

Full Length Research Paper

Equity and access to university education through higher loans in Bungoma district Kenya

Herman J. Wachiye¹ and Joseph W. Nasongo^{2*}

¹Gender Officer, Masinde Muliro University of Science and Technology, Kenya.

²Department of Educational Foundations, Masinde Muliro University of Science and Technology, Kenya.

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University student loans were introduced in Kenya with the aim of easing the burden of public expenditure in higher education. In the initial years the loans were to benefit all students enrolled at University irrespective of their socio-economic backgrounds. The beneficiaries were expected to repay the loan later upon getting into employment. This mode of funding eventually became unpopular both to the government and the international donor community because of the inherent negative social implications. Consequently, the Higher Education Loan Board (HELB) was formed through an Act of Parliament in 1995 and was mandated to disburse loans and recover the same from the former beneficiaries. However, HELB has severally been attacked of inability to consider the genuinely deserving cases. It is in the light of these criticisms that this study was carried out to determine the level of inequalities in the allocation of HELB loans to the recipients. Besides helping the researchers to develop insights into research work, this study uses the Lorenz Curves and Gini- coefficients as tools for determining inequalities in student loan allocations. This study was guided by the theory of socialist economics of education, propounded by Louis Blanc in the 19th century. This theory underlines the need to create an economy that redistributes income from the rich to the poor, so as to create equality of well-being. The study was carried out in Bungoma district and it involved 161 undergraduate loan recipients in the 2000/2001 first year undergraduate cohort from the six public universities, 161 parents, 2 academic registrars in the public universities and the manager of the loan Disbursement and recovery at HELB. Samples for the study were selected using purposive and quota sampling techniques. The population of the study comprised of; 275 undergraduate loan recipients in the cohort, 275 parents, 6 academic registrars and the loan disbursement and recovery manager at HELB. Data was collected using questionnaires and interview schedules. The data collected were analyzed by both the descriptive and inferential statistics. The income share tables, Lorenz curves and the Gini coefficients were used to determine the level of inequality in the provision of loans to the recipients. The findings to this study revealed the following; the amount of HELB loan allocation increased over the four academic years. The number of male students who benefitted from the HELB loan was higher than that of the female students. Majority of the loan recipients in the district were from the medium socio-economic background. There were small inequalities in the provision of the loans, however, these inequalities tended to reduce as the students in the cohort progressed through the four academic years. Recommendations considered essential with regard to ameliorating inequalities in the public universities were made and areas for further research were suggested.

Key words: Access, bursary, efficiency, equity, public subsidy, socio-economic background, student loan.

INTRODUCTION

Student aid schemes exist in several countries in the

world because of a number of reasons such as; economic utilization of educational resources and equalization of educational opportunities among others. Consequently, the pattern of financial assistance, in a country is

*Corresponding author. E-mail: jwamocho@yahoo.com

determined by the objective to be fulfilled. For instance, if the objective is to satisfy the social demand for education, the mode of financing education will target to increase the overall student enrolment in educational institutions. The growing financial constraints on educational investment combined with continued strong private demand for education have led several governments to consider the possibility of increasing the share of financial support provided by the student and their families by various cost recovery measures including, the payment of tuition fees and provision of student loans.

According to World Bank (1980), the proportion of G.N.P devoted to education in developing countries rose on average from 2.3% in 1960 to 4.5% in 1984, and the proportion of the national government budget rose from 11.7% in 1960 to 16.1% in 1984. The increased pressure on public budgets caused by inflation, balance of payments crises, financial crises and financial austerity is one of the main reasons for the current wave of interest in cost-sharing and loans as a form of cost-recovery in higher education.

Woodhall (1991) observes that student loans have been widely advocated for, as a way of providing financial support to students, and as a way of sharing the costs of higher education in a manner that is both equitable and efficient. Several economists and other proponents of loans, for example, Mbanefoh (1981) argue that education is both a personal and a social investment. A loan programme financed from public funds will enable those who cannot afford to pay tuition fees, or to meet the costs of books and living expenses, to borrow and finance their higher education. The beneficiaries would later repay the loans when they enjoy better job prospects.

The World Bank (1986) considered loans as one way to introduce or increase cost recovery in higher education while maintaining access for students from low-income families. In addition to this, Woodhall (1970) notes that loans as a form of public subsidy are very much preferred on the basis of equity. For one, if higher education were provided on the basis of free tuition, grants and allowances, then the privileged elite would benefit more since a majority of them enroll at this level. Secondly, if opportunities for higher education were given only to those who could afford to pay, it would be both inefficient and inequitable. It would be inefficient because some of the most able students would not be able to afford to continue their education, and it would be inequitable because higher education confers benefits on the individual in the form of better job opportunities and higher lifetime earnings so that, to distribute education in accordance with individuals' purchasing power would mean preserving and exaggerating inequalities of income in the future.

Psacharopoulos and Woodhall (1985) reveal that many developed and developing countries have established student loan programmes under which loans are provided

by government agencies, commercial banks or other financial institutions, and that the recipients are charged some form of interest. This is because education is considered to be a profitable private investment, yet many students cannot afford to finance it out of their own or family resources. The loans provide money when it is needed and they are repaid when the graduate gets employed. Studies by Mingat and Tan (1985) show that equity in the distribution of public resources very much depends on the socio-economic composition of student population at each level. If a social group is disproportionately represented in the distribution of resources, inequalities are bound to arise.

Kenya is in the category of countries, which in terms of policy statements subscribes to some form of equality in economic, political and educational domains (Republic of Kenya 1965). The foregoing document explicitly outlined the egalitarian principles to be pursued by Kenya. Kenya has been committed to increasing educational opportunities as made evident by the increasing budgetary allocations to the sector since independence. Gravenir (1991) noted that the amount allocated to the recurrent expenditure in education in 1987/1988 was 56 times what it was in 1963/1964, and that for development expenditure in education during the same year was 72 times. According to the government estimates of 1987/1988 financial year, education consumed over 40% of the total government expenditure (Republic of Kenya, 1989).

Despite this generous budgetary allocation to education, the emerging scenario revealed that enrolments and participation levels did not increase in tandem with the allocations (Kinyanjui, 1991). To redress this problem, the government recommended the introduction of cost-sharing in schools and other institutions to rationalize both the public and private sector educational expenditure (Republic of Kenya, 1988). Following this, Kenya introduced bursaries for needy students in secondary schools and formulated policies to make student loans more responsive to student needs at the university level. Evidence, however, shows that the performance of both the bursary and loan schemes is wanting.

According to the Education Master Plan 1997 - 2001, it is the government policy to direct the bursary allocation to the poor but academically talented students (Republic of Kenya, 1997). However, contrary to this expectation, Odalo (2000) observed that many students with exemplary performance in K.C.P.E. were unable to proceed to secondary schools because their poor parents could hardly afford fees, and that the bursary was inadequate to maintain those in upper classes, while at the same time catering for the new cases.

The use of student loans as a method of financing education in Kenya was first introduced in 1974. However, until 1992, these loans were indiscriminately given to all students irrespective of their financial backgrounds (Eshiwani, 1993). This approach of loan provision very

much compromised the social justice dimension of public subsidies. In an effort to promote social fairness in the loan awards, the government constituted the Higher Education Loans Board (HELB) in 1995 by an Act of Parliament. The foremost task of HELB was to identify and access financial assistance to the needy students.

According to Cheboi (2004), HELB annually disburses about KES 1.5 billions to the university students. Of this amount, the exchequer (Central Government) provides KES eight hundred million (800M), while the balance comes in the form of loan recoveries from the former beneficiaries. Cheboi observes that currently the monthly loan recovery stands at KES 60 million, a figure that translates into KES seven hundred and twenty millions (720 M) annually.

Despite the improved loan recovery, the amount disbursed by HELB is still less than what the students seek for. The insufficiency of loan availability underlines the need to benefit genuine cases only. Bungoma district has a total of 124 secondary schools with an enrolment of 28, 389 students (Republic of Kenya, 2002). From this number, about 500 are admitted to the public universities annually after passing the K.C.S.E. and almost all those who join these universities seek financial assistance from HELB due to the high prevalence of poverty in the district.

The major causes of poverty identified among others are; poor infrastructure, the collapse of agricultural marketing institutions, the high cost of farm inputs, lack of access to production assets and delay in payments for sugarcane delivered to Nzoia Sugar Company. In view of the foregoing circumstances, education is considered to play a significant role in ensuring social mobility in the district (Republic of Kenya, 2002). Consequently, equity in access to university education is critical.

So far, no empirical study has been carried out to find out the manner in which higher education loans are allocated to the undergraduate recipients in the district. This constituted the basis for the study.

Statement of the problem

Education is one of the sectors of the economy that can be used by any government to enhance equity in the society. Its effectiveness in accomplishing this, however, depends greatly on accurate formulation and application of education policies.

The Higher Education Loans Board (HELB) was established in 1995 through an Act of Parliament and was mandated to identify and allocate education loans to the needy university students in Kenya. However, since its inception in 1995, no study has been carried out in Bungoma District and Kenya as a whole to investigate the equity considerations in the loan allocations.

The absence of studies regarding the equity considerations in the use of loans to finance university education,

both in Bungoma District and Kenya at large occasioned the need for an empirical study in this area. The purpose of this study therefore, was to find out the levels of inequalities in the provision of HELB loans to the undergraduate recipients in Bungoma District.

Objectives of the study

General objective

The general purpose of this study was to find out whether the higher education loans were equitably allocated to the undergraduate recipients in Bungoma District or not. The study used the 2000/2001 first year undergraduate loan recipients.

Specific objectives of the study

1. To find out the trend of HELB loan allocations to the undergraduate students in Bungoma District in the academic years 2000/2001 to 2003/2004.
2. To find out the composition of HELB loan recipients by socio-economic background and gender in Bungoma District.
3. To find out the levels of inequality in the provision of HELB loans to undergraduate recipients in Bungoma District.

Research questions

1. What is the trend of HELB loan allocations to the undergraduate students in Bungoma District in the academic years 2000/2001 - 2003/2004?
2. What is the composition of HELB loan recipients by social class and gender in Bungoma District?
3. What are the levels of inequality in the provision of HELB loans to the undergraduate students in Bungoma District?

Significance of the study

The findings of this study have the following significance: First, the results of this study will rekindle further research in this area, which hitherto did not attract much attention. Second, the findings will also be useful to HELB with regard to the formulation of a more equitable policy of loans disbursement. Third, the study uses the Lorenz Curves and Gini-coefficients as techniques of determining inequalities in loan allocation. As such, the apparent inequalities are exposed making it possible to seek for remedies.

Theoretical framework

This study was guided by the theory of socialist economics

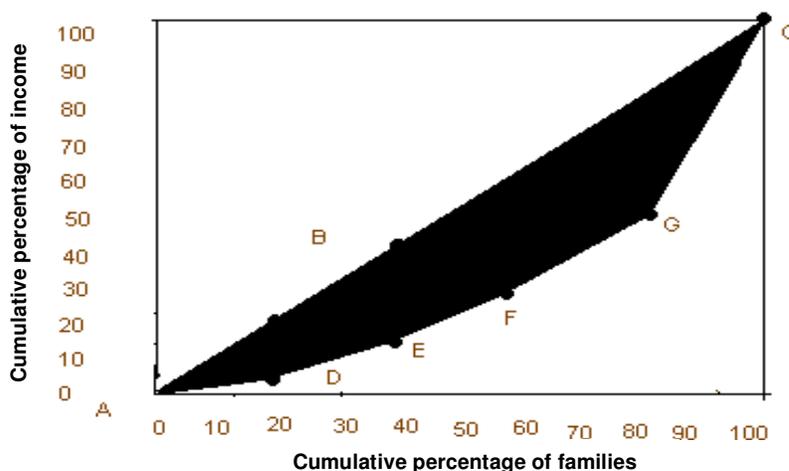


Figure 1. Lorez curve (Baumol and Blinder, 1979).

Table 1. Income shares by quintiles.

Income quintile	Percentage of family income	Cumulative percentage of family income
I	3.9	3.9
II	9.6	13.5
III	16.0	24.5
IV	24.1	53.6
V	46.4	100.0

Source: Baumol and Blinder, 1979.

of education postulated by a French Writer called Louis Blanc in the 19th century. He focused on excesses of unregulated capitalism and underlined the need to create an economy that redistributed income from the rich to the poor so as to create equality of well being (Colander, 1994).

This theory was the basis on which the Lorenz Curve (that is the geometric representation of the distribution of income among families in a given country at a given time, (Baumol and Blinder, 1979) was mooted. The Lorenz Curve measures the cumulative percentage of families from the poorest to the richest on the horizontal axis while cumulative percentage of income is put on the vertical axis as shown in Figure 1.

The cumulative percentages are described in terms of quartiles, quintiles or deciles. According to Psacharopoulos and Woodhall (1985), quartiles, quintiles and deciles are divided into; four, five and ten portions respectively. The measures are then used to compare the relative share going to specific groups such as the top quintile or the bottom quintile as shown in the Table 1.

A diagonal line as shown in Figure 1 would represent a perfect allotment of income. If there is any discrimination

at all, the poorest 20% of families will get less than 20% of all the income. Discrimination in allotment of income corresponds to points below the parity line such as D, E, F and G. Public subsidy in education is justified because of both equality and equity of educational opportunity. If education were provided at market prices, only those who can afford to pay tuition fees and other related costs would enroll. This would lead to under investment in education from the social point of view. In addition to this, income inequalities would be preserved from one generation to the next because education is itself a determinant of lifetime income (Psacharopoulos and Woodhall, 1985). Thus if the student loan is perceived as a social input among the students from low socio-economic status, the expected returns in this investment would be increased graduation rates in university education by the recipients. The distribution of student loans among the recipients would then be shown on the curve of concentration (Lorenz Curve). The allocation of student loans among university students in Bungoma district will be compared with a perfectly equal distribution that is, the actual share received by every group of recipients will be compared with what it would have received if the allocation were equitable. Perfect distribution would give a straight diagonal line shown by points A, B and C (Figure 2).

Deviations from this diagonal as shown by points D, E, F and G indicate inequalities in distribution and would be revealed by the Lorenz Curve. The bigger the area below the parity line, the more unequal is the student loan allocation.

The socialist economics theory of education made it necessary to collect data on the socio-economic background of every loan recipient involved in this study. Besides this data, every recipient had to provide information on the amount of loan received on an annual basis whose aim is to equalize educational opportunities for the

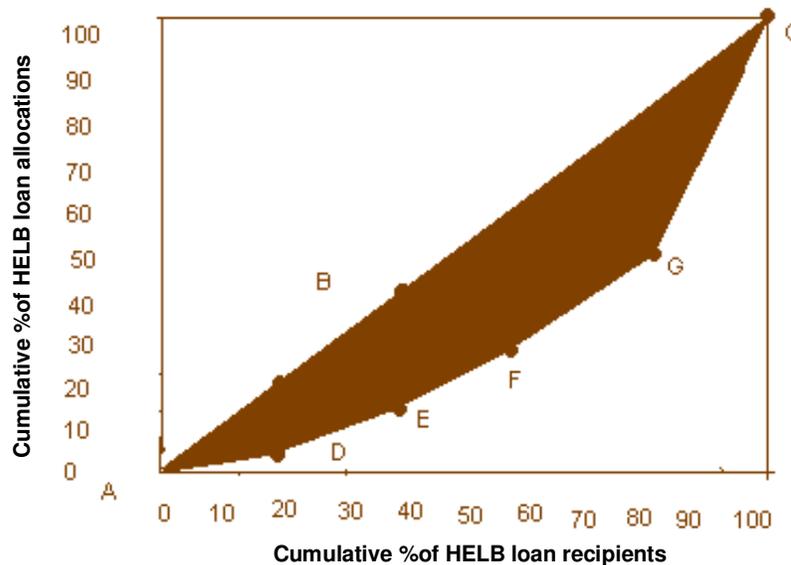


Figure 2. Hypothetical Lorenz curve for HELB loan distribution in Bungoma district (Psacharopoulos and Woodhall, 1985; Collander, 1994; Baumol and Blinder, 1979; Todaro, 1977).

for the four academic years. The foregoing data made it possible to determine the levels of inequalities in the provision of loans to the undergraduate recipients in the cohort within Bungoma District. Inequalities in the loan allocations were determined by drawing the Lorenz Curves and by calculating the Gini-coefficients for the various academic years.

RESEARCH METHODOLOGY

Research design

This study used the ex-post-facto research design. This design investigates possible cause and effect relationships by observing an existing condition or state of affairs and searching back in time for possible casual factors. According to Kerlinger (1973), an ex-post facto research is one in which the independent variable(s) have already occurred and in which the researcher starts with the observation of a dependent variable(s). The independent variable(s) are then studied in retrospect for their possible relationships to and effect on the dependent variable(s). In this study, the socio-economic background of the student is the independent variable, with the amount of loan awarded as the dependent variable.

The study area

Bungoma District is found in Western Province. It lies at the Northern tip of Western Province and has both local and international boundaries. It borders Mt. Elgon District to the Northwest, Trans – Nzoia District to the North, Kakamega District to the East, Butere/ Mumias District to the Southeast, Busia to the West and Teso District to the Southwest. The district borders the Republic of Uganda at the Northwestern point town of Lwakhakha. It covers an area of 2,068.5 km², which is about 25% of the total area of the Province.

The altitude of the district rises from 1,200 m above sea level in the West, to over 2,000 m above the sea level to the North. The annual rainfall in the district varies from 1,250 - 1,800 mm. Most of the rainfall occurs during the long rains and is usually heaviest in April and May. The mean annual temperature in the district varies from 21 - 25°C due to different levels of altitude.

The soils of the district show considerable variation in fertility and drainage properties. The good soils coupled with gently slopping terrain in most parts of the area make the district one of the most arable in the country. The main food crops are maize, beans, sorghum, millet and sweet potatoes while sugarcane, coffee, tobacco and cotton are the main cash crops.

The population size of Bungoma district is 997,175 persons with an average population density of 482 persons/km² (Republic of Kenya, 2002). This population is more or less evenly distributed and does not seem to follow a particular pattern. The estimated total number of the poor in Bungoma district is 490,000 (56%) people, who cannot afford a decent meal daily. The total length of the road system is 1,158.4 km; of this, the Bitumen surface covers 165.6 km, Gravel surface 669.6 km, while the Earth surface covers 323.2 km.

The district has a total number of 124 secondary schools with a total enrolment of 28,389 students (Republic of Kenya, 2002). From this number, about 500 join public universities annually after passing K.C.S.E. Almost all those who join these universities seek for financial assistance from HELB due to the high prevalence of poverty in the district.

It is a paradox that Bungoma District has a high prevalence of poverty, despite having a high agricultural potential. The major causes of poverty identified among others are; poor infrastructure, collapse of agricultural marketing institutions, high cost of farm inputs, lack of access to production assets, delay in payments for sugar cane deliveries by Nzoia Sugar Company and inhibitive cultural practices (Republic of Kenya, 2002). In view of the foregoing circumstances, education is considered to play a significant role in ensuring social mobility in the district. Consequently, attempts to equalize educational opportunities at university would be useful.

Table 2. Distribution of HELB loan recipients in the 2000/2001 first year undergraduate cohort by university.

Universities	Total number of loan recipients	Total number of loan recipients from Bungoma district
Nairobi	1539	61
Kenyatta	993	70
Moi	1055	69
Egerton	862	44
Maseno	441	27
Jomo Kenyatta	297	4
Total	5187	275

Source: HELB; Undergraduate loan recipient files (2000).

Study population

The study population comprised of 275 loan recipients in the 2000/2001 first year undergraduate cohort from Bungoma District. The study population also constituted of 275 parents/guardians of the loan recipients, 6 Academic Registrars from the six public universities and the Loans Disbursement and Recovery Manager from HELB.

The distribution of loan recipients in the six public universities in the 2000/2001 first year undergraduate cohort and the total number of loan recipients in the cohort from Bungoma District, are shown in Table 2.

Samples and sampling procedure

Purposive sampling technique was used to select the HELB loan recipients and their parents from Bungoma District in the 2000/2001 first year undergraduate cohort in all the six public universities. The desired sample size of both the loan recipients and their parents was determined using a formula recommended by Mugenda and Mugenda (1999). This formula is expressed as shown below:

$$nf = \frac{n}{(1 + n/N)}$$

Where;

nf = Sample size (when the population is less than 10,000).

n = Sample size (when the population is more than 10,000); 384.

N = Estimate of the population size; 275

In this study, the population size of the loan recipients in the cohort from Bungoma District was equal to that of their parents. When the foregoing formula was applied using the estimate population sizes as 275 for both the recipients and their parents, the sample sizes were established to be 161 individuals in each case. The working is as shown below;

$$nf = \frac{384}{1 + 384/275} = \frac{384}{2.3964} = 160.2 = 161$$

Quota sampling technique was then carried out on the 161 loan recipients, to determine the sample to be drawn from each of the six public universities. In the same way, the parents of the selected loan recipients were drawn forming a sample size of 161. The

Loans Disbursement and Recovery Manager at HELB and two Academic Registrars from the public universities were also selected for participation. The sample sizes of the different categories of the respondents are shown in Table 3.

Research instruments

The study used questionnaires and interview schedules. The questionnaires were used to obtain data from the students and their parents because they are convenient to use when handling a large group of respondents.

The interview schedules were used on the academic registrars and the Loans Disbursement and Recovery manager at HELB. Interviews provide in-depth data, which is not possible to get if questionnaires are used (Tuckman, 1978). They also make it possible to obtain data required to meet specific objectives of the study.

Reliability

Reliability is the degree of constancy between two measures of the same thing. The questionnaire was pretested to a selected sample of 19 students in the 2000/2001 first year undergraduate cohort from Bungoma district, so as to determine its reliability. The raw data obtained by the instrument was converted to numerical codes representing the measurement of the variables. This coding facilitated for the determination of reliability.

The Cronbach co-efficient Alpha was then computed to determine how the items correlated among themselves. Cronbach's Alpha is the general formula of the Kuder-Richardson (K-R) 20, (Mugenda and Mugenda, 1999). The K-R 20 formula is as follows:

$$KR_{20} = \frac{(K) (S^2 - \sum s^2)}{(S^2) (K - 1)}$$

Where;

KR₂₀ = Reliability coefficient of internal consistency.

K = Number of items used to measure the concept.

S² = Variance of all scores.

s² = Variance of individual items.

The cronbach alpha coefficient was found to be 0.8429. This high coefficient implied that the items of the questionnaire correlated

Table 3. Sample size of the different categories of the respondents in the study.

Category	Loan recipients in the district	Parents	Academic registrars	Loan disbursement and recovery manager
Sample	161	161	2	1

highly among themselves. This suggests that there was consistency among the items in measuring the concepts of interest.

Validity

Dane (1990) defines validity as the extent to which a measure actually measures what is supposed to measure. Validity therefore has to do with how accurately the data obtained in the study represents the variables of the study. To ascertain the content validity of the research instruments, the researcher consulted colleagues who are experts in research methodology. This enabled the researchers to develop instruments that would yield content valid data.

Procedure for data collection

The researcher used the services of six research assistants to administer the questionnaires to the 2000/2001 first year undergraduate loan recipients from Bungoma district in the six public universities. The research assistants were inducted and later given the questionnaires to administer to 161 loan recipients over a period of two weeks, when the universities were in session. The completed questionnaires were submitted back to the researcher for analysis. A total of 140 questionnaires were received back from the students. The returned questionnaires represented a response rate of 87%, a rate that was valid for meaningful generalizations.

The questionnaires for the parents, together with an introductory letter stating the purpose of the study were mailed to the parents. A self-addressed envelope was enclosed in every parent's questionnaire package. The parents were expected to complete the questionnaires and post them back to the researcher within a period of 2 weeks. A follow up letter was mailed to the parents who failed to send back the completed questionnaires within the stipulated duration of 2 weeks. The follow-up immensely helped to enhance the response rate.

Data analysis procedure

The raw data was appropriately coded and tabulated in readiness for analysis. Both the descriptive and inferential statistics were used. The descriptive statistic used was the means presented in the forms of bar charts and percentages, while the inferential statistics used in the study included the; Pearson Product Moment Correlation (r) and two tailed tests of significance at 0.05. The trend on loan allocations to the undergraduate students over the four academic years was expressed in terms of means and percentages. Besides this, tables were drawn showing the cumulative frequency of loan allocations to the recipients on annual basis over a period of four academic years. Tables were also drawn indicating the proportion of HELB loan beneficiaries from the district by gender and socio-economic status.

Tables showing the allocations of HELB - loans to the recipients by quintiles were also drawn. The information from these tables was ultimately used in constructing Lorenz curves. These curves were critical in determining the levels of inequality in the provision of

loans to the students.

The Lorenz curve (Figure 3) has a diagonal line, which represents perfect equality in loan distribution among the beneficiaries. In practice there is no perfect equality in the distribution of income in the society. Consequently, a Lorenz curve always displays a sagging away, on the right of the diagonal line. The sagging away represents inequality.

In order to quantify the levels of inequality in HELB loan allocations, the Gini coefficients were determined. This was done by calculating the ratio of the area between the diagonal and the Lorenz curve herein after known as A as compared to the total area of the half square in which the curve lies hereinafter known as BCD.

The area of the triangle BCD was determined by the formula $\frac{1}{2} b \times h$. In order to find the area of A, it was necessary to determine the area below the Lorenz curve. The area below the Lorenz curve was calculated by use of the trapezoidal rule of approximation of integrals (Berkey, 1990) as indicated below:

$$\frac{1}{2} \{ [h_1 (a + b)] + [h_2 (b + c)] + [h_3 (c + d)] + [h_4 (d + e)] \}$$

The area of A was obtained after subtracting the area below the Lorenz curve from the area of the triangle BCD.

The Gini coefficient values always lie between zero and one. Those values that lie close to zero represent equitable distribution, while those close to one represent inequality. According to Todaro (1977), the Gini-coefficient for countries with highly unequal income distributions typically lies between 0.5 and 0.7, while for countries with relatively equitable distributions it is in the order of 0.2 - 0.35.

The Pearson Product Moment Correlation Coefficient determined the relationship between the amount of loan allocations and the socio-economic backgrounds of the recipient students. The socio-economic background of a recipient was determined by collecting data on the parental level of education, occupation and level of income. In addition to this, information about household ownership of various assets and characteristics of household dwelling were collected and assigned numerical values. The levels of significance of the relationship were then tested at 0.05 confidence level.

RESULTS AND DISCUSSION

Trend of HELB loan allocations to the cohort over four academic years

The information in this section relates to the loan allocations to the recipient students over four academic years.

Table 4 shows the annual HELB loan allocations to 140 respondents of the 2000/2001 first year cohort over four academic years in the district. Over this period, a total of KES 17,750,000 was paid out. The lowest annual figure was KES 3,666,000 in the first academic year, while the highest annual figure was KES 5,411,000 in the fourth academic year. There was a gradual increase in terms of average annual loan allocation per student from KES

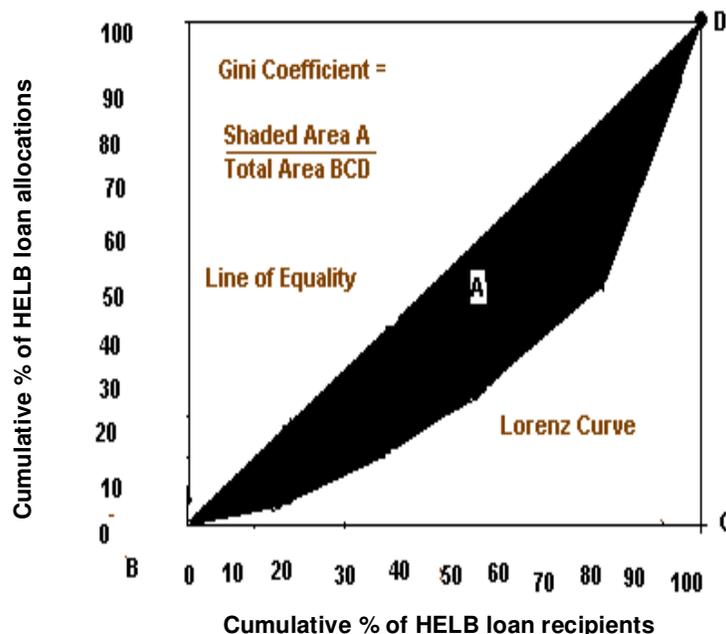


Figure 3. A hypothetical Lorenz curve for HELB loan allocations in Bungoma district (Todaro, 1977).

Table 4. Trend of HELB loan allocations to the cohort over four academic years in Bungoma district.

Academic year	No. of loan recipients/respondent	Total loan allocation (KES)	Average loan allocation
Year 1	140	3,666,000	26,186
Year 2	140	3,910,000	27,929
Year 3	140	4,763,000	34,022
Year 4	140	5,411,000	38,650

26,186 in year one, to KES 38,650 in year four. These figures showed an increasing trend in the average loan allocation to the students over the four academic years. According to Table 5, three of the respondents missed loan allocations in the first academic year. However, all the three had applied for loan allocations but were not awarded. Of these three respondents one was a very needy case that deserved loan allocation. The table also revealed that 36 respondents (25.7%) out of the 140 respondents contacted, received loan allocations of KES 30,000 and above during the first academic year. According to this table, 49.3% of the loan recipients received a loan allocation of KES 20,000. Therefore the bulk of loan recipients during this academic year received KES 20,000. According to the results of this table, the highest loan allocation in the first academic year was KES 50,000.

From Table 6, two respondents missed the loan allocation in the second academic year. These two students were among those that missed the loan allocation in the previous year though they had applied for it. During the second year of study, 48 respondents (34.4%) received loan allocations of KES 20,000. The number of recipients who received the same amount in the previous academic year was higher. According to this table, the bulk of the recipients (49.9%) received a loan allocation of KES 27,000 and above. The highest loan allocation in this academic year was KES 50,000. The students, who received the highest loan allocation during this year, were the same ones that enjoyed the highest allocation in the previous academic year.

According to Table 7, the lowest loan allocation was KES 27,000 in the third academic year. This allocation was awarded to one student only. During this year of stu-

Table 5. Cumulative percentage of HELB loan allocations to the respondents in the cohort in the first academic year in Bungoma district.

Loan amount	Frequency	Percent	Cumulative percent
0.00	3	2.2	2.2
20,000	69	49.3	51.5
22,000	1	0.7	52.2
25,000	14	10.0	62.2
27,000	7	5	67.2
27,500	8	5.7	72.9
28,000	1	0.7	73.6
29,000	1	0.7	74.3
30,000	7	5.0	79.3
34,000	1	0.7	80.0
35,000	4	2.9	82.9
36,000	1	0.7	83.6
37,000	1	0.7	84.3
38,000	1	0.7	85.0
40,000	1	0.7	85.7
41,000	2	1.4	87.1
42,000	5	3.6	90.7
43,000	2	1.4	92.1
44,000	1	0.7	92.8
47,000	1	0.7	93.5
48,000	3	2.2	95.7
50,000	6	4.3	100
TOTAL	140	100	100

dy, all the respondents were allocated loans, even those who had missed allocations in the previous academic years. Majority of the recipients (60%) received a loan allocation of KES 30,000. This was an improvement compared to the previous academic year allocations; where majority of the recipients received KES 20,000. The highest loan allocation rose to KES 53,000. Students who received high allocations in the previous academic years, continued to enjoy higher allocations.

According to Table 8, the lowest loan allocation received by the respondents was KES 30,000. Only two respondents out of those contacted by the researcher received this amount. Majority of the respondents (62.1%) received loan allocations amounting to KES 35,000. The highest amount of loan allocated during this year was KES 60,000.

During the fourth academic year, recipients received the highest loan allocations out of the four academic years. Generally recipients, whose initial loan allocations were comparatively high, received higher loan allocations for all the four academic years, than those whose initial loan allocations were lower. In this academic year, 12.2% of the respondents received loan allocations ranging from

Table 6. Cumulative percentage of HELB loan allocations to the respondents in the cohort in the second academic year in Bungoma district.

Loan amount	Frequency	Percent	Cumulative percent
0.00	2	1.4	1.4
20,000	48	34.4	35.8
22,000	1	0.7	36.5
24,000	1	0.7	37.2
25,000	18	13.0	50.2
26,500	1	0.7	50.9
27,000	9	6.4	57.3
27,500	8	5.8	63.1
28,000	1	0.7	63.8
29,000	1	0.7	64.5
30,000	14	10.0	74.5
32,000	1	0.7	75.2
34,000	3	2.1	77.3
35,000	8	5.8	83.1
38,000	2	1.4	84.5
40,000	1	0.7	85.2
41,000	3	2.1	87.3
42,000	3	2.1	89.4
43,000	2	1.4	90.8
44,000	3	2.1	92.9
47,000	1	0.7	93.6
48,000	3	2.1	95.7
50,000	6	4.3	100.0
TOTAL	140	100.0	100.0

KES 50,000 to KES 60,000.

Composition of HELB loan recipients by gender and socio-economic status

The information provided in this section relates to the composition of loan recipients in the district over the four academic years.

The composition of HELB loan recipients by gender in the cohort from Bungoma District is displayed in Table 9. According to this table, 61.4% of the loan recipients in the cohort were males, while 38.6% were females. The low number of females that accessed loans was attributed to the small number of female students admitted to the universities from the district in the cohort.

The distribution of HELB loan allocations to the recipients in the cohort in Bungoma district by socio economic background is shown in Table 10. According to the table, students from the medium socio-economic background benefited more from the loan allocations than any other group.

Table 7. Cumulative percentage of HELB loan allocations to the respondents in the cohort in the third academic year in Bungoma district.

Loan amount	Frequency	Percent	Cumulative percent
27,000	1	0.7	0.7
30,000	84	60.0	60.7
34,000	3	2.2	62.9
35,000	17	12.0	74.9
36,000	2	1.4	76.3
38,000	4	2.8	79.2
39,000	3	2.2	81.4
40,000	3	2.2	83.6
41,000	3	2.2	85.8
42,000	3	2.2	88.0
43,000	2	1.4	89.4
44,000	1	0.7	90.1
45,000	1	0.7	90.8
46,000	1	0.7	91.5
47,000	3	2.2	93.7
48,000	3	2.2	95.9
50,000	5	3.4	99.3
53,000	1	0.7	100.0
TOTAL	140	100	100.0

Figure 4 gives a general impression of the socio-economic background of the loan recipients in 2000/2001 first year undergraduate cohort in Bungoma District. According to this figure, 67.9% of the loan recipients in the cohort were from the medium socio-economic background. This category of recipients therefore, constituted the bulk of the loan recipients in the cohort.

According to the information in this figure, 23.6% of the loan recipients in the cohort were from the low socio-economic background, while 8.5% were from the high socio-economic background in the district. The foregoing data showed the existence of inequalities in the allocation of higher education loans in terms of the socio-economic backgrounds of the recipients in the district. This was because, while very many students from the medium socio-economic background accessed university through higher education loans, very few from the low socio-economic background did likewise.

Levels of inequality in the provision of HELB loans to the recipients

This section presents the measures that were used in the study to evaluate the levels of inequality as with regard to loan allocations to the undergraduate students in the district. These measures are namely; Income share tables, Lorenz curves and Gini-coefficients.

Table 8. Cumulative percentage of HELB loan allocations to the respondents in the cohort in the fourth academic year in Bungoma district.

Loan amount	Frequency	Percent	Cumulative percent
30,000	2	1.4	1.4
35,000	87	62.1	63.5
36,000	7	5.0	68.5
39,000	1	0.7	69.2
40,000	6	4.3	73.5
41,000	3	2.2	75.7
42,000	3	2.2	77.9
43,000	7	5.0	82.9
44,000	4	2.8	85.7
45,000	2	1.4	87.1
50,000	1	0.7	87.8
51,000	7	5.0	92.8
52,000	5	3.6	96.4
53,000	1	0.7	97.1
59,000	1	0.7	97.8
60,000	3	2.2	100.0
TOTAL	140	100.0	100.0

Table 9. Loan allocations to the recipients in the cohort by gender over the four academic years in Bungoma district.

Gender	Male	Female	Total
Number	86	54	140
Percentage	61.4%	38.6%	100%

Table 10. Loan allocations to the recipients in the cohort by socio-economic background in Bungoma district.

Socio-economic background	Low	Medium	High
Number of recipients	33	95	12
Percentage of recipients	23.6%	67.9%	8.5%

Income share tables

These tables have been used to show the distribution of HELB loans to the undergraduate recipients from Bungoma District in the public universities. All the sampled loan recipients were arranged in an ascending order of their individual loan allocations, and then divided into distinct groups called quintiles.

These tables contain information showing the proportion of the population on one hand and the respective percentage of loan allocation on the other. A special column showing the percentage each proportion of the population would receive, if the allocations were perfect

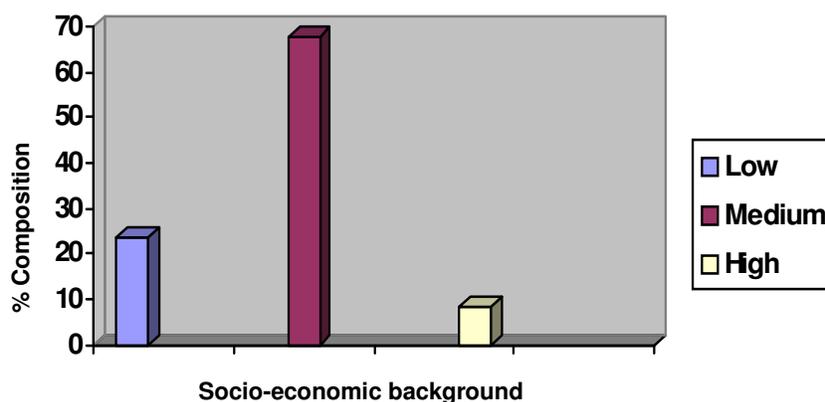


Figure 4. Percentage compositions of loan recipients in the cohort by socio-economic background in Bungoma district.

Table 11. The percentage share of annual HELB loan allocations by quintiles to the cohort over four academic years.

Quintiles	Year 1	Year 2	Year 3	Year 4	Percent equality % allocation
I	13.6	13.3	17.6	17.9	20.0
II	15.3	15.0	17.6	18.0	20.0
III	16.8	18.6	17.6	18.0	20.0
IV	21.4	22.0	20.8	20.1	20.0
V	32.9	31.1	26.4	26.0	20.0
Total	100.0	100.0	100.0	100.0	100.0

was also added.

These income share tables were designed in two forms. The first form was on the basis of individual annual loan allocation, while the second one was on the basis of individual total loan allocation for the four academic years. Therefore, on the basis of the foregoing two types of income share tables were drawn.

The loan allocations to the respondents in the cohort over the four academic years were presented in the form of quintiles as shown in Table 11. In this table, the total number of respondents contacted was divided into five equal parts known as quintiles. The amount of loans received by each of these quintiles was then expressed as a percentage of total loan allocation received by all the respondents for each academic year.

According to this table, the two upper quintiles (40%) of the loan recipients in the cohort received a bigger share of the loans than what was due to them over the four academic years. It also emerged from this table that, the two bottom quintiles (40%) received less than their rightful share of loan allocation for all the four academic years. However, the trend of inequality tended to reduce overtime.

From Table 12, it was evident that the upper two quintiles (40%) of the loan recipients received 48.8% of the

the total loan allocation over the four academic years. This was an excess allocation to the two quintiles. Over the same period, the two bottom quintiles (40%) received only 32.8% of the total allocation.

The Lorenz curves

These curves constitute a method used to analyze personal income figures. In this particular study, these curves were designed so as to diagrammatically show the relationship between the loan recipient groups and their respective shares (%) of loan allocations.

On the horizontal axis, the numbers of loan recipients were plotted, not in absolute terms, but in cumulative percentages, while the vertical axis showed the share of loans associated or received by each percentage of recipients. Percentages on both the axis were cumulative up to 100%.

A diagonal line was drawn from the lower left hand corner (the origin) of the square, to the upper right hand corner. At every point on the diagonal, the percentage of loan received was exactly equal to the percentage of loan recipients. The sagging of the Lorenz curve, away from the diagonal, represented inequality. The more the Lorenz

Table 12. The percentage share of overall HELB loan allocations by deciles to the cohort over four academic years.

Deciles	Loans awarded (KES)	% loan allocation	Perfect equality % loan allocation
I	2,840,00	16.0	20.0
II	2,987,000	16.8	20.0
III	3,264,500	18.4	20.0
IV	3,709,500	20.9	20.0
V	4,949,000	27.9	20.0
Total	17,750,000	100.0	100.0

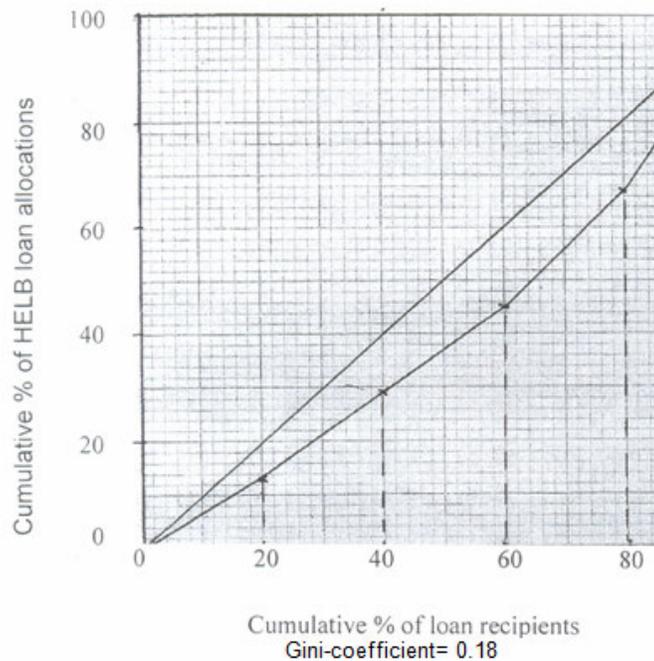


Figure 5. Lorenz curve of HELB loan allocation by quintiles to the cohort in the 2000/2001 academic year.

line curved away from the diagonal, the greater the degree of inequality.

The Lorenz curves were drawn to specifically help answer the research question about determining the levels of inequalities among the loan recipients in the cohort. Four Lorenz curves were consequently drawn in an effort to determine the levels of inequality in loan allocations to the recipients for each of the four academic years. In order to determine the overall level of inequality in the loan allocations for all the academic years of study for the cohort, a fifth Lorenz curve was drawn. In all curves plotted, the trapezoidal rule of approximation of integrals is given as:

$$\frac{1}{2} \{ [h_1 (a + b)] + [h_2 (b + c)] + [h_3 (c + d)] + [h_4 (d + e)] \}$$

The Lorenz curves expressed in Figures 4, 5, 6, 7 and 8

showed some sort of inequalities existing in Bungoma district with regard to HELB loan allocations to the undergraduate students in the public universities. These inequalities, however, were not high because the Lorenz lines tended not to sag too much away from the diagonal line.

According to these curves, the cohort recorded the highest inequalities in loan provision in 2000/2001 academic year (Figure 4) and the lowest inequalities in the last two consecutive academic years, Figures 6 and 7 respectively, of the four academic years involved in the study. This implied that the allocation of HELB loans became less inequitable after every other academic year.

Inequalities were highest in the 2000/2001 academic year because of low uniformity in the loan allocations to the individual recipients in this year. Inequalities kept reducing over the subsequent academic years due to the

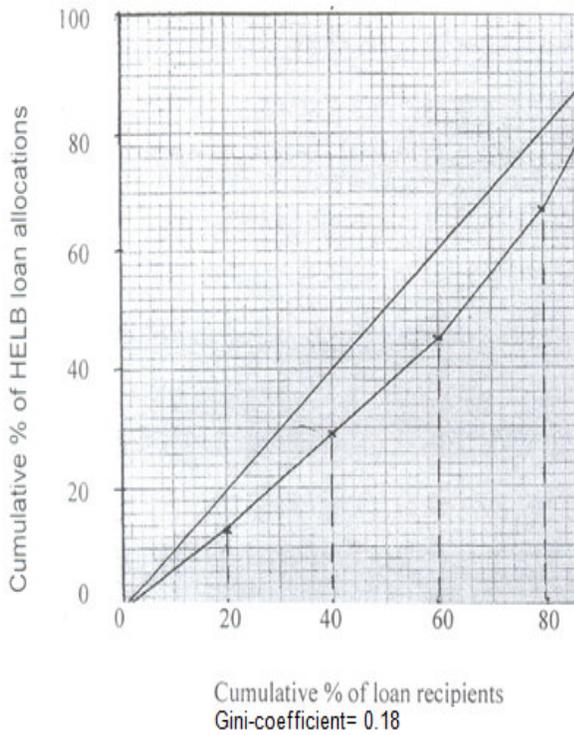


Figure 6. Lorenz curve of HELB loan allocations by quintiles to the cohort in the 2001/2002 academic year.

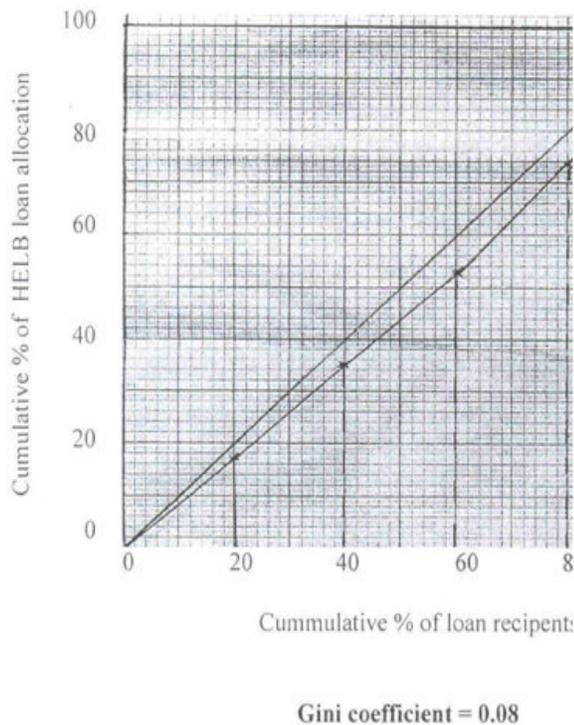


Figure 7. Lorenz curve of HELB loan allocations by quintiles to the cohort in the 2002/2003 academic year.

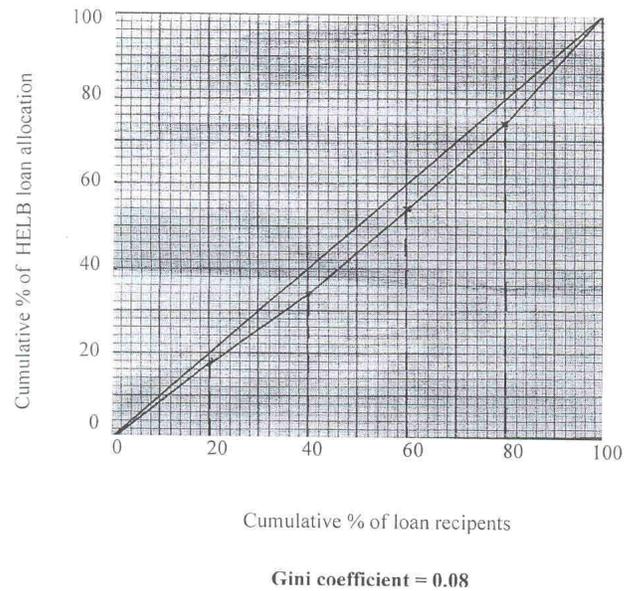


Figure 8. Lorenz curve of HELB loan allocations by quintiles to the cohort in the 2003/2004 academic year.

increase in the uniformity of loan allocations. In the last two academic years, the uniformity in loan allocations to the individual recipients was quite high as reflected in Tables 6 and 7 respectively.

Gini-coefficients

Table 13 shows Gini coefficients for HELB Loan allocations over the four academic years.

The Gini-coefficients for the loan allocations to the respondents in the cohort from Bungoma District are as shown in Table 13. According to this table, the Gini-coefficients for the loan allocations to the respondents over the four academic years were below 0.2. These low figures implied that inequalities in the loan allocations to the recipients in the cohort were low. The inequalities were, however, highest in year one at 0.18 and lowest in the third and fourth academic years at 0.08.

The composition of HELB loan recipients by gender and socio-economic background

The findings greatly showed that males dominated the loan recipients in the cohort. Only 38.6% of loan recipients were females compared to 61.4% males. As with regard to the composition of HELB loan recipients by the socio-economic status, only 23.6% of the recipients were from the low socio economic class. These results showed that, the poor were still under-represented in higher education. These results concurred with studies carried out in Colombia, which concluded that loans had not served to

Table 13. Gini Coefficients over the four academic years

Academic year	Year 1	Year 2	Year 3	Year 4
Gini-coefficient	0.18	0.164	0.08	0.08

redistribute income in the favour of the poor, because loan recipients often came from the upper - income families (Jallade, 1974).

Inequalities in HELB loan allocations

This study also sought to determine levels of inequalities in the loan allocations to the recipients. From the results presented in the Lorenz curves (Figures 4, 5, 6 and 7) it was found that there were small inequalities in loan allocations among the recipients in the cohort. The Gini coefficients for all the four academic years were found to be less than 0.2, an indication that the inequalities were very small. The inequalities tended to reduce over time. The low inequalities were attributed to the uniformity in the amounts of the loans allocated to the recipients other than fairness in the allocation process.

Summary of research findings

The purpose of the study was to find out if the HELB loans were equitably allocated to the recipients in Bungoma District or not. One of the objectives of this study was to find out the trend of Loan Allocations to the recipients in the District between the academic years 2000/2001 - 2003/2004. Tables 4, 5, 6, 7 and 8 revealed an increasing trend in the loan allocations over the four academic years.

It emerged that the loan recipients generally had the least loan allocations in the first academic year but received the highest allocations in the fourth academic year. The average annual loan allocation per recipient rose from KES 26,186 in year one, to KES 38,650 in the fourth academic year (Table 4).

The other objective of this study was to find out the composition of HELB loan allocations by gender and socio-economic background in the district. Table 9 showed that the number of males who accessed the loans were higher than those of the females, while Table 10 revealed that, majority of the loan recipients in the district, were from the medium socio-economic background. According to the findings of this study, 67.9% of the respondents were from the medium socio-economic background, compared to 23.6 and 8.5% who represented the low and high socio-economic backgrounds respectively.

The study also sought to determine the levels of inequalities in loan allocations to the recipients in the district.

The results obtained showed that there were small inequalities in the allocations among the recipients over the four academic years. The Lorenz curves (Figures 4, 5, 6, 7 and 8) showed, the curves sagging downwards from the line of perfect equality. The Gini-coefficients for all the four academic years were below 0.2. It was observed that the level of inequalities tended to reduce over the four-year period of study. The inequalities were highest in the first year and lowest in the last two academic years.

Conclusions

Following the findings of this study, a number of conclusions were drawn as follows: There was an increasing trend in the HELB loan allocations to the recipients over four academic years. The initial loan allocations were smaller than those in the subsequent academic years. It was observed that recipients who received higher allocations in the first academic year tended to receive bigger loans in the subsequent years. This led to the conclusion that HELB determined the loan allocations in the subsequent years based on initial information provided by the applicant during the first academic year.

It emerged from the study that fewer female students accessed the higher education loans than the male students. Following this, it was concluded that the number of female students who accessed university education in the district was smaller than that of the males. The study also revealed that majority of the loan recipients in the cohort were from the medium socio-economic background. This led to the conclusion that most of the students admitted to the universities from Bungoma District were from the medium socio-economic background.

The Gini-coefficients for the cohort over the four academic years were below 0.2. This gave an impression that the allocations were equitable. However, after considering the sizes of the loan allocations, it was concluded that the apparent equity was attributable to uniformity in the amounts of the loans allocated to the recipients rather than fairness in the allocation.

RECOMMENDATIONS

The following recommendations were made based on the findings of this study.

1. Majority of the respondents contacted in the study were of the opinion that the loan allocations were rather low and therefore insufficient for their tuition and general upkeep. There is therefore need for HELB to increase the loan allocations to the recipients. HELB should also consider other sources of finance besides the conventional ones; this would help to enhance its financial base.
2. The findings on the trend of loan allocations showed

that, the amount of loan a recipient received in the first academic year determined the pattern of loan allocation to the recipient in the subsequent academic years. That is, a student who received a comparatively high allocation in the first year, tended to receive a higher allocation over the entire period of study and vice versa. This in essence confirmed the fact that, subsequent loan allocations were based on the initial data provided by the applicant with regard to the socio-economic background. However, basing future allocations on such a criterion is inappropriate because, family fortunes tend to change over time. This study therefore recommends that HELB should devise a method of collecting data regarding the recipient's socio-economic background annually. Subsequent loan allocations would then be based on this current data.

Recommendations of further research

On the basis of the findings of the study, the following recommendations for further research were made.

1. One of the findings of the present study revealed that, there were small inequalities in the allocation of loans to the recipients in Bungoma District. In the wake of this, the study recommends that similar studies be carried out in the different parts of the country, with the purpose of making comparisons in the level of inequalities between the different regions of this country.
2. The inequalities that emerged with regard to the loan allocation in the current study were attributed to the flawed process of identifying the loan recipients. Following this, the study recommends that an investigation be done on the "Means Testing Instrument" used by HELB. This should be done with the view of improving its ability to disaggregate loan applicants into different socio-economic backgrounds.

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