

## **Regional Representation at Higher Education Level in Kenya: A case of Moi University**

**By**

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### **Abstract**

The purpose of this study was to understand the regional representation in higher education in Kenya, particularly at the Moi University in Eldoret, Kenya. The study was carried out in the 1995/96 academic year and focused on selected faculties and schools in regard to regional disparities in University enrolment at undergraduate level. Proportionate random sampling technique was employed in identifying the respondents to this study. The questionnaire and document analysis guide were the key research tools used in this study. The test-retest method was used in determining the reliability of the questionnaire. For secondary data, the study used Document Analysis Guide which was used to collect data from the university authorities and the Ministry of Education Statistics Division and KNEC (Kenya National Examinations Council) for number of candidates who sat for Kenya Certificate for Secondary Education in the years 1990-93. The return rate of the questionnaires was 70%. Data on regional disparities was analyzed using Gini's coefficient and coefficients of equality. The coefficients of equality yielded three classifications of the districts namely low, medium and high. A summary of the national standing in the representation of provinces in Moi university enrolment showed that Central province took the lead in Moi University enrolment. A further analysis in Central province shows that Nyeri, Murang'a and Nyandarua districts are over-represented in enrolment while Kirinyaga and Kiambu districts are well represented hence fall in the medium level category. Central provinces have got no district in the low level category classification. This makes it the most privileged province in Kenya with regard to Moi university enrolment. Coast province is the most under-privileged in Moi university enrolment. It has got no representation in the medium and high level categories of districts. All its six districts are in the lower level category classification. North Eastern province is also under-represented, after Coast province, it is only Mandera district that features in the medium level category while all other districts are within the lower level category of districts. The study recommends a marshal plan in terms of affirmative action to all the districts in Kenya underrepresented in University enrolment in this study.

**Key words:** *Regional Representation, Higher Education, Moi University, Kenya*

### **Introduction**

An outline of the historical development of education in Kenya is essential for understanding the origins of the present regional inequalities. At the time of independence in 1963, Kenya inherited an educational system which had been influenced by three distinct but inter-related social forces originating in the colonial situation. These forces determined the unequal distribution of educational resources and opportunities which were clearly observable in the early 1960s.

The first social force shaping education during the colonial period was racialism. Provision of education along racial lines manifested itself in a number of ways. For example, the provision of secondary schools on the eve of independence in 1963 reflected a racial pattern which was characteristic of the colonial mode of development. The secondary schools were concentrated in the areas near white highlands and urban centers. In 1963, about 30 percent of all the secondary schools in the country were in urban areas, and these mainly catered for the Asian and European communities. These communities formed a mere 3 percent of the total Kenyan population. The expenditure on education reflected this same pattern of unequal educational provision.

The second social force which shaped the pattern of African educational development was the impact of Christian evangelism activities which followed closely the impact of colonial penetration and the completion of Kenya-Uganda railway. The missionary penetration to the hinterlands led to their concentration in the present Central, Nyanza and Western provinces in Kenya. In central province for example, missionary settlements were found in Kiambu and Nyeri districts. In western province, missionary concentrations were in Kakamega district while in Nyanza they concentrated in Siaya, Kisumu and Kisii. Some of these districts in central and western Kenya have contributed to a large proportion of the elite of modern Kenya. The contribution of the Christian missions in the field of education was strengthened by the fact that the colonial state to a large extent relied on the missionary groups for the development of African education.

The third force in the development of education in Kenya was the African response to this western cultural invasion, in the form of Christian's education. This response differed from one place to another and took many forms. In some areas it manifested itself in the form of independent churches, particularly in Western Kenya, while in the central province, it took the form of an educational revolt in the 1930s and this led to the establishment of independent schools.

A further opportunity was opened by the colonial government in 1924 when it established the Local Native Councils to tax themselves to finance education and to open up new elementary schools. This policy of entrusting local authorities with the responsibility of financing and developing primary education had two potential consequences for the emergence of educational inequalities. The relatively rich districts could raise more money through taxation and thereby pay for more schools and teachers, while the poor areas had to struggle to maintain the few schools they had. Secondly, the local authorities channelled their educational funds through the existing missionary and independent school organizations. This means that the areas where there was strong missionary presence, there were strong pressure to offer education more than those areas without missionary or local organizational structures.

These political and socio-economic forces just described shaped the development of education and the pattern of inequalities which have persisted over the years since independence. Coombs (1985) undertook a study on the geographical disparities in developing countries and he observed that urban children have typically had better access to schooling than rural children, and within each of these two geographic categories (urban and rural) there have also been substantial differences. Coombs noted that it is mainly the children of the poorest families in the rural and urban areas who account for high figures of non-school goers and early drop outs. He used a number of countries to depict this picture. For example in Sudan in the year 1978-79, for the country as a whole, a Sudanese child between the ages 7 and 13 had only a 37% chance of being in school. Variations in provinces showed that in Northern Province 74% of the children had a chance of being in school whereas in the Southern province children had only a 12% chance of being in school.

Simmons (1985) in a study on the overview of the policy issues in the 1980s, argued that regional disparities in access to education in the primary and secondary school levels was worsened by the problem of school drop outs. He also reviewed studies on school wastage in low developing countries and noted that there were wide variations in dropout rates in most of these countries. The findings from these countries showed that the drop-out rates for Africa and Latin America ranged between 26.2% to 81.3% and 33.1% to 74.7% respectively. Therefore, higher dropout rates in some regions accounted for the wide regional disparities in the distribution of educational opportunities. In essence, this study looked at regional disparities in relation to drop out rates. The present study goes beyond regional disparities to gender and socio-economic background of university students.

Sudprasert and Tunsiri (1980) carried out a study on the regional disparities in the development of education in Thailand. Enrolment rates were used as indicator of educational development in various provinces. The degree of disparity was done using Lorenz curves and Gini's coefficients. The result of the study showed that; border provinces were under-privileged and disparities at lower primary were

transferred to the next level of the educational system. In the same study, it was revealed that the causes of educational disparities are rooted in the historical development of education in Thailand, cultural differences and the economic development of the country. The Lorenz curve and Gini's coefficients were used to analyze the disparities and the same have been used in the present study.

The World Bank (1982) conducted a survey of the distribution of primary school enrolments in Eastern Africa and two case studies in Sudan and Lesotho. The study made inter-country comparisons that identified countries and areas in the region which lag behind in terms of educational opportunities. The aim of the study was to find the overall degree of inequality in the distribution of primary school enrolments across the districts and between the sexes within a country and to find specific districts and urban or rural locations, or sex groups within these areas which fell below or above the national average in their enrolments and by how much. The paper also attempted to determine how and where to allocate educational investments in order to reduce both inter-country and intra-country inequities. The study used representation index, Gini coefficient and Lorenz curve and pyramid ratio as indices for measuring educational equity. The main finding of this study was that the degree of inequality in the distribution of educational opportunities varied enormously from one Eastern African country to another. Some countries enjoyed a highly proportional distribution, whereas other countries experienced enormous disparities in the allocation of enrolment places among districts between urban and rural areas and between the sexes.

The present study focussed on distribution of university places in Kenya, the study has also used the Lorenz curve and its related Gini coefficient in analyzing the distribution of university places in Kenya. Weele (1973) made a survey on the distribution of education in Kenya, focusing on the benefits of education. This study identified regions, investment made in education in the Republic, as taxonomies of discussion. Of the seven taxonomies, discussion on the inequality of educational opportunity most often centered on three, these were: provincial, urban/rural and sex. The other taxonomies considered comprised of age, level of schooling, tribe and economic sector. The Lorenz curve and its related Gini's coefficient were extensively used in this study. The results of this study showed that there was an insignificant inequality of distribution of education between urban centers on the one hand and rural regions on the other. There was only a slight inequality of distribution of education between males and females. The distribution of education across the provinces was only moderately inequitable.

Court and Kinyanjui (1980) conducted studies between 1965-1976 which revealed that central province was enrolling over 100 percent of the primary school age-cohort, with coast, Rift Valley and North Eastern provinces lagging far behind in the primary school enrolments. They also presented data which divided the country into three groups according to the proportion of school-age population in school. The first group consisted of twenty districts with an enrolment ratio above the national average. These were: All districts in Central and Western province; TaitaTaveta and Lamu in Coast province; Embu, Machakos and Kitui in Eastern province; Laikipia, Nandi and Transoia in Rift valley province and Kisii, Siaya and Kisumu in Nyanza province. Districts in this most privileged category are of two main historical types –those which made up the former African “reserves” and those created from the former white highlands.

These were the districts in the colonial period which positively and enthusiastically welcomed western education and through the local authorities taxed themselves heavily to build an extensive primary-school system. In the post-colonial period this interest was continued, and past advantages have been consolidated into further development in education at all levels (Court and Kinyanjui, 1980). These are economically and politically powered districts in the country and have utilized their positions to maintain leadership in education (Court and Kinyanjui, 1980). The districts in the white highlands include those in the central province like Nyeri, Laikipia, Nyandarua and Kiambu. This also extends to some districts in the Rift valley.

A secondary category of districts which have high rates of participation of school age population in primary schools were not physically close to the white enclave but had contact with mission groups and the colonial economy, for example, Kisii and Meru were the first African Districts in Kenya to be allowed to grow coffee in the 1930s. Machakos District was fully involved in the colonial economy by 1925 and the development of education through missionary groups and local native councils was thereafter much emphasized.

In contrast to these high participation districts there are thirteen districts which have less than two thirds of their school age population enrolled in school. These are the agricultural districts of coast province – Kilifi, Kwale, and Tan River – all three districts in North Eastern province and Kajiado, Narok, West Pokot, Samburu and Turkana in Rift valley province. In the case of the coast, resistance to missionary evangelism and the prevalence of Islam and the non-recorded Koranic schools explain the low school participation.

Between the extreme categories is a third category which is most interesting for the fact that it contains three of the four main urban centers of Kenya i.e. Nairobi, Mombasa and Nakuru. The relatively low figures of primary school enrolment for these centers are explained by two factors. In the first place, while participation is universal among high and medium – income groups, it may well be very low among the urban poor and unemployed.

A study conducted by Mwiria (1986) made a classification of secondary school places in Kenya in 1979; the schools were grouped according to provinces. They were then categorized into three groups namely, Aided, Assisted and Unaided schools. The total number of schools in each province was established plus the percentage population of each province. In this study, it was found that central, Nyanza and Western provinces were advantaged in some or all categories, while coast and North Eastern provinces were disadvantaged. The main reason for this imbalance was seen to be the operation of self-help activities in setting up their own schools and raising funds to maintain them. This trend is evident in primary school enrolment (UNICEF 1984).

## **Methodology**

The population studied was drawn from all faculties/schools at Moi university Main campus, Chepkoilel Campus, Faculty of Health Sciences and Maseno University College, that is, School of Social, Cultural and Development Studies, Faculties of Technology, Information Sciences, Forestry and Wildlife Management, Science, Health Sciences, Law and Education. The study was restricted to the undergraduate students in all years of study during the 1995/96 academic year of study.

Proportionate random sampling technique was employed in identifying the respondents to this study. According to this technique, each faculty/school in Moi University was represented in exact proportion to its student enrolment. Due to the large number of population, 10 percent of the total enrolments in each Faculty/School were considered for the study except the Faculty of Law which is considered 26% of the students due to the low enrolment in the faculty. This ratio was considered appropriate in social sciences (Kerlinger, 1973).

The questionnaire and document analysis guide were the key instruments used in this study. The Questionnaire contained items seeking information on the enrolment in the university by region, gender and socio-economic background. The construction of the questionnaire items was based on the information gathered during the literature review. The questionnaire as an instrument was chosen because it was possible to reach many respondents. The instrument also offered the respondents an opportunity to freely express themselves in an impersonal atmosphere without the face to face embarrassment, particularly when they required to respond to the item on home background.

The test-retest method was used in determining the reliability of the questionnaire. The questionnaire was administered to the same students used in the pilot study within an interval of one week. The responses to the items on the questionnaire were assigned numerical scores. The Spearman rank

correlation coefficient was worked out to give  $\rho = 0.74$ . This was considered enough measure to make the instrument reliable (Kerlinger, 1973).

For secondary data, the researcher developed a proforma (Document Analysis Guide) which was used to collect data from the university authorities and the Ministry of Education Statistics Division, number of candidates KCSE 1990-93. The data collected included: the total university intakes in the last five years, enrolment by sex, enrolment by faculty/school and home provinces/districts of the students.

A letter of introduction was attached to each questionnaire, stating clearly the purpose of the study. The questionnaires were given out to 822 sampled students using research assistants who were picked from each faculty/school and well trained on the exercise. The research assistants were quite familiar with their fellow students and therefore it was better to use them. The questionnaires were administered to the students and were requested to return the filled questionnaires to the research assistants. Some cases where the sampled students took long to return the questionnaires, the research assistants made a follow up to collect them from the students. The return rate of the questionnaires was 70%. This was calculated from the number of questionnaires administered (822). This return rate was therefore considered sufficient to provide the required information.

A proforma seeking information from the university was given to the officers in charge of student registry (Admissions) by the researcher. The officers provided the information that was sought in regard to student distribution in faculties, students' gender and districts and provinces of origin.

Data from the questionnaire and the proforma were analyzed using descriptive statistics. Data on regional disparities was analyzed using Lorenz curve and its related Gini's coefficient and coefficients of equality. The total number of students who sat for "O" level Examinations (1990-1993 cohorts) formed the total population for this study while the number which actually made it to Moi University was considered as the enrolment.

The Gini's Coefficient was calculated from the Lorenz curve. The total area below the line of equality was calculated together with the area that represents the inequality. The ratio of the region of inequality to the total area below the line of equality is in Gini's Coefficient. It ranges between 0 and 1. When the Gini's Coefficient is one (1) then it means perfect inequality and when it is zero, perfect equality. The selection of the Lorenz curve and its related Gini's Coefficient was based on the fact that they are more precise and detailed as measures of inequalities per faculty.

## **Findings**

### **Regional Representation of Students at Moi University using Coefficients of Equality**

Data used in this sub-section was obtained from the Ministry of Education Headquarters (Statistics Division) and Moi University Student Registry. The Ministry of Education provided information on student population while Moi University provided student enrolments. The student population used in this study was the data on the form four students who sat their K.C.S.E examinations in the years 1990, 1991, 1992 and 1993. This was the cohort from which the current number of Moi University students from year one to year four is drawn. Students who had dropped out, repeaters and fifth year students were not taken into account because their data was not available.

The Lorenz Curve or curve of concentration and its related Gini coefficient were employed in tracing the disparities in Moi university enrolment. These methods were borrowed from A. H. terWeele (1973) who had developed and used them in measuring distribution of education in Kenya. In this study, the Lorenz curve is plotted after calculating the cumulative percentages for Moi university enrolment and student population who sat K.C.S.E between 1990 and 1993, for they constitute the current Moi university undergraduate students population. The Lorenz curves for seven provinces in Kenya have been drawn using district populations and enrolments. The districts used in this study were those appearing in the Ministry of education's annual Returns in 1990. Consequently, the new districts were merged with their former mother districts, for example Nyamira to Kisii, Bomet to Kericho and Homa

Bay, Migori, Suba and Kuria to South Nyanza. Nairobi province could not be used because it had no districts which could be used to plot the Lorenz curves hence deduce the Gini's coefficient. Provinces have been used because they are the main administrative units in Kenya.

The Gini's coefficient is calculated from the Lorenz curve. The total areas below the line of perfect equality are calculated together with the area that represents the inequality. The ratio of the region of inequality to the total area below the line of perfect equality is the Gini's coefficient. It ranges between 0 and 1. When the Gini's coefficient is 1, then it represents perfect inequality and when it is 0, perfect equality. In this study, the Gini's coefficient ranged between 0.04 and 0.49. This means that the province with a coefficient of 0.04 was the one with a fair equality while 0.49 represents a high level of inequality. For the purpose of this study, an index lying between 0.04 – 0.20 shall represent a fair distribution while an index between 0.20 – 0.19 shall represent an unfair distribution.

The first province to be analyzed was Rift Valley. This is the largest province in Kenya in terms of geographical area in square kilometers and the number of districts because it has over 13 districts. It had a total of 107,413 students who sat for K.C.S.E between 1990 and 1993. This was the second highest figure nationally after central province with 113,469 students. Nakuru district had the highest number of candidates on the other hand; districts with the lowest number of candidates were Turkana, Samburu and West Pokot with 1315, 1347 and 2929 students respectively (Table 1).

Nakuru and Kericho districts led in the number of Moi university enrolment with 339 (22.3%) and 282 (18.64%) students respectively. Turkana, Samburu and West Pokot had 2, 7 and 26 students respectively. A total of 1513 (21.88%) students were drawn from the Rift Valley to Moi University.

Gini coefficient was calculated which yielded an index of 0.11. This indicates that the distribution of Moi university enrolment in Rift Valley is fair.

Nyanza province had four districts as at 1990. The secondary school student enrolment was highest in Kisii district with a population of 40,442 (49.68%) students while Kisumu, South Nyanza and Siaya had a student population of 15,408 (18.93%), 14,184 (17.42%) and 11,365 (13.97%) respectively (Table 2). This shows that Kisii district had almost half of the secondary school student population. The Moi university enrolment indicated that Kisii district had 37.29% of the students followed by Siaya, Kisumu and South Nyanza with 22.23%, 21.52% and 19.86% of the students respectively. The plotting of Lorenz curve showed a fair distribution of university places in Nyanza province. The Gini coefficient derived from Lorenz curve stood at 0.16.

Coast province has six districts in total. Secondary school student population was fairly distributed in some districts although few showed extremities. Taita Taveta and Mombasa had 29.46% and 26.65% of the students respectively. Lamu had 3.6% of the students representing the lowest represented district while Kilifi, Kwale and Tana River districts had 22.54%, 11.73% and 5.99% of the student's respectively (Table 3). The total number of students was 36,500 representing 6.8% of the total national student population. Mombasa district had 40.37% of

**Table 1: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Rift Valley Province by Districts in 1995/96 Academic Year**

District	Population %	Enrolment %	Cumulative Population %	Cumulative Enrolment %
Kericho	20.91	18.64	20.91	18.64
E/Marakwet	7.71	6.15	28.62	24.79
Kajiado	3.35	1.98	31.97	26.77
Turkana	1.22	0.13	33.19	26.9
West Pokot	2.73	1.72	35.92	28.62
Samburu	1.25	0.46	37.17	29.08

<b>Nakuru</b>	22.83	22.34	60.00	51.42
<b>Nandi</b>	9.29	9.12	69.29	60.54
<b>Laikipia</b>	4.49	4.49	73.78	65.03
<b>Narok</b>	2.19	2.38	75.97	67.41
<b>Baringo</b>	9.31	10.58	85.28	77.99
<b>Trans Nzoia</b>	5.50	8.99	90.78	86.99
<b>Uasin Gishu</b>	9.22	13.02	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

Students at Moi University while its student population was 26.65% only. This kind of phenomenon may be explained by the nature of the district. Most parts of Mombasa lie along the Nairobi-Mombasa highway; this has led to springing up of urban areas, this may have attracted more people from outside the district and may have led to their students doing well in national examinations hence boosting their university intake. Secondly, Mombasa being the provincial headquarters and the main entrance to Kenya may have favored the resources that go along with better learning. TaitaTaveta district that presents a big number of students in form four examinations produced 19.25% of the students from Coast Province entering Moi University. Lamu and Tana River districts each had 1.5% of the total Moi university enrolment from Coast Province. Plotting the Lorenz curve shows that coast province has an unfair distribution of Moi university enrolment among its districts. The calculated Gini coefficient yielded an index of 0.2 which shows a fair representation in the Moi university student enrolment in Coast Province.

North Eastern Province had the least number of students who sat for the form four examinations between 1991 and 1993. Of the total 535,474 students who sat the K.C.S.E. examination, only 2,286 (0.43%) students were from North Eastern Province. For the four years, female students formed 26.9% of the total student population. Of the three districts in the province, Garissa, Wajir and Mandera had a student population of 38.19, 36.88 and 24.93 percent respectively as shown in Table 4. This means that Garissa produced the highest number of students. On the other hand, the Moi University student enrolment showed that Mandera was the most favored district in North Eastern province with a student population of 47 (73.4%) of the total Moi University enrolment from North Eastern province.

**Table 2: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Nyanza Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment %	Cumulative Population in %	Cumulative Enrolment in %
<b>Kisii</b>	49.68	37.29	49.68	37.29
<b>Kisumu</b>	18.93	18.96	68.61	56.25
<b>South Nyanza</b>	17.43	21.52	86.04	77.77
<b>Siaya</b>	13.96	22.23	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

**Table 3: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Coast Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
TaitaTaveta	29.46	19.24	29.46	19.24
Tana River	6.0	1.51	35.46	20.75
Lamu	3.62	1.51	39.08	22.26
Kwale	11.73	10.94	50.81	33.2
Kilifi	22.54	26.42	73.35	59.62
Mombasa	26.65	40.38	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

Garissa and Wajir had 14.06% and 12.5% of the students respectively. This anomaly is quite big given that Garissa presents more students for form four examinations. The Lorenz curve shows that North Eastern province provides the widest disparity in Moi university enrolment more than all the other provinces. This yielded a Gini coefficient index of 0.49.

Eastern province has six districts in total. The highest student population was from Machakos district forming 48.46% of the student population. This was followed by Meru, Kitui and Embu with 26.66%, 11.94% and 10.6% respectively. Isiolo and Marsabit trailed behind with less than 2% of the total student population. Eastern province had a population of 98,184 students representing 18.33% of the national student population who sat for form, four examinations between 1990 and 1993. Eastern province represented 18.34% of the total student population in the country while in Moi university enrolment; the province had 18.17% of the total students enrolled in the 1995/96 academic year. Machakos district was leading in Moi university enrolment from Eastern Province with 47.89% of the students followed by Meru and Kitui with 22.2% and 18.7% of the students respectively (Table 5). Embu recorded a 10.1% in the student enrolment while Marsabit and Isiolo tailed with seven students each with less than 1%. It was interesting to note that Machakos district had a proportionate representation at Moi University because it had 48.89% of the student population and its Moi university enrolment was 47.89%. Eastern province depicts a fair distribution of Moi university enrolment in all its districts with a Gini Coefficient index of 0.09.

**Table 4: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for North Eastern Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
Wajir	36.88	12.5	36.88	12.5
Garissa	38.19	14.06	75.07	26.56
Mandera	24.93	73.44	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

Western Province had three districts in 1990; namely, Bungoma, Busia and Kakamega District had the largest number of students representing 61.47% while Bungoma and Busia followed with 27.72% and



10.81% respectively. Western province had a total of 69,297 students who sat the K.C.S.E examination between 1990 and 1993. The Moi university students enrolment among the districts of western province showed that Kakamega scored 56.16% of the student enrolment while Bungoma scored 31.26% and Busia trailed with 12.58% of the total Moi university enrolment from western province in the 1995/96 academic year (Table 6). The Gini coefficient calculated was 0.05.

Central province was the last province to be analyzed. It was also not possible to construct the Lorenz curve for Central province because the cumulative enrolment percentage for most of the districts in the province were greater than the population percentage actually registered for K.C.S.E. Central province had a total of 113,469 students who sat the K.C.S.E. examinations between 1991 and 1993. This represented 21.19% of the total student population that sat for K.C.S.E. for those years. The number of students admitted to Moi University was 1,347 representing 19.47% of the total Moi university enrolment (Table 7). Nyeri, Murang'a and Kiambu were the leading districts with 27.62%, 25.38% and 24.13% of the students' enrolled respectively. This left Nyandarua and Kirinyaga districts lagging behind with 14.33% and 8.54% respectively. Of all the districts in Central province, this enrolment seems to favour Nyeri districts because the student

**Table 5: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Eastern Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
Meru	26.66	22.2	26.66	22.2
Marsabit	1.28	0.56	27.94	22.76
Machakos	48.46	47.89	76.4	70.65
Embu	10.6	10.10	87.0	80.75
Isiolo	1.06	0.56	88.06	81.31
Kitui	11.94	18.69	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

**Table 6: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Western Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
Kakamega	61.46	56.16	61.46	56.16
Busia	10.81	12.58	72.27	68.74
Bungoma	27.73	31.26	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population are K.C.S.E candidates 1990-1993 cohorts

Population that sat for K.C.S.E examination in the respective years was much lower than that from Kiambu district. The construction of the Lorenz curve was not possible because it had to go above the line of perfect equality. This implied that most of the districts in the province had overenrolled in Moi university intake more than their population. This implies that the student enrolment at Moi University

is fairly drawn from the central province. This is further supported by a very low Gini coefficient of 0.04.

The last level of analysis is that of the national level. This level is very crucial in identifying the disparities in Moi university enrolment per province. At this level, Rift Valley province had the highest number of students enrolled forming 21.88% of the total student enrolment of Moi university. Other provinces that followed closely were Central, Eastern and Nyanza with 19.47%, 18.17% and 16.32% respectively (Table 8). Western, Nairobi, Coast and North Eastern provinces had lower enrolments with 11.61%, 7.79%, 3.83% and 0.93% respectively. The population used in this study was the K.C.S.E candidates between 1990 and 1993. This gave 535,474 students in those four years nationally. The student enrolment in those years at Moi university who constituted the 1995/96 academic year were 6917 forming 20.3% of the undergraduate student enrolment at the public universities in Kenya during the same academic year. The calculation of the Gini's coefficient of 0.08 showed an equitable distribution of enrollment at Moi University.

**Table 7: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Central Province by Districts in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
<b>Kirinyaga</b>	10.61	8.54	10.61	8.54
<b>Murang'a</b>	23.07	25.39	33.68	33.93
<b>Nyeri</b>	25.12	27.61	58.8	61.54
<b>Nyandarua</b>	8.99	14.33	67.79	75.87
<b>Kiambu</b>	32.21	24.13	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population is K.C.S.E candidates 1990-1993 cohorts

**Table 8: Moi University Enrolment, Cumulative Population and Cumulative Enrolment for Kenya by Province in 1995/96 Academic Year**

District	Population in %	Enrolment in %	Cumulative Population in %	Cumulative Enrolment in %
<b>Coast</b>	6.81	3.83	6.81	3.83
<b>Central</b>	21.19	19.47	28.0	23.3
<b>Western</b>	12.94	11.61	40.94	34.91
<b>Eastern</b>	18.34	18.17	59.28	53.08
<b>N/Eastern</b>	0.43	0.93	59.71	54.01
<b>R/Valley</b>	20.06	21.88	79.77	75.89
<b>Nairobi</b>	5.03	7.79	84.8	83.68
<b>Nyanza</b>	15.20	16.32	100	100

Source: Ministry of Education Annual Reports and Moi University Nominal Rolls

Notes: (a) Enrolment in Moi University in 1995/96 Academic Year.

(b) Population is the K.C.S.E candidates 1990-1993 cohorts

A further analysis of regional representation was done using the coefficient of equality. This tool of analysis was borrowed from commissioner (1980), who used it to analyze the representation of various castes in India's Higher Education system. It was used in 1964-65 and 1974-75 and the results showed

that the scheduled castes' coefficient increased from 2.93 in 1964 – 65 to 3.9 in 1974-75. The formula is given as follows:

$$C.E = e : E/p : P$$

Where

E = Total enrolment at Moi university

P = Total national population

E = Enrolment of students per district /province at Moi University

P = Total population of district/province

C.E = Coefficient of equality

If the coefficient of equality is 1.00 the enrolment of given district/province is in proportion to their population. If it is less than 1.00 it indicates that their enrolment is less than proportionate to their population and if it more than 1.00 then their enrolment is more than proportionate to the population.

The population used in the calculation of the coefficient of equality is from the National census that was conducted in 1989 and whose results were published in 1994.

Using this tool of analysis, the districts were grouped into three (3) categories to their student contribution to Moi university enrolment so it assisted in giving a clear picture on inequality. Group one (1) or low group represented the under-represented districts in Moi university enrolment in respect to their 1989 national census populations. Group two (2) or medium group gave proportionate number of students to the national population of individual districts. The national population was extracted from the 1989 national census whose report was published in 1994 and the high or group three (3) represented the overrepresented districts. The first group, that is low, had the highest number of districts totalling to eighteen while the second and third groups had 13 and 8 districts respectively. A coefficient of less than 0.89 was considered low (Table 9) while 0.90 – 1.12 was considered medium (Table 10) and a coefficient of over 1.20 was considered high (Table 11).

Kirinyaga district was the only district in Central province with less than 1.00 index. On the other hand Nyeri had the highest coefficient of 1.89. All the districts in Coast province fell in the low category with Tana River district lagging behind with a coefficient of 0.10. Machakos took the lead in Eastern province with a coefficient of 1.33. This made it to be the only district from the eastern province to fall under the high category of districts. In the same province, Marsabit had the lowest coefficient of 0.17, this pushed it top the low category of districts.

**Table 9: Coefficients of Equality in Moi University Enrolment of Low Level Category of Districts in 1995/96**

District	Population (1989)	Moi University Enrolment	Coefficient of Equality
Kilifi	591,903	70	0.37
Kwale	383,053	29	0.65
Lamu	56,783	4	0.22
Mombasa	461,753	107	0.72
TaitaTaveta	207,273	51	0.76
Tana River	128,426	4	0.10
Isiolo	70,078	7	0.31
Marsabit	129,262	7	0.17
Meru	1,144,594	279	0.76
Garissa	124,835	9	0.22
Wajir	122,769	8	0.20
South Nyanza	1,066,583	243	0.70
Kajiado	258,659	30	0.36

<b>Narok</b>	398,272	36	0.28
<b>Samburu</b>	108,884	7	0.20
<b>Turkana</b>	184,060	2	0.03
<b>West Pokot</b>	225,449	26	0.36
<b>Busia</b>	401,658	101	0.78

Source: Central Bureau of Statistics and Moi University Nominal Rolls

Note: The Population is per the 1989 National census

**Table 10: Coefficients of Equality in Moi University Enrolment of Medium Level Category of Districts in 1995/96**

District	Population (1989)	Moi Enrolment	University	Coefficient of Equality
<b>Kirinyaga</b>	391,516	115		0.91
<b>Kiambu</b>	914,412	325		1.10
<b>Embu</b>	370,138	127		1.06
<b>Kitui</b>	652,603	235		1.12
<b>Mandera</b>	123,787	47		1.17
<b>Kisii</b>	1,137,054	421		1.15
<b>Kisumu</b>	664,086	214		1.00
<b>Kericho</b>	900,934	282		0.97
<b>Laikipia</b>	218,957	68		0.96
<b>Nandi</b>	433,613	138		0.99
<b>Trans- Nzoia</b>	393,682	136		1.07
<b>Bungoma</b>	679,149	251		1.15
<b>Kakamega</b>	1,463,525	451		0.95

Source: central Bureau of Statistics and Moi University Nominal Rolls

Note: The Population is per the 1989 National census

**Table 11: Coefficients of Equality in Moi University Enrolment of High Level Category of Districts in 1995/96**

District	Population (1989)	Moi Enrolment	University	Coefficient of Equality
<b>Murang'a</b>	858,063	342		1.23
<b>Nyandarua</b>	345,420	193		1.73
<b>Nyeri</b>	607,292	372		1.89
<b>Machakos</b>	1,402,002	602		1.33
<b>Baringo</b>	347,990	160		1.42
<b>E/Marakwet</b>	216,487	93		1.33
<b>Nakuru</b>	849,096	338		1.23
<b>Uasin Gishu</b>	445,530	197		1.37

Source: Central Bureau of Statistics and Moi University Nominal Rolls

Note: The Population is per the 1989 National census

North Eastern province had the widest disparity in terms of districts. Mandera took the lead with a coefficient of 1.17 while both Garissa and Wajir had 0.22 and 0.20 coefficients respectively making them to fall under the low category of districts.

In Nyanza province, Kisumu district was the only district in the country to have a coefficient of 1.00 meaning that it had a proportionate share of enrolment at Moi University with its population. However, Siaya and Kisii were over-represented with 1.22 and 1.15 coefficients respectively. South Nyanza trailed behind with a coefficient of 0.70 thus falling under the low category of districts.

Rift Valley province had the highest number of districts in the middle and higher categories. The leading district was Baringo which had a coefficient of 1.42. Others that followed were Uasin Gishu, ElgeyoMarakwet, and Nakuru with coefficients of 1.37, 1.33 and 1.23 respectively. The most underprivileged district came from this province and that was Turkana with a coefficient of 0.03. Others that fell on the low category of districts were Samburu, Narok and West Pokot with coefficients of 0.20, 0.28 and 0.366 respectively.

Western province districts were well represented with Bungoma taking the lead in moi university enrolment followed by Kakamega and Busia with coefficients of 1.15, 0.95, and 0.78 respectively. At the provincial level, two provinces, that is, Nairobi and Central province fell in the high category of provinces with coefficients of 1.26 and 1.34 respectively (Table 12). This means that Central province was over-represented in the Moi university enrolment.

**Table 12: Coefficients of Equality in Moi University Enrolment per Province in 1995/96**

Province	Population (1989)	Moi University Enrolment	Coefficient of Equality
Central	3,116,703	1,347	1.34
Nairobi	1,324,570	539	1.26
Eastern	3,768,677	1,257	1.03
Nyanza	3,507,162	1,129	0.99
Western	2,544,329	803	0.98
Rift Valley	4,981,613	1,513	0.94
North Eastern	371,391	64	0.53
Coast	1,829,191	265	0.45

Source: Central Bureau of Statistics and Moi University Nominal Rolls

Note: The Population is per the 1989 National census

While Eastern, Nyanza, Rift valley and Western provinces had 1.03, 0.99, 0.94 and 0.98 coefficients respectively, Coast province and North Eastern province lagged behind with 0.45 and 0.53 coefficients respectively. This indicated that Coast province had the least enrolment at Moi University in proportion to its population.

## Discussion

A summary of the national standing in the representation of provinces in Moi university enrolment showed that Central province takes the lead in Moi University (partially in female student's enrolment). A further analysis in Central province shows that Nyeri, Murang'a and Nyandarua districts are over-represented in enrolment while Kirinyaga and Kiambu districts are well represented hence fall in the medium level category. Central provinces have got no district in the low level category. This makes it the most privileged province in Kenya with regard to Moi university enrolment. Coast province is the most under-privileged in Moi university enrolment. It has got no representation in the medium and high level categories of districts. All its six districts are in the lower level category. North Eastern province is also under-represented, after Coast province, it is only Mandera district that features in the medium level category while all other districts are within the lower level category of districts. A Gini

coefficient of 0.49 shows a high inequitable distribution of students in the province. This has been clearly showed that Manderu presents more students to Moi University than all the other districts combined. On the other hand even if the Moi university student intake from the North Eastern province is low, its population is also low. However, from the calculations made, it still under presented in Moi university intake. A summary of the Moi university representation per province and the corresponding coefficients of equality show that some provinces are quite under-presented and some are over –represented. This finding concurs with the findings of Court and Kinyanjui (1980) and Mwiria (1986) which revealed that Central province was enrolling over 100% of the primary school age-cohort, with Coast, Rift Valley and North Eastern province lagging behind.

### Conclusion

On regional representation it can be said that there are still wide disparities in Moi university enrolment. Some regions are over-represented while others are marginally represented. If such a trend continues, then Moi University will be for a few regions in the country hence denying other regions the opportunity to learn at this institution. It is true that the Moi university intake is purely done on merit but it is also good to ensure equity is done without sacrificing efficiency. Difference in Moi university intake were also found to exist within the provinces, a notable example is North Eastern province where Manderu district has less than a quarter of the population in North Eastern province but presents about three quarters of Moi university students from North Eastern province. If this trend continues, then we expect marginalization of other districts like Wajir and Garissa in North Eastern province. Another notable case is Mombasa district that has about 26% of the population in Coast province but presents over 40% of the students to Moi University. All these may be a pointer to the inequitable distribution of educational opportunities in the country and in order to achieve equality something must be done, not in lowering the entry marks to university, but in boosting those contributing factors to better performance in national examinations.

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