



## NEEDS BASED FUNDING MODEL AND HIGHER EDUCATION ACCESS: CRITICAL ANALYSIS OF THE KENYAN PUBLIC UNIVERSITIES NEW FUNDING MODEL

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### Abstract:

Quality Education is the fourth Sustainable Goal, and in Kenya, Access to Quality Education is a right. This shows education forms an integral sphere in one's life as an enabler and a transformational tool of society. It is therefore imperative to assess and re-examine the objectivity and reliability of the Kenyan Public Universities' New Funding Model of indexing students on a needy basis for funding. The overall objective of this paper was to evaluate the objectivity of categorizing students into various strata of funding needs. Specifically, the paper examined the sufficiency and appropriateness of the application requirements for funding to inform categorization based on the level of need and degree of vulnerability. The paper found out that the application requirements are too limited to exhaustively provide a good judgment on the indexing of the students' funding needs. This would not only hinder students from accessing higher education but also widen the poverty gap for students coming from economically weak backgrounds. The rushed manner in which the first cohort of students was subjected to the funding evaluation tool might have disadvantaged students in making informed applications and the provision of the necessary requirements to support their status. It was discovered that there is a very thin line among the respondents if they were to be categorized into the various funding strata, with the majority of the respondents tending towards being categorized as either vulnerable or very needy. Descriptive statistics were used to analysis data which had 2391 respondents, and the findings were presented by use of tables and graphs. The paper recommends that the funding tool be modified to include other parameters of evaluating the needy index of the applicants and that categorization of the students be done at the secondary school exit level to enable various financiers

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(parents and other government or non-governmental agencies to arrange for the higher education funding. The paper findings may be relevant in informing funding policy formulation at the national government level, as well as adding to the existing literature on higher education funding.

**Keywords:** public universities, new funding model, objectivity and higher education access

## 1. Introduction

### 1.1 Background of the Study

In a survey study conducted among the first cohort of students to be introduced to the new Public Universities Funding Model at Masinde Muliro University of Science and Technology in the 2023/2024 academic year revealed that there is a thin line among the four categories; vulnerable, extremely needy, the needy and less needy students which the national government observes when financing education of the university students. The main objective of the study was to evaluate the funding need index of the first-year cohort of the 2023/2024 academic year. Specifically, the study examined students' family background in both economic and social constructs as a sign index for each of the four funding categories.

Financing of public universities in Kenya has dominated the public discourse in the recent past. The concern has been exacerbated by the new funding model being implemented and the negative working capital of virtually all the Kenyan public universities, as contained in the Auditor General's annual reports. As of the end of June 2022, the public universities' deficit stood at Ksh. 56.1 billion is a phenomenon associated with high operating expenditure budget against the backdrop of reduced government capitation and insignificant income injection from internally generated funds. In addition, fiscal prudence and responsibility have also been cited as lacking in certain circumstances, as the annual audit reports demonstrate.

The presidential working party on education reforms, as decreed by His Excellency President Dr William Ruto late last year, proposed a new funding model for the public universities as a silver bullet to remedy the financial crisis facing the higher institutions of learning. The older model of Differentiated Unit Cost (DUC) has not been adequate to get public universities out of the thick financial doldrums they are in. However, it should not be lost that the principle of DUC was to address equity issues in the distribution of the financing cake of the Kenyan public universities, but not to bridge some of the administrative gaps inherent in some of these institutions. The DUC is the amount of money required to teach one academic programme per academic year per student, including institutional overhead costs as well as staff and facility costs. The gradual decline of the DUC percentage from 60.7 percent in the fiscal year 2019 /2020 to 49.51 per cent in the fiscal year 2021/2022 has been driving a financial death nail in the operations of the Kenyan public universities.

The new funding model of public universities is a total departure from DUC, which saw the government, in aggregate sponsors all the students who scored a mean grade of C plus and above at the Kenya Certificate of Secondary Education (KCSE) level in transitioning to both public and private universities. In the new model, students have been categorized into four groups based on the “needy index” of a learner in terms of the vulnerable, very needy, needy and less needy. This is a well-calculated move to shift current government expenditure of university fee payment to the future liability of the learner and immediate burden to the parent in the mix of the economics of education.

The vulnerable and very needy categories of learners will receive 100 per cent government financing, built a long 82 per cent government scholarship and 18 per cent Higher Education Loans Board (HELB) loan for the vulnerable group while the very needy category, government scholarship will account for 70 per cent as HELB caters for 30 per cent with households of the two categories contributing nothing. However, for the needy and less needy learners, government financing will be at 93 per cent where the government scholarship for the needy will be 53 per cent and HELB loan 40 per cent as households contribute 7 per cent. The less needy students will get government scholarship funding at 38 per cent, and HELB 55 per cent, while the households take 7 percent.

## 1.2 Research Problem

The overall objective of the study was to evaluate the objectivity of the funding model needy index categorization and how it may impact women high education access. Specifically, the study evaluated the sufficiency and appropriateness of the application requirements of the new funding model, determined the socio-economic distinctive differences among the applicants, informing their categorization and assessed women-specific vulnerability parameters characterizing concern for their higher education access as weighed by the needy indexing funding model. This was against the backdrop of the implementation of a new public universities funding model, which has raised concerns in terms of its objectivity in the placement of applicants in the four categories of funding classification.

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This categorization is based on the information provided by the applicant by feeding in the identification number of the parent, telephone contact, Kenya Revenue Authority pin number, national hospital insurance fund deduction/medical contribution rate, as well as the highest level of education of the parent. In addition, parent occupation, employment status and physical challenges are provided. In terms of the income details of the parent, the funding model requires the applicants to indicate business income, farming and other forms of income. Also, if there is government support or well-wishers' support, as well as relief, they are also required. It is against this backdrop that the paper evaluated the sufficiency and appropriateness of such requirements to objectively place the students into the four categories of funding.

### **1.3 Study Objectives**

The overall objective of the study was to evaluate the objectivity of categorizing students into various strata of funding needs. Specifically, the study sought;

- 1) To examine the sufficiency and appropriateness of the application requirements of the new funding model.
- 2) To determine social- economic distinctive differences among the applicants, informing their categorization.
- 3) To evaluate women-specific vulnerability parameters characterizing concern for their higher education access as weighed by the needs-based funding model.

## 1.4 Research Questions

This paper sought to answer the following research questions;

- 1) Are the new funding model application requirements sufficient and appropriate in categorizing students on the needy indexing basis?
- 2) What are the socioeconomic differences of applicants informing their categorization?
- 3) What are the specific women's vulnerability parameters characterizing concern for their higher education access as weighed by the needy indexing funding model?

## 2. Literature Review

In Kenya, Public universities have almost exclusively depended on the government for remunerating their staff (Goethe, Ivano & Namusonge, 2013). The little income generated internally goes to subsidise staff salaries, as the government funding is not enough to sustain the payroll as well as provide for the operation and maintenance of university facilities.

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Nakhone (2004) describes a university as a place for the pursuit and dissemination of knowledge. It is a social institution that enjoys a high degree of autonomy and academic freedom. A university is generally perceived as a social, cultural, technological and economic agent of change, hence the need to have barriers to its access limited and eliminated. It is therefore imperative to observe that any internal or external parameters that may limit access to university education should be of great concern to education stakeholders. The sessional Paper No. 1 of 2005 (Republic of Kenya, 2005) underscores that the key concerns to education are access, retention, equity, as well as internal and external efficiencies within the education system. The vision is guided by the understanding that quality education and training contribute significantly to economic growth and the expansion of employment opportunities.

In financing education, an individual incurs both direct and indirect costs, which proportionately affected student's retention. Kenya is one of the Sub-Saharan countries which waived payment of fees in secondary schools in 2007. An equal capitation is provided per student in secondary schools to enhance students' enrolment, retention and access to quality education (ROK, 2012). The problem of students' dropout in schools is mainly manifested in students from poor backgrounds (Tuwei, 2013). For example, in

Kenya, 2.5 million children (47 percent girls and 53 percent boys) were out of school in 2019 as per the Global Out of School Children Initiative (OOSCI, 2021). Further, the report revealed that out of the 2.5 million children in Kenya, an estimated 1.9 million children (894,280 girls) live in areas impacted by drought and pockets of poverty manifestation.

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The new funding model of public universities is a total departure from DUC, which saw the government, in aggregate sponsors all the students who scored a mean grade of C plus and above at the Kenya Certificate of Secondary Education (KCSE) level in transitioning to both public and private universities. In the new model, students have been categorized into four groups based on the “needy index” of a learner in terms of the vulnerable, very needy, needy and less needy. This is a well-calculated move to shift current government expenditure of university fee payment to the future liability of the learner and immediate burden to the parent in the mix of the economics of education.

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Keley (2011) noted that one of the major challenges that public post-primary institutions of learning face is the ability to meet obligations like debt payments. In addition, Shattock (2013) observed that financial stability makes a key contribution to academic success and a conservative approach to institutional spending at the top sends a message throughout the institution.

According to the Economic Survey (2022), 562,006 students were enrolled in Kenya’s 77 universities in 2022, and out of that number, 257,398 needy students missed

out on HELB loans awarded in 2022. This is equivalent to almost half of the number of students who joined universities last year. This has been necessitated by poor funding of HELB, as evidenced in the fiscal year 2022/2023 allocation. HELB requested Ksh 27 billion from the exchequer, of which Ksh 5 billion was to be raised from loan recoveries, but only Ksh 15.8 billion was appropriated, leaving a funding deficit of Ksh. 11.2 billion.

The deficiency in funding of higher education will further implicate the vulnerability of the girl child in accessing higher education. Mesch (2001) indicated that girls suffer a lot when it comes to retention and access to education at all levels. The Ministry of Education, Science and Technology (MOEST, 2004) reported that gender disparities were observed in performance, access, retention, transmission and achievement in all educational levels in Kenya. Also, the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2000) noted that the existence of teenage motherhood in schools has been cited as a constraint in the elimination of gender disparities in education and in the achievement of Sustainable Development Goal 4 of access to quality education. Further, a survey on the underlying causes of high school dropout by the US Department of Education (2001) indicated that one of the reasons for young people dropping out of school was teenage pregnancy, which was estimated at 13.6 percent. Another report by UNESCO (2003) on Save the Children indicated that teenage pregnancy is a major drawback to educational attainment. These indicators show that the fundamental goal of a university may be undermined, as the Commission for University Education (CUE, 2016) underscored that the fundamental goal of universities is to provide manpower for both the private and public sectors for the overall national development.

### **3. Material and Methods**

The survey was conducted on a sample size of 2391 first-year students from different schools/faculties, which were broadly classified into two streams of STEM and NON-STEM academic programmes. A total of 764 students are taking STEM academic programmes, while 1627 are specializing in NON-STEM academic programmes. The KUCCPS students who reported at the end of semester one of the 2023/2024 academic year as the target population of the study were 5807 students. The sample size was almost 42 per cent of the target population. The questionnaire was the sole instrument used for data collection, and it was distributed randomly among the respondents at the various lecture halls where the first years were being addressed during the orientation period in the line faculties/schools. Data collected was analyzed by use of descriptive statistics in terms of percentages and frequencies. While findings were presented by use of tables, graphs and pie-charts.

## 4. Results and Discussion

### 4.1 Demographics of the Respondents

The study findings are presented in the demographics of the respondents, which may inform categorization as well as the empirical parameters of the respondents.

The demographics of the respondents were examined with respect to gender composition, academic programme, disability status, school category attended, and birthright position.

#### 4.1.1 Gender Composition

Table 4.1 demonstrates the gender composition of the respondents, which was in the proportion of 56 per cent being male, while females accounted for 44 per cent. This shows that more boys accessed university education than girls. The concerns about the girl child's education by various education stakeholders should be emphasized.

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According to the Global Out of School Children Initiative (OOSCI, 2021), 2.5 million children were out of school, with girls accounting for 47.00 percent of the number and boys taking 53.00 percent. In addition, there are 1.9 million children out of the 2.5 million out of school living in drought-prone areas, and girls account for 894,280.

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#### 4.1.2 Disability Status

The study findings revealed that slightly over 1.00 percent of the students who joined MMUST in the academic year 2023/2024 have some form of disability. These are a vulnerable group of students who are given preference in the financing of students joining higher institutions of learning. Figure 4.1 demonstrates the disability status of the first cohort of students under the new Public Universities Funding Model at MMUST.

The students who are living with any form of disability are expected to have relevant documents to support their status. This will enable them to have higher chances of getting their higher education fully funded by the government because they will be classified under the first tier of the vulnerable group.

### **4.1.3 Women Demographic Matrix 1: Disability Status**

The 34 students out of 2391 respondents living with disability, 15 were women, as Figure 4.2 shows;

Although more men are living with disabilities, the ratio between the two genders is relatively insignificant because women are equally significantly affected at 44.12 percent as compared to men at 55.88 percent.

The Kenya National Bureau of Statistics (KNBS/2019) reveal that the population of people living with disability stand at 618,270, with more women than men living with disabilities. The female population numbered 373,883 compared to men at 244,387, with the majority in the rural areas at 438,778, as the urban share takes 179,492.

### **4.1.4 Placement Academic Programme**

The study classified the academic programmes into two categories of STEM and NON-STEM. The study revealed that the majority of the students pursue NON-STEM academic programmes, which accounted for 68.05 percent while the STEM academic programmes had 31.95 percent as Figure 3 shows. The effort put in by different stakeholders to encourage students to pursue STEM subjects has yet to create a significant impact, while these are the academic programmes that may be used as levers to drive industrialization in the country, as envisaged in the Kenyan Vision 2030.

### **4.1.5 Women Demographic Matrix 2: Academic Programmes Placement**

A total of 764 students were placed in STEM programmes while 1627 students joined MMUST to pursue NON-STEM programmes. The proportion of women was examined in each of the academic programmes, and the study found out that 308 female students were taking STEM while male students were 456. The percentage difference between the two sets of gender was 19.37 percent (456-308 out of 764).

The study emphasis was made on the STEM academic programmes because they are envisaged to catalyse the country into a middle-income economy by the year 2030. The contribution of women through skills and knowledge application to the country's industrialization may be undermined by the significant gap of almost 20 percent to that of men.

According to the Commission for University Education (CUE, 2016), the fundamental goal of universities is to provide manpower for both the private and public sectors for the overall national development. Also, Nakhone (2004) describes a university as a place for the pursuit and dissemination of knowledge. It is a social institution that enjoys a high degree of autonomy and academic freedom. A university is generally perceived as a social, cultural, technological and economic agent of change, hence the need to have barriers to its access limited and eliminated.

### **4.1.6 School Category Attended**

The government categorization of secondary schools in the country is in the form of national, extra-county and county secondary schools. The study examined the proportion

of students who joined MMUST in the academic year 2023/2024 distribution according to the schools they studied in at the secondary level.

The study discovered that the majority of the students who joined MMUST in the 2023/2024 academic year came from extra-county schools, accounting for 46.92 percent followed by county schools at 42.83 percent with national schools being the least at 10.25 percent. These findings are demonstrated in Table 4.2

#### **4.1.7 Women Demographic Matrix 3: School Category Attended**

The secondary schools, according to the Ministry of Education, are divided into three categories of national school, extra county and county schools. Table 4.3 shows the distribution of the respondents' secondary schools attended as per each of the three categories:

In the national and the extra county schools, more boys registered higher attendance than girls at 53.88 and 46.12 percent respectively. Almost a similar percentage was repeated at the extra county schools, accounting for 51.16 and 48.84 percent respectively.

However, at the county schools, the trend changes with more girls than boys registering in such schools in the proportions of 57.62 percent and 42.38 percent respectively, as Table 4.3 demonstrates. The last category of schools is faced with challenges of inadequate infrastructure, teacher-pupil ratio disproportion, significant students' debtor balances, suppliers' pending bills, as well as low funding from the national government, among others.

In financing education, an individual incurs both direct and indirect costs, which proportionately affected student's retention. Kenya is one of the Sub-Saharan countries which waived payment of fees in secondary schools in 2007. An equal capitation is provided per student in secondary schools to enhance students' enrolment, retention and access to quality education (ROK, 2012). The problem of students' dropout in schools is mainly manifested in students from poor backgrounds (Tuwei, 2013).

These challenges negatively impact the girl's education, coupled with the vulnerable nature of the girl child. The bottom-up economic model of the "Kenya Kwanza" government should resonate with this category of schools by channelling financial resources to improve their conditions and address staffing gaps.

## **2.6 Birth Right Position**

The study examined the birthright position of the students and found out that most of the students are the firstborn in their families, at 700 out of 2391 respondents, followed by second and third born students at 573 and 485 out of 2391, respectively. The list numbers were for the eighth- and ninth-born, with 59 and 20 students, respectively. This is shown in Table 4.4.

## **4.2 Empirical Needy Index Parameters**

The study investigated the family background of the students in both economic and social spheres to determine the need index position of the learners. These were interrogated in terms of school type, basic education institution, parental standing, evidence of death occurrence and financier at the secondary level of education. Also examined were fee arrears at secondary school, parental employment status, economic activity of parents and family income. In addition, disability status of parents, the number of siblings in the family, the meals taken in a day and the type of shelter the family resides in were evaluated. The study also looked at the amount of upkeep money given to the students, as well as the financial support of the other siblings in a family.

### **4.2.1 Boarding and Non-Boarding Schooling**

The cost of learning in a boarding secondary school is relatively higher than that of a day secondary school, according to the government fee structure guidelines. Therefore, for the parents and guardians who may not be able to take their children to boarding secondary schools, they may prefer having their children learn in a day secondary school.

The decision to choose either of the schooling arrangements is based on the economic ability of the parents or guardians; hence, it is a valid basis for evaluating the funding needs of a learner for higher education.

The study found out that 64.95 per cent of the respondents learnt in boarding secondary schools, while 35.05 schooled in day secondary schools, as Figure 4.5 shows.

This shows that most of the parents and guardians were capable of meeting the boarding secondary schooling for their children, while slightly above a third are economically less empowered and could only afford to sustain their children in the day secondary schools. However, it is vital to recognize that the boarding schools tend to post better KCSE results, hence another key consideration when preference is given to such schools by the parents. Even in the circumstances where the parents or guardians are not financially stable, they would fumble from various avenues of raising fee to keep their children in school.

It is vital to recognize that in the day secondary schools, it is only the lunch money which the parents are expected to pay, with some minimal unofficial levies such as remedial money for extra lessons or revision materials consolidation. This makes it relatively affordable for parents from inadequate economic backgrounds. Tuwei (2013) posits that in financing education, an individual incurs both direct and indirect costs, which proportionately affected student's retention and that the problem of dropout in schools is mainly manifested in students from poor backgrounds.

### **4.2.2 Women Empirical Needy Index Parameter 1: Boarding and Non-Boarding Schooling**

The study found out that 1554 (64.95 percent) students attended boarding secondary schools while 837 (35.05 percent) students studied at day secondary schools. To those

who attended the boarding schoolings the percentage of the girls was lower at 44.34 percent as compared to boys at 55.66 percent.

This means that the advantages associated with the boarding schools benefit more boys than girls, hence among the causal factors of having more boys getting quality grades of placement at the universities than girls.

In the case of the day schools, still more boys were registered than girls; however, the percentage difference was relatively narrower compared to the boarding school ratio difference. The girls' percentage stood at 46.71 percent while the boys were at 53.29 percent. It means that more girls may be attending day schools as compared to those who attend school in boarding schools.

The challenges experienced in the day secondary schools by the students, such as long distance from home to school, prevalent teen pregnancies, limited revision time off teacher contact hours among others, may weigh the girl child in her academic performance, as Figure 4.6 shows.

The cost of maintaining a child in a boarding secondary school is higher than in a day school, thus household financial framework may determine the type of school one takes a child to. When such a critical aspect of examination does not feature in the new funding model, then some students may be disadvantaged in their classification.

#### **4.2.3 Basic Education Institution (Public or Private)**

The basic level of education encompasses primary and secondary education. At these levels, some learners may join public schools while others join private schools.

In public primary schools, there are no charges parents are expected to pay, while in private primary schools, parents cover everything that goes into their children's education. Thus, the study may state that those who are taking their children to private schools at the primary level of education are relatively economically endowed, unlike those whose children learn in the public primary schools.

The study revealed that 84.23 percent of the respondents attended public primary schools and only 15.77 per cent went to private primary schools. The situation was not different even at the secondary level, with 97.74 percent learning at the public secondary school and only 2.26 per cent in private secondary school, as Table 4.5 demonstrates.

At the secondary level, the number of students studying in private schools is quite low at 2.26 percent and this may be attributed to a number of factors besides economic issues. For example, in terms of academic performance, most of the public secondary schools are performing better than the private schools, a situation which is not the case for the public primary schools.

#### **4.2.3 Parental Standing**

Parental standing, according to this study, refers to whether the parent(s) is or are alive or not. Remember the burden of upbringing is relatively heavier in families where one or both parents is or are deceased, hence a key determinant of the needy index of a learner.

According to the study findings, 24.97 per cent of the students who joined MMUST in the academic year 2023/2024 are having either both parents are dead, or one of the parents is deceased or a single parent upbringing in the specific proportions of 1.21 percent, 10.25 percent and 13.51 percent respectively. This group of students may be categorized as either vulnerable or very needy, besides other considerations. However, 75.03 per cent of the respondents had both parents alive, as Table 4.6 shows;

Although over 75.00 percent of the respondents had both their parents alive, this alone may not automatically exclude them from the category of vulnerable and needy because both parents may be unemployed, or some may be living with disability, or even the family size may be weighing on them.

#### **4.2.4 Women Empirical Needy Index Parameter 2: Parental Standing**

Parental standing parameter examined single-parent upbringing of children, or where one of the parents is dead. The study found out that 323 (13.51 percent) of the respondents were brought up by single parents while 245 (10.25 percent) had one of the parents dead. The respondents who had both parents dead were 29 (1.21 percent), while those with all parents alive were 1799 (75.03 percent).

The study focused on those who were brought up by single parents and those who had one parent dead. The vulnerability of single parents is enormous; their children may be economically disadvantaged in their upbringing and schooling. From the 245 respondents who had one of the parents dead, 169 (68.98 percent) had their fathers deceased and 76 (31.02 percent) lost their mothers. This shows that there were more widows than widowers taking care of their children. However, for the case of the single parents who accounted for 323 out of 2391 respondents, the single mothers were the highest at 65.63 percent (212), while single fathers stood at 34.37 percent (111) as Figure 4.7 shows.

Women's vulnerability is spurred by natural attritions when their spouses pass on or when they are single parents in raising their children. They commonly engage in small-scale businesses, or those who are employed are commonly in unstable employment opportunities, such as waiters, bar maids, domestic workers, laundry attendants, tea pickers, cleaners, among others, as the annual Kenyan Economic Survey reports indicate. The external shock of COVID-19 badly affected these groups, and even currently, as the economic situation in Kenya is rather constricted, they are feeling the impact of the economic downturn in the country. This means that their children's education is under serious threat. The new funding model could have gone further to examine such parameters to inform categorization of students.

#### **4.2.4 Evidence of Death Occurrence**

One of the most important documents to ascertain whether a student is needy is the provision of a death certificate in a case where one or both parents are deceased. The study sought to examine the state of the availability of death certificates among the respondents whose parents might have passed on.

The study found out that 274 respondents had either both of their parents dead or one of the parents deceased. It is from this group that the study sought to determine whether they have death certificates to authenticate their status. The finding was that 23.36 per cent did not have the death certificates. This may limit such students from being favourably rated in the needy index ranking.

This means out of 274 students who do not have either parent or are of the parents deceased, 64 of them did not have death certificates, as Figure 4.8 shows. There is a need for civic education to the public on the essentials of having such documents, as well as ensuring that the modalities of applying for them are simple to enable ease of access.

#### **4.2.5 Secondary Education Financier**

The study revealed that most of the students attended public secondary schools, and it further probed into the finances of their education at that level. It was discovered that parents and guardians topped as independent financiers at the secondary level of education. The other sources of financing were grouped as composite, and in this category, it is a combination of different bodies or organizations such as the National Government Constituency Development Fund (NG-CDF). County Bursary, community fund raisings, church support, scholarships or fee waiver by some school managements. Figure 4.9 shows that 52.50 percent of the respondents' secondary education was paid for by their parents, while guardians accounted for 9.62 percent. However, the composite sources took 38.10 per cent. This group of composite sources basically carry the vulnerable and very needy students. For example, a case of NG-CDF or County Bursary is usually awarded to students from poor family backgrounds, although political undertones at times undermine the needy-based preference principle.

In the new-university funding model, over 38.00 per cent of the students falling under the composite sources of financing stand at an advanced position for favorable ranking in the funding model.

From the study sample of 2391 students, 910 students' secondary education was financed by a composite of sources. The number was only second to parents who had 1250 students being independently paid for by their parents. The study's attention was further drawn to this set of students who were financed by a host of combined sources, and did an in-depth analysis to determine the proportion of each of the composite sources.

The study discovered that most of the students were being financed by County Bursary money, followed by NG-CDF at 18.33 and 16.68 percent respectively. Community fund-raising significantly contributed to the financing of secondary education, accounting for 14.49 per cent. Waiver by the school's management also had a significant contribution to the source at 11.86 per cent. The school management's waiver shows how schools may be a reliable link in identifying the needy students who require funding at the secondary level of education.

Under the other category among the composite sources were cross-cutting sources which may involve parents, guardians and composite sources. Its contribution to the

composite source stood at 31.07, being the highest contributor. This shows that apart from parental financing of secondary education, many families are still gambling in the financing of their children's education, which is a clear sign of the weak financial framework of many families in the country.

Figure 10 shows the proportion of what each of the composite sources of finance at the secondary level of education is contributing.

#### **4.2.6 Women Empirical Needy Index Parameter 4: Financier at Secondary Level**

The study found out that parents and guardians are the single most independent financiers of secondary education for the respondents. However, multiple sources at times are roped in to finance the secondary education of the learners on the basis of the needy situation of the learners.

According to the study findings, parents accounted for 52.28 percent in financing secondary education of their children, while guardians contributed 9.62 percent. However, the multiple sources accounted for 38.10 percent. This particular source of financing was further examined on the basis of parental standing of the beneficiaries, and gender proportion of the learners and the results were as demonstrated in figures 4.11 and 4.12, respectively; the 38.10 percent represented 910 respondents out of a sample of 2391.

When objectivity and fairness are at risk when awarding NG-CDF or County Bursary or Elimu scholarship, among other multiple sources, beneficiaries from single parents/one parent dead/total orphans are adversely affected because they form the majority who depend on the multiple funding sources. To those whose parents were both alive, they also drew from this source of funding due to household size, unemployment status of the parents, disability conditions, and low per capita income, among others.

The internal consistency of the study findings, as demonstrated in the aggregate gender of the 2391 respondents in Table 4.1, shows that the study findings are highly reliable, even when it came to the gender proportion of the respondents who benefited from the multiple funding sources during their secondary school education level.

#### **4.2.6 Fee Arrears as at KCSE Sitting**

Management of secondary schools has been decrying the huge fee arrears most of the students have at various schooling levels. The Auditor General's Office has equally reported significant student debtors. The trend of fee payment may be associated with economic factors such as family income, regional economic activities and poverty levels, among others. These aspects were put into consideration in examining school fee arrears at the KCSE sitting by the respondents. The study found out that most of the students had some fee arrears of between Ksh. 5,000 to Ksh. 15,000 as at the time they were sitting for their KCSE examination, as Table 4.7 demonstrates.

These findings show that in the case of students learning at the Day Secondary Schools, three-quarters of a year's school fees were not paid, or over one year's school fee had not been paid for those students who had fee arrears of greater than Kshs 5,000 but

less than or equal to Ksh. 15,000 per student. This shows the weak financial framework of many families in the financing of their children's education. In addition, the management of the secondary schools is constrained financially in discharging their responsibilities under such financial conditions. No wonder the pending bills at the various secondary school as the audited financial statements of the basic educational institutions reveal.

#### **4.2.7 Women Empirical Needy Index Parameter 5: Fee Arrears at KCSE sitting**

The study discovered that as at KCSE sitting, majority of the students (1789) had fee arrears ranging to less than Ksh 5,000 or equal to Ksh 5,000 but not more than or equal to Ksh. 15,000 as Table 3.3 shows. When further analysis was carried out to determine the type of school the students who had fee arrears in that range learnt from, it was discovered that 49.52 percent (886) came from day schools, while a slightly higher percentage of less than one percent came from boarding secondary schools at 50.48 percent (903), as Figure 4.13 demonstrates.

Remember, in the previous findings of this study, we found out that most of the students who were coming from weak economic backgrounds (single-parent upbringing, unemployed parents, total orphans, among others) were the ones who dominated the day schools as well as those of the female gender. The interpretation of this is that fee arrears as at the KCSE sitting may provide a validity basis of examination in the categorization of the students for funding at the public university in Kenya.

#### **4.2.8 Parent Employment Status**

In a family where both parents are alive, the study sought to determine their employment status in establishing the economic framework of the respondents' parents. The study discovered that less than 6.0 percent of the respondents' parents were both employed, with over 70.00 percent of the respondents' parents being unemployed, as Table 4.8 shows.

The economic framework of the majority of the respondents' parents is very weak because 70.79 per cent of their parents are not employed. The education of the respondents is at risk since, in the other findings, the study realized that it's the parents who are taking the greatest percentage of responsibility for secondary school financing at 52.28 per cent, as Figure 3.3 demonstrates.

If the categorization of the funding model is anything to go by, then over 70.00 per cent of the students could be falling in the categories of the vulnerable and very needy.

#### **4.2.9 One Parent Existing and Employment Status.**

The study sought to establish the employment standing of respondents' parents who have only one parent living. It was discovered that 88.56 per cent of such parents are unemployed, with only 11.44 per cent having formal employment, as Figure 4.14 shows.

The financial framework of one parent existing in taking care of the education financing of their children is very weak making their children being in a position to be considered as vulnerable and very needy in the new public universities funding model.

#### **4.2.9 Economic Activities of Parents**

Economic activities of the respondents' parents were investigated to determine how the family income flows, even for those parents who are employed. The side economic engagements were grouped as others, comprising Juan Kali works, Boda-boda operations, loaders, and entertainment activities, along with others, as Figure 4.15 illustrates.

It is vital to note that multiple responses were involved in this particular question because you find one household engaging in more than one economic activity to make both ends meet in the quest for economic survival.

According to KNBS (2021) creation of paid jobs has been limited, and as a result, most of the poor remain engaged in agriculture or self-employment activities where productivity and earnings are dependent upon the availability of assets that the poor lack.

Farming remains a major economic activity for many households in Kenya, hence the bigger chunk of money for financing education is from farming activities. Small-scale trading earns a living for many of the families in the country, thus improvement of the conditions for the traders by both the national and county governments is necessary to tap into the income streams from the sector.

These findings are consistent with the common trend of fee payment patterns by parents and guardians. When there are external shocks such as drought or famine in the country, many parents struggle to pay school fees for their children, and schools suffer from material students' debtors' accounts balances.

#### **4.2.10 Monthly Family Income**

The monthly income of the respondent's families was established through a closed-ended question, which categorized income into various denominations. The study found out that the majority of the respondents were of the opinion that the family income was either equal to or less than Ksh. 5,000.00 per month. This means that many families in Kenya earn less than a dollar a day. Coupled with economic hardship in the country post-COVID-19, the situation is worsening for many families. Table 9 shows the monthly income distribution of the respondents' families.

Many families in Kenya are barely surviving, and the burden of keeping their children in school or in institutions of higher learning is increasingly becoming a challenge, if the respondents' families' monthly income distribution is anything to go by.

#### **4.2.11 Disability Status of the Parents**

Though disability is not inability, persons living with disabilities are disadvantaged in certain aspects, thus they may not fend for their families on equal footing as people

without any form of disability. The study revealed that less than 5.00 percent of the respondents' parents are living with disability, as Figure 4.16 shows.

The respondents whose parents are living with disability may automatically qualify to be in the category of the vulnerable and very needy due to the inherent challenges their parents may be facing to fend for the families.

#### **4.2.12 Number of Siblings in a Family**

One of the main reasons for reproductive health education to families is to educate them on why it is necessary to have the number of children that will not burden a family economically. Family burden may be more severe when the number of children is relatively large per household.

It is on this basis that the study sought to examine the number of siblings the respondents had in a family. The study categorized the siblings in the range of between 1-3, 4-6, 7-9, and then 10 and above, as Table 9 shows.

The majority of the respondents' siblings ranged between four and six children in a family at 51.82 per cent followed by those in the range of one to three at 25.64 per cent, with just a few having siblings numbering ten and above at 4.31 per cent. It is evidenced that over 75.00 per cent of the respondents have a heavier family burden in respect to those with siblings in the range of four to ten and above, as Table 3.6 demonstrates.

This means that over 75.00 per cent of the respondents ought to have been in the category of very needy on the basis of the family burden per household.

#### **4.2.13 Number of Meals Taken in a Day**

Consumption pattern is a key indicator of the economic condition of a family or a household. Therefore, the number of meals a family takes in a day may help shed light on the economic condition of the family. The study found out that many of the families take two meals in a day, at 56.38 percent with 33.37 percent having three meals in a day, as Figure 4.17 shows.

This shows that almost 70.00 per cent of the households may not manage three square meals in a day. It manifests a weak economic framework in most households. The respondents coming from such families could be categorized as either vulnerable or very needy in the new public universities funding model.

The Kenyan Annual Economic Survey has consistently used shelter type to evaluate the economic status of the constituents from different counties. The study adapted that measure to examine the economic condition of the respondents in consideration of the funding-needy index applied in the Kenyan public universities.

The study found out that only 15.55 per cent of the respondents were living in permanent houses, while 33.84 per cent sheltered in semi-permanent houses. The study may conclude that about 49.00 percent could afford a relatively decent shelter, but 51.00 per cent stayed in mud-walled and grass thatched houses or mabati suite shelters, as well as other forms of indecent shelters, such as manyatta shelter or timber-walled houses, as Table 4.10 shows.

This shows that many of the respondents lacked decent shelter at over 51.00 per cent as the study findings reveal. This is a clear indication of weak economic status; thus, over 51.00 percent of the respondents would be in the category of vulnerable and very needy, which is the new funding model of the Kenyan public universities.

#### **4.2.15 Upkeep Money Given**

The respondents were requested to state the amount of money they were given as they left home to MMUST as their upkeep money. It was discovered that most of the respondents were given either Ksh. 1,000 or less than that as their commencement upkeep at 41.19 per cent followed by those who were given more than Ksh 1,000 but less than or equal to Ksh. 2,000 at 27.48 percent. The respondents who were given more than Ksh 4000 were less than 5.00 percent at 4.48 per cent as Table 11 shows.

When the majority of parents or guardians, at almost 70.00 per cent, give their children less than Ksh 1000 or just Ksh 1000, or they give more than Ksh 1000 but less than or equal to Ksh 2000 as their upkeep money to be spent in a month, it means that the majority of such students spend an average of Ksh 50.00 in a day. This percentage is deduced by dividing the lower limit of Ksh 1000 by 30 days, which will give you Ksh 33.33 per day; then the upper limit of Ksh 2000 is also divided by 30 days to get Ksh 66.66 per day. You then find the average of the two, which is Ksh 33.33 plus Ksh 66.66 to get Ksh 99.99, which you divide by two to get Ksh 49.99, which may be rounded off to a whole number of Ksh. 50.00.

This is a clear indication that many parents are struggling economically to sustain their children in the institutions of higher learning. Some of the social evils some students engage in may be spurred by the economic constraints they are facing. Even those students who were given more than Ksh 4,000 could hardly spend more than Ksh 150.00 in a day, as Table 4.11 demonstrates.

#### **4.2.16 Education Financers of Siblings**

Have sought to establish the existence of siblings studying their education at both basic and tertiary institutions, and it was found out that indeed the respondents had their siblings undertaking education at different levels.

The study further probed to establish who is responsible for financing their education. It was realized that parents and guardians are still the highest independent or stand-alone financers in households or families. However, a composite of various financers significantly contributes to funding education at both basic and tertiary levels, as Table 4.12 shows.

These results mirror closely with the findings on a related question on who was responsible for the respondents' secondary education, which had parents standing at 52.28 per cent, guardians at 9.62 per cent and composite at 38.10 per cent.

## 5. Recommendations

### 5.1 Specific Recommendations

The paper has identified the following areas in the new funding model for improvement:

- 1) Additional socio-economic evaluation requirements should be included in the application platform for both the Higher Education Loans Board (HELB) and the Government Scholarship to inform fair categorization of the students in the four categories of vulnerable, very needy, needy and less needy. Currently, what is contained in the evaluation requirements is insufficient and relatively inappropriate. The additional socio-economic evaluation requirements the paper recommends are; type of family shelter, number of meals taken in a day, fee arrears as at Kenya Certificate of Secondary Education (KCSE) sitting, financier(s) of the siblings' education, number of siblings in a family, nature of parent(s) employment, school type attended (day/boarding) and birth right position (1st or 2nd born etc.).
- 2) Categorization of students to be done at the point of KCSE registration. The process should be initiated at form three with the help of the School Principals, where the various requirements are filled and attested to accordingly to help the Ministry of Education, Science and Technology categorize the students in the four strata of need. At the point of sitting KCSE, the candidate is expected to quote his or her category of need. Just like the same way we have Unique Personal Identification numbers (UPI) of a learner, the categorization for funding purposes can be done at the secondary school exit point, and a unique identification number can be given to each student. Room for appeal is already in place, and where one feels categorization was not fairly done or where status changed due to death or otherwise, appeal steps may be initiated accordingly. This will make students choose programmes on merit but not on the ability to pay, as is being witnessed now. In addition, the confusion which engulf the parents, students and institutions of learning as to which category the learners admitted are in, the amount of the government scholarship takes, HELB portion, as well as household share will be brought to an end. This will not only enhance better cash management and planning for the universities and TVETs but also prepare the parents earlier enough on what their responsibility is in the financing of their children's higher education.
- 3) Admission letters issued to students should quote the category of the student, and the fee guide should spell out what amount the government scholarship should cater for, the amount of HELB loan expected, and the portion the household should bear. The block issuance of the fee guide in the admission letters should be done away with. This has seen students and parents get adversely worried, and mental challenges are bound to occur under such circumstances. The significant number of students who failed to pick up offer chances at various public

universities in the academic year 2023/2024, as our research paper revealed, was due to these scary block fee guides that universities issued.

- 4) Affirmative action parameters of the girl child should be incorporated in the new funding model. The study found out that the majority of girls attend day schools and county schools, where the challenges in the public secondary schools are clearly manifested. In addition, the personal financial needs of a girl are relatively higher than those of their male counter-parts hence the justification for special consideration in funding their higher and university education. Affirmative action indexing parameters of female applicants should be embedded in the funding model due to the vulnerability of women in society, especially in the education sphere, such as teen pregnancies.

## 6. Conclusion

The paper has highlighted four policy tenet recommendations to improve the new public universities and TVETs funding model in terms of expanding socio-economic evaluation requirements, early categorization at KCSE sitting, classification of fee guides in line with the funding bodies and household responsibility, as well as infusion of affirmative action for the girl child education financing. In addition, we herein attach the entire research paper which we presented at the 17th MMUST Multi- Disciplinary International Conference to provide an in-depth understanding of our recommendations. Please pay special attention to the questionnaire used for data collection.

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### Conflict of Interest Statement

The authors declare no conflicts of interest.

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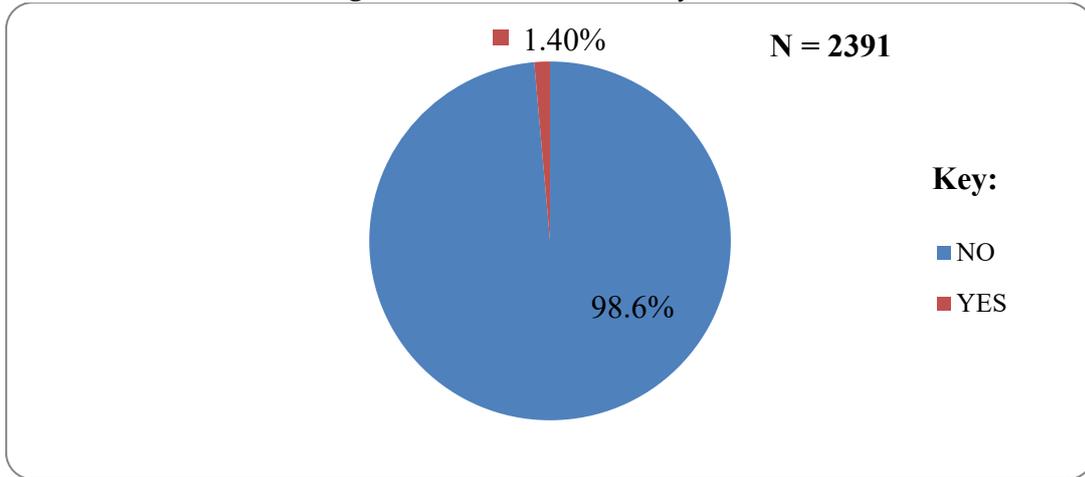
## Appendix: Figures and Tables

**Table 1: Gender Composition**

Gender	Frequency	Percentage	N = 2391
Male	1348	56	
Female	1043	44	
<b>Total</b>	<b>2391</b>	<b>100</b>	

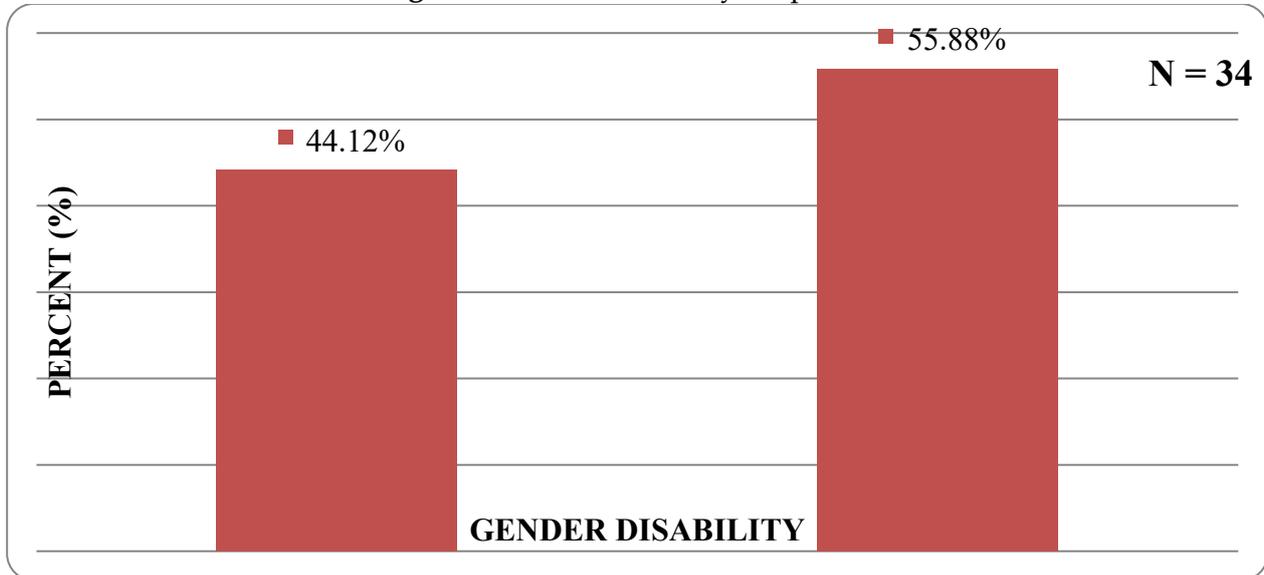
Source: Research Data, (2024).

**Figure 1: Students Disability Status**



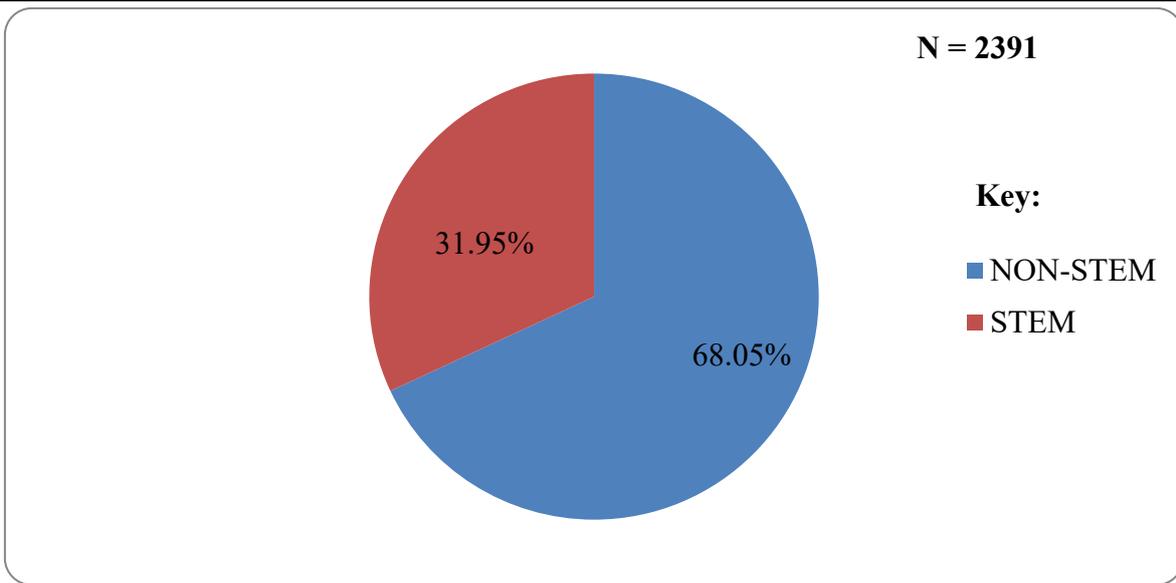
Source: Research Data (2024)

**Figure 2: Gender Disability Proportion**



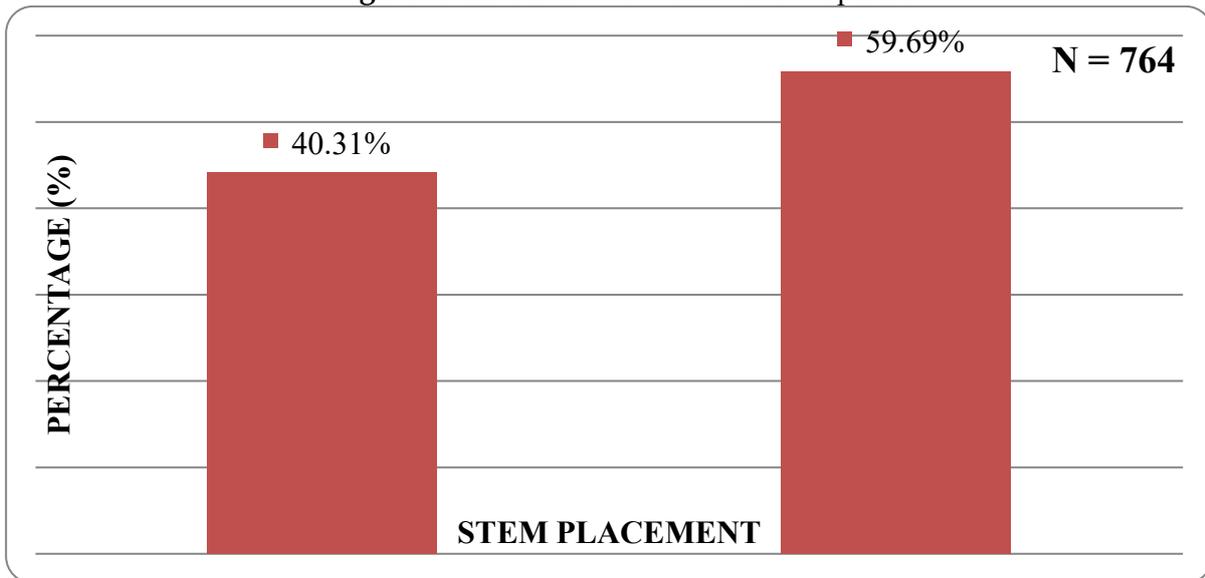
Source: Research Data (2024).

**Figure 4.3: Placement Status in Programmes**



Source: Research Data (2024).

**Figure 4: Gender STEM Placement Proportion**



Source: Research Data (2024).

**Table 2: School Category Attended**

Category	Frequency	Percent	N = 2391
National	245	10.24	
Extra county	1122	46.92	
County	1024	42.83	
<b>Total</b>	<b>2391</b>	<b>100.00</b>	

Source: Research Data (2024).

**Table 3: Gender proportion as per school category attended**

Category	Gender	Frequency	Percentage (%)
National	Female	113	46.12
	Male	132	53.88
<b>Sub-total</b>		<b>245</b>	<b>100.00</b>
Extra county	Female	548	48.84
	Male	574	51.16
<b>Sub-total</b>		<b>1122</b>	<b>100.00</b>
County	Female	590	57.62
	Male	434	42.38
<b>Sub-total</b>		<b>1024</b>	<b>100.00</b>

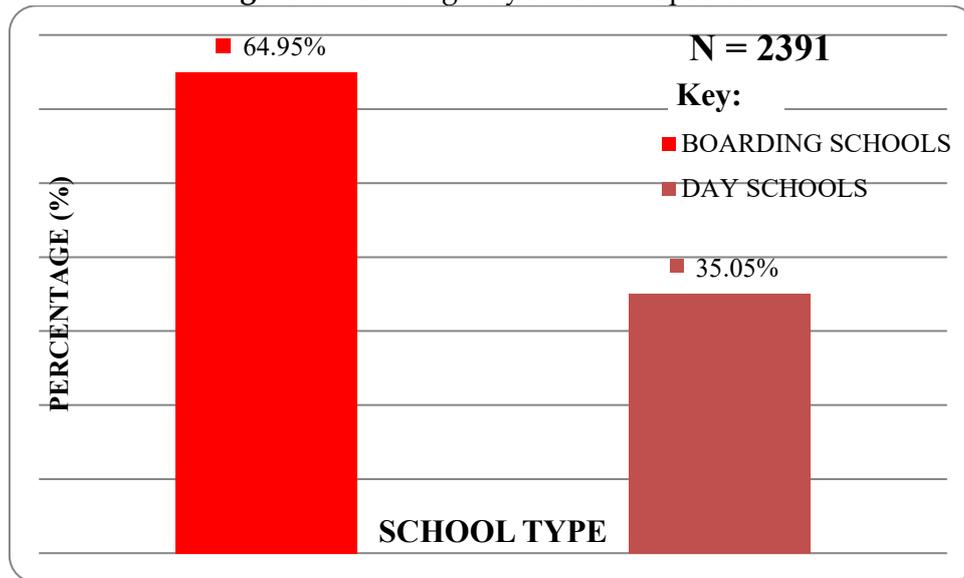
Source: Research Data (2024).

**Table 4: Birth Right Distribution**

Birth Position	1	2	3	4	5	6	7	8	9	Total	N = 2391
Frequency	700	573	485	176	191	118	69	59	20	2391	
Per cent	29.27	23.96	20.28	7.36	7.98	4.92	2.90	2.50	0.83	100.00	

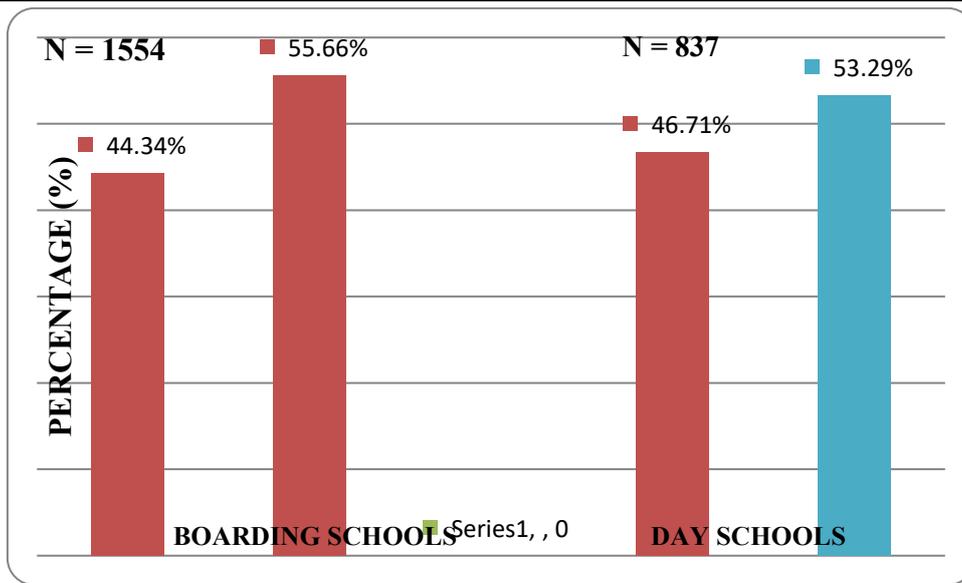
Source: Research Data (2024).

**Figure 5: Boarding-Day School Proposition**



Source: Research Data (2024).

**Figure 6: Comparing Gender Attendance of Secondary School Types**



Source: Research Data (2024).

**Table 4.5:** Institution of Learning at the Basic Level

Category Level		Frequency	Percent (%)	
Primary	Public	2014	84.23	N = 2391
	Private	377	15.77	
	<b>Total</b>	<b>2391</b>	<b>100.00</b>	
Secondary	Public	2337	97.74	N = 2391
	Private	54	2.26	
	<b>Total</b>	<b>2391</b>	<b>100</b>	

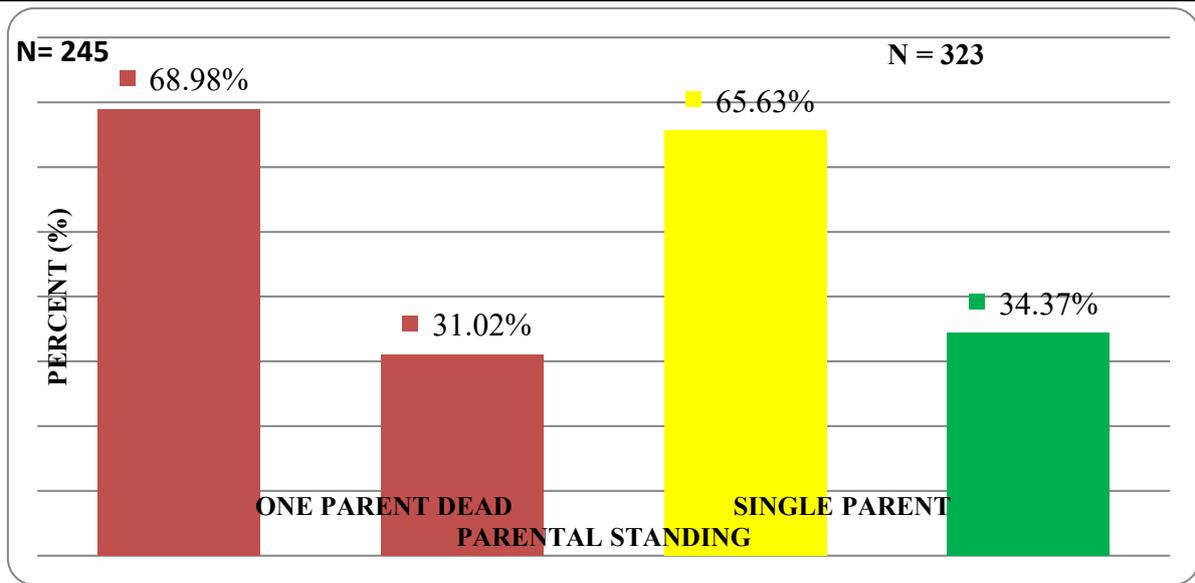
Source: Research Data (2024).

**Table 6:** Parental Status

Status	Frequency	Percent (%)	
Both a live	1794	75.03	N = 2391
Both dead	29	1.21	
One dead	245	10.25	
Single parent	323	13.51	
<b>Total</b>	<b>2391</b>	<b>100.00</b>	

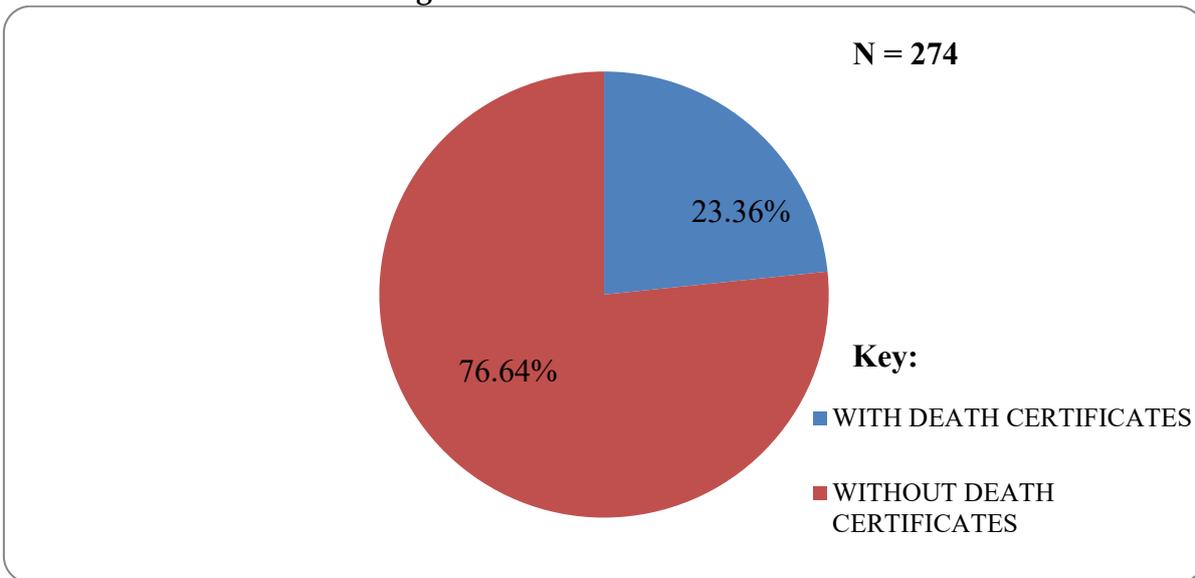
Source: Research Data (2024).

**Figure 7:** Respondents Parental Standing



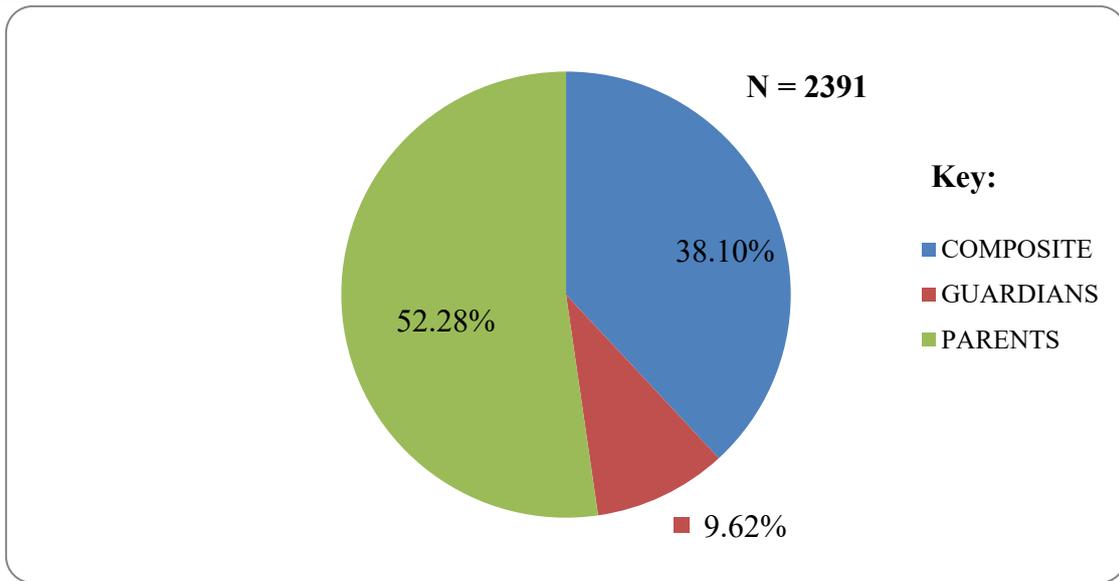
Source: Research Data (2024).

Figure 8: Death Certificate Status



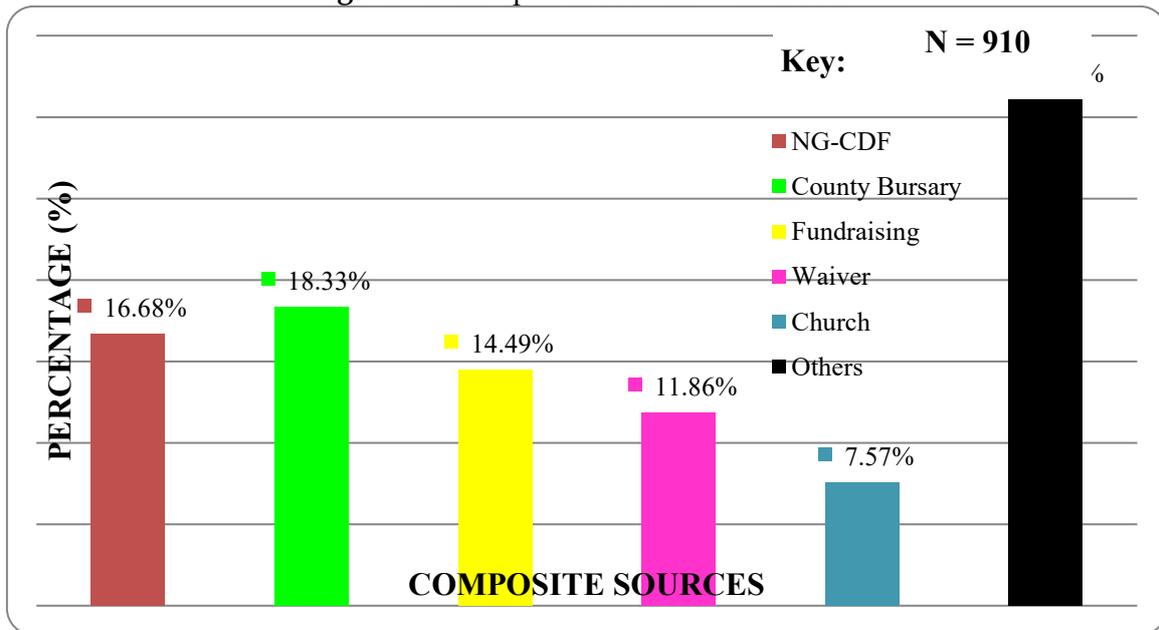
Source: Research Data (2024)

Figure 9: Secondary Education Financers



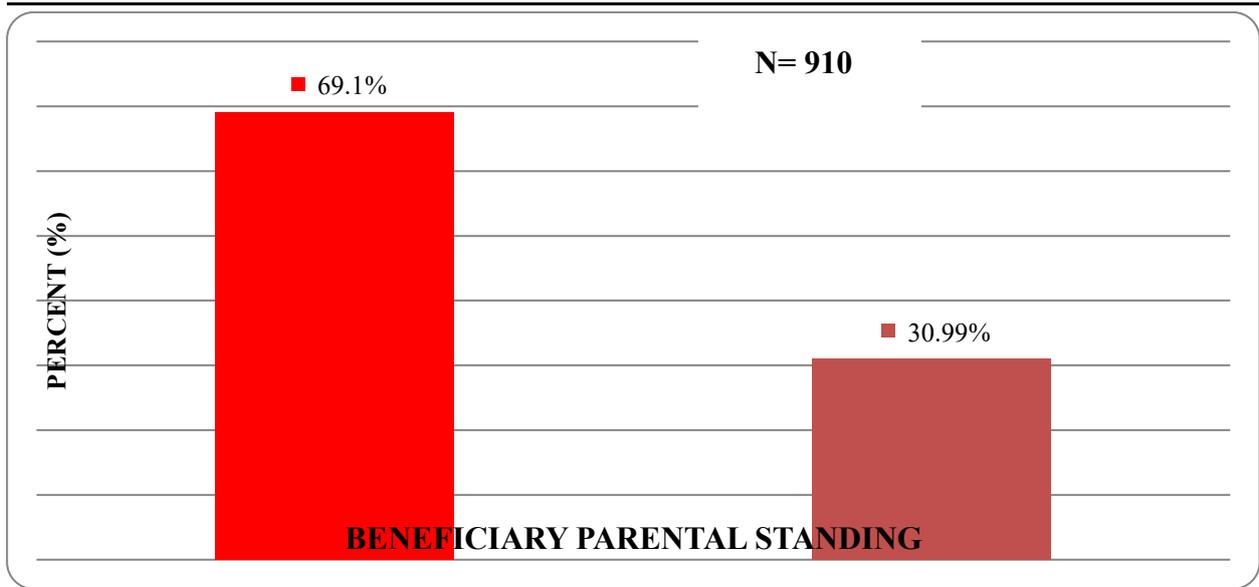
Source: Research Data (2024).

**Figure 10: Composite Sources Distribution**



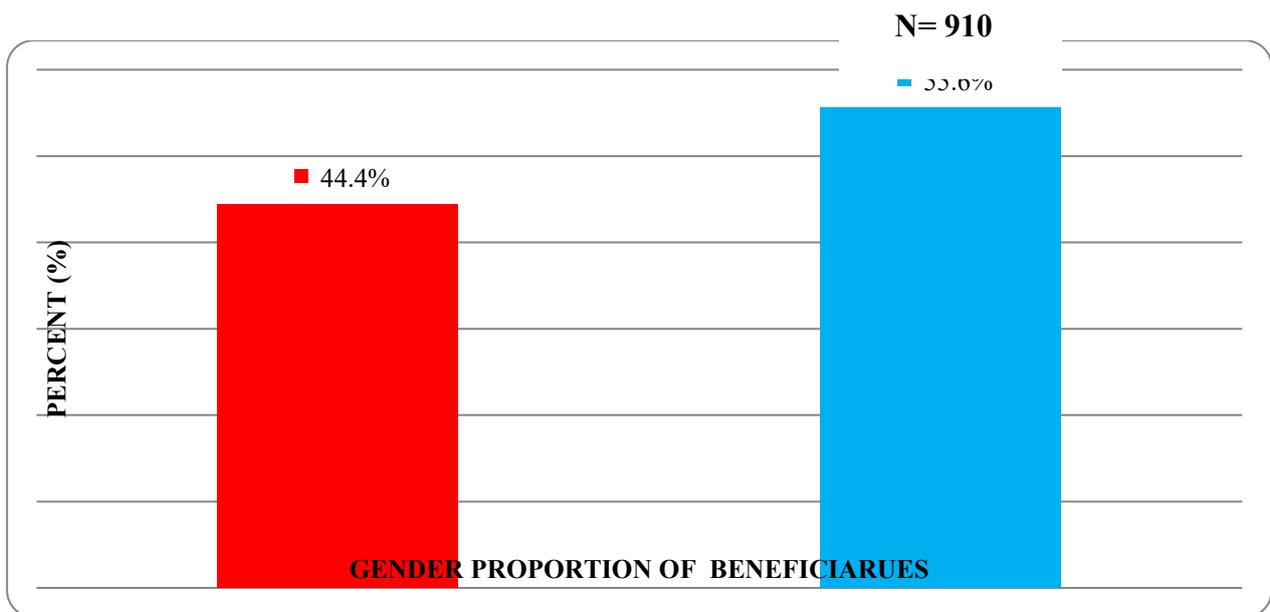
Source: Research Data (2024)

**Figure 4.11: Multiple Sources of Financing Beneficiaries Parental Standing**



Source: Research Data (2024).

Figure 12: Multiple Sources Gender Proportion of the Beneficiaries



Source: Research Data (2024).

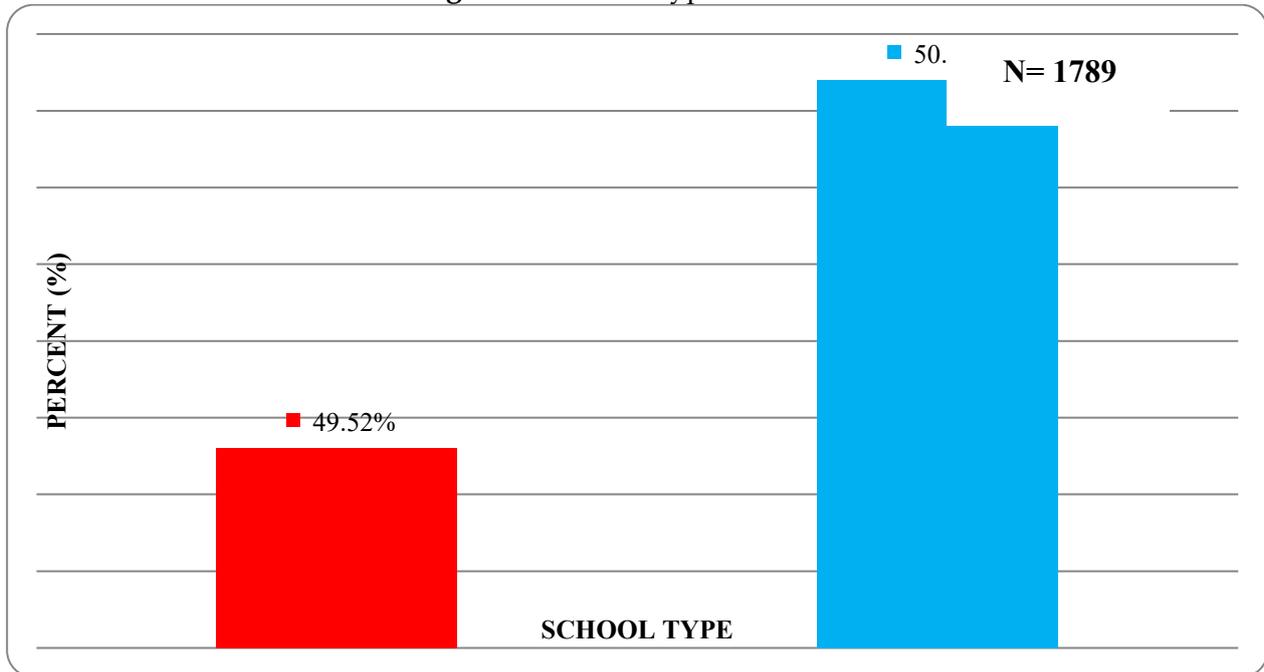
Table 7: Fee Arrear Standing

Standing	Frequency	Peecent (%)	Cum. Percent (%)	N = 2391
Nil	367	15.35	15.35	
FB ≤ 5000	1078	45.09	60.44	
FB > 5000 ≤ 15,000	711	29.74	90.18	
FB>15,000 ≤ 25,000	88	3.68	93.86	
FB > 25,000 ≤ 35,000	98	4.09	97.95	
FB > 35,000	49	2.05	100.00	
<b>Total</b>	<b>2391</b>	<b>100.00</b>		

**Key:** FB= Fe Arrears.

**Source:** Research Data (2024).

**Figure 13: School Type Attended**



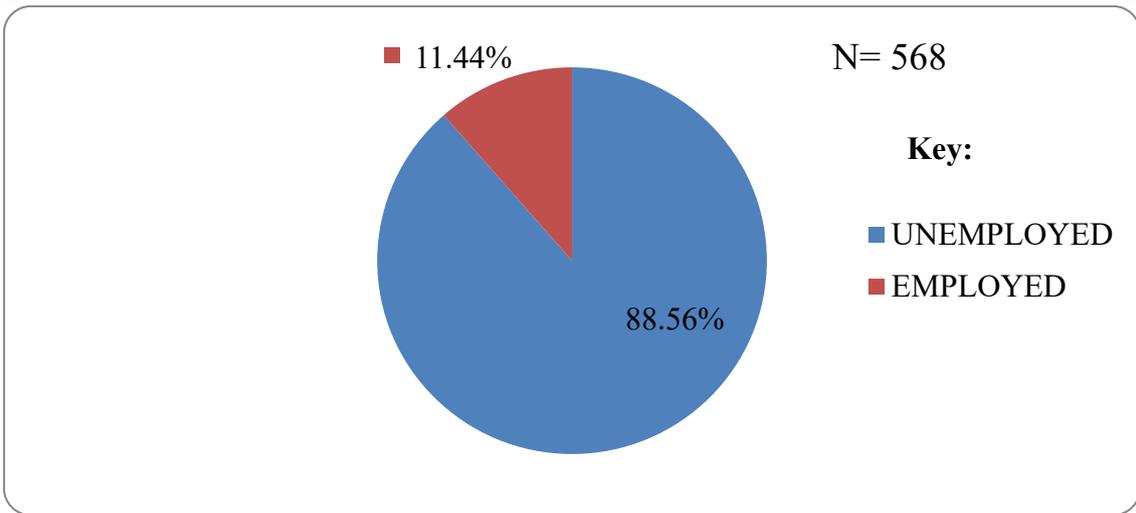
**Source:** Research Data (2024).

**Table 4.8: Parents Employment Standing**

Standing	Frequency	Percent (%)	Comm. Percent (%)	N = 1794
Both employed	103	5.74	5.74	
One employed	421	23.47	29.21	
Non employed	1270	70.79	100.00	
<b>Total</b>	<b>1794</b>	<b>100.00</b>		

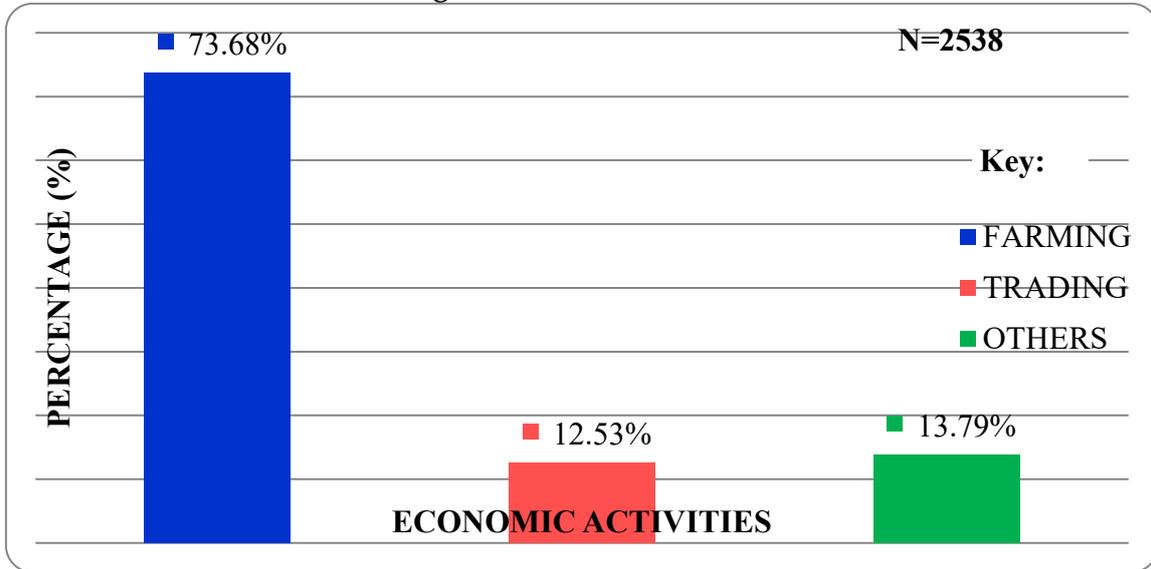
**Source:** Research Data (2024).

**Figure 14: One Parent Existing Employment Status**



Source: Research Data (2024).

Figure 15: Economic Status



Source: Research Data (2024).

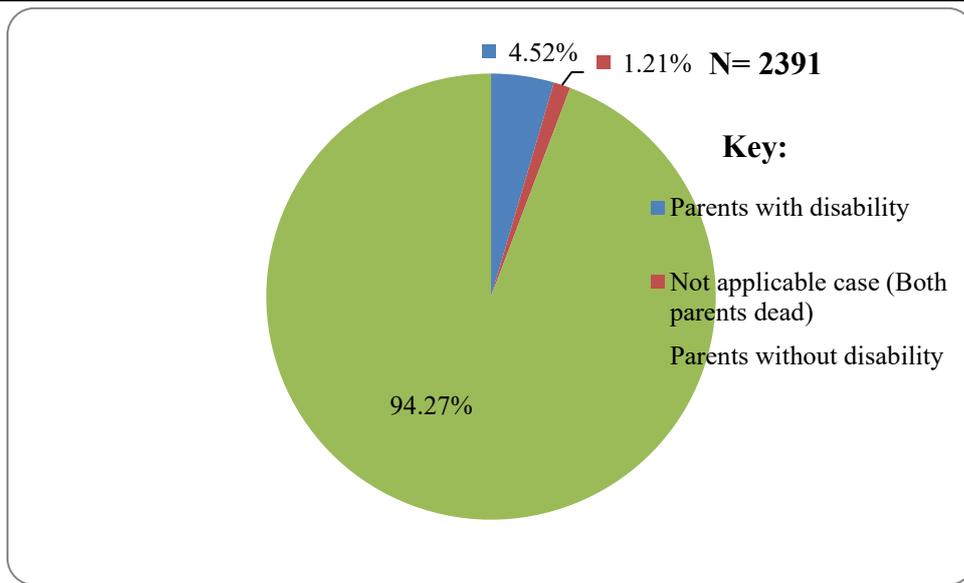
Table 9: Monthly Income Distribution

Income	Frequency	Percent (%)	Comm. Percent (%)
Nil income	367	15.35	15.35
$Y \leq 5000$	1078	45.09	60.44
$Y > 5000 \leq 20,000$	711	29.74	90.18
$Y > 20,000 \leq 35,000$	88	3.68	93.86
$Y > 35,000 \leq 50,000$	98	4.09	97.95
$Y > 50,000$	49	2.05	100.00
<b>Total</b>	<b>2391</b>	<b>100.00</b>	

Key: Y = Income.

Source: Research Data (2024).

Figure 4.16: Parents Disability Status



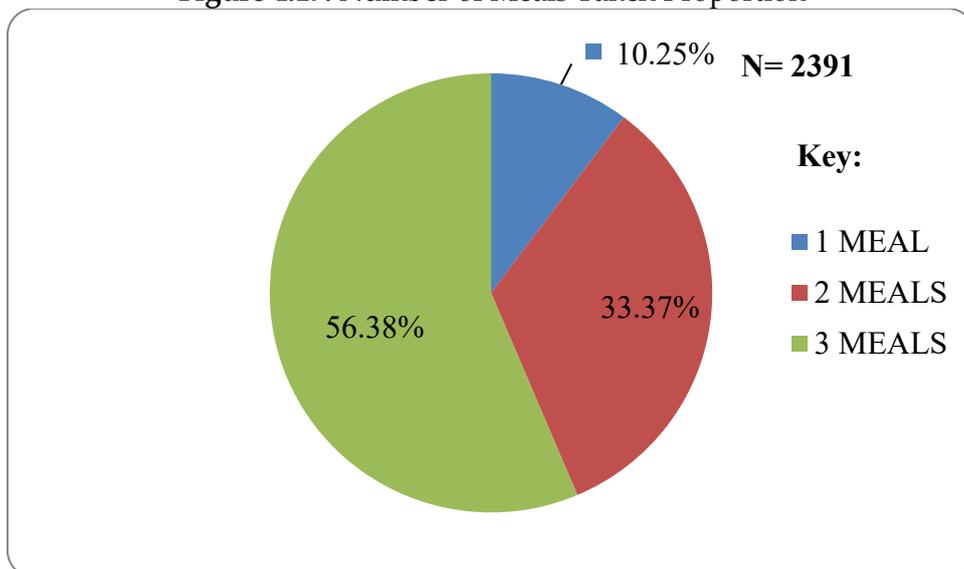
Source: Research Data (2024).

Table 4.9: Number of Siblings in a Family

Siblings	Frequency	Percent (%)	Comm. Percent (%)	N = 2391
1-3	613	25.64	25.64	
4-6	1239	51.82	77.46	
7-9	436	18.23	95.69	
10 & above	103	4.31	100.00	
<b>Total</b>	<b>2391</b>	<b>100.00</b>		

Source: Research Data (2024).

Figure 4.17: Number of Meals Taken Proportion



Source: Research Data (2024).

Table 4.10: Shelter Type

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House	Frequency	Percent (%)	Comm. Percent (%)	N = 2391
Permanent	372	15.55	15.55	
Semi-permanent	809	33.84	49.39	
Mabati suite	725	30.32	79.71	
Mud-wall & grass thatched	299	12.51	92.22	
Others; manyatta, timber wall	186	7.78	100.00	
<b>Total</b>	<b>2391</b>	<b>100.00</b>		

Source: Research Data (2024).

**Table 4.11: Upkeep Money Given**

Amount	Frequency	Percent (%)	Comm. Percent (%)	N = 2391
Up $\leq$ 1000	985	41.19	41.19	
Up $>1000 \leq$ 2000	657	27.48	68.67	
Up $> 20000 \leq$ 3000	397	16.60	85.7	
Up $>3000 \leq$ 4000	245	10.25	95.52	
Up $> 4000$	107	4.48	100.00	
<b>Total</b>	<b>2391</b>	<b>100.00</b>		

Key: UP – Upkeep.

Source: Research Data (2024).

**Table 4.12: Financing Siblings Education**

Financer	Frequency	Percent (%)	Comm. Percent (%)
Parent	975	40.78	40.78
Guardian	118	4.94	45.72
Composite; NG-CDF etc.	1298	54.28	100.00
<b>Total</b>	<b>2391</b>	<b>100.00</b>	

Source: Research Data (2024).