Full Length Research Paper

Equity in the distribution of HELB loans in Kenya in relation to students characteristics: an empirical analysis

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Public funding of higher education in Kenya has gone through various stages all buffeted by myriad equity challenges. This prompted the government of Kenya (GoK) to create the Higher Education Loans Board (HELB), through an Act of parliament in the year 1995. GoK guidelines on loan provision to university students emphasise that deserving cases must get support to finance their education depending on their level of need. However, stakeholders have always expressed concern over the manner in which loans are awarded and recovered. These concerns are attributable to the challenges facing HELB loan administration. This study sought to determine the level of equity in the distribution of HELB loans in relation to students' characteristics. The study used correlational design to determine HELB loan disbursements. The population included all the HELB loan recipients in public and private chartered universities in Kenya who were admitted in the 2000/2001 academic year. Purposive sampling technique was employed in order to select one public rural and one public urban university. Similarly, a private rural and a private urban university were purposively selected. Simple random sampling technique was used to get 626 loan recipients. In order to include non-loan recipients in the sample size, snowball sampling technique was used to get 147 non-recipients. Hypotheses were tested using t-tests and ANOVA at α 0.05 level of significance. Results reveal that no statistically significant difference existed between HELB loan disbursements and the students' characteristics such as gender and location of university. However, the relationship was significant for students' socio-economic status and programme of study. To enhance fairness in HELB loan disbursements, the study recommends the development of a proper means testing tool that can effectively discriminate students according to their level of need. It also recommends the incorporation in the means testing tool a criteria that considers the cost of the programme, the location of the university and the students' gender.

Key words: Equity, finance, higher education, university, means testing, Kenya.

BACKGROUND INFORMATION

Higher education financing in Kenya, has been character-rised by shifting positions determined by local micro-economic changes and policy shifts of the funding agencies particularly the World Bank. Since independence, higher education financing in Kenya has passed through various funding regimes ranging from full support to cost sharing and even private participation (Gravenir et al., 2005).

According to Gravenir et al. (2005) public higher education in Kenya was historically free with the public purse covering both tuition and living expenses regardless of the socio-economic ability of the students. The rationale for state subsidy of higher education was based on the country's desire to create highly trained manpower that could replace the departing colonial administrators. The

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universities were seen as the epicenter of social and economic development, which the newly independent state so much desired to have. To achieve its role of spurring social and economic development, it was argued that generous funding be provided. The small number of students who accessed university education further made free provision of university education possible. In 1964/65 academic year, there were only 651 students enrolled in the then university college of Nairobi compared to 1779 in 1968/69 (Republic of Kenya as cited in Gravenir et al., 2005).

However, it wasn't long before the government support for free higher education posed a challenge to the National budget. This was because the demand for university education increased over a short period of time and it soon became a concern of the government and donor agencies. Unfortunately, the rising demand was taking place at a time when the country's economic performance was plummeting. This made it difficult to offer free or highly subsidized university education. At the same time, this challenge was increasingly being seen from the point of view that investment in university education was not a significant priority due to what is often seen as low social returns of this level of education compared to basic education (Psacharopoulos and Woodhall, 1985). Consequently, cost sharing and cost recovery measures were introduced.

In 1988 the World Bank published an influential policy paper: Education in Sub-Saharan Africa: Policies for Adjustment, Revitalization and Expansion (World Bank, 1988). The Report emphasized that governments in sub-Saharan Africa were not expected to increase substantially the resources they devoted to education. The paper further cautioned that the cost of higher education in Sub-Saharan Africa was needlessly high. It called upon African governments to relieve the burden on public resources of financing by increasing the participation of beneficiaries and their families (World Bank, 1988).

To remedy the situation, the paper recommended the expansion of access for part time fee-paying students. African governments were also directed to introduce fees in public universities. Besides financial and institutional reforms, ostensibly to enhance the quality, efficiency and effectiveness of university programmes, the World Bank argued that beneficiaries of higher education needed to make significant pecuniary contributions to their education since they stood to gain more from the system (World Bank, 1988).

Coupled with the dismal performance of the economy, soaring demand for higher education and implementation of Structural Adjustment Policies (SAP's), the Kenyan government was compelled to adjust financing and reduce expenditure on higher education. The initial response to the declining state budget for higher education was the introduction of cost sharing in 1988 as contained in Sessional Paper No. 6 of 1988 (Republic of Kenya, 1988). Cost sharing requires that students or their parents/guardians cover both tuition and maintenance costs.

In an attempt to have a proactive institution, which could address the needs of the vulnerable against the implementation of the Structural Adjustment Policies (SAP's) and in order to minimise the financial demands from the treasury, Higher Education Loans Board (HELB) was created in 1995 under an Act of Parliament (HELB Review, 2002). It is an autonomous body charged with the responsibility of receiving loans already lent out to Kenyans who benefited from the scheme since 1974 and disbursing it to needy Kenyan students pursuing higher education within and outside Kenya (HELB review, 2004). The board main source of funds has been the exchequer. Through an Act of parliament the board was mandated to perform the following functions *inter alia*: give loans, bursaries and scholarships to needy Kenyan students pursuing higher education within and outside Kenya. Solicit for funds and other assistance to promote the functions of the board. Enter in to contracts with financial institutions for the purpose of loans disbursement and recovery (Republic of Kenya, 1995; Odundo and Njeru, 2005).

According to Odundo and Njeru (2005), the scheme disburses a maximum of Ksh 54,000 for successful applicants and also a bursary of Ksh 8000 to needy student paid directly to the university in which the student is enrolled. Although these loans were originally targeted to students enrolled in public universities, the board has widened its mandate to assist student in private universities as well. The scheme has also recently started disbursing loans to postgraduate students enrolled in a range of HELB defined 'priority courses'. The loans given to postgraduate students are thus geared towards meeting certain occupational or manpower needs (Gravenir et al., 2005). Loans for postgraduate students are disbursed annually while those for undergraduate students are disbursed twice in one academic year (HELB Review, 2003). The portion of the loan for catering and accommodation is directed to each of the six public universities where internal arrangements for the management of these services are done. About 34 per cent of the loan is earmarked for the students' personal expenses including books while the tuition loan is directed to the universities for the necessary purchases of academic materials. According to Odundo and Njeru (2005), the Board's position is that all students selected by JAB to join public universities must not fail to get funding; however, those capable of financing their studies are advised not to apply. Eligibility depends on the information provided in the forms and the supporting documents. The awards are based on the family's annual level of income, where it is held that those who fall below an annual income of Ksh 850,000 are in need of the board's assistance. Other guiding factors include, single parenthood, place of residence, orphan, the number of children at the universities, as well as medical incapabi-

lity. However, despite the creation of HELB,there were concerns that HELB loans are not equitably disbursed (Koigi, 2006). Concerns have been raised that students from richer families get higher loan allocations. There were also concerns that cheaper programmes get higher allocations than the traditionally known expensive programmes (Koigi, 2006; Odebero et al., 2006). Other scholars, (Nyaundi, 2001) argue that location of the university has a bearing on the costs of financing university education. Although this was an indication that the government HELB loan scheme was inequitably allocated, empirical studies have not been documented on the actual status of HELB loan distribution to the recipients in Kenya.

Problem of the study

Equity in access to higher education has attracted interest among policy makers, scholars and other stakeholders. This is in view of the increasing demand for higher education among school leavers and the country's need for highly skilled manpower for the various sectors of the economy. The establishment of the board was expected to not only ease pressure on government exchequer to finance higher education but also more importantly, provide equal opportunity to all to access higher education. However, the extent to which this has been achieved has not been ascertained. Issues on how students qualify for proportions of the loan have been raised. In other cases, students have questioned the criteria of allocating loans. This research sought to establish the effectiveness of HELB in equitable distribution of HELB loans in relation to students' characteristics.

Objective of the study

Determine the relationship between HELB loan allocations and students characteristics

Research hypothesis

In trying to answer the above objective, the following hypothesis guided the study:
H_{01} There is no significant difference between HELB loan allocations and students characteristics.

METHODOLOGY

The study used corelational design to determine HELB loan disbursements. Disbursements focused on the year 2001 undergraduate cohort. This refers to students who enrolled in Kenya's public universities and private chartered universities in the year 2001 to pursue undergraduate programmes. The distribution of the cohort under investigation in the public and private chartered universities is as shown in Table 1.

Purposive sampling technique was employed in order to select one public rural and one public urban university. Similarly, a private rural and a private urban university were purposively selected. Nairobi and Egerton represented public urban and public rural universities respectively, while Catholic university and Baraton represented private urban and private rural universities respectively. These formed the accessible population. The categorization of the universities into urban and rural was based on the cost element associated with the location of the university where cost of living in urban areas is expected to be higher (Nyaundi, 2001). Since the proportion of the population having the requisite characteristics is estimated at 50 % (p = 0.5), the sample size was determined as follows.

$$n = \frac{Z^2 \, pq}{d^2}$$

Where:

n = the desired sample size (if the target population is greater than 10,000)
z = the standard normal deviate at the required confidence level.
p = the proportion in the target population estimated to have characteristics being measured.
q = 1-p.
d = the level of statistical significance set.

Since the target population is less than 10,000, the final sample estimate (nf) was calculated as follows;

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

Where: nf = the desired sample size (when the population is less than 10, 000).
n = the desired sample size (when the population is more than 10,000)
N = the estimate of the population size (Mugenda and Mugenda, 1999).

The distribution of the accessible population and the sample sizes derived from the above formula and based on population data are given in Table 2.
In order to get equitable representation of gender in the sample, stratified random sampling was employed as recommended by Mugenda and Mugenda (1999). This ensured proportional allocation of gender in the sample sizes as follows:

$$\frac{\text{Total male or female in the population}}{\text{Population size}} \times \text{Sample size}$$

Thus for the female population $= \frac{1439}{4233} \times 860$

= 292 females and 568 males.

DATA ANALYSIS

In order to find the relationship between loan allocation and students characteristics, Analysis of Variance (ANOVA) and T-test for equality of means were used. The T-test was used to determine if the means were significantly different between HELB loan allocation and students' characteristics such as gender, type of university and location of university. ANOVA was used in order to test the significant difference in means of HELB

Table 1. Distribution of the 2001 Cohort Loan Recipients in Public and Private Chartered Universities in Kenya

Public University	Recipients	Private University	Recipients
Nairobi	2500	CUEA	109
Egerton	1400	Daystar	119
Kenyatta	1200	Baraton	214
JKUAT	266	Scott	52
Moi	1250	USIU	59
Maseno	600	Nazarene	14

Source: HELB, 2004

Table 2. Accessible population and the corresponding sample sizes.

University	Accessible population	Sample sizes
Nairobi	2500	332
Egerton	1400	301
Daystar	119	90
Baraton	214	137
Total	4233	860

loan allocation and the programme of study and the socio-economic status variables. For means that were significantly different, the Scheffe multiple comparison tests were further conducted in order to determine where the differences lie. Consequently, two level nominal variables were analyzed through Independent-Samples T- Test, while a three way ordinal data such as students SES was analyzed through analysis of variance (ANOVA).

Social economic status (SES) analysis

Before coding and entering the students SES variable in the computer programme for statistical analysis, respondents were grouped into different categories of socio-economic status. This variable was a composite variable measured by eight items each with its own scoring scale. The use of several indicators in this study was preferred in order to capture various characteristics common in African families whose contribution to parental SES could not be ignored. This deviates from the traditional sole measures for SES such as parental level of education or parental occupation (Bosire, 2000; Ndirangu and Bosire, 2004) to include other indicators for SES (Ngware, 2000; Odebero, forthcoming).

The students SES scoring criteria included who pays the applicant's university fees. This was scored 2 for father, one for mother, one for guardian and nil for self. In the next item, parents who were alive attracted 2 marks for father (being the head of household) and I mark for mother while deceased parents attracted no mark. The

third item was the work of the person who pays the applicant's fees. Here, professionals like lawyers, medical doctors, and large-scale business entrepreneurs among others were scored between 3 and 4 while small business entrepreneurs scored 1. The fourth item was the type of house lived in at home. This was scored 3, 2, 1 and 0 for permanent with electricity, semi-permanent with electricity, permanent without electricity, and grass thatched in that order. The fifth item was land acreage owned by the applicant's family, which attracted 1 for below 5 acres, 2 for 6 - 8 and 3 for 9 - 10, 11 - 15 acres got 4 while above 15 scored 5. Item 6 evaluated the type of property owned by the applicant's family. High cost properties like a car were awarded 3 while simple ones like a radio or bicycle scored 1. The seventh item was the level of education of the parents or guardian. The scoring criteria ranged from 6 for postgraduate to 1 for primary, while income level ranged from 7 for above Ksh 50,000 and 1 for below Ksh 2000.

In analysing the students SES, a continuum was generated based on the total score. In order to categorize applicants into different socio-economic classes, the total score of 39 was divided by three to get 13 for low SES and 26 for the medium SES. Consequently, those who scored between 1 - 13 belonged to low SES, while those who scored between 14 - 26 and 27 - 39 belonged to medium SES and high SES respectively as shown in the following continuum.
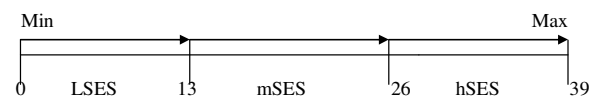
Table 3. Independent T-Test for equality of means between loan received and gender of the recipient 2001-2004

		t	df	Sig. (2-tailed)	Mean Difference
RECEIVD1 2001	Equal variances assumed	-1.561	487	.119	-1505.0629
	Equal variances not assumed	-1.651	417.591	.100	-1505.0629
RECEIVD2 2002	Equal variances assumed	1.057	529	.291	1843.0231
	Equal variances not assumed	1.335	467.862	.182	1843.0231
RECEIVD3 2003	Equal variances assumed	-1.700	561	.090	-1812.5799
	Equal variances not assumed	-1.579	324.088	.115	-1812.5799
RECEIVD4 2004	Equal variances assumed	.394	506	.694	544.0199
	Equal variances not assumed	.413	392.733	.680	544.0199
TTALLREC2001-2004	Equal variances assumed	-.708	616	.479	-2354.9772
	Equal variances not assumed	-.717	453.546	.473	-2354.9772

Treatment of variables for T-test and ANOVA analysis

The study used independent-Samples T- Test procedure to compare means for two groups of cases. Thus in order to get the relationship between loan allocation and students backgrounds, the independent Samples T- Test was computed for the years 2001-2004 and the corresponding students backgrounds such as students gender, type of university and location of university. Nominal variables like type of university were turned into a binomial variable in order not to bias the correlation results (Hillsdale, 1985). The variable was consequently coded 1 for public university and 2 for private university. This resulted in an artificial dichotomy (Gall et al., 2003).

Location of university was also transformed into an artificial dichotomy and coded 1 for universities located in urban areas and 2 for those located in rural areas. Gender was coded 1 for the male students and 2 for the females to form a true dichotomy. The definition of the variables and the coding breakdown was as follows.

$_sSES$ (X$_1$)	Students' Socio-Economic Status. This was a composite variable measured by level of education, property ownership, parental level of income including the student's own income and/ or spouse's and coded 1 for low, 2 Middle, 3 High on a continuum of 0-39.
LoU (X$_2$)	Location of University. This was binomial variable coded 1 for urban and 2 rural.
ToU (X$_3$)	Type of University. Also binomial coded 1 for public and 2 private.
$_sGnr$ (X4)	Students' Gender. A true dichotomous variable with 1 being coded for male and 2 female.
PROGTYP (X$_5$)a-n	Type of programme Enrolled. This was coded $_{a-n}$

Consequently, two level nominal variables were analyzed through Independent-Samples T- Test, while a three way ordinal data such as students SES was analyzed through analysis of variance (ANOVA).

RESULTS AND DISCUSSIONS

Relationship between loan allocation and students gender

The study sought to determine the allocation of HELB loans between male and female students for the years 2001 to 2004. This analysis was meant to test the following hypothesis stated in the null form.

H0$_1$: There is no statistically significant difference between HELB loan allocation and students' gender.

H0$_1$: $\mu_1 = \mu_2$

The results are shown in the following output.

Results in Table 3 reveal that the differences were not significant (t = -0.717, p> 0.05). Therefore the null hypothesis (H0$_1$) stating that no statistically significant difference existed between HELB loan allocation and students gender could not be rejected. This means that HELB loan disbursements were the same for male and female, ignoring the observation that female students expenditure patterns necessitates higher allocations.

This finding contradicts other studies that have shown that there are variations in indirect private costs in education between the boy child and the girl child. A study by Smock (1981) found out that there were quite significant disparities in costs between men and women in the public universities occasioned by the direct private costs with cost demands for women being significantly higher than those of men. A more recent study (Serem, 2006) also contends that female students incur more indirect private costs in education associated with their own nature as women.

Table 4. Independent samples T-Test for equality of means between loan Received and Location of University 2001-2004

Year		t	df	Sig. (2-tailed)
RECEIVD 2001	Equal variances assumed	-1.000	487	.318
	Equal variances not assumed	-1.010	481.528	.313
RECEIVD 2002	Equal variances assumed	1.109	529	.268
	Equal variances not assumed	1.058	306.754	.291
RECEIVD 2003	Equal variances assumed	-.764	561	.445
	Equal variances not assumed	-.766	553.249	.444
RECEIVD 2004	Equal variances assumed	-.786	506	.432
	Equal variances not assumed	-.786	497.318	.432
TTALLREC 2001-2004	Equal variances assumed	1.730	616	.084
	Equal variances not assumed	1.748	613.926	.081

Relationship between loan allocation and location of University

The study also sought to determine the allocation of HELB loans on the basis of university location. This analysis was meant to test the following hypothesis stated in the null form.

$H0_2$:   There is no statistically significant difference between HELB loan allocation and location of university.

$H0_2$: $\mu_1 = \mu_2$

The results are shown in Table 4.

Results in Table 4 indicate that no statistically significant difference existed between HELB loan allocation and location of university t- test results (t =1.748, p>0.05). Consequently, the null hypothesis ($H0_2$) could not be rejected. This suggests that HELB loan disbursements were the same for universities located in urban areas and those located in rural areas ignoring the assumption that urban university expenditure patterns necessitate higher allocations.

Relationship between loan allocation and programme of study

In order to test the significant difference in HELB loan allocations, in relation to students' programmes of study, analysis of variance (ANOVA) was used. The indepen-dent variable was the programme of study, while the dependent variable was the amount of loan allocated. This analysis was meant to test the following hypothesis stated in the null form.

$H0_3$:   There is no statistically significant difference between HELB loan allocation and the programme of study.

$H0_3$: $\mu_1 = \mu_2 = \mu_n$

Where μ_1 , μ_2, ….. μ_n represents the different programmes of study in the university.

ANOVA was employed in order to test the significant difference in means of HELB loan allocation and the programme of study. Results are shown in Table 5.

From the results, it is evident that apart from the year 2002 when HELB loan allocation to the recipients by programme of study was not significant (F = 1.771, p>0.05), the allocations were significant for the rest of the years studied (p< 0.05). In order to gain more insight in these results, post hoc multiple comparisons were computed for the composite year 2001- 2004. In parti-cular, the Scheffe multiple comparison tests were conducted in order to determine where the differences lie. This was preferred because it enabled joint pairwise comparisons for all possible pairwise combination of means (Bosire, 2000; SPSS, 2004; Mugenda and Mugenda, 2003; Odebero, forthcoming). The results are shown in Table 6.

Results presented in Table 6 for the composite year 1 - 4 showed that there existed a statistically significant difference in loan allocation between the arts based programmes and the rest of the programmes such as agriculture, engineering, commercial and science related programmes in favour of arts related programmes (p<0.05). Hence the null hypothesis ($H0_3$) stating that no statistically significant difference existed between HELB loan allocations and the programme of study could not be accepted. This confirms that HELB allocated more HELB loan funds to students enrolled in the arts related courses compared to science, agricultural and engineering and commercial related programmes contrary to the common observation that expenditure patterns on such courses necessitate higher allocations. The findings of this study confirm similar findings commissioned by the Commis-sion for Higher Education (cited in Ndirangu and Bosire, 2004), where the introduction of cost sharing led to the unit cost replacing the *ad hoc* capitation grants in 1994/95 academic year. The unit cost was obtained by dividing the cost of running the universities with the number of students' population where a flat figure of Ksh 120, 000 was obtained. Since this figure remains to date (Ndirangu and Bosire, 2004; Gravenir et al., 2005), it has

Table 5. Analysis of Variance (ANOVA) of HELB Loan Allocation and Recipients Programme of Study

Year		Sum of Squares	df	Mean Square	F	Sig.
RECEIVD1 2001	Between Groups	2619208874.095	4	654802218.524	7.256	.000
	Within Groups	34110727157.236	378	90240018.934		
	Total	36729936031.332	382			
RECEIVD2 2002	Between Groups	3313965875.701	4	828491468.925	1.771	.134
	Within Groups	176856237779.652	378	467873644.920		
	Total	180170203655.352	382			
RECEIVD3	Between Groups	1606197666.403	4	401549416.601	4.627	.001
	Within Groups	32802696589.472	378	86779620.607		
	Total	34408894255.875	382			
RECEIVD4 2004	Between Groups	2102400544.046	4	525600136.011	4.417	.002
	Within Groups	44978831831.934	378	118991618.603		
	Total	47081232375.979	382			
TTALLREC 2001-2004	Between Groups	29549336594.778	4	7387334148.695	7.480	.000
	Within Groups	373295189514.882	378	987553411.415		
	Total	402844526109.660	382			

Table 6. Multiple Comparisons of Mean Difference in HELB Loan Allocation according to Programme of Study Y1-4

Dependent Variable	(I) Discipline	(J) Discipline	Mean Difference (I-J)	Std. Error	Sig.
TTALLREC 2001-2004	B.ED Sci/BSc	B.ED Arts/BA	-12269.9310(*)	4145.09064	.003
		Engineering	-603.5260	4237.56252	.887
		Agriculture	6676.8423	5813.37540	.251
		B.Com/BBM	27685.8513(*)	7872.02510	.000
	B.ED Arts/BA	B.ED Sci/BSc	12269.9310(*)	4145.09064	.003
		Engineering	11666.4050(*)	4574.85638	.011
		Agriculture	18946.7733(*)	6063.63821	.002
		B.Com/BBM	39955.7823(*)	8058.60745	.000
	Engineering	B.ED Sci/BSc	603.5260	4237.56252	.887
		B.ED Arts/BA	-11666.4050(*)	4574.85638	.011
		Agriculture	7280.3683	6127.22352	.236
		B.Com/BBM	28289.3773(*)	8106.55992	.001
	Agriculture	B.ED Sci/BSc	-6676.8423	5813.37540	.251
		B.ED Arts/BA	-18946.7733(*)	6063.63821	.002
		Engineering	-7280.3683	6127.22352	.236
		B.Com/BBM	21009.0090(*)	9030.76470	.021
	B.Com/BBM	B.ED Sci/BSc	-27685.8513(*)	7872.02510	.000
		B.ED Arts/BA	-39955.7823(*)	8058.60745	.000
		Engineering	-28289.3773(*)	8106.55992	.001
		Agriculture	-21009.0090(*)	9030.76470	.021

resulted in under funding of programmes requiring higher investments such as Engineering, Medicine as opposed to cheaper programmes such as arts related programmes. However, since the results had an inclination for higher allocations for arts courses, this led to the computation of cross tabulation table to determine the association between students SES and enrolment in various programmes at the university. This was based on the feeling that arts based courses attracted students from poorer backgrounds hence necessitating higher allocations. The results are posited in Table 7.

Results indicate that apart from educational and arts based courses, which attracted students from across the board, other programmes had an inclination towards one's social class. Such courses include medicine, which attracted 75 percent of its students from high SES with no student at all from low SES while only 25 percent of the registered students came from mSES. Similarly,

Table 7. Relationship between sSES and enrolment in various programmes

Programme	Socio-Economic Status			Total
	ISES	mSES	hSES	
B.ED Sci/BSc	81	76	76	233
	34.8%	32.6%	32.6%	100.0%
B.ED Arts/BA	38	110	70	218
	17.4%	50.5%	32.1%	100.0%
Medicine	0	2	6	8
	.0%	25.0%	75.0%	100.0%
Engineering	79	68	16	163
	48.5%	41.7%	9.8%	100.0%
Agriculture	15	27	6	48
	31.3%	56.3%	12.5%	100.0%
B.Tech (e.g. Automative)	0	6	3	9
	.0%	66.7%	33.3%	100.0%
B.Com/BBM	0	22	4	26
	.0%	84.6%	15.4%	100.0%
Vertinary Med	4	0	4	8
	50.0%	.0%	50.0%	100.0%
Total	217	311	185	713
	28.5%	42.9%	28.6%	100.0%

commercial related courses had over 80 percent of its registered students drawn from medium SES and the rest from high SES. Technology related courses also had all its registered students drawn from medium SES and high SES only. This is clear evidence that access to competitive programmes like medicine, Bachelor of commerce/business management, and technology related courses was a function of one's socio-economic class. However, since arts courses attracted students from across the board, there was no justification for higher HELB loan allocations and this implied that the means testing criteria might have been flawed.

Relationship between HELB loan allocation and SES of the recipients

Another student characteristic was the students' socio-economic status. Three types of income groups were identified namely low SES, medium SES, and high SES. The independent variable was the students' SES, while the dependent variable was the amount of loan allocated. This analysis was meant to test the following hypothesis stated in the null form.

$H0_4$: There is no statistically significant difference between HELB loan allocation and students socio-economic status.
$H0_4$: $\mu_1 = \mu_2 = \mu_3$

Where $\mu 1$, $\mu 2$ and $\mu 3'$ represents the different socio-economic classes of students.

The ANOVA was employed in order to test the significant difference in the relationship between loan allocation (supply) and the SES of the student as shown in Table 8.

From the results, it is evident that HELB loan allocation to the recipients by SES was significant for all the years studied ($P < 0.05$). In order to gain more insight in these results, Scheffe's multiple comparison tests were computed for year 1, 2, 3, 4 and cumulatively for year 1 – 4. The multiple comparisons were justified because they gave more insight in the significance differences between loan allocation and sSES, including the direction of the differences. The results are shown in Table 9.

Results presented in Table 9 for the multiple comparisons in the year 2001 - 2004 and composite year 1-4 showed that there existed a statistically significant difference in loan allocation between students socio-economic status in favour of low SES ($p<0.05$). Hence from the sampled data there was no evidence to support the claim that no statistically significant difference existed between HELB loan allocations and students SES. This implies that HELB allocated more HELB loan funds to students who came from low SES. However, results showed that the mean difference between medium SES and high SES were not significant for all the years studied ($p>0.05$). This meant that the Board allocated the same amounts of money for applicants from medium and

Table 8. Analysis of variance of HELB loan allocation and SES of the recipients

Year		Sum of Squares	df	Mean Square	F	Sig.
RECEIVD1 2001	Between Groups	2729425614.665	2	1364712807.33	15.25	.000
	Within Groups	34000510416.667	380	89475027.412		
	Total	36729936031.332	382			
RECEIVD2 2002	Between Groups	3074054191.067	2	1537027095.53	3.298	.038
	Within Groups	177096149464.29	380	466042498.590		
	Total	180170203655.35	382			
RECEIVD3 2003	Between Groups	2710682410.637	2	1355341205.31	16.25	.000
	Within Groups	31698211845.238	380	83416346.961		
	Total	34408894255.875	382			
RECEIVD4 2004	Between Groups	2308439756.931	2	1154219878.46	9.796	.000
	Within Groups	44772792619.048	380	117823138.471		
	Total	47081232375.979	382			
TTALLREC 2001-2004	Between Groups	55878483788.232	2	27939241894.2	30.59	.000
	Within Groups	346966042321.43	380	913068532.425		
	Total	402844526109.66	382			

high SES. These results imply that the means testing tool used by the board could not effectively discriminate students according to their SES. It may also imply that there could be some intervening variables that impeded upon effective use of the means testing tool in discriminating students according to their SES. Such factors could include, cheating or canvassing.

Conclusions

The t-test results for equality of means showed that no statistically significant difference existed between HELB loan allocation and students gender (t = -0.717, p> 0.05). From this it can be concluded that HELB loan disbursements were the same for male and female applicants contrary to the observation that female expenditure patterns necessitates higher allocations.

The t-test results for equality of means also showed that no statistically significant difference existed between HELB loan allocation and the location of the university (t = 1.748, p>0.05) Consequently, the null hypothesis (H0$_2$) stating that no statistically significant difference existed between HELB loan allocation and the location of the university could not be rejected. This conclusion that can be drawn from here is that HELB loan disbursements were the same for urban and rural universities ignoring the observation that the expenditure patterns for students enrolled in urban universities necessitated higher allocations.

The analysis of variance (ANOVA) between HELB loan allocation and the programme of study showed a statistically significant difference in means (p<0.05). The Scheffe multiple comparison tests results for the composite year 1 - 4 confirmed that there existed a statistically significant difference in loan allocation between the arts

based programmes and the rest of the programmes such as agriculture, engineering, commercial and science related programmes in favour of arts related programmes (p<0.05). Hence the null hypothesis (H0$_3$) stating that no statistically significant difference existed between HELB loan allocations and the programme of study could not be accepted. The conclusion drawn from this result was that HELB allocated more HELB loan funds to students enrolled in the arts related programmes compared to science, agriculture, medicine, technology and engineering related programmes contrary to the common view that expenditure patterns on such courses necessitate higher allocations. This implies that the disbursements are inequitable. The findings are consistent with those of the Commission of Higher Education (cited in Ndirangu and Bosire, 2004) and the observation by Gravenir et al. (2005) that programmes requiring higher allocations in Kenya have been under funded.

The study showed that apart from educational and arts based courses, which attracted students from across the board, other programmes had an inclination towards one's social class. Such courses include medicine which attracted 75 percent of its students from high SES with no student (0%) from low SES and only 25 percent of the registered students came from medium SES. Similarly, commercial related courses had over 80 percent of its registered students drawn from medium SES and the rest from high SES. Technology related courses also had all its registered students drawn from medium SES (66.7%) and hSES (33.3%)) only. This is clear evidence that access to competitive programmes like medicine, Bachelor of commerce/business management, engineering and technology related courses was a function of one's socio-economic class.

Results for multiple comparisons in the year 2001 -

Table 9: Multiple Comparisons of Mean Difference in HELB Loan Allocation According to SES

Dependent Variable	(I) Socio-Economic Status	(J) Socio-Economic Status	Mean Difference (I-J)	Std. Error	Sig.
RECEIVD1	Low ses	Medium ses	5312.5000(*)	1082.44944	.000
		High ses	5983.3333(*)	1353.55373	.000
	Medium ses	Low ses	-5312.5000(*)	1082.44944	.000
		High ses	670.8333	1313.61707	.610
	High ses	Low ses	-5983.3333(*)	1353.55373	.000
		Medium ses	-670.8333	1313.61707	.610
RECEIVD2	Low ses	Medium ses	2492.2619	2470.41241	.314
		High ses	7924.7619(*)	3089.13822	.011
	Medium ses	Low ses	-2492.2619	2470.41241	.314
		High ses	5432.5000	2997.99307	.071
	High ses	Low ses	-7924.7619(*)	3089.13822	.011
		Medium ses	-5432.5000	2997.99307	.071
RECEIVD3	Low ses	Medium ses	5280.3571(*)	1045.15880	.000
		High ses	5985.2381(*)	1306.92349	.000
	Medium ses	Low ses	-5280.3571(*)	1045.15880	.000
		High ses	704.8810	1268.36266	.579
	High ses	Low ses	-5985.2381(*)	1306.92349	.000
		Medium ses	-704.8810	1268.36266	.579
RECEIVD4	Low ses	Medium ses	4658.3333(*)	1242.14413	.000
		High ses	5827.1429(*)	1553.24468	.000
	Medium ses	Low ses	-4658.3333(*)	1242.14413	.000
		High ses	1168.8095	1507.41613	.439
	High ses	Low ses	-5827.1429(*)	1553.24468	.000
		Medium ses	-1168.8095	1507.41613	.439
TTALLREC	Low ses	Medium ses	24486.3095(*)	3457.86782	.000
		High ses	26291.9048(*)	4323.90624	.000
	Medium ses	Low ses	-24486.3095(*)	3457.86782	.000
		High ses	1805.5952	4196.32921	.667
	High ses	Low ses	-26291.9048(*)	4323.90624	.000
		Medium ses	-1805.5952	4196.32921	.667

2004 and composite year 1 - 4 showed that there existed a statistically significant difference in loan allocation between students socio-economic status in favour of Low SES (p<0.05). However, results showed that the mean difference between medium SES and high SES were not significant for all the years studied (p>0.05). These results led to the conclusion that the means testing tool used by the board could not effectively discriminate students according to their SES for the differentiated HELB loan allocations.

Recommendations

Access to competitive programmes like medicine, Bachelor of commerce/business management, engineering and technology related courses were a function of one's socio-economic class. It is recommended that there should be concerted effort by the government through the Ministry of Education to improve access to competitive programmes at the university level for students from lower SES. This could be achieved through developing policies at the primary school level that encourage students from poor families to equitably access secondary school education and particularly national schools and competitive provincial secondary schools.

The study showed that the means testing tool used by the board could not effectively discriminate students according to their SES for the differentiated HELB loan allocations. It is recommended that HELB should develop a proper means testing tool that can effectively discriminate students according to their SES from low SES to high SES for the differentiated HELB loan allocations based on the applicants level of need. The effectiveness in the use of such a tool in equitable distribution of loans will depend on the extent to which HELB will address intervening variables such as cheating, or canvassing. This recommendation is rein-forced by the finding that whereas HELB intended to favour students in loan allocation according to their SES, the means testing instrument could not effectively segregate students according to their level of need for differentiated HELB loan allocations.

In order to be seen to be fair in HELB loan disbursements, HELB should incorporate in its means testing tool a criteria that considers the cost of the programme, the location of the university and the students gender, such that students who are enrolled in more expensive programmes or enrolled in universities located in urban setup would be considered for higher allocations compared to those enrolled in cheaper programmes. Similarly, the means testing tool should consider higher allocations for female students than their male counter parts in order to accommodate the cost element associated with their own nature as women.

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