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The Trend and Effect of Higher Education Loans Board Funding on Access and Equity in Public University Undergraduate Studies in Kakamega-East Sub-County, Kenya

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Abstract:

The legal statute in parliament of HELB Act no. 3 of 1995 established HELB to assist needy students with loans to pursue higher education. The loans were to be allocated to them according to their levels of need. However, numerous complains among university students and some studies had casted doubt on whether the genuinely deserving cases were being considered during loan allocations unlike previously when funding was being done to all university students irrespective of their socio-economic backgrounds. Since Kakamega-East sub-county had the highest absolute household poverty index of 67.8% in Kakamega County, it implied that many of its students were needy. The purpose of this study was therefore to determine the contribution of HELB loans to access in public university undergraduate studies in the sub-county. The objectives of the study were to: establish the percentage of HELB undergraduate loan recipients as a proportion of the total university enrolment for the 2011/12 cohort in Kakamega-East sub-county; establish the trend of HELB undergraduate loan allocation to the sub-county between 2011 – 2014; and to determine the degree of fairness in HELB undergraduate loan allocation to the sub-county based on the criterion used. The study was guided by the socialist economics of education theory postulated by Louis Blank. It used both descriptive survey and ex-post facto research designs. The study population was 788 HELB loan applicants from the sub-county in undergraduate studies in public universities, 22 University Academic Registrars (UARs) of the chartered public universities in Kenya and 1 CEO of HELB. The study sample comprised 292 university students, 7 UARs and 1 CEO of HELB. Systematic sampling was used to select students based on the serial numbers of their HELB forms, purposive sampling was used to select the UARs of the 7 public universities that existed before enactment of the Universities Act No. 42 of 2012 while saturated sampling was used for the CEO of HELB. Primary sources of data were Questionnaires and Interview Schedules while Secondary sources were the processed HELB forms for students and proforma for document analysis for UARs and CEO of HELB. Face validity was used while the test-retest at 0.05 significance level on a two-tailed t-test for reliability obtained a coefficient of 0.96 for the study. In data analysis, the study established that 60.7% of total enrolment in public universities for the cohort was recipients of HELB undergraduate loans while an increasing trend of 0.92% per year characterised the HELB loan allocations. The study further revealed a relatively inequitable allocation of the loans to the students with a gini coefficient of 0.45 while the degree of unfairness in HELB loan allocation rose at a rate of 7.4% per year. The study therefore recommended for the review of the Means Testing Instrument (MTI) that HELB uses to allocate loans so as to ensure that it identifies deserving cases properly. These findings were significant to HELB in assessing its effectiveness in allocating study loans to university students.

1.1. Background of the Study

Financing of public higher education in Kenya was historically free with the public purse covering both tuition and living expenses of students regardless of their socio-economic backgrounds (SEBs). The rationale for the subsidy was based on the country's desire to create highly trained manpower that would replace the departing colonial administrators. This approach realized increasing rates in enrolments in higher education per year. However, it did not only compromise the social justice dimension of public subsidy in higher education, but also became a concern of the government since it posed a great burden to the exchequer.

Therefore, the government introduced the cost-sharing policy in 1991 in which both the students and the state would share the costs of higher education. Students were to pay modest tuition fees of between Ksh. 2,400 - 3,200 annually and also contribute to costs of maintenance and other direct charges which made the total fees rise up to Ksh. 20,000 (World Bank, 2006a). This approach also became unfair to needy students since some could not afford hence began negating the gains that had been achieved in increasing enrolments.

In an effort to promote social fairness in the financing of higher education as well as minimize the financial burdens on the exchequer, the Higher Education Loans Board (HELB) was created in 1995 through a legal statute in parliament known as "The HELB Act number 3 of 1995". It came into existence on the 21st day of July 1995 through the Kenya Gazette Supplement (Cap 213A). Its role was to identify needy students and assist them with study loans according to their levels of need. It was mandated to recover outstanding loans from Kenyans who had benefited from its loan scheme.

Currently, HELB has a total of Ksh. 5.64 billion annually for loan disbursements out of which the exchequer contributes Ksh. 3.34 billion while recoveries from former beneficiaries' net about Ksh. 2.3 billion annually (Ringera, 2014). The table 1 below shows the trend of cumulative HELB loan allocations over a number of years in the past.

Academic Year	Total Number of Recipients	Total HELB allocations (Ksh.)
2002/2003	18,105	1.0 billion
2004/2005	23,400	1.5 billion
2009/2010	89,888	4.5 billion
2010/2011	109,110	4.83 billion
2012/2013	131,176	5.6 billion
2013/2014	154,000	5.6 billion

Table 1: Annual Loan allocations by HELB in Kenya

Source: HELB statistics from Loans Disbursement and Recovery Department, 2014

Table 1 generally demonstrates a gradually increasing trend in HELB loan allocations over the years. However, the last two academic years shows the allocation stagnating at Ksh. 5.6 billion annually despite HELB having begun allocating its loans to self-sponsored students in public universities (module II) as well as those in private universities in 2008/2009 (Ringera, 2014). Despite the high Net Enrolment Rate in universities in Kenya of 70.5% as estimated by World Bank (2012) implying increased access in higher education, the contribution of HELB in this access to university education cannot be ascertained since the rates fall short of accounting for the proportion in the enrolments that is as a result of HELB funding.

Kakamega-East sub-county in Kakamega County has the highest number of needy students. This is due to the fact that it has the highest absolute household poverty index of 67.8% in the County (Republic of Kenya, 2009) as a result of the socio-economic indicator factors shown in table 2.

Information Category	Specific Area	Statistics
Socio-economic indicators	Total number of households	36,774
	Average households size	5.1
	Female headed households	25,848
	Children headed households	1,107
	No. of disabled persons	2,028
Poverty indicators	Absolute poverty households	24,933
	Percentage of poverty	67.8
	Number of poverty incidences	127,156
	Contribution to National Poverty	0.60

Table 2: Socio-Economic Indicators for Kakamega-East Sub-county

Source: Kakamega-East Sub-County Development Plan 2010-2014, pg. 15-18.

Furthermore, the Economic survey (2014) which gives the national poverty index of 45.2%, reveals that Kakamega County contributes the highest by 4.77 % which is 25 times more than what the least contributor, Lamu County at 0.19% does (Republic of Kenya, 2014a). From this, the Kakamega County Integrated Development Plan (2013-2017) established that Kakamega-East sub-county is the highest poverty contributor to the County poverty index by 0.60% (Republic of Kenya, 2013a). This is further illustrated by the characteristic nature of the non-parenthood households that are prevalent in it where in every ten households, only two enjoy dual parenthood. This implies that eight in every ten households are either single or lack parenthood at all (Republic of Kenya, 2009). However, most students from the sub-county who qualify for university education through the attainment of the minimum university requirement grade subsequently get selected by the Joint Admission Board (JAB) for admission in public universities as shown in table 3.

Year	KCSE Entry	University Entry Qualifiers		Job Selected Admissions	
		No. of Candidates	Proportion of Total Entry	No. of Candidates	Proportion of Minimum Entry Qualifiers
2010	2, 112	623	29.5 %	93	14.9 %
2011	2, 517	780	31.0 %	110	14.1 %
2012	2, 574	796	30.9 %	175	22.0 %
2013	2, 624	764	29.1 %	213	27.9 %
Total	9,827	2,963	30.2 %	591	19.9 %

Table 3: Statistics of University Qualification for Kakamega-East sub-county

Source: DEO Kakamega-East sub-county, 2014.

With the number of chartered public universities in Kenya having increased to 22 from the initial 7 upon the enactment of the Universities Act No. 42 of 2012 on 30th June 2013 (Commission for University Education, 2013), it would be expected that the rate of enrolment to the universities would be high unless hampered by fees lack of fees. Since most of them emanate from poor backgrounds, the number of students who have been applying for HELB undergraduate loans has been characterized by increasing trends as shown in table 4.

Academic Year	Total Number of Applicants	Number of Applicants in 1 st year
2009/2010	1, 917	613
2010/2011	2, 136	689
2011/2012	2, 378	788
2012/2013	2, 562	799
2013/2014	2, 573	742

Table 4: HELB Applicants in Undergraduate Public Universities in Kenya for Kakamega-East sub-county
Source: HELB statistics from Loans Disbursement and Recovery Department, 2014

Despite the increasing trend in student applications for HELB loans as shown in table 4, the 2009 national census revealed that out of 84,179 school age-going population in Kakamega-East sub-county, only 2,111 were in education participation in universities representing a university education participation of 2.51% (Republic of Kenya, 2010). It also approximated only one graduate in every 17 households in the sub-county. Concerns were further raised by Wachiye (2012) that HELB loans could be being inequitably allocated in Kenya while Muriithi *et al* (2012) suggested that there could be a number of miscalculations being made when allocating HELB resulting in inequitable disbursements, but recommended for a study to ascertain the truth.

1.2. Statement of the Problem

HELB was established to identify and assist needy students with study loans to pursue higher education. This was intended to enhance access and equity in the financing of higher education in Kenya. However, numerous complains amongst university students and some studies raise concerns that students from richer backgrounds could be getting higher allocations than their counterparts from poorer backgrounds. Studies like Wachiye (2012), Muriithi *et al* (2012) and Odebero *et al* (2007) also cast doubt on whether the genuinely deserving cases are being considered during loan allocations. In view of this, this study endeavored to empirically establish how effective HELB carries out its mandate using the Means Testing Instrument (MTI) it uses.

1.3. Purpose of the Study

The purpose of this study was to determine the effectiveness of HELB in enhancing access and equity in financing public university undergraduate studies in Kakamega-East sub-county.

1.4. Objectives of the Study

The specific objectives of the study were to:

- (i) Establish the percentage of HELB undergraduate loan recipients as a proportion of the total university enrolment for the 2011/2012 cohort for Kakamega-East sub-county.
- (ii) Establish the trend of HELB undergraduate loan allocation to Kakamega-East sub-county between 2011 – 2014 for the 2011/2012 cohort.
- (iii) Determine the degree of fairness in HELB undergraduate loan allocation to Kakamega-East sub-county based on the criterion used.

1.5. Research Questions

The following research questions guided this study:

- (i) What percentage proportion of the 2011/2012 cohort from Kakamega-East sub-county enrolled in public universities received HELB undergraduate loans ?
- (ii) How many students of 2011/12 cohort from Kakamega-East sub-county have benefited and by how much from the HELB undergraduate loans between 2011-2014 ?
- (iii) What was the level of fairness in HELB loan allocation to Kakamega-East sub-county based on the criterion used ?

1.6. Significance of the Study

The findings of this study are instrumental to HELB in assessing its effectiveness in allocating loans to students.

1.7. Limitations of the Study

The study involved recipients of HELB loan in the 2011/2012 cohort enrolled in four-year undergraduate programmes only and it was further limited to public universities alone.

1.8. Delimitations of the Study

The researcher selected the student sample using systematic sampling procedure based on the serial numbers of their LAFs which were easily retrievable from HELB to avoid biasness.

1.9. Assumptions of the Study

The study was carried out based on the following assumptions:

- (i) The needy students in the sub-county had access to on-line application for HELB loans.
- (ii) The applicants give sincere and honest information about their SEB status.

1.10. Theoretical Framework

The study was guided by a theoretical framework of the Socialist economics of education pronounced by Louis Blank (Colander, 1994). The theory was the basis on which the Lorenz Curve was mooted, which is a geometric representation of the distribution of income among families in a given country at a given time (Baumol and Blinder, 1979). Using it, gini coefficients can be determined which is an aggregate inequality measure that varies from 0 for perfect equality to 1 for perfect inequality. According to Todaro & Smith (2006), Gini coefficients that lie between 0 to 0.20 imply extremely highly equitable distributions, between 0.21 to 0.35 imply relatively equitable distributions, 0.36 to 0.49 imply relatively inequitable, 0.50 to 0.70 imply highly inequitable while coefficients between 0.71 to 1 imply extremely perfect inequitable distributions.

2. Literature Review

2.1. Enrolments in Higher Education through Student Loans

Countries that had intentions of enhancing increased enrolments in higher education for purposes of sustainable socio-economic development had to embrace the concept of student loan schemes in higher education. The student loan schemes now exist in more than fifty countries with several of them found in developing countries in Latin America and the Caribbean, Africa and Asia (Woodhall, 2004). According to the study, student loan schemes in developing countries especially in Sub-Saharan Africa and Asia accounted for more than half of the total enrolments in higher education. However, the successes or failures of such student loans in enhancing access depended on both the level of public subsidy in the loans as well as how definite their public policies were in terms of eligibility criterion and repayment modes in the respective countries.

Bray (2000) reveals that in Ghana, Indonesia and France the study loans greatly hampered the intended access in higher education by registering less than 10% enrolments from poor students.

However, the study further reveals that in both Lesotho and Thailand, study loans enhanced higher rates in enrolment for higher education since its loans greatly subsidized education costs by covering all tuition costs, living expenses and books.

This study endeavored to establish the contribution of HELB to access in higher education in Kenya by establishing the proportion of university enrolment that benefit from HELB funding.

2.2. Trends in Student Loan Funding for Higher Education

Initially, the government through the USLS covered about three quarters (75%) of the total annual higher education costs that were a must to be borne by students in public universities and about 40% of the tuition fee for students in private universities leading to increasing trends in loan allocations (Cheboi, 2004).

According to Odebero *et al* (2007), the trend of financing higher education in Kenya has been influenced by shifting positions determined by local micro-economic changes and policy shifts of funding agencies, particularly the World Bank. Since independence, financing of higher education in Kenya has passed through various funding regimes ranging from full support to cost sharing and even private participation. Studies by Eshiwani (1993), Weidman (1995) and Gravenir *et al* (2005) all reveal that initially, all university students were fully financed for their education irrespective of their SEB status.

Kiamba (2004) reveals that during the Structural Adjustment Policies of cost sharing in universities that was introduced 1991, a sharply decreasing trend in financing of higher education set in the late 90's. Odundo and Njeru (2005) found that HELB allocations had just been characterized by relatively uniform trends in financing higher education slightly before the introduction of Module II programmes in public universities in 1998. However, the current trend cannot be easily established after the self-sponsored students in public universities (module II) as well as those in private universities began benefitting from HELB in 2008/2009 (Ringera, 2014).

2.3. Fairness in Loan Allocations

According to both Jallade (2000) and Woodhall (2004), public subsidies in education have always targeted to redistribute income from the rich to the poor. According to their studies, student loans in various countries were advocated for on grounds of both equity and efficiency. However, the studies observed that most recipients often came from upper-income families. This study endeavors to establish whether the findings hold for Kenya as well.

3. Research Methodology

3.1. Research Design

This study used both ex-post facto and descriptive survey research designs. Ex-post facto design appropriately enhanced retrospective examining of the effect of the naturally occurring SEB status of students which subsequently determines the amount of HELB loan allocations made respectively (Cohen & Manion, 1992). The descriptive survey design allows a study to measure, classify, analyze, compare, and interpret collected data for purposes of specific clarification (Kombo and Tromp, 2009).

3.2. Area of the Study

Kakamega-East sub-county lies between longitudes 34° 38' and 34° 47' East of the prime meridian and latitudes 0° 03' and 0° 02' North of the Equator. It covers a total area of 410.3 km² (Republic of Kenya, 2009) with a population of 212,358 persons.

3.3. Study Population

The study population comprised the CEO of HELB, 22 University Academic Registrars (UARs) of the 22 chartered public universities in Kenya (Commission for University Education, 2013) and 788 HELB undergraduate loan applicants from Kakamega-East sub-county enrolled in public universities in Kenya in 2011/12 cohort as shown in table 4 (page 6).

3.4. Sample Size

The sample for the study comprised the 1 CEO of HELB, 7 UARs of the 7 chartered public universities that initially admitted the cohort in study, and 292 undergraduate university students out of the 788 HELB loan applicants in the 2011/2012 cohort obtained using a formula advanced by Yamane in 1967 (Israel, 1992) calculated as follows:

$$n = \frac{N}{1 + N(\delta)^2}$$

Where n is the sample size, N is the population size, and δ is the level of precision, which in this case was 0.05 significance level. This was calculated as:

$$n = \frac{788}{1 + 788(0.05)^2} = 265, \text{ plus } 10\% \text{ of the sample size to get a total of } 292 \text{ university students.}$$

3.5. Sampling Procedure

Whereas saturated sampling was used to select the 1 CEO of HELB, Purposive sampling was used to select the UARs from the 7 chartered public universities that existed through individual Acts of Parliament before the enactment of the Universities Act No. 42 of 2012 (on 13th December 2012) since the 2011/12 cohort had already been admitted in universities by this date, and Systematic random sampling was used to select the students based on the serial numbers of their LAFs, which were retrieved from HELB. After sorting out the forms, an appropriate sampling interval of picking every third form was applied based on their serial numbers. These students were in their final year of study.

3.6. Research Instruments

Primary data was collected using questionnaires for all the three categories of research respondents and interview schedules for the CEO of HELB and the UARs, while secondary data was collected using the processed HELB LAFs for students and proforma for document analysis that was issued to both UARs and CEO of HELB.

3.7. Validity and Reliability of the Instruments

Face validity was enhanced in the study through the use of both the students' LAFs retrievable from HELB and the students' questionnaires individually filled. A pilot study was done in one university randomly sampled to determine the appropriateness of the instruments to yield the desired responses of the study.

The test-retest method was used to determine the extent to which the questionnaires contained variable errors which obtained a correlation coefficient of 0.96.

3.8. Ethical Considerations and Informed Consent

There was an obligation to ensure that the research participants' rights and welfare were not violated before, during and after conducting the research. The participants were thoroughly briefed beforehand on the research problem, the need for a scientific research on the problem, the reasons for the choice of the area of study and the benefits of the study. Their voluntary involvement in the research was hence sought.

3.9. Data Collection Procedures

Permission to do research was sought from the Maseno University Ethics Review Committee (MUERC) on behalf of the National Council of Science and Technology (NCST) through the School of Graduate Studies of Maseno University. Universities were accessed through permission that was sought from their Vice-Chancellors prior to the onset of data collection.

3.10. Data Analysis

The researcher analyzed data both quantitatively and qualitatively. Descriptive and inferential statistics were used in which rates were used for access, tables and graphs for trends in HELB allocations and Lorenz curves and Gini-coefficients were used to establish inequalities in HELB loan allocations which in turn revealed the degree of fairness in loan allocations.

4. Results and Analysis

The returns for questionnaires was 100%.

4.1. HELB Recipients as a Proportion of Total Enrolment for 2011/12 Cohort

The study sought to find out the number of HELB loan recipients as a proportion of the total enrolment for the 2011/12 cohort in undergraduate studies in public universities for Kakamega-East sub-county. Whereas the University Academic Registrars (UARs) provided information about the total enrolment for the cohort, HELB on the other hand provided the information about the number of HELB loan recipients for the cohort. This information was compiled as shown in table 5 below

University	Total enrolment	HELB applicants	HELB recipients	Percentage of HELB recipients (%)
MMUST	163	156	116	71.17
MU	152	126	107	70.39
KU	159	121	109	68.55
MAS	139	113	67	48.20
EU	127	81	53	41.73
UoN	101	72	54	53.47
JKUAT	87	50	41	47.13
	928	719	547	58.9

Table 5: 2011/12 cohort enrolment and HELB loan recipients in Public universities

From the table, it can be established that 58.9% of total university students were HELB loan recipients during admission for undergraduate studies in public universities. This implies that HELB enhanced the enrolment of 58.9% of the university students in the district who qualified for undergraduate studies in public universities.

In order to establish whether this enrolment was sustained in the studies by HELB, it was necessary to establish any wastage in the HELB recipients throughout the entire study period. The results of the wastage as established from the UARs were as shown in table 6.

UNIVERSITY	Year 1			Year 2			Year 3			Year 4		
	D	R	DR	D	R	DR	D	R	DR	D	R	DR
MMUST	2	0	1	1	0	1	1	0	0	0	0	0
MU	1	0	0	1	0	1	1	0	0	0	0	0
KU	1	0	1	1	0	0	1	0	0	1	0	0
MAS	1	0	0	1	0	0	0	0	0	0	0	0
EU	1	0	0	0	0	0	0	0	0	1	0	0
UoN	1	1	0	2	0	0	1	0	0	0	0	0
JKUAT	1	0	0	1	0	0	0	0	1	1	0	0
Sub-total	9	1	2	7	0	2	4	0	1	2	0	0
Total wastage	12			9			5			2		

Table 6: 2011/12 cohort Wastage in public universities for Kakamega-East sub-county

Key: D = Deferrals, R = Repeaters, DR = Drop-outs

Table 6 revealed that the highest wastage was in first year of study comprising a total of 12. The wastage rate significantly reduced as the cohort progressed in years of study. It also revealed that majority of the student wastage were those who deferred their studies in each year of study. Based on the wastage established in table 6, the proportion of HELB loan recipients per year of study was revised and determined by the results shown in table 7.

Academic Year	Total Enrolment	HELB Recipients	Percentage (%)	Total Wastage	Percentage Wastage (%)
Year 1	928	547	58.9	12	2.2
Year 2	916	555	60.6	9	1.6
Year 3	907	557	61.4	5	0.9
Year 4	902	558	61.9	2	0.4
Average	913	554	60.7	7	1.3

Table 7: Cohort transition and HELB loan recipients for Kakamega-East district

Table 7 shows that total enrolment per year of study steadily decreased as the cohort moved from one academic year to the next as a result of the wastage ascertained in table 6. However, the number of HELB loan recipients slightly increased per year of study resulting in the respective increase in the percentage of recipients from 58.9% in first year of study to 61.9% in the final year of study. The increase in the number of HELB recipients was attributed to “the new beneficiaries of HELB loans resulting from successful appeals from some students who were initially not allocated” as stated by the CEO of HELB during the interview schedule.

This resulted in an average of 60.7% of HELB loan recipients as a proportion of the total university enrolment for the cohort, despite the 1.3% average wastage in the cohort. This means that HELB assisted most of the students who qualified for admission in public universities and applied for it to enrol for their undergraduate studies.

This finding agrees with the findings of Woodhall (2004) who established that student loan schemes that existed in developing countries especially in Sub-Saharan Africa and Asia accounted for more than half of the total enrolments in higher education. The finding also agreed with Bray (2000) who established increased enrolment rates in higher education in both Lesotho and Thailand as a result of the student loans. However, the study finding disagreed with Mwiria and Wamahili (1995) who established that in both Ghana, France and Indonesia, student loan schemes failed to enhance increased enrolments in higher education.

4.4. Trend in HELB Loan Allocations for the 2011/12 Cohort

The study sought to establish the trend of HELB loan allocation to the sub-county for the cohort.

4.4.1. Trends in HELB Allocations Based on the Number of Loan Recipients

Firstly, the HELB loan allocation based on the number of recipients was considered as shown in table 8 for each of the amount of HELB allocation disbursed for undergraduate students

Amount of loan (x)	No. of HELB loan recipients			
	Year 1	Year 2	Year 3	Year 4
0	6	5	4	3
35,000	68	62	61	62
37,000	25	24	24	18
40,000	43	45	44	48
45,000	20	22	22	21
50,000	31	31	32	34
55,000	37	35	34	33
60,000	62	68	71	73

Table 8: Summary trend of HELB loan recipients for entire period of study

The information in table 8 was used to draw the graph shown in figure 2 in order to depict the trend of HELB loan allocation over the entire study period for the cohort.

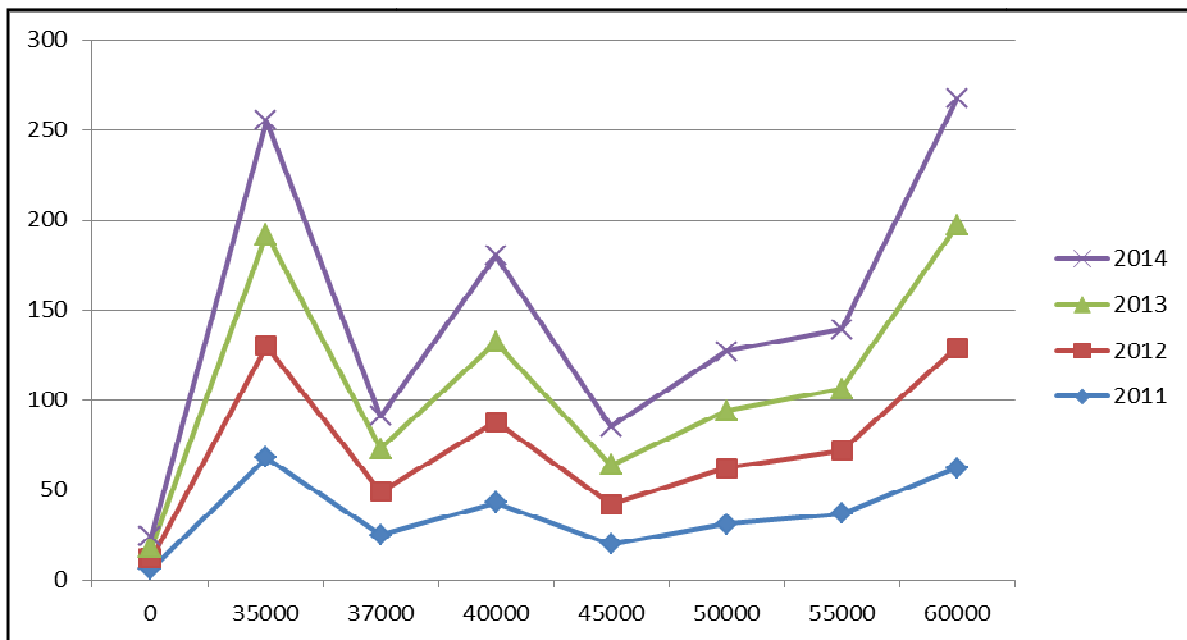


Figure 2: Grouped line graph for annual HELB loan allocations

Figure 2 illustrates that generally, there was an increasing trend in HELB loan allocation to the district for each of the four years of study.

4.4.2. Trends in HELB Allocations Based on the Cumulative Amounts

Secondly, the trend based on the cumulative amounts of HELB loan allocations over the entire period of study was considered. The trends were represented in the summary table 9

TREND OF HELB LOAN ALLOCATION FOR 2011/12 COHORT FOR KAKAMEGA-EAST DISTRICT								
AMOUNT OF LOAN	YEAR 1		YEAR 2		YEAR 3		YEAR 4	
	Frequency (f)	Amount (fx)	Frequency (f)	Amount (fx)	Frequency (f)	Amount (fx)	Frequency (f)	Amount (fx)
0	6	-	5	-	4	-	3	-
35,000	68	2,380,000.00	62	2,170,000.00	61	2,135,000.00	62	2,170,000.00
37,000	25	925,000.00	24	888,000.00	24	888,000.00	18	666,000.00
40,000	43	1,720,000.00	45	1,800,000.00	44	1,760,000.00	48	1,920,000.00
45,000	20	900,000.00	22	990,000.00	22	990,000.00	21	945,000.00
50,000	31	1,550,000.00	31	1,550,000.00	32	1,600,000.00	34	1,700,000.00
55,000	37	2,035,000.00	35	1,925,000.00	34	1,870,000.00	33	1,815,000.00
60,000	62	3,720,000.00	68	4,080,000.00	71	4,260,000.00	73	4,380,000.00
TOTAL	292	13,230,000.00	292	13,403,000.00	292	13,503,000.00	292	13,596,000.00

Table 9

Source: HELB statistics from Loans Disbursement and Recovery Department, 2014

The entire loan allocations for all the four years of undergraduate study for the cohort in table 9 was represented in a grouped bar graph as shown in figure 3 to illustrate the trend clearly.

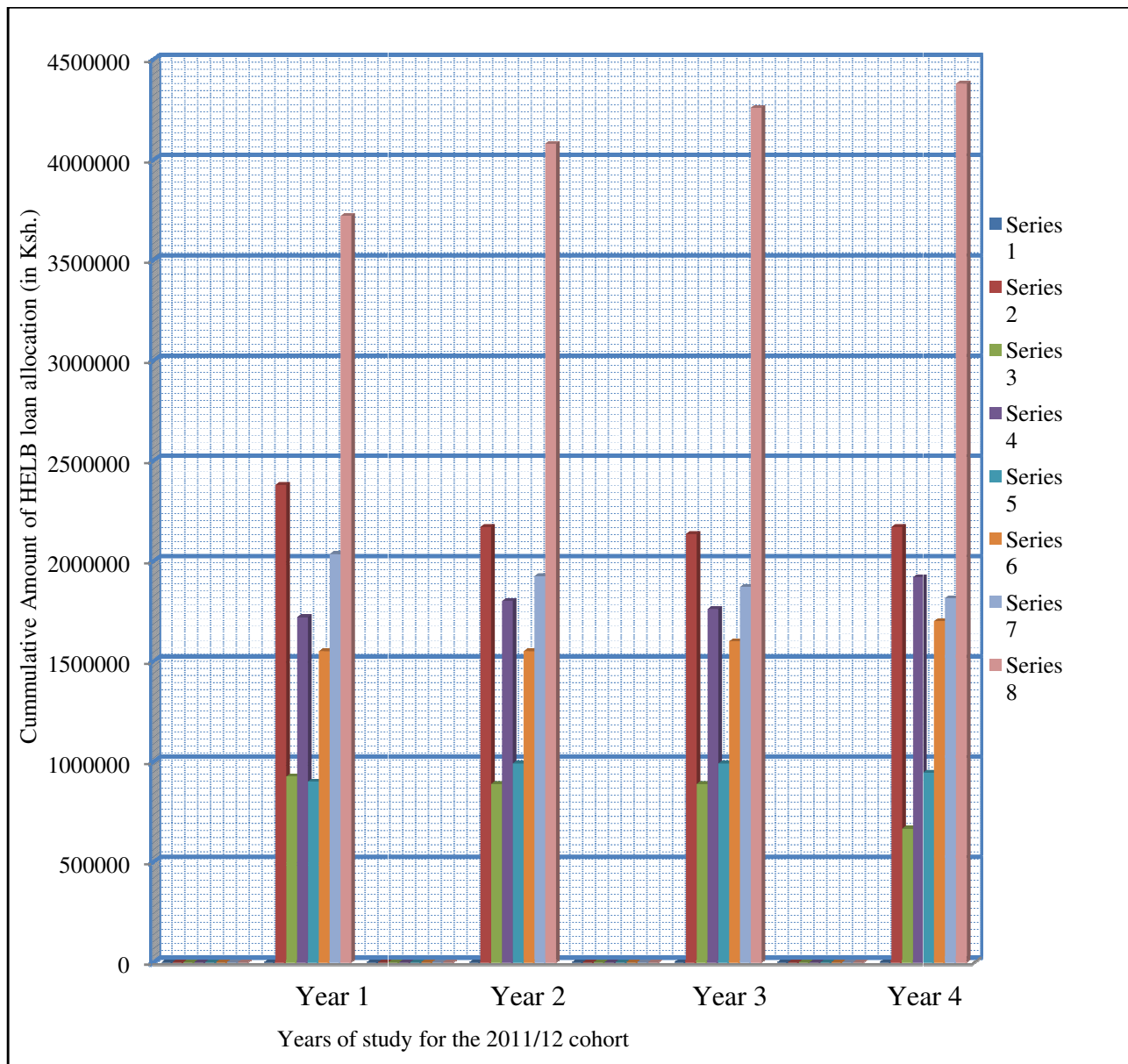


Figure 3: Grouped Bar graph of HELB loan allocations for the entire study period

Key: Series 1 = Ksh. 0
 Series 2 = Ksh. 35,000
 Series 3 = Ksh. 37,000
 Series 4 = Ksh. 40,000
 Series 5 = Ksh. 45,000
 Series 6 = Ksh. 50,000
 Series 7 = Ksh. 55,000
 Series 8 = Ksh. 60,000

Figure 3 shows that except for first year of study, the other years of study had the highest number of loan recipients being the ones with the maximum HELB allocation of Ksh. 60,000 followed by those with the minimum HELB allocation of Ksh. 35,000. The totals of cumulative HELB loan allocations from the first to the fourth years established a cumulative summary trend of HELB loan allocations shown in table 10 below.

Year of Study	No. of Recipients	Amount (Ksh.)	Cumulative HELB allocation		
			%	Cumulative %	Increment
Year 1	292	13,230,000.00	24.7	24.7	-
Year 2	292	13,403,000.00	24.9	49.6	1.31%
Year 3	292	13,503,000.00	25.1	74.7	0.75%
Year 4	292	13,596,000.00	25.3	100.0	0.69%
Total	292	53,732,000.00	100		0.92%

Table 10: Summary of cumulative HELB loan allocations for the entire study period

The table shows that the total HELB loan allocation for the 2011/12 cohort for Kakamega-East sub-county was Ksh. 53, 732,000 in total for all the four years of undergraduate studies in public universities. The table also shows that the trend in HELB allocation to the sub-county was increasing at an average rate of 0.92% per year with the highest increment in the second year.

The summary in table 10 gave the overall trend in HELB loan allocation for the cohort in the sub-county as illustrated in the simple bar graph shown in figure 4.

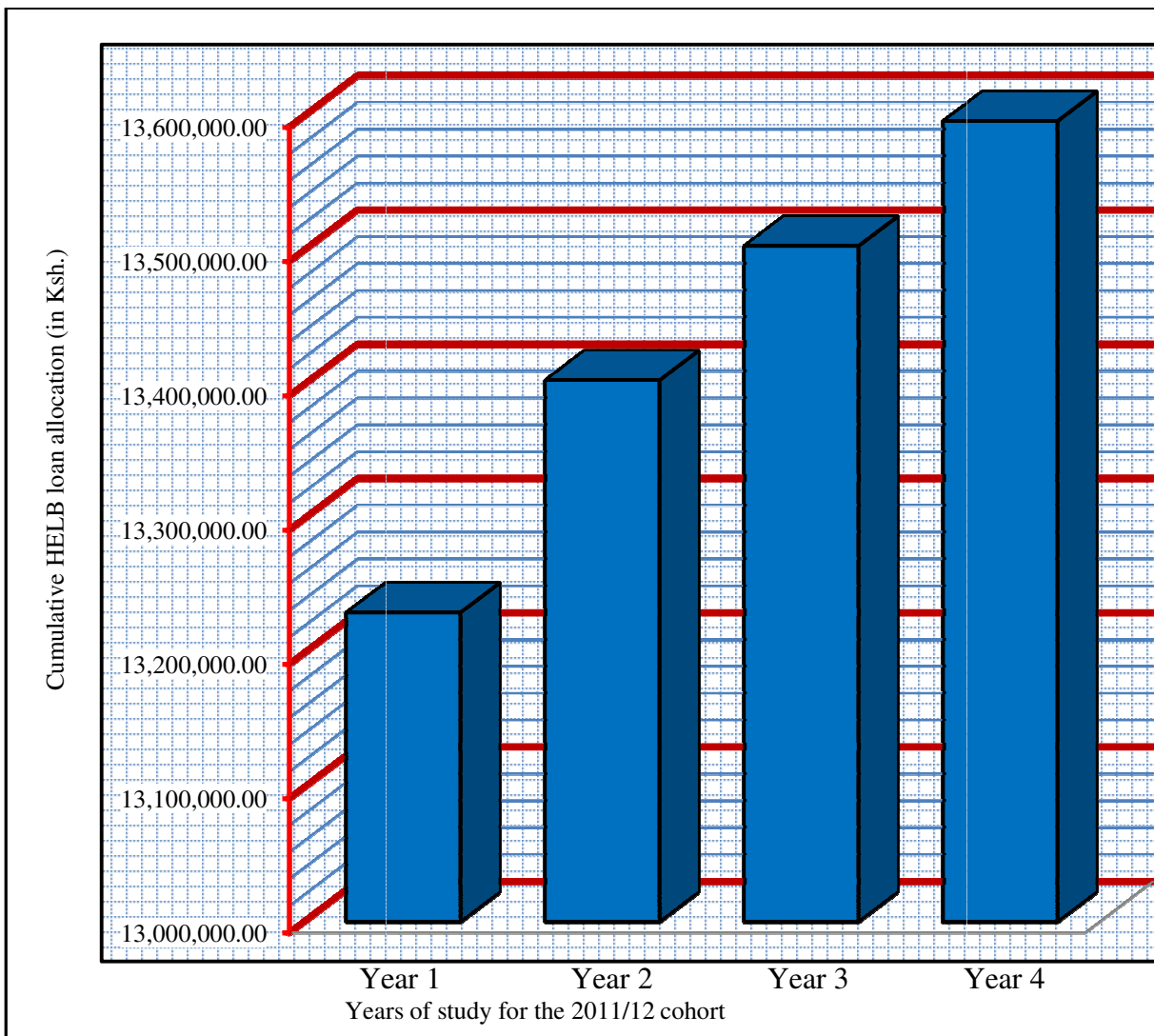


Figure 4: Bar graph for cumulative HELB loan allocation for Kakamega-East district

Figure 4 ascertained that the undergraduate HELB loan allocation to the sub-county was characterized by an increasing trend in disbursements throughout the period of study. However, there was a notable sharp increase in HELB allocation between the first and second years of study as compared to the rest of the years of study for the cohort. This was due to the fact that after the first year of study, additional numbers of new applicants were considered for the loans as was revealed by the CEO of HELB during the interview schedule.

This increasing trend as reflected in figure 4 was highly attributed to the improved recovery of the loans from former beneficiaries as well as the increased financial allocation by the exchequer through the national budgetary allocation every year as established from the interview schedule with the CEO of HELB. He stated:

- “Currently, HELB has two main sources of funds for loan allocations to undergraduate students. It gets a total of Ksh. 5.64 billion annually for loan allocations out of which the exchequer contributes Ksh. 3.34 billion (59.2%) while recoveries from former beneficiaries’ net about Ksh. 2.3 billion (40.8%) annually. Out of this, it allocates Ksh. 5.5 billion to continuing students while Ksh. 2.4 billion more is required for new applicants every year. Compared to 2004/05 when HELB had Ksh. 1.5 billion for loan allocations out of which the exchequer gave 800 million while recoveries from former beneficiaries amounted to Ksh. 700 million, it is evident that there has been tremendous improvement. It is on this strength that HELB loan allocations have generally been characterized by increasing trends in nature.”

This finding agree with some earlier studies conducted in Kenya by Eshiwani (1993), Weidman (1995) and Gravenir *et al* (2005) who realized general increasing trends in government funding for students’ learning in higher education. However, this study finding disagreed with the study findings of both Kiamba (2004) and Odundo and Njeru (2005). Whereas the former study found a decreasing trend in loan allocations, the later one found a relatively uniform trend followed by sharply decreasing trends in loan allocations. The two studies both cited the introduction of module II programmes as the main causes of declining trends in HELB loan allocations in higher education.

4.5. Degree of Fairness in HELB Loan Allocations

The study sought to determine the degree of fairness enhanced during allocation of HELB undergraduate loans to Kakamega-East sub-county based on the criterion used. In order to achieve this, it was necessary to measure the degree of inequalities in HELB loan distributions using Gini co-efficients. The Lorenz curves were drawn first using cumulative percentages.

4.5.1. Lorenz Curves and Gini-coefficients of HELB loan Allocations

In order to plot the dependent and independent variables for the various Lorenz curves, table 11 was prepared to obtain the respective values on the y and x-axes respectively. The values were converted in to cumulative percentages as required for the construction of the curves.

Academic year	Type of axis	Cumulative percentages of both recipients and amounts of HELB loans							
1 st year	x-axis	2.1	25.3	33.9	48.6	55.5	66.1	78.8	100
	y-axis	0	4.5	10.7	20.1	31.2	45.2	63.0	100
2 nd year	x-axis	1.7	22.9	31.2	46.6	54.1	64.7	76.7	100
	y-axis	0	4.1	9.8	18.9	29.9	43.8	61.3	100
3 rd year	x-axis	1.4	22.3	30.5	45.6	53.1	64.1	75.7	100
	y-axis	0	4.1	9.8	18.8	29.7	43.6	61.0	100
4 th year	x-axis	1.0	22.2	28.4	44.8	52.0	63.7	75.0	100
	y-axis	0	4.1	9.8	18.8	29.7	43.6	60.9	100
Entire period	x-axis	1.5	23.2	31.0	46.4	53.7	64.6	76.5	100
	y-axis	0	4.2	10.0	19.2	30.1	44.1	61.2	100

Table 11: Values of cumulative percentages for x and y axes for Lorenz curves

The Values of cumulative percentages in table 4.5 were used to plot and draw both the x and y axes of Lorenz curves for each year of study similar to the one drawn for the entire study below and their respective *gini* coefficients were calculated and given in Table 12

4.5.1.2. Lorenz curve and gini coefficient for entire period of study 2011-2014

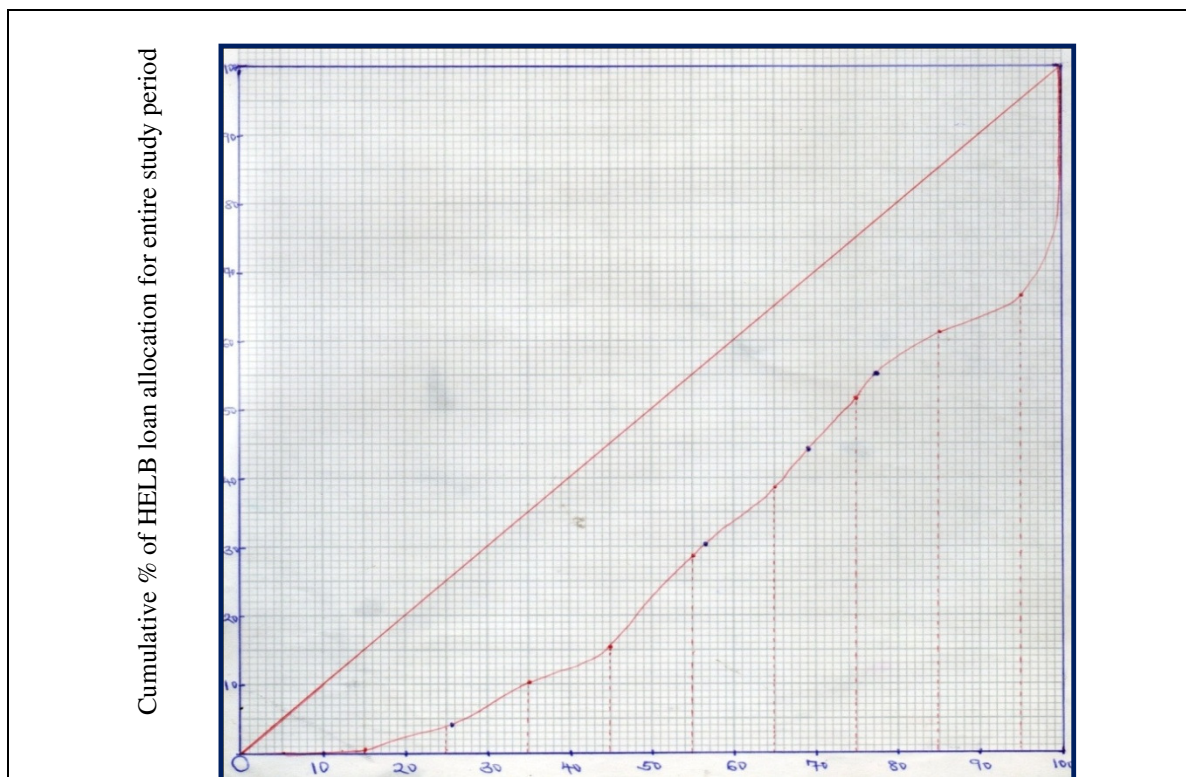


Figure 5: Lorenz curve for entire period of study

Determination of Gini coefficient:

$$\begin{aligned} \text{Area of Half-Square} &= \frac{1}{2} \times \text{base} \times \text{height} \\ &= \frac{1}{2} \times 100 \times 100 \\ &= 5000 \end{aligned}$$

To find the area below Lorenz curve, the Mid-ordinate rule was used as follows:

$$\begin{aligned} \text{Mid-Ordinate Rule} &= (\text{width of interval}) \times (\text{sum of Mid-ordinates}) \\ &= h \times (y_1 + y_2 + \dots + y_n) \\ \text{Area below Lorenz curve} &= 10 \times (0.1+0.2+0.4+10.1+15.0+28.8+38.8+51.6+61.1+66.6) \\ &= 10 \times 272.7 \\ &= 2727 \end{aligned}$$

$$\begin{aligned} \text{Area between line of Equality \& Lorenz curve} &= 5000 - 2727 \\ &= 2273 \\ \text{Gini coefficient} &= \frac{2273}{5000} \\ &= 0.4546 \\ \text{Gini coefficient} &= 0.45 \end{aligned}$$

The average *gini* coefficient for the entire study period was 0.45 which implies that HELB undergraduate loans were relatively inequitably allocated to students during their entire study period. Also, the *gini* coefficients for the individual years of study progressively increased in aggregate values implying increasing trends of inequalities. As shown in table 11 for the respective values of the Lorenz curves on the y and x-axes respectively.

Year of study	Gini coefficient	Annual rise in degree of unfairness
1 st	0.38	-
2 nd	0.40	5.3%
3 rd	0.43	7.5%
4 th	0.47	9.3%
Entire period (2011-2014)	0.45	7.4%

Table 12: Trend of rising degrees of unfairness in HELB loan allocations

According to Todaro & Smith (2006), coefficients within the range of 0.36 to 0.49 imply relatively inequitable distributions. The *gini* coefficients for each of the four academic years of study further revealed that there were relatively inequitable allocations of HELB loans.

Also, it was further established that the inequitable allocations in the HELB loans were gradually increasing as the cohort moved from one academic year to the next. This was supported by the establishment in table 12 that there was an average annual rise of 7.4% in degree of unfairness.

5. Summary, Conclusions and Recommendations

5.1. Summary of Research Findings

It was found that 60.7% of the total university enrolment was HELB loan recipient; the loan allocation to the sub-county was found to be increasing at an average rate of 0.92% per year and the loans were relatively inequitably allocated to the students throughout the study period.

5.2. Conclusions

From the aforementioned findings, it can be concluded that HELB loans enhanced access due to an enrolment of 60.7% that was HELB recipient in the cohort as well as an increasing trend of 0.92% per year for the entire study period. However, it failed to enhance equity in the financing of public university undergraduate studies as they were relatively inequitably allocated while the degree of unfairness in allocation increased at an average rate of 7.4% per year of study.

5.3. Recommendations

Due to the aforementioned conclusions, this study wishes to recommend the following:

- (i) HELB should consider revising upwards the levels of loans awarded to students
- (ii) The continuing students should be allowed to be filling all the sections of the LAFs
- (iii) The Means Testing Instrument used by HELB in Kenya should be tested alongside other models used in countries like Lesotho and Thailand where equity is highly enhanced.

5.4. Suggestions for Further Research

- (i) A research study should be carried out to establish the exact retention, wastage and completion rates of HELB loan beneficiaries in public universities.
- (ii) A correlational research study between the amounts of loan allocated by HELB and each of the factors that influence SEB status of students on the LAFs should be conducted.

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