4 out of 10 on availability of hostels to cater for the student population. The majority of the students were operating from outside the college campus and were residing in unpleasant conditions in addition to having to walk long distances to and from school, which paused a threat at night, especially to girls when going for studies, to access Wi-Fi, library or other activities. Students were losing valuable items such as laptops and smart phones to robbers.

Table 4.19 shows that university A was rated very low on the availability of adequate cafeteria, as low as 1 out of 10, which is almost zero. The university does not offer cafeteria services to students. Students fend for themselves, some prepare their own meals if they get a chance in-between classes while the majority buy food from local restaurants most of which are substandard meals prepared by local food vendors. Students have to walk a longer distance to buy food. Those without money and anything to cook, go to class full of emptiness.

The table shows that the university was rated 4 out of 10 on power backup adequacy which is low efficiency with regard to that predictor of internal efficiency. The university had generators but were not adequate and sustainable due to running cost in the face of high energy poverty stricken country with the elliptic power supply.

University A scored very high on the predictor availability of nearby clinic which was rated 9 out of 10. The university had adequate clinic with essential drugs and had a standby vehicle to carry students during an emergency especially at night.

The university was rated 6 out of 10 which is high efficiency on the availability of adequate clean and safe water to its subjects. In total, the university was rated 51% efficiency which is high efficiency.

Table 4. 20: Level of internal efficiency: University B

Serial No	Predictor	Score	Efficiency Level
1	Student/Lecturer Ratio	4	Low
2	Teaching/Learning Resources	4	Low
3	Adequate well Furnished classrooms	6	High
4	Availability of well stocked library	4	Low
5	Availability of well-equipped laboratory	6	High
6	Availability of adequate standard hostels	4	Low
7	Availability of cafeteria	0	Low
8	Availability of adequate power backup facilities	4	Low
9	Availability of nearby clinic	8	High
10	Availability of adequate clean water facilities	4	Low
	Rating	46%	Low

Table 4.20 shows that university B was rated as having a score of 4 out of 10 on student/lecturer ratio which indicates that with regards to this predictor of internal efficiency, the university' efficiency was low. The same score applied to predictor teaching/learning resources with a score of 4 out of 10, which is low internal efficiency on the efficiency index. Most classes had students above 50 with the largest classes having up to 700 students.

University B was rated 4 out of 10 on teaching and learning resources which is low internal efficiency. Teaching and learning materials were not adequate, computer laboratory did not have even a single computer and students were struggling during lessons because many came from poor families and did not have personal computers to use for practicals, more especially first year students. Some experiments could not be done due to lack of availability of some chemicals and equipment. In addition to that some equipment were old fashioned.

The university was rated high efficiency with regards to classroom space which scored 6 out of 10. It had a new campus and an old campus which made classes to be available for use by students. However, with the increase in enrolment, the first year classes could not fit in a classroom such that they were being taught in a big multi-purpose hall, which made it

impossible to use some teaching methods. For instance, the absence of a board limited mathematics lecturers in their presentations to make demonstrations on how to solve problems. The environment limited lecturers to the use of lecture method.

University B was rated lowly on the availability of a well-stocked library. It was rated 4 out of 10 on the efficiency index. The library was very small compared to the student population who use it. Most of the books were outdated. They were purchased during the establishment of the college during the late Kamuzu Banda era. During that time, it was adequate for the student population. With the increase in enrolment, very little has been done to improve service delivery of this facility. Although online study material is seen as the panacea of inadequacy of this facility, access to the internet in this university in not guaranteed due to elliptic power supply especially given the energy poverty the country is facing.

Table 4.20 shows that in terms of the availability of adequate well equipped laboratories as a predictor of internal efficiency, the university was rated highly at 6 out of 10. With the completion of the new campus, the university had a good number of modern laboratory facilities which were put in place. This eased a bit the challenge of laboratory space in the university. However, the challenge was the availability of materials for use in these facilities. For instance, students still used some old fashioned equipment and there was shortage of chemicals such that some experiments are orally explained instead of doing practicals and in some cases, a few students were given access to hands on experience as they conducted the experiments while others observed in groups due to shortage of equipment and chemicals.

University B was rated 4 out of 10 on the availability of hostel indicating that on this predictor of internal efficiency, the university was rated low. The university had acute shortage of hostels such that the majority of the students were resident off the campus. In the campus, the researcher observed that a room which was supposed to accommodate 2 students was occupied

by 8 to 10 students, which left students with no privacy and inconvenient reading environment. The university being a bush school by geographical location, did not have many standard houses on offer for students to rent. Such being the case, students were left with no option but to scramble for the few around the village growth point popularly known as trading centres in Malawi, which made them expensive due to high demand. The rest occupied the remaining unpleasant village houses as long as there was at least a bulb of light and a laptop circuit which could be used for charging phones and laptops.

Table 4.20 shows that university B was rated 0 out of 10 on availability of cafeteria which is an indicator that there is low efficiency with regard to that predictor of internal efficiency. The university did not have a cafeteria of its own in the campus or elsewhere. Students struggle to get food. It's either they had to cook for themselves or else go outside the campus to look for food which is sold by villagers who have seized the opportunity to make money. The challenge is that the food which local people provide on the market, some of it is poorly prepared and is substandard. The food is also expensive, especially to the needy who rely on government loans to afford buying meals on daily basis. As a result, some skip some meals in order for the money to last and take them long through the semester. For instance, they may eat breakfast and supper only while others may eat only lunch and supper while the most impoverished only afford one meal a day. There are cases of students fainting having gone for days without food, which force some students to drop out.

Table 4.20 Shows that university B was rated 4 out of 10 on the availability of power backup facilities which is an indicator that there was low internal efficiency regarding this predictor. The available generators were only used to supply backup power to offices and the teaching area. This backup was not however, guaranteed because it also depended on the availability of fuel which had also become expensive, making the power backup not to be sustainable due to running cost which was also dependent on the frequency of power black outs. Students were

affected because during such times, they could not study in their halls of residence, they could not access Wi-Fi and some laboratory tests and experiments could not be conducted. In addition to that they could not type if their laptops did not have a long lasting battery, and they could not print their work which in turn, affected them on meeting due dates for assignments submission.

The table shows that university B was rated highly on the availability of adequate nearby clinic as a predictor of internal efficiency. It scored 8 out of 10 which is high efficiency. The university had a clinic situated in the campus with most of the required drugs which served the university community. There were no long queues such that students did not spend much time to get the required assistance. There was also always a standby vehicle to ferry referral cases to the District Central hospital.

The table shows that university B was rated low on the availability of reliable clean and safe water, having scored 4 out of 10 on the efficiency index. The university did not have a stable supply of clean and safe water to its subjects, especially those who were resident on campus. The university depended on borehole water such that students had to walk for a longer distance to fetch water in pails after queuing for some time especially during peak hours, like early morning and evenings. This affected them in that they ended up coming to class late and at times failing to report for classes due to sanitary issues, especially ladies.

Table 4. 21: Level of internal efficiency: University C

Serial No	Predictor	Score	Efficiency Level
1	Student/Lecturer Ratio	4	Low
2	Teaching/Learning Resources	4	Low
3	Adequate well Furnished classrooms	6	High
4	Availability of well stocked library	6	High
5	Availability of well-equipped laboratory	6	High
6	Availability of adequate standard hostels	4	Low
7	Availability of cafeteria	0	Low
8	Availability of adequate power backup facilities	4	Low
9	Availability of nearby clinic	8	High
10	Availability of adequate clean water facilities	4	Low
	Rating	45%	Low

Table 4.21 above shows that university C was rated low on student/lecturer ratio as a predictor of internal efficiency having a score of 4 out of 10. Most of the classes had more than 100 students taught by one lecturer at the same time in an overcrowded classroom with others having to peep through the window due to inadequate classroom space and furniture.

University C got 4 out 10 which is an indication that there was low internal efficiency when it comes to adequacy of classroom facilities and standard furniture availability. Some students especially in humanity courses, were learning while standing due to lack of furniture, while those who could not stand for long sat on the floor.

The university was rated low on the availability of teaching/learning materials. Table 4.21 shows that the university scored 4 out of 10 which is low internal efficiency. The university had shortage of teaching and learning materials. For instance, there was a shortage of projectors and chemicals in the laboratories, and even equipment in the laboratories was not only old fashioned but also inadequate that students were doing experiments in large groups to save chemicals and as a result of the shortage of apparatus, students had to get into the laboratories in turns. The problem is that the situation gave only a few students hands on experience while

the rest were just observing. This gave an unfair advantage to the selected group representatives.

The table shows that internal efficiency was low on the availability of a well-stocked library for university C as it got a score of 4 out of 10. The university did not have a proper library after the library got burnt some years ago. The university was using an improvised small building for a library, small that students go in, in turns, especially during peak times such as examination time. I had a few computers as compared to the student population and although it relies on online study materials, its Wi-Fi was not reliable due to elliptic power supply since the university generator was not running all the time due to high fuel costs. To make matters worse, it took long for the generator to be switched on after working hours and during the weekend and the power supplied by the generator could not reach most students' residential areas.

On the availability of adequate hostels, university C scored 4 out of 10, which is a low rating. The university like all other public universities in the country had no adequate hostels. Most of the students operate from rented accommodation outside the campus which pause a security threat especially for girls as they move to and from the library at night. Students meet robbers who dispossess them of valuables such as laptops and smart phones. This makes some students not to go to the library which usually closes between 9 and 10 pm. Most of the students rented in substandard apartments due to cost of accommodation around the campus due to high demand by students. Some of the accommodation was not secure such that students frequently complain of theft. The campus accommodation was not adequate and instead of housing one or two students per room students made internal arrangements to rent out the same accommodation to others at a lower cost the practice which is popularly known as bonding.

This results in overcrowding and lack of privacy as a room which was meant to be occupied by two people, was accommodating eight students.

University C had cafeteria services for staff members and private catering service providers were within the university campus proximity which enabled students to buy food from a wide range of sellers. However, the food quality and hygiene could not be guaranteed as there was no one to monitor and test the food for consumption suitability. Food from certified sellers was expensive to students especially those who relied merely on government loan and upkeep allowance. Those who were resident inside the campus were illegally preparing their own food which put the facilities at a fire risk as they were not designed for the purpose.

University C was rated very high on the availability of a nearby clinic which got a score of 9 out of 10. The university had a clinic in the campus supplied with all essential drugs and medicines. The university had a school of nursing with doctors, nurses and other medical professionals within the campus. The central hospital was also at a walking distance from the university campus. In addition, the university had a standby vehicle ready to carry any emergency case to the referral hospital.

Table 4.21 shows that university C had adequate and reliable supply of clean water to cater for its community. It scored 6 out of 10 which represent high internal efficiency on the efficiency index. However, it did not have reservoir tanks to back up in the event that the water board was carrying out maintenance work or cleaning and when water stopped due to erratic power supply by ESCOM. This forced students to buy water for drinking and immediate use, or to get it from questionable sources.

4.4 Indicators of internal efficiency

Table 4.22 below shows the flow of students at university A for the group which started studies in 2016. Out of the 922 who were enrolled, 546 completed their studies in the fourth year, 4 were completely withdrawn, and 246 dropped out while 116 were withdrawn to repeat.

Table 4. 22: University A: Examination results 2016 year 1 to 4

2016 Cohort Year 1	university A	Male	Female	total	%
	Enrolled	541	381	922	
	Passed	366	286	652	71
	Dropped	143	75	218	24
	Withdraw and repeat	32	20	52	6
	Completely withdrawn	0	0	0	0
2016 Cohort Year 2		Male	Female		
	Enrolled	360	286	646	
	Passed	335	259	594	92
	Dropped	7	5	12	2
	Withdraw and repeat	18	22	40	6
	Completely withdrawn	0	0	0	0
2016 Cohort Year 3		Male	Female		
	Enrolled	332	257	589	
	Passed	305	248	553	94
	Dropped	9	3	12	2
	Withdraw and repeat	15	5	20	3
	Completely withdrawn	3	1	4	1
2016 Cohort Year 4		Male	Female		
	Enrolled	306	248	554	
	Passed	302	244	546	99
	Dropped	2	2	4	1
	Withdraw and repeat	2	2	4	1
	Completely withdrawn	0	0	0	0

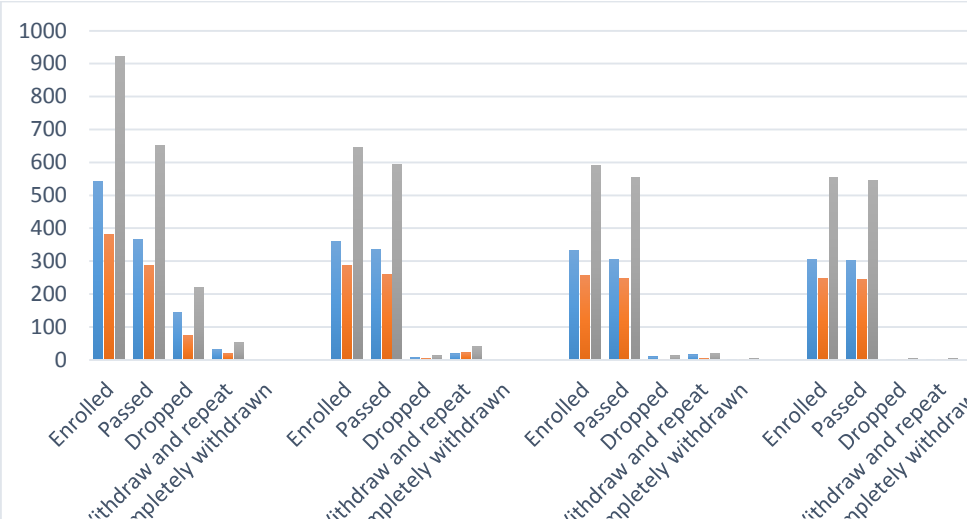

Figure 4 1: University A: Examination results 2016 year 1 to 4

Figure 4.1 above shows the flow of students from year 1 to year 4 of study for university A

Table 4. 23: University A: Examination results 2016 year 1 to 4

2017 Cohort Year 1		Male	Female	Total	%
	Enrolled	566	396	962	
	Passed	401	287	688	72
	Dropped	153	86	239	25
	Withdraw and repeat	12	33	45	5
	Completely withdrawn	0	0	0	0
Year 2	Enrolled	380	278	658	
	Passed	346	257	603	92
	Dropped	15	6	21	3
	Withdrawand Repeat	19	15	34	5
	Completely withdrawn	0	0	0	0
Year 3	Enrolled	344	256	600	
	Passed	324	248	572	95
	Dropped	5	1	6	1
	Withdraw and repeat	13	7	20	3
	Completely withdrawn	2	0	2	0
Year 4	Enrolled	323	249	572	
	Passed	310	239	549	96
	Dropped	8	3	11	2
	Withdraw and repeat	5	7	12	2
	Completely withdrawn	0	0	0	0

Table 4.23 above shows that for university A, the group which commenced studies in 2017, 962 students were enrolled. Out of this number, 549 completed their studies in the fourth year.

277 dropped out, 2 were completely withdrawn on academic grounds while 111 were withdrawn to repeat.

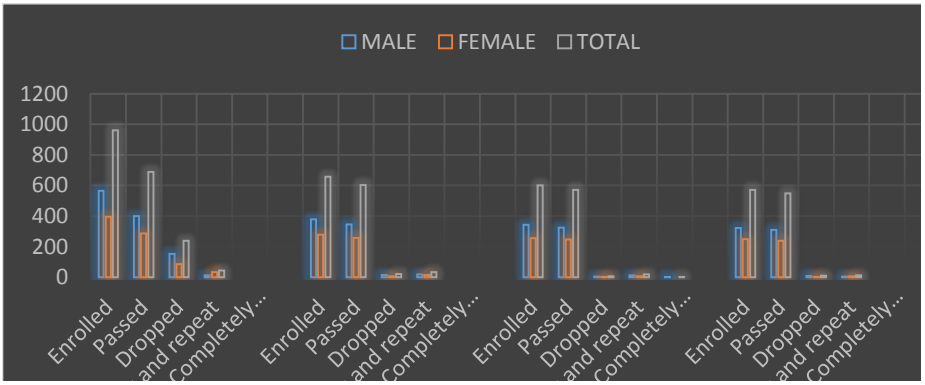

Figure 4 2: University A: Examination results 2017 year 1 to 4

Figure 4.2 above shows the flow of students for the group which was enrolled in 2017 at university A.

Table 4. 24: University B: 2015/2016 and 2016/17 Examination results year 1-4

2015/16 Group	University B	Total	%
Year 1	Enrolled	896	
	Passed	801	89
	Dropped	46	5
	Repeat	14	2
	Withdrawn	35	4
Year 2	Enrolled	801	
	Passed	750	94
	Dropped	30	4
	Repeat	11	1
	Withdrawn	10	1
Year 3	Enrolled	750	
	Passed	722	96
	Dropped	18	2
	Repeat	4	1
	Withdrawn	6	1
Year 4	Enrolled	722	
	Passed	720	100
	Dropped	0	0
	Repeat	2	0
	Withdrawn	0	0

2016/17 Group	University B	%
Year 1	Enrolled	919
	Passed	862
	Dropped	18
	Repeat	26
	Withdrawn	13
Year 2	Enrolled	862
	Passed	839
	Dropped	12
	Repeat	5
	Withdrawn	6
Year 3	Enrolled	832
	Passed	802
	Dropped	15
	Repeat	8
	Withdrawn	7
Year 4	Enrolled	802
	Passed	794
	Dropped	5
	Repeat	1
	Withdrawn	2

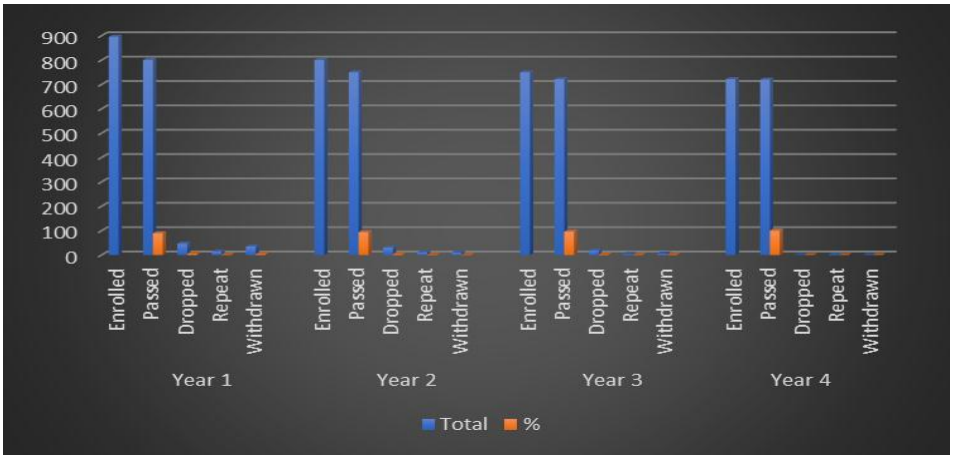

Figure 4 3: University B: Examination results 2015/2016 year 1 to 4

Figure 4.3 above shows the flow of students and how they have been performing from the first year to their final year of study, thus from 2015/2016 academic year for university B.

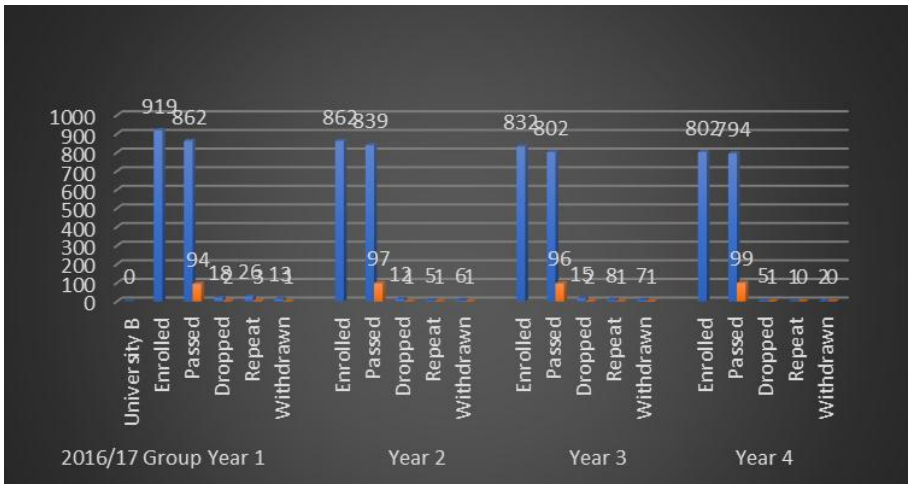

Figure 4 4: University B: Examination results 2016/17 year 1 to 4

Figure 4.4 above shows the flow of students and how they have been performing from first year to their final year of study i.e. from 2016/2017 academic year for university B.

Table 4. 25: University C: Examination results 2015 year 1 to 4

2015 Cohort Year 1	University C	Male	Female	Total	%
	Enrolled	866	504	1370	
	Passed	737	460	1197	87
	Dropped	0	0	0	0
	Withdraw and repeat	27	10	37	3
	Completely withdrawn	2	1	3	0
2015 Cohort Year 2		Male	Female	Total	
	Enrolled	837	493	1330	
	Passed	737	460	1197	35
	Dropped	0	11	11	1
	Withdraw and repeat	27	1	28	2
	Withdrawn completely	2	1	3	0
2015 Cohort Year 3		Male	Female	Total	
	Enrolled	816	474	1290	
	Passed	754	443	1197	93
	Dropped	0	1	1	0
	Withdraw and repeat	1	1	2	0
	Withdrawn completely	1	0	1	0
2015 Cohort Year 4		Male	Female	total	
	Enrolled	815	472	1287	
	Passed	755	413	1168	91
	Dropped	0	0	0	0
	Withdraw and repeat	2	1	3	0
	Completely withdrawn	0	0	0	0

Table 4.25 shows that for university C, 1370 students were enrolled for the 2015 group. Out of this number, 1168 completed their studies in the 4th year, 13 dropped out, 70 were withdrawn to repeat while 7 were completely withdrawn on academic grounds.

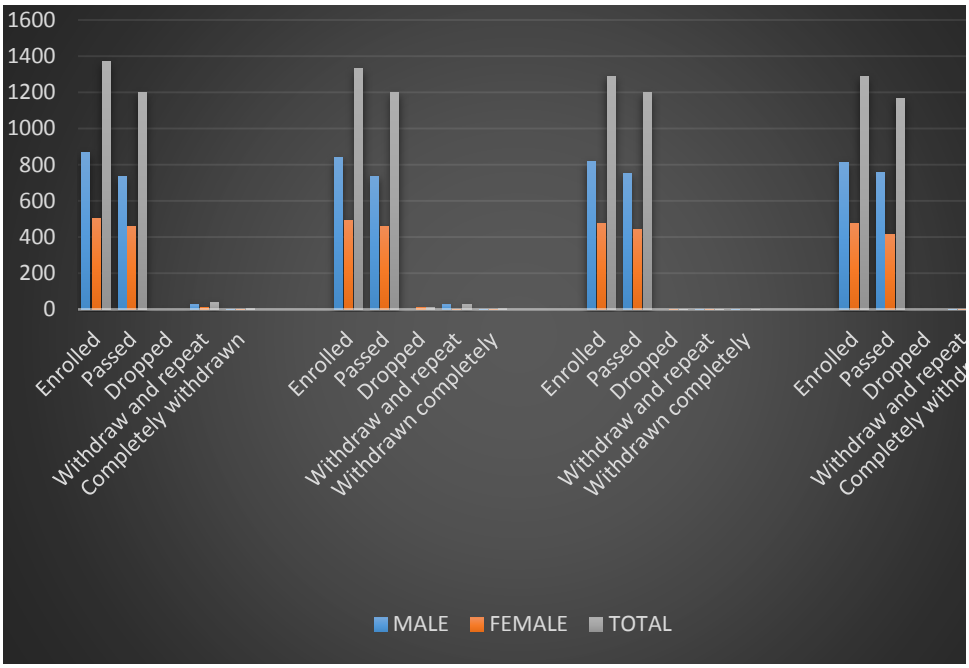

Figure 4. 5 University C: Examination results 2015 Year 1 to 4

Figure 4.3 above shows a graphical representation of the student flow for university C 2015 cohort.

Table 4. 26: University C: Examination results 2016 year 1 to year 4

2016 Cohort Year 1		MALE	FEMALE	TOTAL	%
	Enrolled	750	655	1405	
	Passed	652	616	1268	90
	Dropped	0	3	3	0
	Withdraw and repeat	1	1	2	0
	Completely withdrawn	2	4	6	0
2016 Cohort Year 2		**MALE**	**FEMALE**	**TOTAL**	
	Enrolled	747	648	1395	
	Passed	597	607	1204	86
	Dropped	5	0	5	0
	Withdraw and repeat	7	3	10	1
	Completely withdrawn	4	2	6	0
2016 Cohort Year 3		**MALE**	**FEMALE**	**TOTAL**	
	Enrolled	731	643	1374	
	Passed	649	602	1251	91
	Dropped	0	0	0	0
	Withdraw and repeat	3	2	5	0
	Completely withdrawn	0	2	2	0
2016 Cohort Year 4		**MALE**	**FEMALE**	**TOTAL**	
	Enrolled	728	639	1367	
	Passed	661	623	1284	94
	Dropped	1	0	1	0
	Withdraw and repeat	0	0	0	0
	Completely withdrawn	0	0	0	0

Table 4.26 show that for university C, for the group which was enrolled in 2016, 1405 students were enrolled. Out of this group, 9 students dropped out, 17 students were withdrawn to repeat while 14 were completely withdrawn on academic grounds.

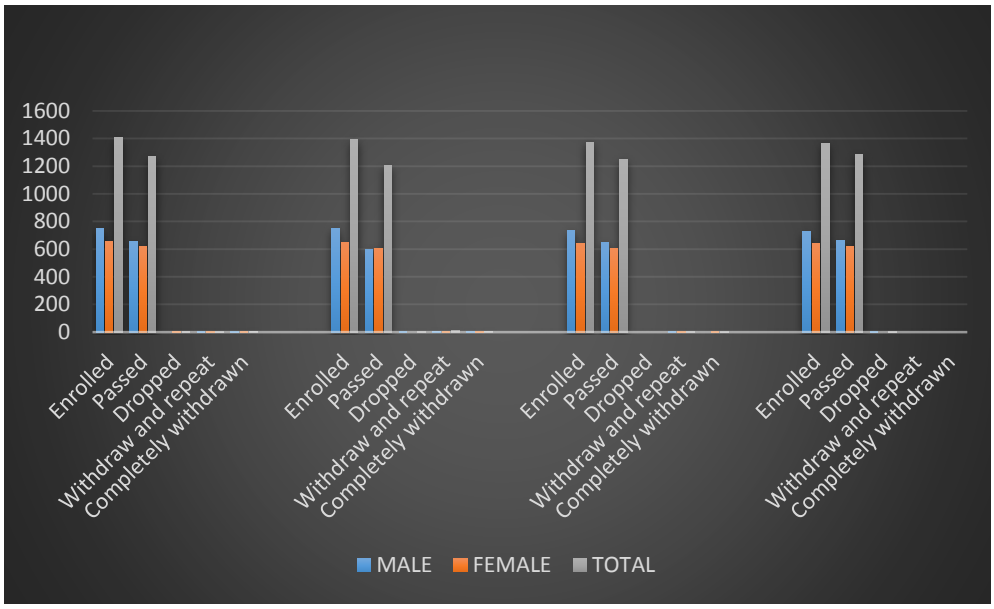

Figure 4 6: University C: Examination results 2016 year 1 to 4

Figure 4.4 shows the flow of students enrolled in 2016 from their first year of study to the final year at university C.

4.5 Documentary analysis

In a similar study contacted to investigate internal efficiency in Kenyan public vocational training centres, Okinyi, Nyerere, and Kariuki, (2021) reveled low efficiency as indicated by low enrolment, high dropout and low completion rate in the public vocational training centres. On the contrary this study has revealed that the indicators of low internal efficiency in Malawian public universities are high enrolment as opposed to low enrolment, high drop out and low completion rates as is the case in the Kenyan public vocational training centres. Tabulated data for all the three universities shows that most students drop out and repeat courses in the first two years of their studies, thus in year 1 and 2. For instance table, 4.22 shows that at university A, out of 922 enrolled in 2016, 218 students dropped out representing

24%. Performance increases as students get used to the teaching and study styles required at the university. Pass rate increases as students move to upper classes of study, thus third and fourth year. For instance, table 4.22 shows that for university A pass rate in the first year was 71% and in the fourth year it shot to 99%. Similarly, for university C table 4.26 shows that pass rate in year 1 was 90%, but in the fourth year it had risen to 94%.

4.6 Pearson Chi Square test of association between individual predictors and internal efficiency: Objective 2

Table 4. 27: Physical facilities vs internal efficiency cross tabulation

University Binary Internal Efficiency				
		Low	**High**	**Total**
Library Facility	Adequate	93	50	143
	Not Adequate	217	33	250
Total		**310**	**83**	**393**
Teaching and Learning Resources	Adequate	73	26	99
	Not Adequate	237	57	294
Total		**301**	**79**	**393**
Student Teacher Ratio	High	235	75	310
	Low	69	14	83
Total		**301**	**89**	**393**
Cafeteria Facility	Adequate	18	9	27
	Not Available	292	74	366
Total		**311**	**83**	**393**

Classroom Facility	Adequate	119	31	150
	Not Adequate	191	52	243
Total		**310**	**83**	**393**
Hostel Facility	Adequate	17	7	24
	Not Adequate	293	76	369
Total		**310**	**83**	**393**
Power Backup Facility	Adequate	95	39	134
	Not Adequate	215	44	259
Total		**310**	**83**	**393**
Clinic near	Adequate	223	73	296
	Not Adequate	**87**	**10**	**97**
Total		**310**	**83**	**393**
Access to clean water	Adequate	174	70	244
	Not Adequate	136	13	149
Total		**310**	**83**	**393**
Toilets Adequacy	Adequate	178	66	244
	Not Adequate	132	17	149
Total		**310**	**83**	**393**
Laboratory Facility	Adequate	166	52	218
	Not adequate	144	31	175
Total		**310**	**83**	**393**

Table 4.28: Chi Square test: Association between physical facilities and internal efficiency

Facility	Value	Df	Asymp. Sig. (2-sided)
Library Facility	25.867	1	0.000
Teaching/Learning Resources	2.101	1	0.147
Student/lecturer ratio	2.006	1	0.157
Cafeteria	2.596	1	0.107
Classrooms	0.04	1	0.948
Hostel	0.994	1	0.319
Power Backup	7,782	1	0.005
Nearby Clinic	9.034	1	0.003
Clean water	23.131	1	0.000
Toilets	13.583	1	0.000
Laboratory Facility	2.196	1	0.138

A Pearson chi-square test was conducted to examine whether there was a relationship between internal efficiency and the following physical facilities adequacy: library, laboratories, classrooms, cafeteria, hostels, power backup, water, clinic, access to clean water, student/lecturer ratio, teaching /learning resources. The results revealed that there was a significant relationship between variables library facility and internal efficiency (Chi square value = 21.99, df = 1, $p < .0001$). A significantly larger proportion of the respondents indicated that internal efficiency was low (79%) as they reported inadequacy of the library facility as compared to 21% who reported adequacy as shown in Table 4.27 and 4.5. A Pearson Chi-Square conducted to examine whether there was a relationship between the availability of a nearby clinic and internal efficiency in public universities revealed that there was a significant

relationship between the two variables (chi-square value = 11.44, df = 1, p = .001). 75% of the respondents indicated that there was an adequate nearby clinic as compared to the 25% who indicated that the nearby clinic was not adequate. A Pearson Chi-Square test which was conducted to examine whether there a relationship between the availability of adequate toilets and internal efficiency revealed that there was a significant relationship between the two variables (chi-square value = 13.58, df = 1, p = 0.001). The number of respondents who indicated that toilets were adequate in public universities was 62% compared to 38% of the respondents who indicated that toilets were inadequate. Pearson Chi-Square test also revealed the existence of a significant relationship between the variables availability of clean safe water and internal efficiency (chi square value = 21.40, df = 1, p = .001). 64% of the respondents indicated that clean and safe water was adequate compared to 36% who indicated that it was not adequate.

4.6.1 Multiple regression

Multiple regression analysis was then conducted to determine the best predictor of internal efficiency among multiple independent predictors, thus variable determinants of internal efficiency in the variate.

$y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 \ldots . b_nx_n + c$

Where:

y = the dependent/outcome variable, thus internal efficiency as predicted by the independent or predictor variables.

Bis (i-1,2,3….n) are the regression coefficients, which represent the value at which the criterion variable-predictors of efficiency changes when the predictor variable changes.

Xs = (1,2….n) are the independent predictors of internal efficiency.

Table 4. 29: Proportion of variation in dependent variable explained by independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.346a	0.12	0.093	2.154
2	.000b	0	0	2.262

Predictors: (Constant), Teaching and learning resources, Student/lecturer ratio, Nearby clinic, Cafeteria, Library, Access to clean safe water, Hostel, Classrooms, Adequate Toilets, Power backup facility, Laboratory facility.

Table 4. 30: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	232.068	11	21.097	4.55	.000[b]
	Residual	1707.119	368	4.639		
	Total	1939.187	379			
2	Regression	0	0	0	.	.[c]
	Residual	1939.187	379	5.117		
	Total	1939.187	379			

Dependent variable: Overall internal efficiency for universities

Predictors: (constant), teaching and learning resources, student/lecturer ratio, nearby clinic, cafeteria facility, access to clean water, hostel facility, classroom facility, toilets adequacy, power backup facility, laboratory facility.

Predictor: (constant)

Table 4.31 Overall internal efficiency for universities

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.295	1.238		42.236	.000
	Student Teacher Ratio	-.079	.269	-.014	-.292	.770
	Library Facility	-.965	.260	-.201	-3.714	.000
	Classroom Facility	.388	.270	.082	1.438	.151
	Laboratory Facility	.155	.267	.033	.581	.562
	Hostel Facility	-.882	.495	-.092	-1.782	.076
	Cafeteria Facility	-.492	.466	-.054	-1.056	.292
	Power Backup Facility	-.093	.273	-.019	-.341	.734
	Access to clean water	-.256	.258	-.054	-.993	.321
	Clinic near	-.409	.278	-.076	-1.471	.142
	Toilets Adequacy	-.547	.265	-.115	-2.061	.040
	Teaching and Learning Resources	-.183	.293	-.034	-.626	.532

a. Dependent Variable: *Overall internal efficiency for universities*

Multiple regression analysis was conducted to examine whether student lecturer ratio and physical facilities such as library, classrooms, teaching and learning resources, laboratories, toilets, water, nearby clinic, power backup and hostels has an impact on the overall internal efficiency. The overall model explained 12 percent of variance in internal efficiency, which was revealed to be statistically significant, $F(11,368) = 4.55$, $p < .001$. An inspection of

individual predictors revealed that adequacy of library facility (Beta = -.22, $p < .001$) is a significant predictor of internal efficiency. Lack of adequate library facility is directly associated with low efficiency and inversely proportional to high internal efficiency, they are inversely proportional.

Chances are therefore, high that a university that lacks adequate library facility is likely to be low in internal efficiency with adequate library facility being the best predictor of internal efficiency in the model. [Note that a negative beta coefficient shows the dependent and independent variables do not vary together i.e. as x increases, for example, y decreases, while a positive beta coefficient shows that they vary together i.e. an increase in x is associated with an increase in y.]

4.7 Qualitative findings

This section presents qualitative findings for the study in line with objectives, themes and sub-themes that emerged following thematic analysis.

4.7.1 Factors which affect internal efficiency in public universities: objective 3

Fifteen (15) university managers in the study indicated that factors which affect internal efficiency in public universities can be categorised as: environmental factors, lecturer factors and student factors. Environmental factors include: student lecturer ratio, availability of adequate teaching and learning resources, physical facilities such as availability of adequate library, availability of adequate well equipped laboratories, availability of classroom space, absence of cafeteria, shortage of hostels, inadequacy of safe clean water, power backup facility and availability of nearby clinic. Lecturer factors include: type of qualification, commitment to work, missing grades, job specification and under staffing. Student factors include: poverty, and quality of students. Factors which affect internal efficiency of students in public university

as presented by students through focus group discussion and interviews scheduled for university managers are summarised in the table below

Table 4. 31: Students and university managers' views of factors which affect internal efficiency in public university

Factor	Frequency	Relative frequency
Student Factors		
Poverty	33	94%
Student Quality	25	71%
Lecturer Factors		
Qualification	20	57%
Commitment to duty	20	57%
Environmental Factors		
High student lecturer ratio	34	97%
Inadequate laboratories	30	86%
Shortage of hostels	25	71%
Absence of cafeteria	20	57%
Inadequate library space	34	97%
Inadequate classroom space	33	94%

4.7.2 Student factors

4.7.2.1 Poverty

Table 4.6 shows that 94% of the respondents indicated that students in public universities are affected by poverty in their academic internal efficiency. Due to poverty, most students in public universities fail to get necessities to see them sail through their studies. This ranges from money to buy meals, gadgets such as laptops, smart phones, to pay for a decent accommodation and to buy stationery as well as for printing. Some of the interviewed respondents said the following:

Many students do not have electronic gadgets such as PCs to use in their studies. With black outs, it becomes a challenge because some laptops do not have good batteries to power them up and some have very little space. Some students do not have reliable phones and honestly speaking, you can't read for a long time on a phone because its screen size is not as big as the laptop and you squint your eyes. Some phones do not have enough space to store large volumes of daily notes and tutorial videos. (Respondent P, Focus group interview)

Most students we depend on loans but find that this year you are given and next year you have been omitted, so it takes you long to graduate because you are forced to ask for place reservation to go and look for fees. (Respondent P4, focus group interview)

In addition to that students complained that they sometimes fail to access notes, assignments and other things because they don't have gadgets with which to access the required information. Respondent P3 had this to say, *"Most of the notes are in form of soft copies, so if you don't have a PC or smart phone, you are in trouble."*

Furthermore, some students go to class with on empty belly, which makes it very difficult for them to concentrate. Respondent P7 narrated her experience as follows; "*Our parents tell us to*

take only two meals per day because they cannot afford to give us money for three meals per day."

Respondent R4 agreed with respondent P7 saying,

Most of the things they need to support themselves throughout their studies require money. Students who come from poor back grounds struggle a lot. Sometimes they do not have anything to eat. They come to class and they cannot concentrate.

I am a living example of what he is saying. I came here in 2017, that's when I started my first year but when I came, I had no tuition fees. I had only K20000 which I was supposed to use to buy food. I had a headache as to where I would find tuition fees. To make matters worse, I was not considered for government loan. This affected me a lot to an extent that I had three supplementary examinations. Out of the 3, I repeated 2 courses. I only managed to pass 1, so what my colleague is saying here is true. (Respondent E, focus group discussion)

Students also drop out as a result of poverty in public universities.

There could be other factors as well, the cost of living has gone up and students may not be able to have other things like may be Wi-Fi, a good accommodation, good food, and provisions to sustain them. These and other outside factors could also be contributing to their performance. Outside factors, some within our control but most of these are not within our control. For example, each year we experience a number of students not completing their studies on account of financial difficulties and these are factors that may affect students. We wish we could have more access by students to loans by government and perhaps other stakeholders so that perhaps those that drop out on account of lack of livelihood, tuition fees or things they need for their support in education should be available so that our students shouldn't drop.

(Respondent R3, face to face interview)

4.7.2.2 Student quality

Table 5.6 show that internal efficiency is affected by the quality of students public universities get. Seventy-one (71%) of the respondents reported that some of the students do not perform well because of their sluggish study habits such as relying on spoon feeding the practice which is common in primary and secondary schools, instead of reading on their own. Respondent P9 said, *"Some students fail because they cheated during MANEB examinations to gain entry into the university."*

Some of the students get carried away by the freedom they get by being away from parents. They do not study because their parents who have been forcing them to do so are now far away. So, they are playful that you find them on whats-app in class while the lecturer is teaching. This affects their performance.

(Respondent R3, face to face discussion)

I don't know what is happening with the children of today, you find that they don't want to study on their own. They want someone to push them. We give them a course outline but they can't make use of it like, we used to do during our time, that reading culture is not in them. The other thing is that you find them busy with Whats-app when you are teaching. (Respondent R2, face to face discussion)

4.8 Lecturer factors

Focus group discussion with students and face to face interviews with university managers revealed that lecturer qualification is one of the factors which affects internal efficiency in public universities. Some of the participants have this to say:

We have shortage of lecturers in some departments. We depend on adjunct lecturers some of whom are not reliable. There is need to beef up lecturers at masters and PhD level. Some of the lecturers we use are not well qualified.

(Respondent R6, face to face interview)

The first factor is that the release of results is not timely. The second is that students have missing grades. Most of the students because of missing grades, find it difficult to proceed with their studies because they don't know their academic performance through results and missing grades, thus the delay in releasing results and missing grades. (Respondent R9, face to face interview)

Our lecturers are qualified but some of them need to go through UCE because they are not teachers by profession. As such, they may not understand how to teach since they are managers by profession. Some of the issues of missing grades may be as a result of recruiting staff who may not even know how to assess students and how to combine continuous assessment and the final grade.

(Respondent R9, face to face interview)

Respondent P2 said that, "Such *lecturers do not teach well. They do not want to be asked questions by students when they do not understand."*

Another issue could be support, outside classroom support. Maybe the lecturer is doing a good job and maybe they are getting feedback on time but some of them may require to meet specific

lecturers outside classes at a time like this one so that they can chat in an office like this. Unfortunately, that time may not be available to lecturers due to factors such as heavy workloads, however, off classroom support is required. (Respondent R2)

Respondent R1 said, *"The other factor is the actual contact between lecturers and students, at times the lecturers may not be coming. That has implications on student performance"*

Still on time management, you find that when we are given grace week to prepare for exams, we do not have grace week at all because you find that because some lecturers did not finish the work they planned for the semester, they teach us during that grace week. Some will even teach when exams are in progress because they know that they have not yet covered some of the content in their exams. (Respondent P, Focus Group Discussion)

4.9 Environmental factors

4.9.1 High student lecturer ratio

Table 4.6.0 shows that high student lecturer ratio is a factor which affects internal efficiency in public universities as it affects students' performance. About 97% of the respondents indicated that high student lecturer ratio affects internal efficiency. Respondents who were interviewed through focus groups and face to face interviews said the following:

Ideally lecturer to student ratio should be the NCHE recommended ratio 1:18. But here you find, like in the faculty of science, you find in classes maybe 700 students especially in Mathematics. Courses like Biology you find maybe 500 students, courses like chemistry go up 600, 400, 300 students in one class. (Respondent R, face to face interview)

Factors which affect internal efficiency in public universities like ours include failure of universities to balance quality of training with quantity, which has an impact on the quality of assessment. For example, the government policy is 1:25 student lecturer ratio per course maximum, but on the ground, its 1:400 [laughs]. And therefore, it becomes difficult for a lecturer, for example, to conduct as many continuous assessments as possible and then to mark them on time and give timely feedback as well. (Respondent R7, face to face interview)

Nowadays government is demanding that we increase access to higher education, but at the same time, the same government is not providing enough resources for us to recruit. So, in fact the amount the government is providing to universities is going down instead of going up but the number of students is going up. So the government, for political reasons, it wants the number of students to increase that the universities are taking. Actually VCs are under pressure to enroll many students. (Respondent R2, face to face interview)

4.9.2 Inadequate laboratories

Inadequacy of laboratories affects internal efficiency in public universities. In table 4.6.0, 86% of the interviewed respondents pointed out that shortage of chemicals, laboratory space and modern equipment has an impact on the performance of public university students.

Respondent P1 said, *"…. equipment in laboratories is not adequate. We rarely do practicals. In some courses, students graduate with knowledge gaps."*

In addition, respondent P8 said, *"The population growth does not match with the available facilities and equipment."* To add, respondent R5 says, *".....due to shortage of teaching and learning materials. For example shortage of chemicals may result in the students being half baked since they will not be doing practicals."*

We don't have enough apparatus. Most of the apparatus we use are old fashioned. They were bought during the one party era when Kamuzu was still President. A good example is the apparatus we use in the physics laboratories. (Respondent P9, focus group discussion)

The departments do not have some chemicals needed for practical lessons and equipment. The lecturers end up just explaining, for example, how a machine works when in actual case we and even she has never seen the actual machine. She will just say for instance, here in Malawi, it's not there but it works like this. So, it becomes difficult to imagine how the thing looks like. I will give an example of PCR machine used in genetics and ……. (Respondent P2, focus group discussion)

We are limited on the time that we have to spend in the laboratory due to inadequacy of equipment, for example, instead of spending 3hours we are given 1 hour, we are told to just collect data so that you can answer the question outside the lab to give way to others to get into the laboratory. This happens because students are many but equipment and lab space is not enough, so we get into the lab in turns. (Respondent P1, focus group discussion)

We also have acute shortage of laboratory equipment, for example, in the computer laboratory, we do not even have one functional computer. We just do practicals using the word of mouth and we are told to go and try at our own time if we get laptops of which most of us have no personal computers due to poverty. (Respondent P2, focus group interview)

4.9.3 Shortage of hostels

Accommodation is another factor which affects internal efficiency in public universities. Out of the 35 participants who were interviewed to solicit their views on the subject, 25 said that shortage of hostels has a negative impact on students' internal efficiency, while 10 were of the contrary view.

The other one is accommodation. For example, some students live far from the campus and they are affected by thieves as they come to the campus because the library closes at 10pm. So, someone who is living away from the campus is attacked. So, accommodation affect students' performance because someone can decide not to go to the library. (Respondent R9, face to face interview)

On accommodation we are stack there. The university was initially meant to accommodate 1500 students and a few additional rooms were constructed around 1996-98, after that we haven't constructed any. So most of the students apart from the 1500 on campus are residing in off campus private hostels most of which are substandard, lacking in basic amenities. (Respondent R, face to face interview)

Accommodation can be a factor or not. It depends with the type of accommodation. Some students reside in accommodation where they do not have proper light where there is no electricity in poor quality houses because they do not have money or they want to save. As a result, they cannot study at night and in most cases, they have to walk for a long distance to get to school when their colleagues stay on campus and have a library where they can comfortably and conveniently do their studies while accessing free Wi-Fi. Those who stay outside in most cases can't come at night to access either Wi-Fi or the library because of safety. (Respondent R5, face to face interview)

Respondent P2 said, "...accommodation which is offered outside the campus are tiny rooms with a small space and would not have a desk and a chair for you to be able to sit properly and study."

4.9.4 Inadequate library

Inadequacy of library facilities affect internal efficiency in public universities. Table 4.6 shows that 87% of the participants stated that students are affected by inadequate library space, shortage of up to date relevant books and reliable Wi-Fi to access online materials. Respondents in focus group and face to face interviews said the following:

"My friend was taking Law Enforcement course; in the library he could not find books for their course. The university should get prepared with materials such as books for the course before introducing new courses."

To be honest, in the library we don't have enough books. You go to the library to borrow a book and you are told that the book you want has already been borrowed by someone, so you have to wait. When you try to book it, you find, that there are others on the list who are also waiting for the same book you are booking who have to use it before you can access it and each one would have to use it for 2 hours which means you will have to wait for long before you can access the book. You end up getting fed up such that by the time you get the book, you are tired and you have lost interest. By so doing, you are put off. (Respondent P3, focus group interview)

Wi-Fi is not reliable. In most hostels there is no Wi-Fi. Wi-Fi is mostly found in offices but the problem is that you can't be in someone's office to access it, you have to be outside. This becomes a challenge during the rainy season as well. My view is that they want to reduce the number of students to reduce workloads by creating an environment which will see students failing and being withdrawn. (Respondent P1, focus group interview)

Respondent P2 said, *"When everyone is here on campus, we fail to access the data at the speed that we want because network will be very slow when many are accessing Wi-Fi."*

Respondent R6 said,*"... library space is not enough such that during pick times such as towards examination time, the grace week, students go into the library in turns. Reading materials are not sufficient since most essential books are inadequate."*

4.9.5 Absence of cafeteria

The absence of cafeteria in public universities is another factor which students and university managers explained as affecting internal efficiency of students. Table 5.6 shows that 20 out of the 35 participants, were of the view that the absence of cafeteria affects the internal efficiency of students. This represents 57% of the interviewed respondents. Respondent P3 said, *"It is time consuming for students to cook and because of this, we end up coming to classes late and at times even missing classes."*

Some restaurants are very much below acceptable standards. They are not even clean, which at times affects the health of students. We have no option, we just go there because we look for at least cheaper food because we have no money. (Respondent P5, focus group interview)

It's not only accommodation which affect students but even access to food. We have students who come to class hungry because literary they don't know what they are going to eat. Some of them rely on their friends to share. Some students go to an extent of fainting due to hunger, not fainting because they are sick, but due to hunger. (Respondent R5, face to face interview)

Respondent P7 said, *"Our parents tell us to take only two meals per day because they cannot afford to give us money for three meals per day."*

Respondent P9 said, *"We need the cafeteria to be rebuilt as quickly as possible so that we can access cheaper meals if they can subsidise at least."*

Respondent R7 said, *"It does affect internal efficiency of students, actually food is the first on Maslow's hierarchy of needs. Nobody would go to look for the other needs if the need for food is not satisfied."*

4.9.6 Inadequate classroom space

Table 5.6.0 shows that 94% of the respondents indicated that classroom space is a factor which affects internal efficiency in public universities in Malawi. Respondent R 6 said, *"Class room space is a challenge. Students are congested."*

Respondent P2 Said, *"Classrooms are not enough and you would have classes unexpectedly shifting to another venue due to high demand for classes."*

Respondent R said, *"Classroom space is also a challenge in terms of infrastructure. We have expanded but we haven't built another campus, that's the challenge we are facing."*

4.10 Strategies which can be implemented to improve internal efficiency in public universities: Objective 4

Respondent R said, "Ideally if you want a student on government scholarship to enjoy university education, government should pay students enough money in loans. It is a loan which they are going to pay back, so why not give them enough."

Students should be given a loan with proper modalities to recover it when they start working. As it is, people get away because there is no proper modalities to recover it, that's why the system is as it is, but it's the bright student who should be supported because he is the capacity of the country. Those making the policies if they went through the system, they wouldn't be where they are today. I am not blaming anyone but it's a fact. People should look back and say

if we were subjected to these conditions even children with parents working in government couldn't afford university education. (Respondent R, Face to face interview)

There is need to beef up lecturers at masters and PhD level. Some of the lecturers we use are not well qualified. The other thing is that I would recommend that as a university we move back to provide the cafeteria so that students can access at least subsidised meals because students who come to the university now are very young. So, if the university can bring back the cafeteria services, it will help students concentrate on their studies unlike the situation as of now. We should provide mobility to our students to do practicals, field trips and to do planned social errands such as drama, SCOM, church gatherings through the dean of students. (Respondent R6, Face to face interview)

Some of the solutions would be like I have already said those that do not have teaching qualifications should be given an in-house training on assessment and curriculum issues. The university can lobby with other stakeholders to come and put in place infrastructure so that students can find accommodation on campus. When enrolling students, the university should consider classroom space, accommodation and student lecturer ratio rather than just enrolling anyhow. (Respondent R9, Face to face interview)

There should be a bit of distinction for example, a difference like teaching of classes between, let's say between you know, masters holder, lecturers who are masters holder, PhD holder, an ordinary lecturer, and a senior lecturer. In other universities for example, senior lecturers like professors, uh, they concentrate more uh, on research. They are given more tasks on supervising students, like masters students rather than teaching the undergraduate students. So senior lecturers, professors are given very limited teaching workloads. But they are given clear responsibilities like supervision of post graduate students. That facilitates swift and quick

completion of post graduate students research, for example. What happens is that the most important part, like supervision of post graduate students, suffers at the end of the day. (Respondent R9, Face to face interview)

Plus, we have put in place monitoring tools to ensure that teaching and learning is taking place. These are with class representatives so that each and every lecturer can sign as proof that they have taught that day. We have also put in place measures to ensure that there are efficiencies in the path of students' academic cycle to help them in their performances. We have noted that sometimes poor performance is as a result of poor development of examinations and sometimes it is as a result of poor marking. So, we have put in place what we call internal moderation exercise. (RespondentR5, Face to face interview)

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Chapter overview

The chapter presents the discussion findings of the study based on the objectives and research questions.

5.2 Objective 1: Predictors of internal efficiency in public universities

With reference to the research question, "To identify predictors of internal efficiency in public universities." The study has revealed that predictors of internal efficiency in public universities are: availability of adequate library facility; nearby clinic; adequate clean safe water, and adequate toilets.

Seiler, Jones, Landy, Olds, and Young (2006) in Ileuma, S (2017) enlightened that physical facilities such as library; clinics; clean water; toilets; equipment and technology are a necessity for effective teaching and learning to take place. Universities that have suitable infrastructure aids the internal efficiency of their students. Fabunmi (2000) pointed out that when a university does not have adequate infrastructure and equipment, lecturers tend to be frustrated. This is because they struggle to meet their educational goals and objectives. In order to improve internal efficiency of students, an institution of education is supposed to have appropriate infrastructure in addition to other necessities Ileuma (2017).

5.3. Objective 2: The best predictor of internal efficiency in public universities

The study revealed library facility as the best predictor of internal efficiency (Beta -22, $p < .001$) is a significant predictor of internal efficiency. Lack of adequate library facility is directly associated with low efficiency and inversely proportional to high internal efficiency, they are inversely proportional.

Chances are therefore, high that a university that lacks adequate library facility is likely to be low in internal efficiency with adequate library facility being the best predictor of internal efficiency in the model. [Note that a negative beta coefficient shows the dependent and independent variables do not vary together i.e. as x increases, for example, y decreases, while a positive beta coefficient shows that they vary together i.e. an increase in x is associated with an increase in y.] This implies that when inadequacy increases, internal efficiency is reduced. Hence the higher, the inadequacy, the lower the internal efficiency.

In a chi-square test that was conducted a significantly larger proportion of the respondents indicated that internal efficiency was low (79%) as they reported inadequacy of the library facility as compared to 21% who reported adequacy as shown in Table 4.27 and 4.5. This shows that library facilities are not adequate in public universities. In the same vein the interface interview conducted for university mangers revealed that library facility adequacy is a challenge in public universities. In the interviews, 97% of the university managers indicated disclosed that library facilities are not adequate in their universities. They also admitted that this inadequacy affect students. For instance respondent R6 said, *"…library space is not enough such that during peak times, towards examinations, during grace week, students get into the library in turns"*. Lack of physical facilities such as a library, affects students in their academic internal efficiency.

Library inadequacy has a negative impact on the internal efficiency of students. For instance, in Nigeria, a study by Okwu and Opurum (2021) attributed mass failure in public examinations to inadequacy of library services. An adequate library helps lecturers to adequately prepare for classes and incite students to enjoy studying (Okwu and Opurum, 2021). Todd (2003) found out that when the library is adequate, more students are retained because an adequate library helps students to perform well. In support of this, Papa (2017) pointed out that students who learn in schools with adequate libraries tend to perform better than those who learn in schools

with inadequate or small libraries. The situation is even worse for those who learn in schools without a library. In order for a student to do well, there is need to have access to a well-stocked library with standard furniture to comfortably sit so that the student can effectively study.

In this modern world, a library should provide access to online collections to beef up its collections (Okwu and Opuram, 2021). However, observations and focus group interviews with university students has shown that in public universities, Wi-Fi is not that reliable. Students have complained that during peak times they fail to access internet through Wi-Fi due to poor signal, its slowness and network break down. Respondent P2 for example explained, "Respondent P2 said, *"When everyone is here on campus, we fail to access the data at the speed that we want because network will be very slow when many are accessing Wi-Fi."*

" This shows that access to online collections is a challenge for those who rely on free Wi-Fi. Wi-Fi access points in public universities is also limited as some places do not have access. For instance respondent P1 said," *Wi-Fi is mostly found in offices but the problem is that you can't be in someone's office to access it, you have to be outside. This becomes a challenge during the rainy season...*" This shows that Wi-Fi access points are not enough in the universities.

5.4 Objective 3: University managers' views on factors which affect internal efficiency in public universities

University managers disclosed that factors which affect internal efficiency in public universities can be categorised into three parts which are: student factors, lecturer factors and environmental factors.

5.4.1 Student factors

5.4.1.1 Poverty

Table 4.6 shows that 94% of the respondents indicated that students in public universities are affected by poverty in their academic internal efficiency. Due to poverty, most students in public universities fail to get necessities to see them sail through their studies. This ranges from money to buy meals, gadgets such as laptops, smart phones, to pay for a decent accommodation and to buy stationery as well as for printing.

Poverty is one of the factors which negatively affects internal efficiency of most students in public universities. The above quotes show that students from poor home back grounds find life tough in the public universities as they mostly rely on the provision of government loan to get tuition fees and upkeep money. This affect them a lot because the provision of government loan to students is not guaranteed. A good example is respondent R4 who said, *"... I had a headache as to where I would get tuition fees and to make matters worse, I was not considered for government loan."* This make students to have psychological disturbances and stress as they have to think of how they can get fees, food, shelter and other basic amenities. The end result is that students fail to complete their studies on time as some temporarily withdraw to go and source tuition fees and others find their way into the streets where they become destitute as they hopelessly drop out for good. Others are affected because they have divided attention as they have to look for food and there are some who come to class on empty bellies because they literally have nothing to eat, some live in very bad accommodation as they cannot afford to rent decent accommodation. Some do not even have money to buy smart phones or laptops with which to access Wi-Fi. According to Cedeno, Martinez-Arias and Bueno (2016), the economic status of students can predict their academic achievement. They observed that students who come from poor families experience emotional and social challenges such as chronic stressors and cognitive lags as a result of changes in the brain structure, especially in

areas which are related to memory and emotion. Jenson (2009) concurs with Cedeno and others adding that thee stress result in the production of cortisol, a chemical which causes the sending of weaker neuron signals to the prefrontal cortex and the hippocampus which are crucial for learning, cognition and memory.

In Malawian public universities, most students are severely stressed by poverty. To make matters worse, they lack even the basic needs due to perpetual poverty. This has both a direct and indirect impact on their performance. According to Jenson (2009), if these stresses are left to take place frequently, the effect is that they cause neurons to shrink in the frontal lobe of the student's brain. Should this happen, the problem is that the affected student will have problems in planning, making sound judgment and impulsivity control. This also has the potential of destruction of the hippocampus which results in the student having a low learning capacity. In support with Jenson (2009), Dike (2017) adds that students who have been exposed to poverty are problematic and hard to deal with behaviour wise. When students are exposed to adverse conditions such as poverty and perpetual stressors, they exhibit disruptive compensatory behavior which in turn may affect their completion rates

5.4.1.2 Student Quality

Student quality is one of the factors which affect internal efficiency in public universities. Education has become more accessible to the rich than the poor. For instance, most of the students are poor. They did not attend high quality primary and secondary schools to prepare them well for higher education for they attended low cost overcrowded government primary schools and community day secondary schools (CDSS). They join the universities with poor foundation with regard to language competency and other background knowledge which affect their understanding of concepts, especially during the first year of study which affects their performance, hence most of them either repeat courses or are shown the exit door. The above participants show that students themselves contribute to lack of internal efficiency in public

universities. The study has found that students themselves are one of the factors which affect internal efficiency in public universities. The quality of students universities get nowadays leaves a lot to be desired. For instance, respondent R2 pointed out that universities get students who are used to *"spoon feeding"* from primary to secondary schools. They wait for lecturers to teach them and give them notes, instead of making use of the library and the available online reading materials such as journals, pdfs and tutorials. According to Dewey (1916) education is a product of experience. Students are supposed to discover knowledge for themselves in order for the knowledge to be permanent.

Internal efficiency is also affected by students' irresponsible behaviour. Respondent R3 said, *"Some students are playful, they whats-app in class while the lecturer is teaching."* Some students get carried away by college trivialities that they forget the reason for being at the university. They do not manage the independence that comes with freedom which universities offer. It takes them time to realise that they are supposed to engage in independent study. That is why the pass rate is very low in the first year of study especially the first semester of first year, and improves as the students' progress to higher levels just as respondent R puts it when he said, *"…after administering examinations in the first semester, the pass rate is around 56-60% and it goes up to 90%."*

To mitigate the plight of the needy students, Budge and Parrett (2018) suggest that educators such as lecturers develop good relationships with students in order to give them a trust worth reliable and positive role model which they can count on. However, in Malawian public universities, students complain that this relationship exist at primary and secondary school level. They argue that in universities, lecturers have a pompous character such that they do not care about the plight of students. For instance, participant B said, "Lecturers are happy to see students failing, they tell you that they are going to weed you and that not all of you can pass their course, which is discouraging." In addition to that, participant C also said, *"...When you*

ask a question to seek clarification….., you are ignored such that you look a fool and sometimes you are told to go to the library when you actually need clarity…" Lecturers on their part argued that they do not entertain questions because classes are overcrowded and giving room for questions would mean taking away lesson time since students are many. They also pointed out that building up relations with students is not possible due to tight schedules and work overloads which do not give them room for outside classroom support to students. To improve the quality of students and the plight of needy students, there is need for the government to ensure that it starts at lower levels to raise the quality of education and to reconsider enrolment against capacity of public universities.

5.4.2 Lecturer factors

According to the above respondents, lecturer factors do affect internal efficiency in public universities. These are lecturer absenteeism, use of non-teaching professionals without UCE and shortage of qualified teaching staff.

Public universities do not have adequate qualified lecturers. Respondent R says, "….. We depend on adjunct lecturers some of whom are not reliable. There is need to beef up lecturers at masters and PhD level." This shows that there is shortage of qualified teaching staff in public universities. For instance some universities use lecturers who are "*inappropriately*" qualified as most universities fail to meet the 30% minimum PhD staff qualification requirement (NCHE, 2019). The National Council for Higher Education, NCHE (2019) admits that, really, there is shortage for qualified teaching staff in public universities which is affecting quality and relevance of higher education. This shortage has implications on lecturers work load. Understaffing leads to heavy workloads. In a face to face interview respondent R 9 explains, *"…lecturers who are masters' holders and; PhD holders and professors should be given lighter load in the teaching of undergraduate students so that they can concentrate more on crucial areas such as supervision of post graduate research for example… "* This is not be

possible in the face of shortage of qualified staff. However overburdening lecturers reduces the quality of delivery which in turn has an impact on the end product (Asiyayi, 2013).

Some lecturers in the Malawian public universities teach for examinations. This is because at the onset of the semester, they do not come to class to attend to students as they will be engaged in other activities such as research, part-time lecturing and personal engagements. By the time they come to attend to their students, they will be behind time such that they engage in giving students heavy slides knowing that the content is contained in the examinations. However, Akpotu and Akpochafo (2009) in Msiska (2015) postulate that when students are rushed through content, they suffer because the lecturer will be focusing on covering content without minding as to whether meaningful learning is taking place or not. This gives students tough time as they are bulldozed with heavy slides in different departments. In the end, some end up unnecessarily failing as they fail to cope. For instance, Respondent P explains, *"we are given a grace week without grace…"* Students are taught during their grace week, which they are supposed to use to prepare for examinations because lecturers would like to cover content which is in the exam which they didn't cover by the time they were not attending to students. This leaves students with very little to no time to adequately prepare for examinations.

The situation is aggravated by shortage of lecturers in different departments. Respondent R6 points out, *"We have shortage of lecturers in some departments. We depend on adjunct lecturers some of whom are not reliable."* Sometimes students go for long without a lecturer. In this case they are taught by adjunct or part-time lecturers who are hired to cover up the gap. The practice of hiring adjunct or part-time lecturers also takes place in other countries like China (Jiang, 2015). The challenge however, is that some of those lecturers are not reliable which result in students covering little of the intended course outline. The end result is that students graduate with knowledge gaps. This is because most part-time lecturers have other jobs which may be their main sources of income. As a result they do not spend much time in

the institution. They just come and teach for the hired hours then off they go. This disadvantages students as they cannot access outside the classroom support easily given that the lecturer does not spend much time in the institution (Msiska, 2015).

5.4.3 Environmental factors

5.4.3.1 Student: lecturer ratio

University managers revealed that student: lecturer ratio is big challenge which may be affecting students in their academic internal efficiency. Most of the problems public universities are facing are as a result of high student lecturer ratio. The government is increasing intakes without providing the much needed accompanying support. This has a negative impact on the internal efficiency of students as students struggle to find the resources which are required for them to efficiently study. The government recommends a ratio of 1:18 per programme, yet in most programmes the number is more than double. This has put pressure on teaching and learning resources such as classroom space, lab equipment among other crucial learning resources. Respondent R7 laments, *"…. the government policy is 1:25 student lecturer ratio per course maximum, but on the ground its 1:400"* This shows how critical the situation is on the ground.

In some public universities in Malawi, they have resorted to the use of large halls so that 700 students or more can be taught at once by one lecturer. However, the challenge is that in most cases, those who sit at the back do not benefit much as it takes the skills of the lecturer to benefit everyone in the hall. For instance, some lecturer's voice is not that audible. The situation become worse when they do not use PH system because not all halls are installed with such facilities. Those without adequate halls have a bigger challenge as students sit on the flour and some stand behind others making it difficult to see the teacher and in the worst case, some peep through the window. P2 explains, *"Classrooms are not enough and you would have classes unexpectedly shifting to another venue due to high demand for classes."* Although respondent

R points to the fact that universities are putting in place infrastructure to increase classroom space, the challenge is that the increase in enrollment does not match with the rate at which infrastructure is being put in place. Worse still, infrastructural projects are coming in response to the situation rather than being put in place in preparation for the growing intakes (Chitete, 2023).

5.4.3.2 Inadequate laboratories

From these contributions from the participants, laboratory space, apparatus and chemicals is a challenge which affects internal efficiency of students in public universities. Laboratory space is limited due to enrollments which exceed capacity. As a result, students get into laboratories in turns, which is a challenge given the time allocation. The end result is that students are not given adequate laboratory time since they have to complete their work outside the laboratory to pave way for others. Respondent P1 in a focus group interview had this to say, "… *Instead of spending 3hours we are given 1 hour, we are told to just collect data so that you can answer the question outside the lab to give way to others."* This happens because lab space is not adequate and equipment is not adequate as well. In some cases the laboratory equipment is very old and old fashioned while at times students are affected by the absence of the equipment and non-availability of chemicals which force lecturers to teach only certain content and not to teach the others. Sometimes the teaching is done theoretically rather than practically as a result of the absence of equipment and chemicals required. However, House (2009) observed that science especially subjects such as chemistry cannot be effectively taught without appropriate laboratory, equipment and materials. This notion is supported by Dewey (1944) who postulates that education is a product of experience. Such being the case, students learn effectively when they discover knowledge themselves. This is done through carrying out experiments, handling and manipulating equipment and materials through hands on approach.

5.4.3.3 Inadequate cafeteria

The study shows that the absence of cafeteria in Malawian public universities affect the internal efficiency of students. A study conducted by Mekonnen and Ayele (2019), revealed that variables such as food adequacy, cafeteria sanitation quality, food sanitation, personal hygiene of cafeteria workers, and cafeteria time are some of the determinant factors that lead to good student results. In Malawian public universities students have two options which are, buying prepared meals from out sourced food outlets if they are residing in the university campus or either buying prepared meals or preparing their own meals if they are off campus residents. Since most students come from poor family backgrounds, they opt for preparing their own meals since they cannot afford to buy meals on daily basis. Even those who reside in the campus, illegally prepare their own food despite being forbidden by the university authorities due to cost of buying meals on daily basis. This affects students as it takes away much of their precious time to prepare meals. Sometimes they go to class without eating if they have a tight class schedule. Some do not eat because they do not even have anything to cook. This makes them not to concentrate in class as they will be hungry and busy thinking of how and when they are going to get the next meal. Those who can afford to buy face the challenge that most of the restaurants which have mushroomed all over the university campuses are substandard. Those that provide better quality are expensive and only those from well to do families can afford to buy from them. This has resulted in some students skipping meals in order to save. Respondent P7 complains as she says*, "Our parents tell us to take only two meals per day because they cannot afford to give us money for three meals per day."* Parents have resorted to this as they do not have money but would want their child to acquire higher education just like the children of the elites. However, according to Maslow (1954), food is a basic need and such being the case, nobody would go to look for other needs if the need for food was not satisfied. Students cannot effectively learn when they are hungry. In support of this, Haaque and Slam

(2018) argue that students cannot learn on an empty bell. The implication is that, if a student is hungry, there is no way knowledge acquisition can take place. This is also supported by Respondent R7 who says, *"It does affect internal efficiency of students, actually food is the first on Maslow's hierarchy of needs."* The absence of cafeteria in public universities does affect the internal efficiency of students. Lack of food can lead to truancy or even student withdrawals as they go to look for upkeep allowance which can result in students completing school late.

5.4.3.4 Inadequate Accommodation

. Out of the participants who were interviewed to solicit their views on the subject, 71% said that shortage of hostels has a negative impact on students' internal efficiency, while 29% were of the contrary view. This is an indication that accommodation really affect students on their academic internal efficiency in public universities. The Ministry of Education, MoEST (2020) share this assertion by acknowledging that many of the students who are selected into public universities are not provided with university accommodation which force them to live in sub-standard accommodation outside the university premises. This compromise the quality of learning as well as precipitates poor academic performance (Valeta, J. et al, 2016 in MoEST (2020)).

The standard of off campus accommodation is dependent on how much you are prepared to pay. Most of the accommodation that is close to the campus is very expensive due to high demand. Since the majority of students in public universities come from low income families, students end up residing in substandard rooms. Some of the rooms they rent do not have basic amenities. For instance, some students stay in rooms without electricity, very tiny rooms without study space, far away from the library such that they cannot move to the school library

to access free Wi-Fi or library books for their safety at night, especially girls. This notion is supported by Jenifer (2011) who postulates that students who lack good accommodation frequently miss as well as forfeit classes and academic work due to challenges which are posed by lack of accommodation. This is supported by respondent R5 and P2 in a face to face interview who said, "*...Accommodation which is offered outside the campus are tiny rooms with a small space and would not have a desk and a chair for you to be able to sit properly and study."* As a result of this, some students decide not to go to the library at night, because they are targeted by robbers who would like to dispossess them of valuables such as smart phones and laptops. This has an impact on their performance because good accommodation leads to good health and high academic participation (Jenifer, 2011). It is important that higher education institutions provide student accommodation so that they can perform their study activities as expected as well as to reduce truancy which affect students on their academic journey (Njia and Darabor, 2021).

5.5 Objective 4: Managers views on what can be done to improve internal efficiency of public universities

In order to improve internal efficiency of students in public universities, the university managers' views are that the government should consider going back to the old system of issuing students with adequate and meaningful loans rather than giving loans just for the sake of its name. The loan should be enough to cater for the students' needs throughout the student's stay in the university. In the interface interviews with university mangers, respondent R said, *"Ideally, if you want a student on government scholarship to enjoy university education, government should pay students enough money in loans. It is a loan which they are going to pay back, so why not give them enough."* This shows that the money which students are given by the government as loans through the Loans Board is not enough to cater for their needs for

the period they stay in the university. This cause student according to respondent R, *"... to struggle as if they are not on government loan scheme..."* This shows that students struggle to make ends meet because the loan is not adequate even though they are on government loan scheme. So, university managers are of the opinion that the government should give students enough money so that they can only concentrate on their studies and not be side tracked by financial hustles. This will help students to excel in their studies.

University managers also noted that there is need for the government to give all deserving students loans with proper modalities to pay back the money after finishing school rather than giving them anyhow. There should be proper research to scrutinise students so that the actual needy students can be identified to avoid leaving out needy students while giving loans to the less needy and undeserving students. In support of these assertions, Respondent R observes, *"... if the policy makers we have, had been subjected to the conditions they are subjecting university students today, they too would not have managed to be where they are today."* This implies that there is need for policy makers to revisit the policies on university students' welfare and reconsider making it possible for the needy students to go through their education without hustles of tuition fees and upkeep as it used to be.

To improve internal efficiency, university managers pointed out that there is need to improve on lecturer qualification by sending lecturers who are under qualified to school so that they can upgrade their qualifications to Masters Level. Respondent R6 said, *"There is need to beef up lecturers at Masters and PhD level. Some of the lecturers we use are not well qualified."* At minimum, a university is supposed to have 30% of its lecturers should have PhD qualification. Some public universities are below this requirement. For instance, PhD qualification is at 47.3% at university A, 54% at university B and 26.2% at university C (MoEST, 2022). There is need to improve the lecturers' qualification to ensure that there is teaching quality in public universities.

Government should increase funding to universities so that they can employ more teaching staff members and for research. This will enable universities to have a reasonable teaching load and be able to provide individualised support to students as well as to improve the quality of delivery. Universities should be clear on job description of lecturers according to their grades. For instance, Respondent R9 points out, *"There should be a bit of distinction, for example, a difference like teaching of classes between, lecturers who are master's holders, PhD holders, an ordinary lecturer, and a senior lecturer."* This will help to lessen the load for Professors and senior lecturers so that they can concentrate more on research supervision, especially of Masters students, which will help to uplift the quality of research done in the institutions of higher learning and the nation as a whole.

Universities should strengthen the use of monitoring tools in public universities and take appropriate measures to ensure that lecturers are attending to students as required. Universities should also put in place measures to check and monitor the quality of delivery in their institutions through quality control directorate.

CHAPTER SIX: CONCLUSIONS AND IMPLICATION OF THE STUDY

6.1 Chapter Overview

The chapter presents conclusion of the study based on the objectives and research questions as well as recommendations for further studies. The chapter consists of three sections which are: major findings, study implications and suggested areas for further study.

6.2. Conclusion

This study explored four objectives which are; to identify predictors of internal efficiency in public universities, establish major predictors of internal efficiency in public universities, to explore views of university managers on factors which affect internal efficiency in public universities and to analyze views of university managers on strategies which can be implemented to improve internal efficiency in public universities.

6.2.1 Predictors of internal efficiency in public universities

With reference to the research question, "To identify predictors of internal efficiency in public universities." The study has revealed that predictors of internal efficiency in public universities are: availability of adequate library facility, nearby clinic, adequate clean safe water and adequate toilets. Public universities do not have adequate library facilities to cater for the student population.

In order for a student to do well, there is need to have access to a well-stocked library with standard furniture to comfortably sit so that the student can effectively study. A conducive study environment is crucial for students to perform. In public universities however, most students have limited access to the library facilities as the facilities are small, most of the students stay far away from the library as off campus residents and find it challenging to come to the library at night especially girls who are the number one victims of being robbed and abused on and from the library at night. This makes most of the students not to visit libraries

during the night yet most of them would like to use that time to study as they are busy with classes during the day and the library is closed early during the weekend. Students wish the library could be opened for 24 hours to enable them more time to have access due to student population.

The use of modern technology in libraries is also a milestone as it gives students access to other study materials in other libraries across the world through academic based websites. However, in Malawian public universities library space is a challenge. Enrolment does not consider the adequacy of available facilities. As a result, libraries are too small to serve the available student population such that students go into the library in turns. Its survival of the fittest to have access into the library especially during peak times such as examination time. Books are not enough as most of the books are outdated. The few good books which are available are normally put on reserve section where one has to book in advance to be granted access. The challenge however is that the books are few such that it can take long on the waiting list before one can get hold of them due to high demand because of high student population versus the available resources. Although some authorities have argued that students do not need the library to do well because universities subscribe for access to online study materials such as electronic journals, the study has found that in public universities, Wi-Fi is not that reliable. Students have complained that during peak times they fail to access internet through Wi-Fi due to poor signal, its slowness and network break down. This give an added advantage to those from well to do families as they can afford to buy internet bundles. Wi-Fi access points in public universities is also limited as some places do not have access. Very few students can access Wi-Fi from their halls of residence and ICT laboratories are few and have limited access to those not taking ICT related programs. Most students access Wi-Fi through office windows, pavements, doors or sitting on stones behind office buildings. There is not a decent hall built to comfortably enable students to access internet apart from those few computer laboratories with very few to

no computers. To make matters worse, the computer laboratories close earlier than the library and you need to have your own gadget to use it which gives an opportunity to those from rich families to have more access. In addition, Wi-Fi in public universities is frequently interrupted by power outages as universities claim not to have adequate funds for gen-set fuel due to frequent power blackouts.

Public universities have nearby clinics which serve them well. However, however due to the increase in numbers of the population they serve, they have resource constraints. The same applies to toilets which are there but the challenge is that there are many users. Students queue when it is bathing time especially during peak hours in the morning when they want to go for classes. Water is a problem that they do not have a stable supply. Some universities have resorted to drilling boreholes around their institutions. However, the challenge is that students have to walk a long distance with a pail of water on their heads all the way to the wash rooms which sometimes make them to report late for classes. This also makes sanitation for girls a challenge.

6.2.2 The best predictor of internal efficiency in public Universities

The study revealed that the availability of adequate library facility in public university is a major predictor of internal efficiency.

6.2.3 University Managers' views on factors which affect internal efficiency in public universities

University managers disclosed that factors which affect internal efficiency in public universities include high student to lecturer ratio, government failure to provide accompanying support to cater for high enrolment, shortage of physical facilities, students' poor social economic status, and lack of proper lecturer job description.

High student to lecturer ratio is the major problem in public universities as it exerts pressure on adequacy of physical facilities such as libraries, laboratories, bed space, classroom space lecturers' workloads and resources. Inadequacy of these resources affect lesson delivery and how students learn. The government is increasing enrollments but is failing to provide supporting funding to accompany the ever rising enrollments. This has an impact on quality of service delivery of public universities and the quality of the end product which is half backed.

There is more suffering in Malawian public universities. Most of the students come from poor home back grounds. Students rely on loans provided by the government. However, the money is not enough to see the students through the semester. Sometimes they are given only tuition fees and not upkeep allowance and at times they are given both only to find that their names have been removed from the list the other semester without notice. This forces the poor students who have no option but withdrawing from school. Some students go to class on bare stomachs because they do not have food. A good number sleep in unpleasant places and cannot afford a decent meal. Higher education is favoring those from the elite families who can afford tuition, standard accommodation, and decent meals.

On the part of teaching staff, public universities are understaffed. They are failing to employ because of the wage bill does not support that. The end result is that lecturers are overworked which in turn affect the way they deliver. They are always up and down from one class to the other and have very large classes which makes marking a big challenge. They rarely have enough time to rest.

6.2.4 Managers views on what can be done to improve internal efficiency of public universities

Public university managers are of the opinion that in order to improve internal efficiency in public universities, the government should enroll students basing on the university capacities

rather than being propelled by politics. The number of students should tally with the available facilities and resources. The government should increase funding, increase infrastructure and all other requirements before it can raise the number of students enrolled.

There is need to increase the number of staff and to send to school staff members who are not teachers by profession and those who are not highly qualified. For instance, lecturer should be send for masters and PHD to strengthen the teaching staff. Government should increase funding to institutions of higher learning to enable them to function efficiently for instance to enable them to come up with refresher courses, to employ additional staff, for research which will enable lecturers to gain and generate more knowledge and other activities which will improve efficiency in public universities.

Universities should put in place a deliberate policy so that they can be a clear job description between junior and senior lecturers so that senior lecturers can have more focus on supervision of masters' students' research rather than concentrating more on teaching undergraduate classes. This will help to come up with high quality graduates who also complete their studies on time.

The government should provide adequate loans to students so that they do not struggle to make ends meet during their study period as the case is at the moment. It should give them enough money especially taking cognizant of the fact that it is a loan which they are going to pay back. The money should always be revised in line with the cost of living and inflation. However, before issuing the loans, government should do research to ensure that the money is being given to deserving students and should put in place a proper loan recovery scheme so that the money can be recovered and become a revolving fund for needy students. For instance, issuing and recovering the loans through banks. This will help to reduce the widening gap between the rich and the poor as higher education is becoming for those from the elite families.

There is also need for universities to intensify monitoring tools to ensure that lecturers attend to their students. The government should consider going back to the cafeteria providing system so that no student should go into class without eating and should lobby with education stakeholders to help put in place infrastructure such as hostels in public universities.

6.3 Implications of the study

The research has crucial implications for public university managers and Malawian government. From the study, the major predictor of internal efficiency in Malawian public universities is the availability of an adequate library facility. Library plays a pivotal role to university students' studies. The absence of an adequate library with adequate books, space and access to online supplementary study materials can be a stumbling block on the road to success for university students. The government should prioritize availability of adequate library facilities to public universities so that there can be efficiency and meaningful learning in public universities. The government should take cognizant of the fact that there is a lot of independent and discovery learning in higher education institution and knowledge construction at individual level which require the presence of a well stalked library and access to online study materials.

The delivery methodologies which are used require that students go into the library and dig deeper for knowledge for themselves to gain a deeper understanding of concepts which they are taught in class through lecturer facilitation and guidance which become permanent knowledge. The absence of such a facility will mean failure on the part of students which in turn lead to the rising number of cases of repetition, low completion rates and increased withdrawals on academic grounds and hence inefficiency of public universities.

The government should consider university capacities when enrolling students to avoid overwhelming the available facilities and resources as this has a direct and indirect impact on

internal efficiency. The inadequacy of physical facilities and other resources will impact on the delivery mode and quality which in turn will have an impact on students' performance and academic flow. The government should consider accompanying support when it thinks of increasing student enrolment so that universities can cope with the pressure which comes with mass enrolment. If government continues with the trend of irresponsibly enrolling students without providing the required accompanying support, government and parents will continue wasting resources while students lose their precious time and energy as public universities will continue having high drop outs and many repeaters which constitutes to inefficiency with regards to student flow and completion rates.

The government should take note that students on their bursary scheme are suffering due to the fact that the money the give them in form of loan is not enough to cater for their requirements especially their upkeep. As a result students spend much of their study time running up and down trying to find something they can get hold of to supplement their budgets. Some even engage in socially acceptable behavior to get upkeep money. This affect them in their studies. The government should therefore give them adequate funds in line with the cost of living of the time so that they do not waste study time so that that they can concentrate on their studies rather than having a headache over what they will eat. There is no need for the government not to give them enough money since they are going to pay back. The government should only put proper modalities to ensure that the funds given to students as loans can be recovered after their studies and should carry out proper research to ensure that the loan is given to the right and deserving students.

The government should consider going back to the cafeteria providing system to guarantee that each student will have food as part of their government loan so that students can access decent meals at a subsidized cost from the school cafeteria so as to save time lost preparing meals, walking long distance to access food and to ensure that students are eating hygienic food.

Without cafeteria, life is very tough for students in public universities. The provision of subsidized food within the campus will help students to focus on their studies as they will be able to meet their number one basic need because they cannot effectively learn if this need is not satisfied first.

Government should prioritize the provision of clean and safe water to public universities so that students do not have to walk long distances to access water. They should consider putting in place reservoir tanks so that in the event that there is a water stoppage, students can continue to get clean and safe water.

6.4 Suggested areas of further studies

With respect to areas for further research, similar studies could be conducted as follows:

(i) Whether the same results can be replicated if the study were to be conducted with ODL students.

(ii) Whether this study findings could be applicable to private universities.

6.5 Limitations of the study

The study instruments which were used in this study included self-reports from interviews and questionnaires which could have been problematic in that they could have been highly prone to reporter bias. The respondents in an interviews choose what to tell you and what not to disclose. For instance, they may have over-report or under reported or even exaggerated their responses. The other problem is that the respondents may just have ticked on the questionnaire just for the sense of fulfillment without even making sense of the questions.

6.5 Delimitation of the study

The study only involved public universities in Malawi. It did not include private universities which may have different factors. The university of Science and Technology (MUST) declined

to provide crucial data needed for the study such that the researcher had to consider another public university in its place. This stretched the researcher's budget and time since the researcher had already spend two weeks in Thyolo by the time the researcher realized that the institution was hiding crucial data.

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APPENDINCES

Appendix I: student questionnaire

The purpose of this questionnaire is to solicit information on internal efficiency in public universities in Malawi. You are requested to participate in this study by answering questions in this questionnaire. You are assured that your confidentiality will be treated with partiality. Please answer all the questions honestly and to the best of your knowledge.

Section A Tick in the box ☑

1. What is your sex? Male ☐ Female ☐

2. What is your study programme? _____

3. In which year are you? First ☐ Second ☐ Third ☐ Fourth ☐
4. How would you rate the number of students per class in your university?
   High [ ] Low [ ]

5. What is the general number of students in class in your university?
   50 below [ ] Less than 100 [ ] Above 100 [ ]

(b) If above 100, how does this affect students learning?

_____

_____

Section B

6. School Physical Facilities. Tick in the appropriate box ☑

FACILITY	VERY ADEQUATE	ADEQUATE	NOT ADEQUATE	NOT AVAILABLE
LIBRARY				
CLASSROOMS				
LABORATORIES				
CAFETERIA				
TOILETS				
WATER				
NEAR-BY CLINIC				
POWER BACK UP				
HOSTELS				

Section C

7. Teaching and Learning Materials

Please indicate whether the following teaching and learning materials are adequate in your university.

MATERIAL	VERY ADEQUATE	ADEQUATE	NOT ADEQUATE	NOT AVAILABLE
Books in the library				
Equipment in the laboratories				
Chemicals in the laboratories				
Teaching materials e.g projectors, laptops, markers for lecturers				
Others				

8. In general, how would you rate the adequacy of teaching and learning materials in your university? Tick in the appropriate box ☑

Adequate [ ] Not Adequate [ ]

(b) If not adequate, how does this affect students learning?

_____

_____

9. What do you think the university management should do to improve students' learning?

_____

_____

Appendix II: questionnaire for lecturers

The purpose of this questionnaire is to collect information on the predictors of internal efficiency in public universities in Malawi. You are requested to participate in this study by answering questions in this questionnaire. You are assured that your identity will be treated with confidentiality. Please answer all the questions in this questionnaire honestly and to the best of your knowledge.

Tick in the appropriate box to indicate your answer.☑

Section A

1. What is your highest qualification?

Bachelor's Degree	Master's Degree	PHD

2. What is your university teaching experience?

1Year	2years	3years	More than 4years

3. How many courses do you teach? _____

4. What is the recommended lecturer: student ratio in the university?

_____

5. In how many programmes do you teach? _____

(b) Mention them: _____

6. (a) How many students do you teach per class?

50 below [ ] 100 below [ ] Above [ ]

(b) If above 100, how does this affect your students learning?

_____

7. School Physical Facilities. Tick in the appropriate box ☑

FACILITY	VERY ADEQUATE	ADEQUATE	NOT ADEQUATE	NOT AVAILABLE
LIBRARY				
CLASSROOMS				
LABORATORIES				
CAFETERIA				
TOILETS				
WATER				
NEAR-BY CLINIC				
POWER BACK UP				
HOSTELS				

Section C

8. Teaching and Learning Materials

Please indicate whether the following teaching and learning materials are adequate in your university.

MATERIAL	VERY ADEQUATE	ADEQUATE	NOT ADEQUATE	NOT AVAILABLE
Books in the library				
Equipment in the laboratories				
Chemicals in the laboratories				
Teaching materials e.g projectors, laptops, markers for lecturers				

9. In general, how would you rate the adequacy of teaching and learning materials in your university? Tick in the appropriate box ☑

Adequate [ ] Not Adequate [ ]

(b) If not adequate, how does this affect students learning?

_____

_____

10. What do you think the university management should do to improve students' learning?

_____

_____

11. What are the other predictors of internal efficiency in public universities?

Appendix III: interview schedule for university managers

The purpose of this interview is to solicit information on the internal efficiency in public universities in Malawi. You are requested to participate in this study by answering questions which the researcher is going to ask you. You are assured that your identity will be treated with confidentiality and that the information you are going to provide will be used just for the purpose of the study. You are encouraged to answer all the questions honestly and to the best of your knowledge.

1. What is the recommended lecturer: student ratio in public universities?
2. May you comment on lecturer: student ratio in your university?
3. Does it have an impact on the academic performance of your students?
4. Apart from lecturer: student ratio, what are the other factors which affect the internal efficiency in your university?
5. What do you think can be done to improve internal efficiency in public universities?

Appendix IV: observation checklist

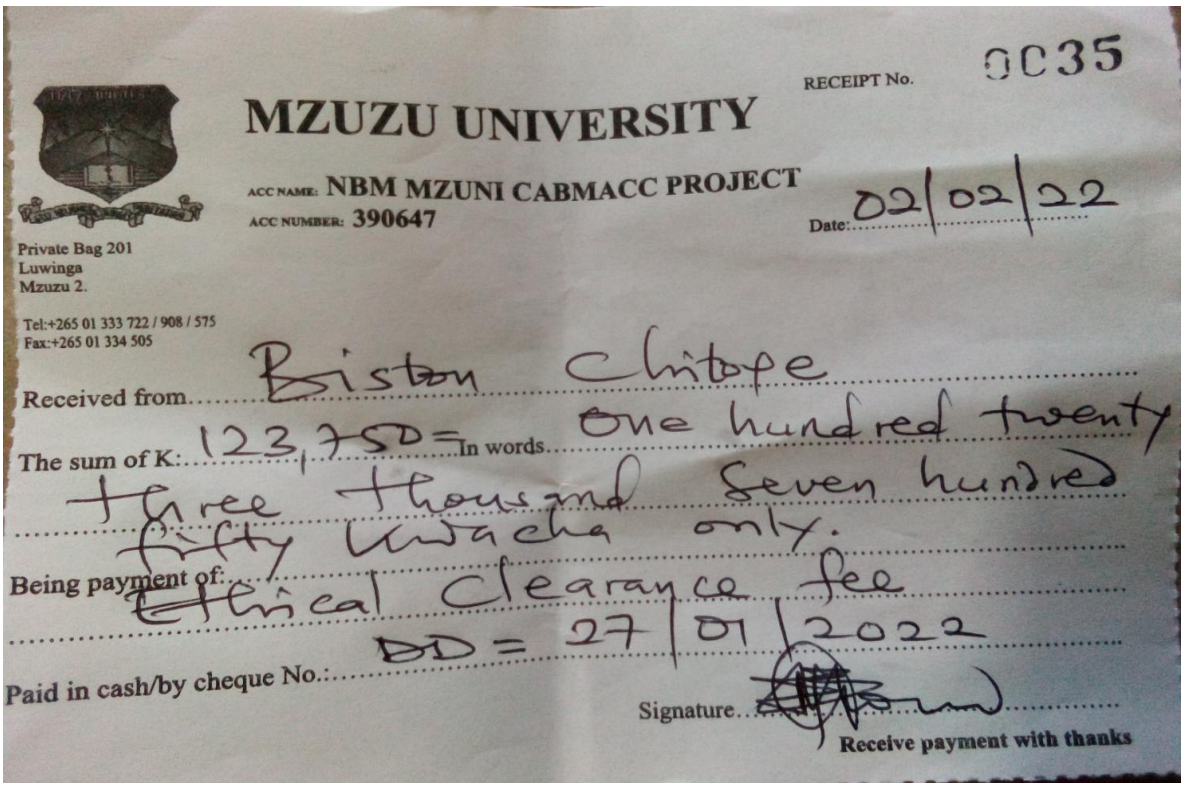
Key

INDEX	DESCRIPTION
1: 0	No efficiency
2: 1-4	Low efficiency
3: 5-6	Moderate efficiency
4: 7-10	High efficiency

Predictors of internal efficiency

		1	2	3	4
1	Lecturer: Student ratio				
2	Availability of Teaching/Learning materials e.g. projector				
3	Availability of adequate well-furnished classrooms				
4	Availability of well stocked library				
5	Availability of adequate well equipped laboratories				
6	Availability of adequate hostels				
7	Availability of cafeteria				
8	Availability of power backup facilities				
9	Availability of nearby clinic				
10	Availability of reliable clean water facilities				

Appendix V: ethical clearance fees



RECEIPT No. 0035

MZUZU UNIVERSITY

ACC NAME: NBM MZUNI CABMACC PROJECT
ACC NUMBER: 390647

Date: 02/02/22

Private Bag 201
Luwinga
Mzuzu 2.

Tel:+265 01 333 722 / 908 / 575
Fax:+265 01 334 505

Received from Biston Chitope

The sum of K: 123,750= In words One hundred twenty three thousand Seven hundred fifty Kwacha only.

Being payment of: Ethical Clearance fee

Paid in cash/by cheque No.: DD = 27/01/2022

Signature

Receive payment with thanks

Appendix VI: investigator's CV

CURRRICULUM VITAE

PERSONAL DETAILS

NAME	**:**	Biston
SURNAME	**:**	Chitope
DATE OF BIRTH	**:**	08/06/80
NATIONALITY	**:**	Malawian
VILLAGE	**:**	Mbalame
T/A	**:**	Mkukula
REGION	**:**	Central
MARITAL STATUS	**:**	Married
POATAL ADDRESS	**:**	Bwaila Secondary School
		Box 410
		Lilongwe
PHYSICAL ADDRESS	**:**	Bwaila Secondary School
		Box 410
		Lilongwe
CONTACT	**:**	0996764192/0887571570
EMAIL	**:**	bistonchitope@gmail.com

PROFESSIONAL QUALIFICATIONS

Academic

Year	Institution	Qualification
1999	Rujeko High School (Zimbabwe)	O' Level

Professional

Year	Institution	Qualification
2004	Morgan Zintec Teachers Training College **(University of Zimbabwe Constituent College**)	Diploma in Education
2014	Mzuzu University	Bachelor of Arts Education

WORK EXPERIENCE

Period	Institution	Post	Responsibilities
2001-2002	Iron Duke Mine (Anglo-American Corporation) Zimbabwe	Acid Neutralisation Plant Operator and Shift Supervisor	❖ Supervisor ❖ Neutralising Acids ❖ Testing Sulfurous Acid & Water PH ❖ Plant maintenance
2005	Msampakaruma Primary School (Zimbabwe)	Teacher	❖ Teaching ❖ Staff Secretary Sports Master
2005	Zimbabwe Electro-Commission	Voter's Roll Inspector	Inspecting the voters' registration
2006	Chitete Primary School (Zimbabwe)	Teacher	Teaching

2008	Maranatha Private School	Teacher	Teaching English
2009	Cherub Private School	Teacher	Teaching English
2009	Chankhandwe CDSS	Teacher	❖ Teaching English ❖ Teacher/Librarian
2010 to date	Bwaila Secondary School	Senior Teacher	❖ Teaching English/Computer ❖ Staff Secretary ❖ ICT Chairperson
2020	MEC	Presiding Officer	Managing Polling Station

Appendix VII: Informed Consent Form

Mzuzu University Research Ethics Committee (MZUNIREC)

Informed Consent Form for Research in Master of Education (Leadership and Management)

Introduction

I am **Biston Chitope** from **Mzuzu University.** I am doing research on: **Determining Predictors of Internal Efficiency in Public Universities in Malawi.**

This consent form may contain words which you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them to me or to another researcher.

Purpose of the research

The purpose of the study is to find out the major predictors of internal efficiency in Malawian public universities and recommend improvement strategies.

Type of Research Intervention

The research will involve your participation in either responding to the questionnaire or individual interview questions.

Participation Selection

You are being invited to take part in this research because you are the rightful person to provide most relevant information pertaining to the topic of study as you are in the field of study. Your input will contribute significantly to the success of this research and will contribute to the improvement of the quality of higher education provision in the Malawian public universities.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate, nothing will change. You may skip any question and move on to the next question.

Duration

The research will take place for a period of 6 months.

Risks

You do not have to answer any question or take part in the interview or respond to questionnaires if you feel the question(s) are too personal or if talking about them makes you uncomfortable.

Reimbursements

You will not be provided with any incentive to take part in this research.

Sharing the Results

The knowledge we will obtain in this research will be shared to you and your community before it is widely made available to the public. The results will thereafter be published so that interested people may learn from the research.

Whom to Contact

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact:

1. **Biston Chitope** (Researcher), Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2.
   Mobile: +265996764192/**+265887571570**
   Email:bistonchitope@mail.com

2. **Dr Marisen Mwale** (Senior Lecturer: Department of Education and Teaching Studies),Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2.
   Mobile: +265**99924501**
   Email: marisen.mwale@yahoo.ac.uk

3. **Dr Margaret Mdolo** (Masters of Education Programme and Research Coordinator & Lecturer: Department of Education and Teaching Studies), Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2.

Mobile: +265993801059

Email:margaretmdolo@gmail.com

This proposal has been reviewed and approved by Mzuzu University Research Ethics Committee (MZUNIREC) a committee whose task is to make sure that research participants are protected from harm. Should you want to find more about the committee, do not hesitate to contact **Mr Gift Mbwele,** Mzuzu University Research Ethics Committee (MZUNIREC) Administrator, Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2. **Phone** 0999404008/**0888641486**

Do you have any question?

Part II: Certificate of Consent

I have been invited to participate in the research titled: **Managing Education in Malawi:** Determining the Predictors of Internal Efficiency of Public Universities.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Name of Participant: _____

Signature of Participant: _____

Date: _____

Day/ Month/ Year

If illiterate

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Name of Witness _____ Thump Print of Participant

Witness' Signature _____

Date _____

Day/Month/Year

Statement by the researcher/person taking consent

I have accurately read the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the research project. I confirm the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and ti the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of researcher/person taking consent:

Date _____

Day/ Month/ Year

Appendix VIII: Approved data collection permission letter-university A

VICE-CHANCELLOR
Prof. Samson M.I. Sajidu,
BSc Mlw, MPhil Cantab, PhD Mlw

Connect with Excellence

UNIVERSITY OF MALAWI
P.O. Box 280, Zomba, Malawi
TEL: (265) 1 524 222
FAX: (265) 1 524 046
EMAIL: vc@unima.ac.mw

Our Ref: UNIMA/R/1/14//3/1

29th August, 2022

Mr. Biston Chitope
C/o MZUZU University
Private \bag 201
Liwinga
MZUZU

Dear Mr. Chitope,

REF: REQUEST FOR PERMISSION TO COLLECT DATA FOR A MASTERS RESERCH PROJECT ON *'DETERMINING THE PREDICTORS OF INTERNAL EFFICIENCY IN PUBLIC UNIVERSITIES IN MALAW'*

Reference is made to your letter dated 29th August, 2022 wherein you are seeking permission to collect data for your Masters research project.

I am therefore pleased to inform you that approval has been granted for you to collect the data subject to acquiring further consent from individual respondents/participants.

Yours sincerely,

Mary Wasiri (Mrs)
ACTING REGISTRAR

Cc: Vice-Chancellor
Deputy Vice-Chancellor
AR - Academic

Appendix IX: Approved data collection permission letter university B

MZUZU UNIVERSITY

Department of Teaching, Learning and Curriculum Studies

Mzuzu University
Private Bag 201
Luwinga
Mzuzu 2
MALAWI

Tel: (265) 01 320 575/722
Fax: (265) 01 320 568
mdolo.mm@mzuni.ac.mw

6TH JUNE 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION: MR BISTON CHITOPE

Mr Biston Chitope is a registered Master of Education (Leadership and Management) Program student at Mzuzu University. He has been cleared by the Mzuzu University Research Ethics Committee (MZUNIREC) to collect data for the research study he is conducting as a requirement for the program. The research topic: Determining the predictors of internal efficiency in public universities.

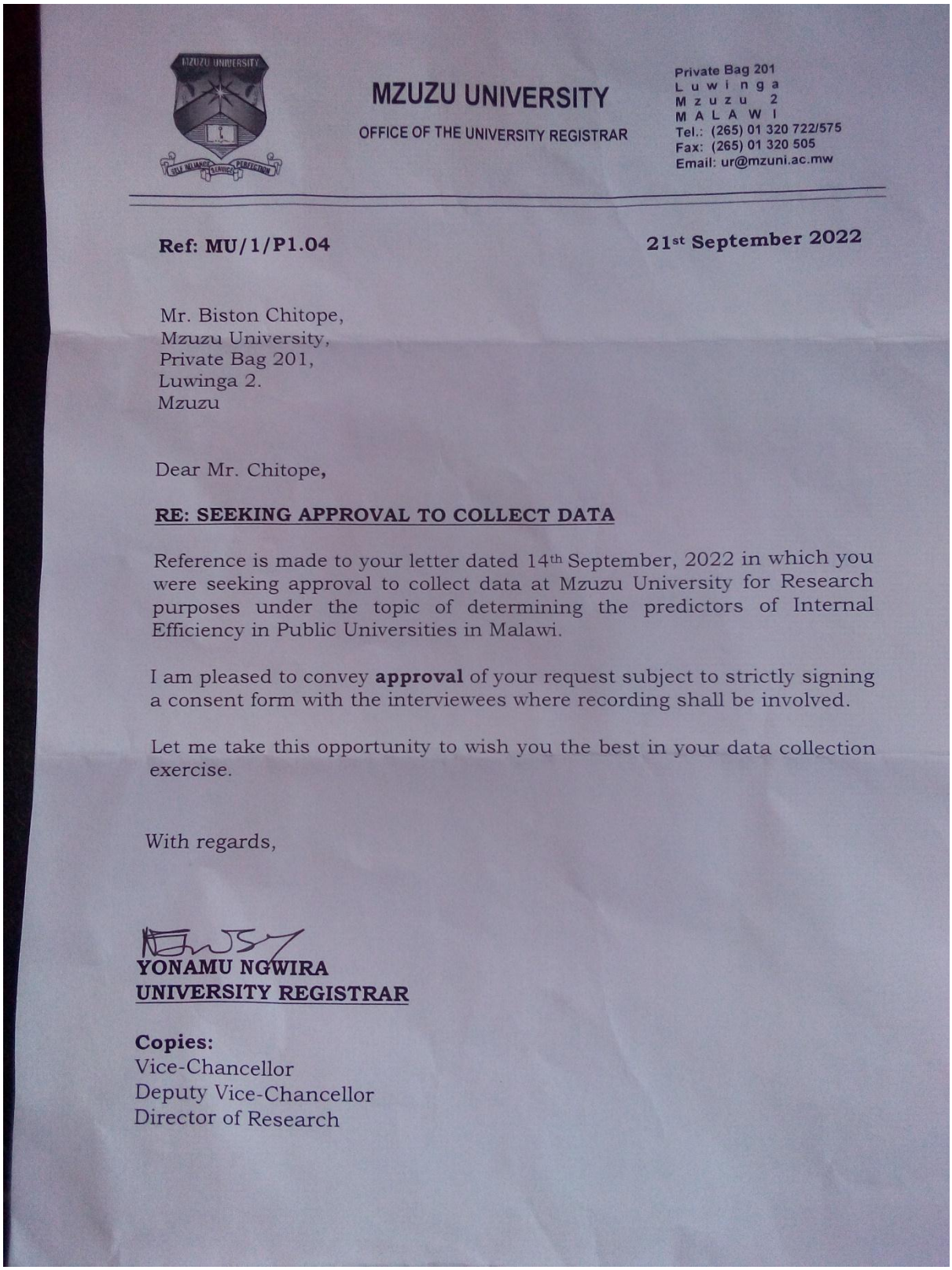
Kindly assist him accordingly.

Yours faithfully,

Dr Margaret M. Mdolo
Program Coordinator

SAC
13
Was approved

Appendix X: Approved data collection permission letter-university C



MZUZU UNIVERSITY

OFFICE OF THE UNIVERSITY REGISTRAR

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Ref: MU/1/P1.04 **21st September 2022**

Mr. Biston Chitope,
Mzuzu University,
Private Bag 201,
Luwinga 2.
Mzuzu

Dear Mr. Chitope,

RE: SEEKING APPROVAL TO COLLECT DATA

Reference is made to your letter dated 14th September, 2022 in which you were seeking approval to collect data at Mzuzu University for Research purposes under the topic of determining the predictors of Internal Efficiency in Public Universities in Malawi.

I am pleased to convey **approval** of your request subject to strictly signing a consent form with the interviewees where recording shall be involved.

Let me take this opportunity to wish you the best in your data collection exercise.

With regards,

YONAMU NGWIRA
UNIVERSITY REGISTRAR

Copies:
Vice-Chancellor
Deputy Vice-Chancellor
Director of Research