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Family-Related Determinants and Implications of Low Female Enrolment in Electrical Trade in Adamawa State

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Abstract

This study determined the perceived family-related determinants and implications of low enrolment of female students in electrical trade in technical colleges of Adamawa State. Two research questions were answered and two null hypotheses were formulated to guide the study which were tested at 0.05 level of significance. A descriptive survey research design was adopted for the study. The population of the study consisted of 13 Electrical Installation and Maintenance Work Trade (EIMWT) teachers and 129 parents of National Technical Certificate Two (NTCII) EIMWT students (either father or mother) in three Government Science Technical Colleges of Adamawa State. There was no sampling done as the entire population was used. A researcher-developed 20-item questionnaire was used for the collection of data. Three lecturers from Electrical Technology Education Department of Modibbo Adama University Yola validated the questionnaire. A reliability coefficient of the questionnaire was established to be 0.87 using Cronbach Alpha method. The research questions were answered using weighted mean while t-test of independent samples was used to test the hypotheses. The study revealed low contribution from the female gender to family income in households and increased level of dependency of the female gender on the males in Adamawa State as major perceived family-related implications. The study therefore recommended among others that Adamawa State Government in collaboration with corporate bodies should embark on an awareness campaign in order to enlighten parents and family members on the prospects of EIMWT especially to female gender. The study concludes that mechanisms should be put in place to improve female enrolment into EIMWT as a way of investing in the education of females in view of breaking cycles of poverty and social vices that the females might be lured into.

Keywords: Family-Related Determinants, Family-Related Implications, Low Enrolment, Electrical Installation and Maintenance Works trade

Introduction

The education of female gender is a strategy that is universally accepted in order

to improve lives and advance development (National Academy of Sciences, 2017). The National Academy of Sciences further asserts that female gender's schooling is associated with many demographic outcomes, including later age at marriage or union formation, lower fertility, and better child health. Therefore, it is pertinent to say that the outcome of the female gender enrolment is not just beneficial to the economy of a nation, but also to the wellbeing of the person. Educated women are more productive at home, better paid in the workplace, and are able to participate in social, economic and political decision making. One aspect of education requiring female participation in Nigeria is Technical Vocational Education and Training (TVET).

The participation of females in TVET (especially technical education programmes) in Nigeria institutions is generally low and very poor when compared to enrolment in general education programmes (Adelakun, Oviawe, & Garba, 2015; Aina, 2006). Okolocha (2006) opined that enrolment in TVET programmes in Nigeria has remained low since the introduction of TVET into the Nigerian educational system. This poor enrolment is further made noticeable in female enrolment in TVET (Ezeliora & Ezeokana, 2010). This is supported by Agwi and Puyate (2017) whose study revealed that the poor enrolment into TVET programmes in Nigeria is more disturbing on female gender's participation. This low enrolment of females in TVET programmes have been attributed to several factors. According to Wubon (2013), education of the female gender has not been a priority due to certain socio-cultural beliefs and perverted mind-sets. It has been observed that the male gender is considered to be superior to the female gender in many aspects especially education, and that is why in most cases, only the male child has access to education while it is believed that the female gender's place is in her husband's house. Similarly, Dokubo and Deebom (2017) blamed the poor enrolment of females on several factors including poverty, preference of male child, cultural and religious beliefs. Ayonmike (2014) noted that the government, schools, the society, and parents had a role to play in the poor enrolment of the female gender in TVET programmes.

Altrajir (as cited in Khaguya, 2014) opined that parents and the community have the belief that a formal education of the female gender is not necessary as the roles the females are expected to prepare for can be learnt from their mothers and other members in the community. As a result of this belief, many parents shy away from enrolling their daughters into schools, and in situations where they've been enrolled, the parents tend to withdraw them before completion. This belief denies these females an opportunity at formal education and participation in technical subjects in particular. This is corroborated by Hart (2008) who revealed that educating females is considered a waste of time and money by many parents and community members because they believe that the females will eventually be married off and their education would therefore only benefit their husbands. There is also this expectation that males are the breadwinners of their future families. Therefore, many parents and community members feel that males should be

provided with every advantage, including educating them as far as possible, to help them fulfil the role of being breadwinners to their families. Peterson and Runyan (2009) added that parents also tend to discourage their sons from getting married to females who are technical graduates as they believe that the female technical graduates would not respect those husbands who are non-technical graduates.

Statement of the Problem

Preparing and training of students to acquire requisite trade skills that would enable them secure employment, become self-employed and/or be able to employ others, or pursue further education in tertiary institutions, is the objective of TVET. Women can also benefit from this; however, students' enrolment records of the three Government Technical Colleges spread across the three educational zones of Adamawa State shows that there is a decline in the enrolment of female students into Electrical Installation and Maintenance Works Trade (Adamawa State Post-Primary Board, 2019). In 2016-2017 session, out of 70 students that were enrolled, 88.57% (62 students) were males and 11.43% (8 students) were females. In 2017-2018 session, there was an increase in enrolment as 146 students were enrolled; sadly, 94.52% (138 students) were males, leaving just 5.48% (8 students) as females. A decrease in enrolment was observed in the 2018/2019 session as 129 students were enrolled; sadly, only 4.65% (6 students) were females and 95.35% (123 students) were males. The enrolment records therefore reveal that female students' enrolment into Electrical Installation and Maintenance Works Trade in the technical colleges in Adamawa State is low and discouraging. There is therefore, a need to ascertain the family-related determinants of low female enrolment while also establishing the implications of this trend. Additionally, if this trend in female students' enrolment is not addressed urgently, the Electrical Installation and Maintenance Works Trade of the technical colleges in Adamawa State might end up having no female students enrolled in the programme in the near future, thus leaving the Adamawa community with the dearth of female technicians in electrical installations and maintenance. It is against this background that this study was carried out**.**

Purpose of the Study

The study specifically sought to:

1. Determine the perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.
2. Determine the perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Research Questions

The study sought to answer the following research questions:

1. What are the perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State?
2. What are the perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges in Adamawa State?

Research Hypotheses

The study sought to test the following null hypotheses (H_0) at 0.05 level of significance.

H_{O1}: There is no significant difference in the mean responses of parents and teachers on perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

H_{O2}: There is no significant difference in the mean responses of parents and teachers on perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Methodology

Research Design

A descriptive survey research design was adopted for the study. The researchers thus sampled a population of respondents (teachers and parents of NTCII students in EIMWT) and administered questionnaires to them.

Sampling

The population for the study consisted of 142 respondents (13 teachers and 129 parents of NTCII students in EIMWT). There was no sampling because the small and manageable population.

Data Collection/Data Analysis

A structured questionnaire was used for the purpose of collecting data to assist in the findings of the study. The instrument used for collecting data for this study was a structured questionnaire developed by the researcher for teachers and parents, titled Perceived Determinants and Economic Implications of Low Female Enrolment Questionnaire (PDEILFEQ). The questionnaire was divided into two sub-sections based on the two research questions that guided the study. The responses on the questionnaire were structured on 5-point Likert scale of Strongly Agree (SA) = 5, Agree (A) = 4, Undecided (U) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. Three lecturers from Electrical Technology Education Department of Modibbo Adama University Yola, validated the questionnaire. Before embarking on field work, the structured questionnaire designed by

the researcher for the purpose of collecting data was trial tested in Vocational Training Centre Jalingo, Taraba State. The choice of Vocational Training Centre Jalingo for trial testing was because, although it is not part of the study area, its population shares similar characteristics to that of the area of study, hence appropriate for determining the reliability of the instrument. The data from this trial testing were analysed using the Cronbach's alpha method. The Cronbach alpha was found to be 0.87 and the instrument adjudged highly reliable. The researcher then proceeded to administer the questionnaire to the respondents. Administering of the questionnaire was carried out within five weeks and the researcher had 100% recovery of the questionnaires issued out. A total of 142 copies of the structured questionnaire were fully filled and returned. The data collected were presented in tables. Weighted Mean and Standard Deviation were used to answer the research questions while the null hypotheses were tested using t-test of independent samples. In answering the Research Questions, an item with a mean of 3.50 and above was considered as Agreed (A) while an item with a mean less than 3.50 (3.49 and below) was considered as Disagreed (D). In interpreting the result of the t-test analysis as contained in the SPSS output, where the *p*-value was greater than .05 ($p > .05$), the null hypothesis was accepted and where *p*-value was less than or equal to .05 ($p \leq .05$), the null hypothesis was rejected. The data collected for this study was analysed using Statistical Package for Social Sciences (SPSS) version 20.0.

Results

Perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State

Table 1: Weighted Mean and Standard Deviations of teachers and parents responses on the perceived family-related determinants of low enrolment of female students

S/N	Items	Respondents $n_T = 13, n_P = 129, n_G = 142$						Remarks
		$\bar{x}_T$	σ_T	$\bar{x}_P$	σ_P	$\bar{x}_G$	σ_G	
1.	Parents and family members' poor perception of female gender education	3.84	0.89	3.74	1.19	3.75	1.16	Agreed
2.	Lack of family members support	3.69	0.94	4.34	0.76	4.28	0.80	Agreed
3.	Family beliefs that Electrical Installation and Maintenance Works Trade requires physical strength	3.69	0.94	3.85	1.42	3.83	1.38	Agreed
4.	Family belief that the chores at home are difficult to combine with study of Electrical Installation and Maintenance Work Trade	3.46	1.12	3.30	1.05	3.31	1.05	Disagreed
5.	Unwillingness of parents to allow girls to travel long distances to study Electrical Installation and Maintenance Works Trade	3.84	0.68	3.49	1.34	3.52	1.29	Agreed
6.	Family perception about female child working with electricity	3.92	0.49	3.89	1.15	3.89	1.10	Agreed
7.	Families prioritizing early marriage over education	4.00	0.70	3.28	1.48	3.35	1.44	Disagreed
8.	Family restriction due to religion	3.46	1.19	3.47	1.19	3.47	1.19	Disagreed
9.	Family members' fear of hazards involved in working with electricity	4.15	0.80	3.78	1.38	3.81	1.34	Agreed
10.	Illiteracy of mothers/female guardians	3.84	1.14	3.07	1.58	3.14	1.56	Disagreed
	Grand Mean	**3.78**		**3.62**		**3.63**		**Agreed**

$\bar{x}_T$ = Mean responses of Teachers, $\bar{x}_p$ = Mean responses of Parents, σ_T = Standard Deviation of Teachers, σ_P = Standard Deviation of Parents, $\bar{x}_G$ = Item mean of means, σ_G = Item Standard Deviation of means.

Results presented in Table 1 above showed that the respondents (teachers and parents) agreed on six out of 10 perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State base on the item mean of means ranging from 3.75 to 4.28. Specifically, the respondents disagreed on family belief that the chores at home are difficult to combine with study of Electrical Installation and Maintenance Work Trade, families prioritizing early marriage over education, family restriction due to religion, and illiteracy of mothers/female guardians as perceived family-related determinants of low enrolment of female students. Given a grand mean of 3.63, the respondents agreed on the perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State. Furthermore, with standard deviation ranging from 0.80 to 1.56, the results indicate that there is little dispersion in the opinions of the respondents.

Perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State

Table 2: Weighted Mean and Standard Deviations of teachers and parents responses on the perceived family-related implications of low enrolment of female students

S/N	Items	Respondents						Remarks
		$\bar{x}_T$	σ_T	$\bar{x}_P$	σ_P	$\bar{x}_G$	σ_G	
11.	Decline in family living standards in Adamawa State due to lack of self-reliance of female folks in Adamawa State	3.46	0.87	3.45	1.39	3.45	1.35	Disagreed
12.	Increased level of dependency of the female gender on the males in Adamawa State	3.23	1.09	3.77	1.28	3.72	1.27	Agreed
13.	Inability for the early married females in Adamawa State to support their families financially	2.92	1.11	3.62	1.27	3.56	1.27	Agreed
14.	Promotes inequality in the family	3.84	0.98	3.31	1.40	3.35	1.37	Disagreed
15.	Poor earning power among the female gender in Adamawa State	3.38	1.19	3.68	1.19	3.66	1.19	Agreed
16.	It has contributed to the unproductivity of the female gender in some homes of Adamawa State	3.46	1.12	3.37	1.19	3.38	1.18	Disagreed
17.	It has contributed to increased poverty in some homes of Adamawa State	3.15	1.06	3.25	1.45	3.24	1.42	Disagreed
18.	Diminished quality of life in households of Adamawa State	2.76	1.09	3.15	1.14	3.11	1.14	Disagreed
19.	Low contribution from the female gender to family income in households of Adamawa State	3.38	1.26	3.99	0.87	3.93	0.93	Agreed
20.	Low contribution from the female gender to the productivity of Adamawa State	3.53	1.19	3.35	1.37	3.37	1.35	Disagreed
	Grand Mean	**3.31**		**3.49**		**3.47**		**Disagreed**

$\bar{x}_T$ = Mean responses of Teachers, $\bar{x}_p$ = Mean responses of Parents, σ_T = Standard Deviation of Teachers, σ_P = Standard Deviation of Parents, $\bar{x}_G$ = Grand mean, σ_G = Grand Standard Deviation.

Data presented in Table 2 above showed that the respondents (teachers and parents) agreed on four out of ten perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State base on the item mean of means ranging from 3.56 to 3.93. Specifically, the respondents disagreed on decline in family living standards in Adamawa State due to lack of self-reliance of female folks in Adamawa State, promotion of inequality in the family, contribution to the unproductivity of the female gender in some homes of Adamawa State, contribution to increased poverty in some homes of Adamawa State, diminished quality of life in households of Adamawa State, and low contribution from the female gender to the productivity of Adamawa State as perceived family-related implications of low enrolment of female students. Given a grand mean of 3.47, the respondents disagreed on the perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State. Furthermore, with standard deviation ranging from 0.93 to 1.42, the results indicate that the opinions of the respondents are clustered around the mean response.

H_{01}: There is no significant difference in the mean responses of parents and teachers on perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Table 3: t-Test analysis of responses on the perceived family-related determinants of low enrolment of female students

	$\bar{x}$	σ	n	df	α	t_{cal}	p	Decision
Teachers	3.79	0.44	13					
				140	0.05	0.96	0.33	Accepted
Parents	3.62	0.60	129					

KEY: $\bar{x}$ = Mean, σ = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, α = level of significance, t_{cal} = Calculated t-value, p = Significance (2-tailed)

The result on Table 3 reveals a t_{cal} of 0.96 with a p-value of 0.33. Since the p-value is greater than the alpha level of the test (p>.05), the null hypothesis is accepted. This means that there is no significant difference in the mean responses of parents and teachers on perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

H_{02}:There is no significant difference in the mean responses of parents and teachers on perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Table 4: t-Test analysis of responses on the perceived family-related implications of low enrolment of female students

	$\bar{x}$	σ	n	df	α	t_{cal}	p	Decision
Teachers	3.31	0.67	13					
				140	0.05	1.00	0.31	Accepted
Parents	3.49	0.62	129					

KEY: $\bar{x}$ = Mean, σ = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, α = level of significance, t_{cal} = Calculated t-value, p = Significance (2-tailed)

The result on Table 4 reveals a t_{cal} of 1.00 with a *p*-value of 0.31. Since the *p*-value is greater than the alpha level of the test ($p>.05$), the null hypothesis is accepted. This means that there is no significant difference in the mean responses of parents and teachers on perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Discussion of Findings

Findings with respect to research question one shows that the respondents (teachers and parents) agreed on six out 10 perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State which are: Parents and family members' poor perception of female gender education, Lack of family members support, Family beliefs that Electrical Installation and Maintenance Works Trade requires physical strength, Unwillingness of parents to allow girls to travel long distances to study Electrical Installation and Maintenance Works Trade, Family perception about female child working with electricity, and Family members' fear of hazards involved in working with electricity. This finding is consistent with studies by Ayonmike (2014), Adelakun, Oviawe, and Barfa (2015), Dokubo and Deebom (2017), and Altrajir (cited in Khaguya, 2014), which revealed that poor parental perceptions about the benefits of female education and an unwillingness to allow girls to travel long distances constitute perceived family-related determinants of low enrolment of female students. Furthermore, the respondents did not consider family belief that the chores at home are difficult to combine with study of Electrical Installation and Maintenance Work Trade, families prioritizing early marriage over education, family restriction due to religion, and illiteracy of mothers/female guardians as perceived family-related determinants of low enrolment of female students. This finding is distinct from the study by Ayonmike (2014) which revealed religious and sociocultural traditions as a factor affecting female enrolment. The corresponding hypothesis test shows that the parents and teachers shared similar opinions on the perceived family-related determinants of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Findings with respect to research question two shows that the respondents (teachers and parents) agreed on four out of ten perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State which are: Increased level of dependency of the female gender on the males in Adamawa State, Inability for the early married females in Adamawa State to support their families financially, Poor earning power among the female gender in Adamawa State, and Low contribution from the female gender to family income in households of Adamawa State. Furthermore, the respondents did not consider decline in family living standards in Adamawa State due to lack of self-reliance of female folks in Adamawa State, promotion of inequality in the family, contribution to the unproductivity of the female gender in some homes of Adamawa State, contribution to increased poverty in some homes of Adamawa State, diminished quality of life in households of Adamawa State, and low contribution from the female gender to the productivity of Adamawa State as perceived family-related implications of low enrolment of female students. This finding is distinct from the study by Ngelu, Omwenga, Mungatu, and Iravo (2018) which revealed that female enrolment in education is more likely to improve the quality of life for the household as compared to not enrolling. The corresponding hypothesis test shows that the parents and teachers shared similar opinions on the perceived family-related implications of low enrolment of female students in EIMWT in Technical Colleges of Adamawa State.

Conclusion

Based on the findings of the study, it can be concluded that lack of family members support and family perception about the female child working electricity are the major perceived family-related determinants of low female enrolment in EIMWT in Technical Colleges of Adamawa State. It can also be concluded that low contribution from the female gender to family income in households and increased level of dependency of the female gender on the males in Adamawa State are the major perceived family-related implications of low female enrolment in EIMWT in Technical Colleges of Adamawa State. Therefore, mechanisms should be put in place to adopt and improve female enrolment into EIMWT as a way of investing in the education of females in view of breaking cycles of poverty and social vices that the females might be lured into, thereby bringing about economic growth.

In view of the findings of the study therefore, the following recommendations are made:

1. The Adamawa state government in collaboration with corporate bodies should embark on an awareness campaign in order to enlighten parents and family members of the prospects of EIMWT especially to female gender, as an avenue of disabusing their poor perception of female gender education and securing the support of the family members.

2. EIMWT teachers in Adamawa State in collaboration with corporate bodies should organize empowerment seminars in order to enlighten the female gender how their enrolment into the trade will increase their contribution to family income in households and reduce their level of dependency on the males.

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