



EQUITY IN HIGHER EDUCATION LOAN DISBURSEMENT TO SELF-SPONSORED STUDENTS IN PUBLIC UNIVERSITIES IN KENYA

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Abstract:

The position on equity in HELB funding self-sponsored students in Kenya remains unclear since most studies on HELB loans are limited to government sponsored students. This paper provides empirical evidence on equity in HELB disbursements to self-sponsored students in Kenyan public universities. The study targeted 16,082 fourth year self-sponsored loan recipients in seven public universities before the enactment of the University Bill 2012. A sample of 536 loan recipients was drawn to provide data for the study. The Gini coefficients results show that HELB loan allocation was equitable with marginal variations. This is a good indication that HELB loan awards to self-sponsored students may bridge the gap that exist in access to higher education based on socioeconomic status.

Keywords: higher education, loan awards, socio-economic status, self-sponsored students, equity

1. Introduction

Education is entrenched in international declarations to which Kenya is a signatory. For example, Article 26 of the Universal Declaration of Human Rights states clearly that everyone has the right to education and that higher education shall be equally accessible to all on the basis of merit. This implies that higher education is not a privilege of some sections of the society. In reality, Higher Education (HE) should be equally accessible to the populace irrespective of their socioeconomic status, gender or region so long as prospective students meet minimum university entry requirements.

According to Boit (2012), the problem of equity and access to higher education remains a challenge to individuals of low socioeconomic status. This has mainly been

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attributed to individual's socioeconomic status. For example, Ziderman and Albrecht (1995) study on the social economic distribution of students at the national autonomous university of Honduras showed that despite the government's efforts to increase participation of students from low income groups through its open access policy and payment of token, 66% of the students enrolled were from families that had higher annual income of U\$ 2500 and 6% of the students were from families with income below U\$1130.

Other studies (Burgess, 1981; Richardson, 1981; Ziderman & Albrecht, 1995) have also demonstrated that HE is preponderantly middle/upper class based. Similarly, the results of studies assessing the socioeconomic status of students in Australian higher education have provided indisputable evidence of a socioeconomic imbalance (Western et al., 1998). There also exists a lot of literature on how one's socioeconomic status accounts for inequalities in HE. For example, Power and Beswick (1985) study showed that enrolment in higher education favoured the children of professional, executive and managerial groups'. However, other studies have indicated varied results. For example, Wanhua (2010) study in five Minban, universities and colleges in Shanxi province, China, found that the proportions of students with self-employed and farmers/fisherman background (61.3%) were much higher than students with business executive, governmental official and professional family background (38.7%).

In Kenya, studies done have also shown that inequalities exist in access to HE. Knight and Sabot (1990) study content that in Kenya; 36 per cent of employees whose fathers had no formal education had secondary or higher education compared to 66% of those whose fathers had primary education and 84% for those whose fathers had secondary or higher education. According to Knight and Sabot, this is an indication that children from well-educated family backgrounds tend to have a higher probability of getting secondary education and progressing to universities than those who are not. Boit (1998) study indicates that students from the middle and upper end of the socio-economic scale were disproportionately represented in higher education.

For these reasons some scholars (Odebero et al., 2007; Wachiye, 2009) have attempted to establish the level of equity in loan allocations to students. For instance, a study by Odebero (2007) established the level of equity in loan allocation for academic year 2001, 2002, 2003 and 2004 in public and private universities in Kenya. The Gini coefficient results for academic years 2001, 2002, 2003 and 2004 were 0.261(26.1%), 0.33 (33%), 0.18 (18%) and 0.16 (16%) respectively. These coefficients were high especially for the 2001 and 2002 academic year suggesting that loan allocations to public and private universities within the period were inequitable. The gap (17%) between the academic years was relatively high suggesting that great inequalities existed in loan allocations in public and private universities in the academic years studied. On overall loan allocation to public and private universities loan recipients in 2001-2004 the result of the Gini coefficient of 0.261(26.1%) suggested that the allocations were inequitable.

A similar study by Wachiye (2009), on equity in loan disbursement to government sponsored loan recipients in Bungoma district indicates different results. Using Gini coefficients, the study results showed that loan allocations to recipients in

Bungoma district was equitable. Wachiye's Gini coefficient for academic year 2001, 2002, 2003 and 2004 of 0.18 (18%), 0.064 (6.4%), 0.08 (8%) and 0.08 (8%) respectively suggested the allocations for the academic years were equitable. Further, the results showed that the overall Gini coefficient for loan allocation for government sponsored loan recipients in academic year 2001-2004 in Bungoma district was 0.101 (10.1%). This result suggested that loan allocation to government sponsored loan recipients in Bungoma district was equitable.

The literature reviewed on studies on loan schemes in the world and in Kenya indicate that despite the existence of loan schemes inequalities in access to HE by the low SES persists. In Kenya, literature reviewed on HELB funding reveal mixed results an indication that the issue of financing students in HE is tricky and challenging. The situation is complex with the funding of SSS given that self-sponsored programmes have been alleged to be a preserve of the rich (Carrol, 2005; Ooro, 2009; Ngolovoi, 2008). This is based on the fact that SSPs fees are exorbitant and in many instances potential students applying for these programmes are unable to secure HELB loans in their first year of study, an opportunity which is otherwise made available to those enrolled in the regular programmes (Munavu et al., 2008).

However, ensuring equal access even when a system is technically open to all who are qualified is not obvious. In recognition of these impediments, innovative methods such as student financing schemes have a responsibility to equalise opportunities in HE especially for the underrepresented groups to better access HE (Altbach, et al., 2009). Ideally, the main goal of student loan schemes worldwide has been to address imbalances in the provision of HE arising from prevalent gender, social status and regional marginalization. This paper therefore contributes to the debate of financing students in higher education by providing empirical findings of HELB funding self-sponsored students in public universities in Kenya.

2. Methodology

The paper utilizes stratified and simple random sampling techniques to draw a sample of 536 from 16,082 fourth year self-sponsored higher education loan recipients in the seven public universities in Kenya namely; Nairobi, Moi, Kenyatta, Egerton, JKUAT, Maseno and Masinde Muliro before the enactment of the University Bill 2012. The study modified the 2008-09 Kenya Demographic and Health Survey (KDHS) questionnaire to reflect the relevant issues of the study so as to collect data on recipients SES using their asset ownership and sanitation data and the amount of loan allocation for four academic years (2010/11-2013/14). Face and content analysis was used to validate the questionnaire while the test-retest technique was used to test its reliability. The obtained (r) coefficient of 0.85 was large enough to surpass the set threshold of $r = 0.7$.

Principal Component Analysis (PCA) is used to construct the SES quintiles of self-sponsored loan recipients (Seema & Lilani, 2006; Booysen et al., 2008; Howe et al., 2008). The paper also uses information obtained from the self-sponsored loan recipients' on the amount of HELB loan awarded in academic years 2010/11–2013/14 to determine

the overall loan amounts. The overall loan allocation is the outcome variable and measured on an interval scale. In addition, data on loan recipient gender is obtained from the respondents'. The paper uses data on; loan recipients SES quintiles, recipients' loan amounts in academic years 2010/11–2013/14 and recipient's gender to determine the level of equity in HE loan disbursement to self-sponsored students in public universities in Kenya using Gini Coefficient. Data on loan allocations were segregated by gender and SES quintiles. Using the procedure prescribed by Kakwani (1977); Firebaugh (1999); Firebaugh (2003) and Charles (2011), first, data on loan allocation to recipients for each category was sorted in ascending order and the total for each category established. Secondly, loan recipients per quintile were established by dividing loan recipients in each category by five. Thirdly, the total loan allocation for each quintile in each category was calculated. Fourthly, the percentage of loan allocation in each quintile in each category was established by taking the total loan allocation for the quintile divided by the total loan allocation in that particular category. For all the calculations, percentage loan allocations per quintile were approximated to two decimal places for easier plotting.

Fifthly, the cumulative percentage of loan allocation to the quintiles for all the categories was calculated. The data for the quintiles, percentage of loan allocation to the quintiles, cumulative percentage of loan allocation to the quintiles and the line of perfect equality for each category were presented in tables. Sixthly, Lorenz curves were drawn for each category by graphing quintiles, cumulative per cent of loan allocation and the line of perfect equality by aid of a chart wizard in Microsoft excel by selecting "Scatter plot". The Lorenz curves for each category were presented in graphs. Seventhly, the triangular formula $\frac{1}{2} \times \text{base} \times \text{height}$ was used to calculate separately the area under the line of perfect equality for each of the Lorenz curve in each category. Eighthly, the area under the Lorenz curve in each category was calculated using the trapezoidal formula: $\frac{1}{2} \{ [h_1 (a+b)] + [h_2 (b+c)] + [h_3 (c+d)] + [h_4 (d+e)] + [h_5 (e+f)] \}$.

The area under the line of perfect equality was subtracted from the area under the Lorenz curve in each category to obtain the area between the line of perfect equality and the Lorenz curve. That was:

$$[\frac{1}{2} \times \text{base} \times \text{height}] - [\frac{1}{2} \{ [h_1 (a+b)] + [h_2 (b+c)] + [h_3 (c+d)] + [h_4 (d+e)] + [h_5 (e+f)] \}].$$

The Gini coefficient in each category was calculated by taking the ratio of the area between the line of perfect equality and the Lorenz curve to the area under the line of perfect equality. That was:

$$\frac{[\frac{1}{2} \times \text{base} \times \text{height}] - [\frac{1}{2} \{ [h_1(a+b)] + [h_2(b+c)] + [h_3(c+d)] + [h_4(d+e)] + [h_5(e+f)] \}]}{\frac{1}{2} \times \text{base} \times \text{height}}$$

The values of the Gini coefficients for all the categories were presented as decimals and percentages. Therefore, Gini coefficients were used to establish the level of equity in loan allocation by SES and gender for academic years 2010/11-2013/14. The results were

interpreted according to Todaro (1980). A low Gini coefficient indicated a more equal distribution, with 0 corresponding to complete equality, while a higher Gini coefficient indicated a more unequal distribution, with 1 corresponding to complete inequality (Todaro, 1980).

3. Results and Discussion

This paper compares the level of equity in loan allocation to self-sponsored loan recipients by academic year and gender. This was aimed at establishing whether inequalities existed in overall loan allocation within and between the academic years and gender. Table 1 presents the results of loan allocation in academic year 2010/11 while Figure 1 presents the Lorenz curve for loan allocation in academic year 2010/11.

Table 1: Loan Allocation in Academic Year 2010/11 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 2,450,000 | 0.16 | 0.16 | 0.20 |
| 2 | 0.40 | 2,642,000 | 0.18 | 0.34 | 0.40 |
| 3 | 0.60 | 2,800,000 | 0.19 | 0.53 | 0.60 |
| 4 | 0.80 | 3,172,000 | 0.21 | 0.74 | 0.80 |
| 5 | 1.00 | 3,850,000 | 0.26 | 1.00 | 1.00 |
| Total | | 14,914,000 | 1.00 | | |

Source: Field data.

The data in Table 1 was used to plot the Lorenz curve in Figure 1.

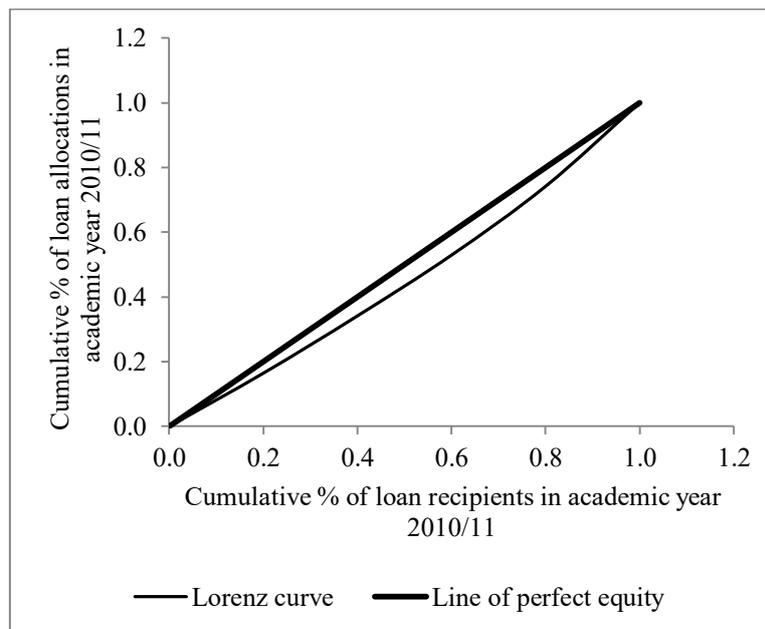


Figure 1: Lorenz Curve for Loan Allocation in Academic Year 2010/11
(Source: Microsoft Excel scatter plot output.)

The area under the Lorenz curve is:

$$\frac{1}{2} \{ [0.20(0+0.16)] + [0.20(0.16+0.34)] + [0.20(0.34+0.53)] + [0.20(0.53+0.74)] + [(0.74+1)] \} = 0.454.$$

The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.454 = 0.046$. The Gini Coefficient is $0.046/0.50 = 0.092$. With a Gini coefficient of 0.092 (9.2%), HELB can be said to have equitably allocated the loans to the 350 loan recipients in the academic year 2010/11.

Similarly, Table 2 presents the results of loan allocation in academic year 2011/12 while Figure 2 presents the Lorenz curve for loan allocation in academic year 2011/12.

Table 2: Loan Allocation in Academic Year 2011/12 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 2,975,000 | 0.17 | 0.17 | 0.20 |
| 2 | 0.40 | 3,169,000 | 0.18 | 0.34 | 0.40 |
| 3 | 0.60 | 3,360,000 | 0.19 | 0.53 | 0.60 |
| 4 | 0.80 | 3,826,000 | 0.21 | 0.74 | 0.80 |
| 5 | 1.00 | 4,615,000 | 0.26 | 1.00 | 1.00 |
| Total | | 17,945,000 | 1.00 | | |

Source: Field data.

The data in Table 2 was used to plot the Lorenz curve in Figure 2.

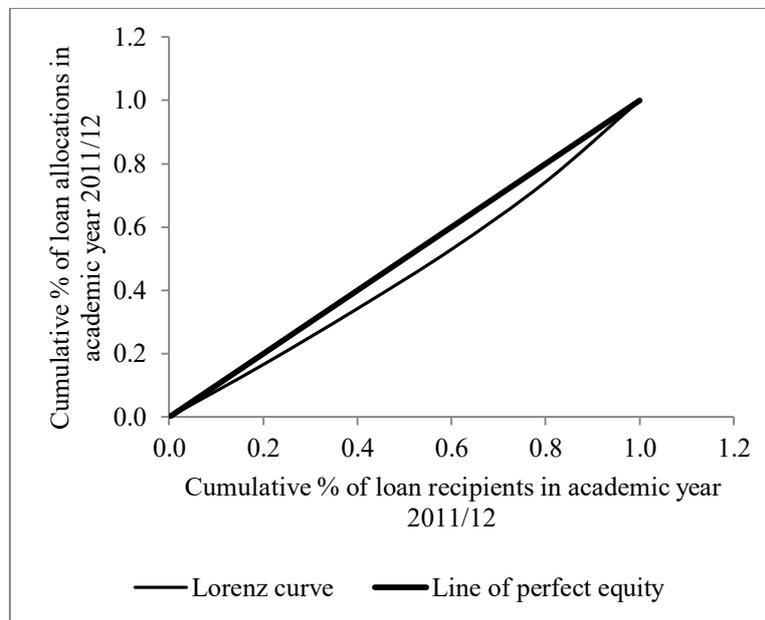


Figure 2: Lorenz Curve for Loan Allocation in Academic Year 2011/12
(Source: Microsoft Excel scatter plot output)

The area under the Lorenz curve is:

$$\frac{1}{2} \{ [0.20(0+0.17)] + [0.20(0.17+0.34)] + [0.20(0.34+0.53)] + [0.20(0.53+0.74)] + [(0.74+1)] \} = 0.456.$$

The area between the line of perfect equality and the Lorenz curve is:

$$0.5 - 0.456 = 0.044.$$

The Gini Coefficient is $0.044/0.50 = 0.088$. With a Gini coefficient of 0.088 (8.8%), HELB can be said to have equitably allocated the loans to the 424 recipients in the academic year 2011-2012.

Further, Table 3 presents the results of loan allocation in academic year 2012/13 while Figure 3 presents the Lorenz curve for loan allocation in academic year 2012/13.

Table 3: Loan Allocation in Academic Year 2012/13 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 3,360,000 | 0.16 | 0.16 | 0.20 |
| 2 | 0.40 | 3,601,000 | 0.18 | 0.34 | 0.40 |
| 3 | 0.60 | 3,840,000 | 0.19 | 0.53 | 0.60 |
| 4 | 0.80 | 4,436,800 | 0.22 | 0.74 | 0.80 |
| 5 | 1.00 | 5,245,000 | 0.26 | 1.00 | 1.00 |
| Total | | 20,482,800 | 1.00 | | |

Source: Field data.

The data in Table 3 was used to plot the Lorenz curve in Figure 3.

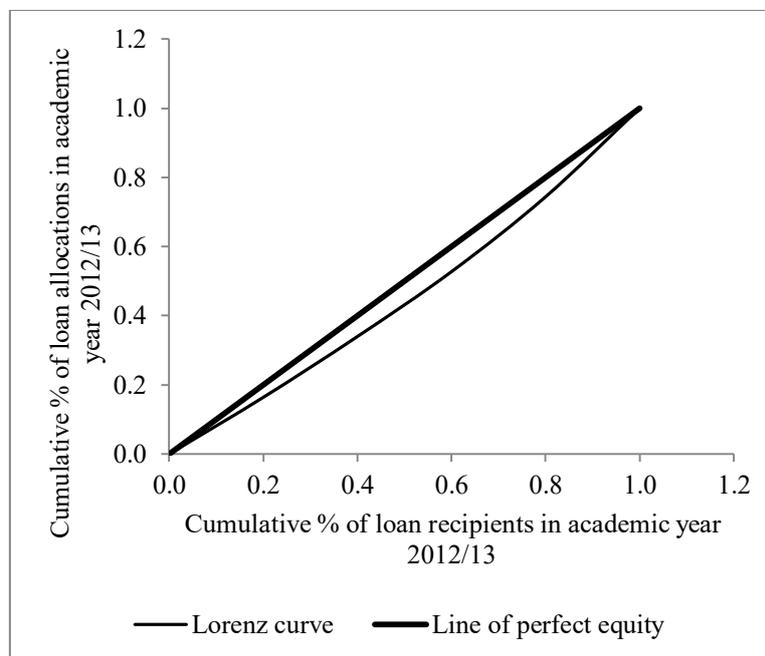


Figure 3: Lorenz Curve for Loan Allocation in Academic Year 2012/13
(Source: Microsoft Excel scatter plot output)

The area under the Lorenz curve is $\frac{1}{2} \{ [0.20(0+0.16)] + [0.20(0.16+0.34)] + [0.20(0.34+0.53)] + [0.20(0.53+0.74)] + [(0.74+1)] \} = 0.454$. The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.454 = 0.046$. The Gini coefficient is

$0.046/0.50 = 0.092$. With a Gini coefficient of 0.092 (9.2%), HELB can be said to have equitably allocated the loans to the 478 loan recipients in the academic year 2012-2013. Finally, Table 4 presents the results of loan allocation in academic year 2013/14 while Figure 4 presents the Lorenz curve for loan allocation in academic year 2013/14.

Table 4: Loan Allocation in Academic Year 2013/14 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 3,290,000 | 0.16 | 0.16 | 0.20 |
| 2 | 0.40 | 3,539,000 | 0.18 | 0.34 | 0.40 |
| 3 | 0.60 | 3,800,000 | 0.19 | 0.53 | 0.60 |
| 4 | 0.80 | 4,347,500 | 0.22 | 0.74 | 0.80 |
| 5 | 1.00 | 5,170,000 | 0.26 | 1.00 | 1.00 |
| Total | | 20,146,500 | 1.00 | | |

Source: Field data.

The data in Table 4 was used to plot the Lorenz curve in Figure 4.

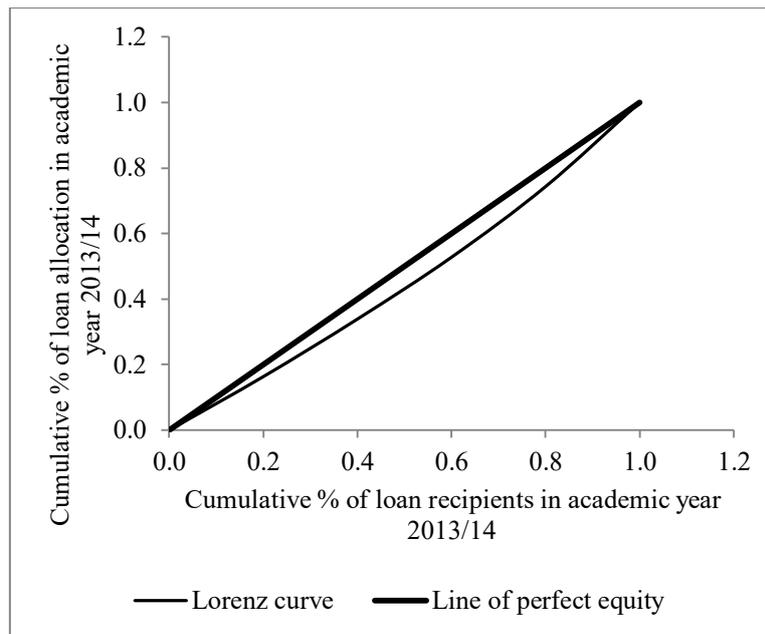


Figure 4: Lorenz Curve for Loan Allocation in Academic Year 2013/14
(Source: Microsoft Excel scatter plot output)

The area under the Lorenz curve is $\frac{1}{2} \{ [0.20(0+0.16)] + [0.20(0.16+0.34)] + [0.20(0.34+0.53)] + [0.20(0.53+0.74)] + [(0.74+1)] \} = 0.454$. The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.454 = 0.046$. The Gini coefficient is $0.046/0.50 = 0.092$. With a Gini coefficient of 0.092 (9.2%), HELB can be said to have equitably allocated the loans to the 471 loan recipients in the academic year 2013-2014. Comparing the Gini coefficients of 9.2%, 8.8%, 9.2% and 9.2% for academic years 2010/11, 2011/12, 2012/13, and 2013/14 respectively, all the Gini coefficients suggest equitable allocation between and within the academic years. In addition, the results

indicate that loan allocation was most equitable in academic year 2011/12 compared to the rest with a gap of 0.4%. The findings further suggest that HELB rightfully allocated loans to all the self-sponsored loan recipients in public universities in Kenya within the four academic years.

The results match those of Wachiye (2009) on equity in loan disbursement to government sponsored loan recipients in Bungoma district. The study Gini coefficients for academic year 2001, 2002, 2003 and 2004 were found to be 0.18 (18%) 0.064 (6.4%) 0.08 (8%) and 0.08 (8%) respectively indicating that the loan allocation was equitable. However, the gap between the academic years (10%) was large indicating great disparity in equity in loan allocations between the academic years compared to the gap of 0.4% of this study indicating near uniformity in loan allocations in all the four academic years (2010/11, 2011/12, 2012/13 and 2013/14).

The results also differ with those of Odebero (2007) on equity in loan allocation in public and private universities in academic year 2001-2004. In his analysis Odebero Gini coefficient in academic years 2001, 2002, 2003 and 2004 were 0.261(26.1%), 0.33 (33%), 0.18 (18%) and 0.16 (16%) respectively. These coefficients were relatively high especially for the 2002 academic year suggesting that loan allocations to students in public and private universities within the period were inequitable. The gap (17%) between the academic years was very high suggesting high disparities in loan allocation between the years compared to a gap of 0.4% for Gini coefficient of equity in loan allocation to the self-sponsored students in public universities in Kenya in academic years 2010/11, 2011/12, 2012/13 and 2013/14 indicating low disparity between the academic years.

The difference could be largely attributed to the categorization of loan recipients and the methodology used in the calculation of the Gini coefficient. As noted this paper utilised the principal component analysis to group loan recipients into SES quintiles while Odebero assigns arbitrary values to the asset ownership in order to group recipients into three SES groups. PCA is a widely used method of categorising individuals into SES (Rutstein & Kiersten, 2004; Ainley & Long, 1995; McKenzie, 2003; Seema & Lilani, 2006). In addition, Odebero's study did not use the conventionally acceptable method as prescribed by Kakwani (1977); Firebaugh (1999); Firebaugh (2003) and Charles (2011) in calculating Gini coefficients. The study did not rank allocations for individual loan recipients in ascending order as expected in calculating Gini coefficient for a particular group of individuals.

Further, this paper compared the level of equity in overall loan allocation for female and male loan recipients. Table 5 presents the results of the overall loan allocation for female loan recipients while Figure 5 presents the Lorenz curve for female loan recipients.

Table 5: Loan Allocation for Females in Academic Year 2010/11-2013/14 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 2,636,000 | 0.12 | 0.12 | 0.20 |
| 2 | 0.40 | 3,660,000 | 0.17 | 0.29 | 0.40 |
| 3 | 0.60 | 4,358,000 | 0.20 | 0.49 | 0.60 |
| 4 | 0.80 | 4,782,000 | 0.22 | 0.72 | 0.80 |
| 5 | 1.00 | 6,149,000 | 0.28 | 1.00 | 1.00 |
| Total | | 21,585,000 | 1.00 | | |

Source: Field data, 2014.

The data in Table 5.34 was used to plot the Lorenz curve in Figure 5.

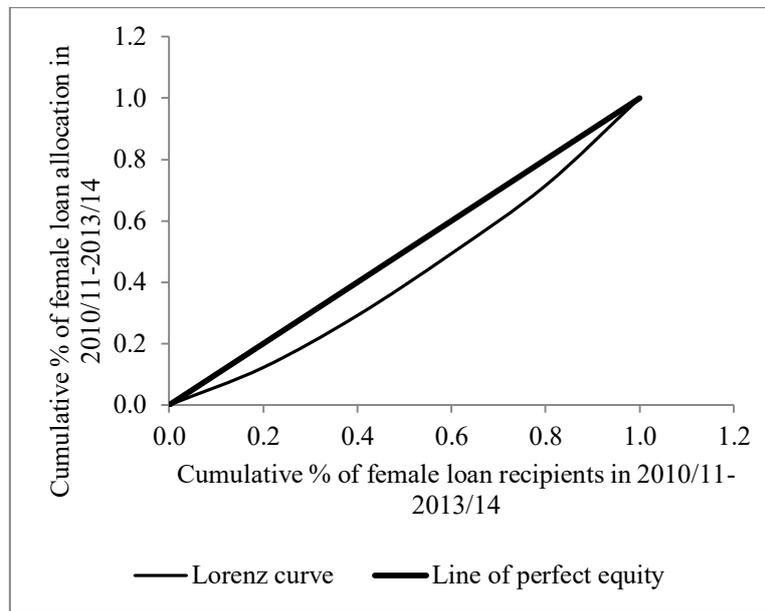


Figure 5: Lorenz Curve for Female Loan Allocation in Academic Years 2010/11- 2013/14
(Source: Microsoft Excel scatter plot output)

The area under the Lorenz curve is $\frac{1}{2} \{[0.20(0+0.12)] + [0.20(0.12+0.29)] + [0.20(0.29+0.49)] + [0.20(0.49+0.72)] + [(0.72+1)]\} = 0.424$. The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.424 = 0.076$. The Gini coefficient is $0.076/0.50 = 0.152$. With a Gini coefficient of 0.152 (15.2%), HELB can be said to have equitably allocated the loans to the 141 female self-sponsored loan recipients in academic year 2010/11-2013/14 but the study compared this results with those for the males.

Table 6 presents the results of overall loan allocation for male loan recipients while Figure 6 presents the Lorenz curve for male loan recipients.

Table 6: Loan Allocation for Males in Academic Year 2010/11-2013/14 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 6,475,000 | 0.12 | 0.12 | 0.20 |
| 2 | 0.40 | 9,545,000 | 0.18 | 0.31 | 0.40 |
| 3 | 0.60 | 10,326,300 | 0.20 | 0.51 | 0.60 |
| 4 | 0.80 | 11,342,000 | 0.22 | 0.73 | 0.80 |
| 5 | 1.00 | 14,215,000 | 0.27 | 1.00 | 1.00 |
| Total | | 51,903,300 | 1.00 | | |

Source: Field data.

The data in Table 6 was used to plot the Lorenz curve in Figure 6.

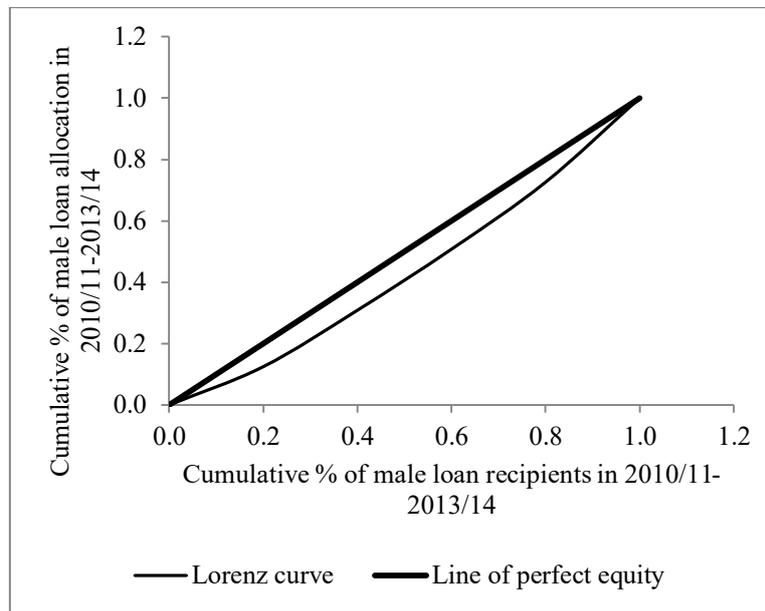


Figure 6: Lorenz Curve for Male Loan Allocation in Academic Years 2010/11-2013/14
(Source: Microsoft Excel scatter plot output)

The area under the Lorenz curve is $\frac{1}{2} \{ [0.20(0+0.12)] + [0.20(0.12+0.31)] + [0.20(0.31+0.51)] + [0.20(0.51+0.73)] + [(0.73+1)] \} = 0.434$. The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.434 = 0.066$. The Gini coefficient is $0.066/0.50 = 0.132$. With a Gini coefficient of 0.132 (13.2%), HELB can be said to have equitably allocated the loans to the 344 male self-sponsored loan recipients.

In comparison, the Gini coefficient of 15.2% and 13.2% for females and males respectively over the four academic years, HELB can be said to have equitably allocated the loans to the male and female self-sponsored recipients. The difference of 2% was marginal. The results also indicated that loan allocation for males was better than that for females. This difference may impact negatively in access to higher education by females given that inequalities exist in access to higher education in favour of males (David, 2011). This finding was crucial given that none of the studies reviewed established equity in loan disbursement by gender using Gini coefficient. The findings

suggest that HELB allocations may be addressing inequalities in access to higher education in Kenya by funding needy male and female loan recipients equally.

The paper finally establishes the level of equity in overall loan allocation to self-sponsored loan recipients in public universities in Kenya in academic year 2010/11-2013/14. Table 7 presents the results of overall loan allocation in academic year 2010/11 - 2013/14 while Figure 7 presents the Lorenz curve for loan allocation in academic year 2010/11 - 2013/14.

Table 7: Loan Allocation to Recipients in Academic Year 2010/11-2013/14 by Quintiles

| Quintile | Cumulative % of Loan Recipients | Loan Allocation | % Loan Allocation | Cumulative % of Loan Allocation | Perfect Equality % |
|----------|---------------------------------|-----------------|-------------------|---------------------------------|--------------------|
| 1 | 0.20 | 9,111,000 | 0.12 | 0.12 | 0.20 |
| 2 | 0.40 | 13,205,000 | 0.18 | 0.30 | 0.40 |
| 3 | 0.60 | 14,844,300 | 0.20 | 0.51 | 0.60 |
| 4 | 0.80 | 16,144,000 | 0.22 | 0.73 | 0.80 |
| 5 | 1.00 | 20,184,000 | 0.27 | 1.00 | 1.00 |
| Total | | 73,488,300 | 1.00 | | |

Source: Field data.

The data in Table 7 was used to plot the Lorenz curve in Figure 7.

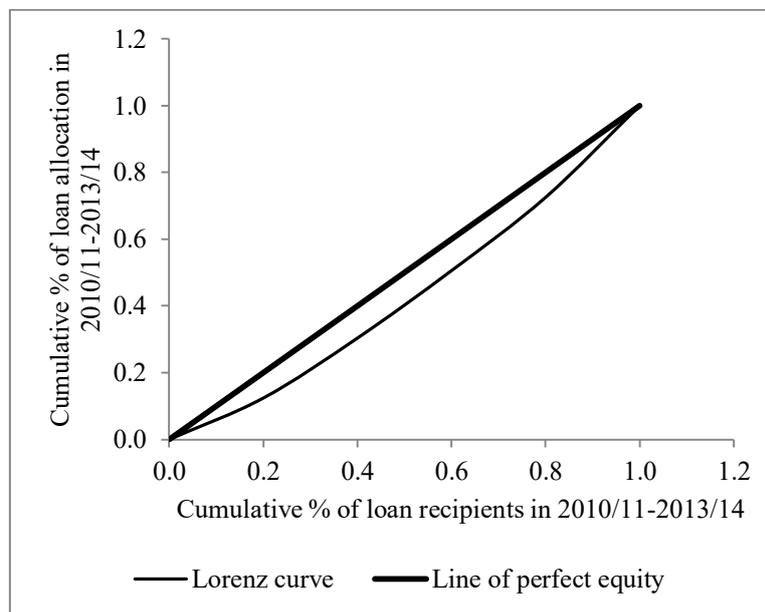


Figure 7: Lorenz Curve for Loan Allocation in Academic Years 2010/11-2013/14

(**Source:** Microsoft excel scatter plot output)

The area under the Lorenz curve is $\frac{1}{2} \{ [0.20(0+0.12)] + [0.20(0.12+0.30)] + [0.20(0.30+0.51)] + [0.20(0.51+0.73)] + [(0.73+1)] \} = 0.432$. The area between the line of perfect equality and the Lorenz curve is $0.5 - 0.432 = 0.068$. The Gini coefficient is $0.068/0.50 = 0.136$. With a Gini coefficient of 0.136 (13.6%), HELB can be said to have equitably allocated the loans to all the 485 loan recipients using the overall four-year sum. The results suggest that loan allocation to the self-sponsored loan recipients was

equitable. The results further suggest that all the 485 self-sponsored loan recipients got their rightful share of overall loan allocation. This implies that HELB did not favour students in any quintile as suggested by other scholars (Otieno, 2004; 2007; Ngolovoi, 2008; Nganga, 2012). Other findings (RoK, 1996; Deolalikar, 1999) have also suggested that subsidies and loans in higher education benefited disproportionately the more affluent groups. The findings of this paper are contrary.

The results match those of Wachiye (2009) on equity in loan disbursement to government sponsored loan recipients in Bungoma district. Wachiye's Gini coefficient result of 0.101 (10.1%) suggested that the loan disbursement to government sponsored loan recipients in Bungoma district was equitable. However, there was a marginal difference 0.035 (3.5%) in Gini coefficients between loan allocations to self-sponsored students in public universities in Kenya and government sponsored loan recipients in Bungoma district. The difference could be attributed to sampling procedures, the type of loan recipients and categorisation of loan recipients into SES.

Surprisingly, the results differ with those of Odebero (2007) on equity in loan allocation to loan recipients in public and private universities in Kenya. The Odebero Gini coefficient for the composite HELB loan allocation in the year 2001-2004 was 0.261 (26.1%) suggesting inequality in HELB loan allocation for public and private universities loan recipients. This coefficient was relatively high compared to the study Gini coefficient of 0.136 (13.6%) suggesting equity in overall loan allocation to the self-sponsored loan recipients in public universities in Kenya. The difference could be attributed to the categorisation of loan recipients and the methodology used in the calculation of the Gini coefficient. This paper used the principal component analysis to categorise loan recipients into SES quintiles while Odebero study arbitrary allocated values to the asset ownership in order to categorise recipients into three SES. PCA is a widely used method of categorising individuals into SES (Rutstein and Kiersten, 2004; Ainley and Long, 1995; McKenzie, 2003; Seema and Lilani, 2006).

The results are also different from Carrol (2005), Kasozi (2009) and Mohamad (2007). Studies by Carrol (2005) and Kasozi (2009) indicated that a majority of students accessing Ugandan universities and whose expenses were paid by the state came from wealthy classes. Similarly, Mohamad (2007) observed that the new financing methods that promoted privatization in higher education had failed to achieve greater access for low SES student in developing countries. The findings of this paper on HELB funding self-sponsored students in public universities in Kenya are contrary.

4. Conclusion

It is evident that most studies on HELB loans are limited to government sponsored students despite the increasing number of self-sponsored students. However, these studies have casted doubt on the equality of financing students using loans. This paper has provided empirical evidence on the status of equity in HELB disbursements to self-sponsored students in Kenyan public universities using Gini coefficients. The empirical results show that HELB loans to self-sponsored students within and between the

academic years and within and between genders for the various SES quintiles to be equitable. These findings give HELB a clean bill of promoting social equity in access to higher education. However, HELB should address marginal differences in equity levels in loan allocation to self-sponsored students. This can be done through home visits and establishing a national data base to perfect their ability to trail needy students right from primary school level.

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TO SELF-SPONSORED STUDENTS IN PUBLIC UNIVERSITIES IN KENYA

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