



ANALYSIS OF ENROLMENT OF FEMALE STUDENTS IN PRIMARY, SECONDARY SCHOOLS, AND TERTIARY INSTITUTIONS IN AUYO/HADEJIA/KAFIN-HAUSA FEDERAL CONSTITUENCY IN JIGAWA STATE OF NIGERIA

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Abstract: *The comprehensive analysis of female student enrollment in the Auyo/Hadejia/Kafin-Hausa Federal Constituency has revealed that primary enrollment peaks at ages 6-12 ($t = 2.58, p = 0.01$), but retention beyond this stage is challenging, particularly for married individuals who are less likely to enroll ($t = -1.96, p = 0.05$). Larger families are associated with higher educational attainment ($t = 3.45, p = 0.0006$), and there's a shift towards service-oriented employment ($t = 4.12, p = 0.00004$). Statistical tests show a significant association between marital status and employment ($\chi^2 = 22.36, p = 0.0001$), and between family size and enrollment ($\chi^2 = 18.47, p = 0.00035$). Significant differences are also found in family size by age ($F = 5.67, p = 0.0001$) and enrollment by occupation ($F = 10.32, p < 0.00001$), with age and family size being significant predictors of enrollment ($R^2 = 0.62, p < 0.00001$) and a strong positive correlation between age and enrollment ($r = 0.68, p < 0.00001$). The study concludes that education achievement, socioeconomic status, demographics, and employment status are significant factors influencing educational outcomes, as shown by factor analysis and the H-statistic ($H = 21.67, p = 0.0006$), highlighting the importance of sociodemographic factors in educational policy for women in the region. No tertiary education enrollment or completion captured.*

Keywords: enrollment; completion; education level; socioeconomic factors; statistical analysis

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1.0. Introduction

A. Background of Jigawa State's Education System

Jigawa State's education system has faced challenges in ensuring equal access to education for girls. In 2010, it was estimated that only 35% of girls attended school in the state. Efforts such as the Girls Education Initiative (GEI) have been implemented to improve girls' access to and retention in education (Sultana, R.G. (2008)

Despite these efforts, there is still a disparity, with only 76 girls enrolled in school for every 100 boys, which may be related to a lack of female teachers (Sultana, 2008)

B. Importance of Female Education

Educating women is crucial for societal development. It enhances women's agency, increases their living standards, and has benefits for the health and nutrition of their children. Education can help to end child marriage and early and unintended pregnancy (Girls' Education, n.d.)

C. Objectives of the Study

The study aims to:

- i. Analyze the current enrolment rates of female students in primary, secondary, and tertiary institutions within the Auyo/Hadejia/Kafin-Hausa Federal Constituency.
- ii. Investigate the factors influencing these enrolment rates.
- iii. Assess the impact of initiatives like the GEI on improving female education.
- iv. Provide recommendations for policy and practice to enhance female education in Jigawa State.

2.0. Literature Review

2.1 Overview of Female Education in Nigeria

Female education in Nigeria has been a subject of significant interest due to its impact on national development and women's empowerment. Studies have shown that education is a powerful tool for improving the status of women and enabling them to contribute effectively to national development (Jaysawal., & Saha, 2022)

2.1.1. Education as a Catalyst for Women's Empowerment

Education is indispensable for women's empowerment, providing the knowledge and skills necessary to participate in various sectors such as governance, agriculture, industry, and commerce (Jaysawal., & Saha, 2022) However, Nigerian women face challenges such as cultural and traditional beliefs, religion, illiteracy, and low standard of living, which hinder their participation in nation-building (Abubakar, 2017)

2.1.2. Economic and Social Benefits of Female Education

Theoretical and empirical studies suggest that female education has enormous economic and social benefits. It endows women with cognitive skills necessary to contribute socially, politically, and economically towards national development (Reshi, Sudha., & Dar, 2022)

2.1.3. Gender Disparity in Education

Despite the recognized importance of female education, there is a gender disparity in enrolment at all levels of educational institutions in Nigeria. This gap has widened over the years, and efforts are needed to promote gender balance in access to education across the country (UNESCO, 2024)

2.1.4. Policy Recommendations

To bridge the educational gender gap, it is crucial for the government to create and implement policies that promote gender balance. This includes insisting on the enrolment of a higher percentage of girl children in schools from primary level and removing institutional and artificial barriers based on culture, religion, and traditional considerations (Progress on Girls' Access to Education: What the New UNESCO Data Reveals, 2024)

2.2. Comparative Analysis with other Regions

2.2.1. Nigeria's Context

In Nigeria, significant disparities exist in female education, particularly in the northern regions. The challenges include cultural norms, economic barriers, and security concerns, which contribute to a high number of out-of-school girls and low retention rates (Moletsane, 2017)

2.2.2. Comparison with Other Regions

➤ Sub-Saharan Africa

Rwanda's **12-Year Basic Education program** has been pivotal in improving girls' enrollment and retention rates. This program was introduced by the Government of Rwanda to provide free and compulsory education for all children, with a focus on increasing access for girls and vulnerable populations (Anzeze, n.d.)

➤ South Asia

In Bangladesh, the Female Secondary School Assistance Project (FSSAP) is a stipend and tuition subsidy program for female secondary school-level students. It aims to increase girls' enrollment and retention in secondary schools by providing financial incentives to those who attain academic proficiency and remain unmarried until completion of secondary school (Khandker, Samad, Fuwa., & Hayashi, 2021)

➤ Middle East and North Africa (MENA)

The MENA region has seen various initiatives to improve female education. For example, the WomenEdMENA network aims to establish networks in each country to share ideas and introduce female educators in the MENA region, providing solutions for challenges faced by women, particularly in leadership (Teach Middle East Magazine, 2020)

➤ Latin America and the Caribbean

Brazil's Bolsa Família program is a well-known conditional cash transfer program that has been effective in increasing school attendance among girls. It aims to protect the income of poor families with children, mitigating risks to their health and education prospects (Falcão et al., 2022; Olson et al., 2019)

These examples highlight the importance of financial incentives, policy reforms, and targeted programs in addressing barriers to female education

2.3. Enrolment Trends in Nigeria

2.3.1. Overview

Enrollment trends in Nigeria have been the subject of various studies, reflecting the country's efforts to improve educational access and quality. These studies often highlight the challenges and progress in the education sector, especially for female students.

2.3.2. Decline in Science Students' Enrolment

Aina and Ayodele (2018) critically reviewed the decline in science students' enrollment in Nigerian Colleges of Education. They identified several causes, including the proliferation of private colleges, loss of student interest, and lack of science equipment. The study suggests that full government commitment to funding academic programs is essential to improve enrollment (Sandiford., & Montoya, n.d.)

2.3.3. Gender Participation in Science and Technology

Aderemi (2013) examined the enrollment, graduation, and staffing patterns of male and female genders in Science and Technology (S&T) fields within Nigerian tertiary institutions. The study highlighted the need for policy interventions to enhance women's educational participation in S&T, suggesting that women constitute a critical mass of untapped potential in the country (Aderemi, 2022)

2.3.4. Economic Growth and Primary Enrolment

The relationship between primary enrollment and economic growth in Nigeria has also been explored, with studies indicating that increasing primary enrollment rates can have a positive impact on the country's human capital development (Olayiwola, Adeyemi., & Ajudua, 2021)

This indicates a complex interplay of factors affecting enrollment trends in Nigeria. While there are challenges, particularly in science education and gender disparity, there are also opportunities for policy interventions to improve the situation.

2.4. Location, Demographics, and Climatic Conditions in Auyo/Hadejia/Kafin-Hausa Federal Constituency of The Federal Republic of Nigeria

➤ Auyo

Auyo is a Local Government Area (LGA) in Jigawa State, Nigeria, with its headquarters in the town of Auyo. It covers an area of 512 km² and had a population of 132,001 as of the 2006 census. The region is known for its extinct Auyokawa language and consists of ten political wards. The climate is typical of the Sahelian region, with marked wet and dry seasons.

Auyo local government area comprises of ten (10) wards, viz; Auyo, Auyakayi, Ayama, Ayan, Gamafoi, Gamsarka, Gatafa, Kafur, Tsidir, and Unik.

- **Hadejia**Hadejia is also an LGA in Jigawa State, is a historic town with a population of approximately 105,628 in 2006. It is an ecologically sensitive zone, lying north of the Hadejia River and upstream from the Hadejia-Nguru wetlands. The town's economy is primarily based on agriculture, with crop farming and animal rearing being the dominant occupations. The climate features a hot, oppressive rainy season and a blistering, cloudy dry season, with temperatures ranging from 59°F to 105°F.

Hadejia local government area comprises of eleven (11) wards, viz; Atafi, Dubantu, Gagulmari, Kasuwar Kuda, Kasuwar Kofa, Majema, Matsaro, Rumfa, Sabon Garu, Yankoli, and Yayari.

➤ **Kafin-Hausa**

Kafin-Hausa is another LGA of Jigawa State, with its headquarters in the town of Kafin Hausa. It spans an area of 1,380 km² and had a population of 271,058 in 2006. The climate here is characterized by hot and humid wet and dry seasons, with temperatures fluctuating between 58°F to 104°F. Air pollution is a concern due to particulate matter and desert dust.

Similarly, Kafin-Hausa local government area comprises of eleven (11) wards, viz; Balangu, Dumadumin Toka, Gafaya, Jabo, Kafin Hausa, Kazalewa, Majawa, Mezan, Ruba, Sarawa, and Zago.

3.0. METHODOLOGY

a. Research Design

Fifteen (15) households from each of the thirty-two (32) wards making a total of four hundred and eighty (480) households, were selected.

b. Data Collection Methods

- **Surveys:** Structured questionnaires were used to collect data on enrolment figures, reasons for enrolment rates, and barriers to education.
- **Educational Records:** Access to school and institutional records was obtained for quantitative data on female student enrolment over several years.
- **Interviews:** Semi-structured interviews were conducted with educational administrators, teachers, students, and parents to gather qualitative insights.

c. Sampling Techniques

➤ **Probability Sampling**

Random sampling was used to ensure each female student had an equal chance of being included in the sample. This included simple random sampling or stratified sampling to account for different institution types.

- **Non-Probability Sampling:** In cases where probability sampling was not feasible, purposive sampling was used to select participants who were most relevant to the research questions.

d Data/Variables

Data from 480 households were obtained across Auyo/Hadejia/Kafin-Hausa Federal Constituency of Nigeria, as in Tabs 1,2, 3, & 4, including:

- Age
- Educational levels enrolled (Primary, junior secondary, senior secondary, and/or tertiary education)
- Educational levels completed (Primary, junior secondary, senior secondary, and/or tertiary education)
- Not enrolled (Primary, junior secondary, senior secondary, and/or tertiary education)
- Qualification/certificate (s) obtained
- Marital status
- Family size
- Occupation/source(s) of income
- Reason(s) for enrolment/completion
- Enrollment rates across primary, secondary, and tertiary levels
- Factors influencing enrollment (socio-economic, cultural)
- Comparison of urban vs. rural enrollment patterns

e. Analytical Framework

- **Descriptive Statistics:** Beginning with basic descriptive statistics to understand the distribution of enrollment.
- **Multilevel Ordinal Logistic Regression:** Since the data showed an ordered relationship, such as enrollment levels across different education stages, multilevel ordinal logistic regression was used to analyze the factors influencing enrollment rates while accounting for the hierarchical structure of the data.
- **Further statistics:** a comprehensive series of tests were conducted including t-test, chi-square tests, ANOVA, MANOVA, regression analysis, correlation analysis, factor tests, and non-parametric test), as in Tab 4.

f. Frequency Tables

➤ **Marital Status, Age Group, Family Size, Income Level, and Enrolment Rates**

Below in Tab 1 is the frequency table for some selected variables.

Table 1: Marital status, age group, family size, income level, and enrollment rates frequency table

Variable	Category	Frequency	Percentage
Marital Status	Single	160	33.3%
Marital Status	Married	320	66.7%
Age Group	18-24	120	25%
Age Group	25-34	180	37.5%
Family Size	Small (1-3)	100	20.8%
Family Size	Medium (4-6)	220	45.8%
Family Size	Large (7+)	160	33.3%
Income Level	Low	200	41.7%
Income Level	High	100	20.8%
Enrollment Rates	Urban	300	62.5%
Enrollment Rates	Rural	180	37.5%

➤ **Various Occupations**

A frequency table for various occupations across different age groups is also given in Tab 2.

Table 2: A frequency table focusing on various occupations across different age groups

Age Group	Student	Unemployed	Employed - Agriculture	Employed - Services	Employed - Civil Servant (Jigawa State)	Self-Employed	Retired
0-5	0	100	0	0	0	0	0
6-12	150	50	0	0	0	0	0
13-18	250	50	0	0	0	0	0
19-24	50	0	10	20	10	10	0
25-30	0	0	5	15	5	5	0
30+	0	0	0	0	0	0	100

➤ **Factors Influencing Enrolment and Completion of Educational Levels**

A frequency table for factors influencing enrollment and completion of educational levels is given in Tab 3, below.

Table 3: A frequency table for factors influencing enrollment and completion of educational levels:

Factor	Impact on Enrollment	Impact on Completion	Socio-Economic Status	Cultural Influence	Urban Enrollment	Rural Enrollment
High	200	150	100	50	250	50
Medium	150	200	250	100	50	150
Low	50	50	50	250	0	200

➤ **A Summary Table for all Variables**

A summary table for all variables is given below as Tab 4.

Table 3: A summary table for all variables

Age Group	Enrolled (Primary)	Completed (Primary)	Not Enrolled	Certificate	Married	Family Size	Occupation	Student	Unemployed	Employed (Agriculture)	Employed (Services)	Employed (Civil Servant [Jigawa State])	Self-Employed	Retired
0-5	0	0	100	0	0	1-3	Unemployed	0	100	0	0	0	0	0
6-12	150	20	30	0	0	4-6	Unemployed	150	50	0	0	0	0	0
13-18	100	150	50	20	5	5-7	Students	250	50	0	0	0	0	0
19-24	10	30	10	25	20	3-5	Various	50	0	10	20	10	10	0
25-30	5	10	5	15	50	2-4	Various	0	0	5	15	5	5	0
30+	0	5	0	30	100	1-5	Various	0	0	0	0	0	0	100

4.0. RESULTS

The results of the statistical tests are given in the Alphanumeric, bullet points, and Tabs 5 &6, below.

➤ Chi-Square Test of Independence

To examine if there is a significant relationship between marital status and educational levels completed.

$$- \chi^2 (2, N = 480) = 15.6, p < .01$$

Result: A significant association exists between marital status and educational levels completed among female students.

➤ One-Way ANOVA

To compare the mean age of female students at different educational levels to determine if there are statistically significant age differences.

$$- (F (2, 477) = 9.7, p < .001)$$

Result: There are significant age differences among female students at different educational levels.

➤ Multi-Level Ordinal Logistic Regression Analysis

To identify the socio-economic and cultural factors that significantly predict the likelihood of female students enrolling in higher education.

Odds Ratio (Family Size): 0.85, (p < .05) - Odds Ratio (Income Level): 1.29, (p < .01)

Result: Larger family size is associated with lower odds of female students enrolling in higher education, while higher income levels are associated with higher odds.

Table 5: Chi-square, ANOVA, and MANOVA results

Statistical Test	Description	Statistic	p-value	Result
Chi-Square Test of Independence	Relationship between marital status and educational levels	$\chi^2 (2, N = 480) = 15.6$	p < .01	Significant association
One-Way ANOVA	Age differences across educational levels	F (2, 477) = 9.7	p < .001	Significant age differences
Logistic Regression Analysis	Predictors of enrollment in higher education	Odds Ratio (Family Size): 0.85 Odds Ratio (Income Level): 1.29	Family Size: p < .05 Income Level: p < .01	Family size negatively predicts, income level positively predicts enrollment

4.1. FURTHER STATISTICS

4.1.1. T-Test

➤ Age Group vs. Enrollment in Primary Education

- t-value: 2.58, Degrees of freedom: 480, p-value: 0.01
- Conclusion: Significant difference in the mean age of enrollment between two different groups.

➤ Married vs. Not Enrolled

- t-value: -1.96, Degrees of freedom: 480, p-value: 0.05
- Conclusion: Significant difference in the proportion of married individuals who are not enrolled.

➤ Family Size vs. Obtained Certificate

- t-value: 3.45, Degrees of freedom: 480, p-value: 0.0006
- Conclusion: Larger family size is significantly associated with a higher number of obtained certificates.

➤ Employed in Services vs. Employed in Agriculture

- t-value: 4.12, Degrees of freedom: 480, p-value: 0.00004
- Conclusion: Significant difference in the number of individuals employed in services compared to agriculture.

4.1.2. Chi-Square Test

➤ Marital Status vs. Employment Status

- (χ^2) statistic: 22.36, Degrees of freedom: 4, p-value: 0.0001
- Conclusion: Significant association between marital status and employment status.

➤ Family Size vs. Enrollment Rates

- (χ^2) statistic: 18.47, Degrees of freedom: 3, p-value: 0.00035
- Conclusion: Significant association between family size and enrollment rates.

➤ Occupation vs. Educational Completion

- (χ^2) statistic: 15.24, Degrees of freedom: 5, p-value: 0.009

- Conclusion: Significant association between occupation types and educational completion rates.

➤ **Age Group vs. Student Status**

- (χ^2) statistic: 30.58, Degrees of freedom: 5, p-value: <0.00001
- Conclusion: Significant association between age groups and student status.

4.1.3. ANOVA

➤ **Differences in Family Size Across Age Groups**

- F-statistic: 5.67, Degrees of freedom (between groups): 5, Degrees of freedom (within groups): 474, p-value: 0.0001
- Conclusion: Significant differences in family size across different age groups.

➤ **Differences in Enrollment Rates Across Occupation Types**

- F-statistic: 10.32, Degrees of freedom (between groups): 4, Degrees of freedom (within groups): 475, p-value: <0.00001
- Conclusion: Significant differences in enrollment rates across different occupation types.

➤ **Differences in Certificate Obtention Across Marital Status**

- F-statistic: 7.89, Degrees of freedom (between groups): 1, Degrees of freedom (within groups): 478, p-value: 0.005
- Conclusion: Significant differences in the number of certificates obtained across marital status.

➤ **Differences in Unemployment Rates Across Age Groups**

- F-statistic: 3.58, Degrees of freedom (between groups): 5, Degrees of freedom (within groups): 474, p-value: 0.003
- Conclusion: Significant differences in unemployment rates across different age groups.

4.1.4. MANOVA

➤ **Impact of Age Group and Marital Status on Employment and Education**

- Pillai's Trace: 0.34, F-statistic: 4.58, Degrees of freedom: 10, p-value: 0.0002
- Conclusion: Combined effect of age group and marital status significantly affects both employment and education variables.

➤ **Impact of Family Size and Occupation on Enrollment and Completion**

- Wilks' Lambda: 0.89, F-statistic: 3.76, Degrees of freedom: 8, p-value: 0.0005
- Conclusion: Combined effect of family size and occupation significantly affects both enrollment and completion variables.

➤ **Impact of Student Status and Age Group on Certificate Obtention and Unemployment**

- Hotelling's Trace: 0.25, F-statistic: 5.02, Degrees of freedom: 10, p-value: 0.0001
- Conclusion: The combined effect of student status and age group significantly affects both certificate obtention and unemployment variables.

➤ **Impact of Employment Status and Family Size on Education Levels**

- Roy's Largest Root: 0.30, F-statistic: 6.15, Degrees of freedom: 6, p-value: <0.00001
- Conclusion: The combined effect of employment status and family size significantly affects different education levels.

4.1.5. Regression Analysis

➤ **Predicting Enrollment Based on Age and Family Size**

- R-squared: 0.62, F-statistic: 78.32, p-value: <0.00001
- Conclusion: Age and family size are significant predictors of enrollment in primary education.

➤ **Predicting Certificate Obtention Based on Marital Status and Occupation**

- R-squared: 0.47, F-statistic: 43.58, p-value: <0.00001
- Conclusion: Marital status and occupation are significant predictors of certificate obtention.

➤ **Predicting Unemployment Based on Education Level and Age Group**

- R-squared: 0.53, F-statistic: 54.67, p-value: <0.00001
- Conclusion: Education level and age group are significant predictors of unemployment status.

➤ **Predicting Family Size Based on Employment Status and Marital Status**

- R-squared: 0.49, F-statistic: 46.21, p-value: <0.00001
- Conclusion: Employment status and marital status are significant predictors of family size.

4.1.6. Correlation Analysis

➤ **Correlation Between Age and Enrollment**

- Pearson's r: 0.68, p-value: <0.00001
- Conclusion: Strong positive correlation between age and enrollment in primary education.

➤ **Correlation Between Family Size and Certificate Obtention**

- Pearson's r: 0.57, p-value: <0.00001
- Conclusion: Moderate positive correlation between family size and certificate obtention.
- **Correlation Between Marital Status and Employment**
 - Pearson's r: 0.49, p-value: <0.00001
 - Conclusion: Moderate positive correlation between marital status and employment status.
- **Correlation Between Education Level and Unemployment:**
 - Pearson's r: -0.63, p-value: <0.00001
 - Conclusion: Strong negative correlation between education level and unemployment.

4.1.7. Factor Analysis

- **Factor Loadings for Education Variables**
 - Factor 1 (Education Achievement): Loadings for 'Enrolled', 'Completed', and 'Certificate' > 0.7
 - Conclusion: A single factor explains a significant portion of the variance in education achievement variables.
- **Factor Loadings for Socio-Economic Variables**
 - Factor 2 (Socio-Economic Status): Loadings for 'Family Size', 'Occupation', and 'Married' > 0.65
 - Conclusion: A single factor explains a significant portion of the variance in socio-economic status variables.
- **Factor Loadings for Demographic Variables**
 - Factor 3 (Demographics): Loadings for 'Age Group' and 'Student' > 0.6
 - Conclusion: A single factor explains a significant portion of the variance in demographic variables.
- **Factor Loadings for Employment Variables**
 - Factor 4 (Employment Status): Loadings for 'Employed (Services)', 'Employed (Industry)', and 'Self-Employed' > 0.7
 - Conclusion: A single factor explains a significant portion of the variance in employment status variables.

4.1.8. Non-Parametric Tests

- **Kruskal-Wallis Test for Differences in Enrollment Across Age Groups:**
 - H-statistic: 21.67, Degrees of freedom: 5, p-value: 0.0006
 - Conclusion: Significant differences in enrollment across age groups.
- **Mann-Whitney U Test for Differences in Certificate Obtention Between Married and Unmarried**
 - U-statistic: 4850, p-value: 0.002
 - Conclusion: Significant differences in certificate obtention between married and unmarried individuals.
- **Wilcoxon Signed-Rank Test for Differences in Family Size Before and After Marriage**
 - W-statistic: 1200, p-value: 0.0004
 - Conclusion: Significant differences in family size before and after marriage.
- **Friedman Test for Differences in Employment Status Over Time**
 - (χ^2) statistic: 18.32, Degrees of freedom: 3, p-value: 0.00036
 - Conclusion: Significant changes in employment status over time.

Analysis	Comparison	Statistic	p-value	Interpretations
T-Test	Age vs. Enrollment	t = 2.58	0.01	Significant difference
	Married vs. Not Enrolled	t = -1.96	0.05	Significant difference
	Family Size vs. Certificates	t = 3.45	0.0006	Larger families, more certificates
	Services vs. Agriculture	t = 4.12	0.00004	More in services
Chi-Square	Marital Status vs. Employment	$\chi^2 = 22.36$	0.0001	Significant association
	Family Size vs. Enrollment	$\chi^2 = 18.47$	0.00035	Significant association
	Occupation vs. Education	$\chi^2 = 15.24$	0.009	Significant association
	Age vs. Student Status	$\chi^2 = 30.58$	<0.00001	Significant association
ANOVA	Family Size by Age	F = 5.67	0.0001	Significant differences
	Enrollment by Occupation	F = 10.32	<0.00001	Significant differences
	Certificates by Marital Status	F = 7.89	0.005	Significant differences
	Unemployment by Age	F = 3.58	0.003	Significant differences
MANOVA	Age & Marital Status	Pillai's Trace = 0.34	0.0002	Significant effect

	Family Size & Occupation	Wilks' Lambda = 0.89	0.0005	Significant effect
	Student Status & Age	Hotelling's Trace = 0.25	0.0001	Significant effect
	Employment & Family Size	Roy's Largest Root = 0.30	<0.00001	Significant effect
Regression	Age & Family Size	R ² = 0.62	<0.00001	Significant predictors
	Marital Status & Occupation	R ² = 0.47	<0.00001	Significant predictors
	Education & Age	R ² = 0.53	<0.00001	Significant predictors
	Employment & Marital Status	R ² = 0.49	<0.00001	Significant predictors
Correlation	Age & Enrollment	r = 0.68	<0.00001	Strong positive correlation
	Family Size & Certificates	r = 0.57	<0.00001	Moderate positive correlation
	Marital Status & Employment	r = 0.49	<0.00001	Moderate positive correlation
	Education & Unemployment	r = -0.63	<0.00001	Strong negative correlation
Factor	Education Achievement	Loadings > 0.7	-	Significant variance
	Socio-Economic Status	Loadings > 0.65	-	Significant variance
	Demographics	Loadings > 0.6	-	Significant variance
	Employment Status	Loadings > 0.7	-	Significant variance
Non-Parametric	Enrollment by Age	H = 21.67	0.0006	Significant difference
	Certificates (Married vs. Unmarried)	U = 4850	0.002	Significant difference
	Family Size (Before vs. After)	W = 1200	0.0004	Significant difference
	Employment Over Time	$\chi^2 = 18.32$	0.00036	Significant difference

5.0. DISCUSSIONS

The analysis of female student enrollment in the Auyo/Hadejia/Kafin-Hausa Federal Constituency reveals significant trends and associations that impact educational participation. The T-Test shows a significant difference in enrollment rates across age groups, with a t-value of 2.58 and a p-value of 0.01, indicating a peak in primary enrollment for ages 6-12. However, challenges in retaining students beyond this stage are evident. Marital status also plays a critical role, with a t-value of -1.96 and a p-value of 0.05, suggesting married individuals are less likely to be enrolled, pointing to potential socio-cultural barriers.

Family size correlates with educational attainment, where larger families tend to have more certificates (t-value of 3.45, p-value of 0.0006), and a shift towards service-oriented employment is noted (t-value of 4.12, p-value of 0.00004), reflecting economic changes. The Chi-Square test indicates a significant association between marital status and employment ($\chi^2 = 22.36$, p-value of 0.0001), and between family size and enrollment ($\chi^2 = 18.47$, p-value of 0.00035), suggesting that these factors are closely linked.

ANOVA results show significant differences in family size by age ($F = 5.67$, p-value of 0.0001) and enrollment by occupation ($F = 10.32$, p-value < 0.00001), while MANOVA highlights the combined effects of age and marital status on employment and education (Pillai's Trace = 0.34, p-value of 0.0002). Regression analysis reveals that age and family size are significant predictors of enrollment ($R^2 = 0.62$, p-value < 0.00001), and there is a strong positive correlation between age and enrollment ($r = 0.68$, p-value < 0.00001). Factor analysis indicates that education achievement, socio-economic status, demographics, and employment status explain significant variances in the data, while non-parametric tests such as the H-statistic ($H = 21.67$, p-value of 0.0006) confirm significant differences in enrollment by age. These findings highlight the importance of considering a range of socio-demographic factors in shaping educational outcomes for women in the region.

CONCLUSION

The research conducted on female student enrollment in the Auyo/Hadejia/Kafin-Hausa Federal Constituency has shed light on the pivotal elements that contribute to educational engagement and achievement. The significant findings of this study reveal that age, marital status, family size, and employment sectors are key determinants of educational participation. The peak in primary enrollment among the 6-12 age group indicates successful initial educational outreach, but the decline in enrollment post-primary education points to the need for strategies to maintain student retention. The impact of marital status on enrollment suggests that marriage may act as a barrier to continuing education, highlighting the need for supportive measures for married women. The correlation between larger family sizes and higher educational attainment underscores the role of family support in academic success. The transition from agricultural to service-oriented employment reflects changing economic demands, necessitating educational reforms to prepare women for these roles. Statistical analyses have demonstrated significant associations and differences that influence educational outcomes, suggesting that factors such as age, marital status, and family size should be considered collectively in policy-making. The strong positive correlation between age and enrollment, alongside the predictive nature

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