



## EARLY MARRIAGE AND LOW EDUCATIONAL ATTAINMENT AS PREDICTORS OF WOMEN'S INVOLVEMENT IN HARD LABOUR IN ABAKALIKI

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### ABSTRACT

*This study examined the predictive influence of early marriage and low education on women's involvement in hard labour in Abakaliki. A correlational survey research design was adopted for the study. A sample of 474 married women who are either involved (251) or not involved (223) in hard labour were purposively selected to participate in the study. Data were collected using structured questionnaires and analyzed using descriptive statistics, Pearson Chi-Square, and Binary Logistic Regression models. Chi-square results indicated statistically significant associations between the independent variables and women's involvement in hard labour. Results from Binary Logistic Regression indicated that both predictors; Early marriage ( $B = 4.375$ ,  $SE = .552$ ,  $Wald = 62.710$ ,  $p < .001$ ,  $odds\ ratio = 79.432$ ) and educational status ( $B = 5.425$ ,  $SE = .749$ ,  $Wald = 52.402$ ,  $p < .001$ ,  $odds\ ratio = 227.035$ ), independently made significant contributions to the prediction of hard-labour involvement. Women who had early marriage and those with low education respectively had 79 and 227 times the odds of being involved in hard*



*labour when compared to their counterparts who did not marry early and had higher education. The study concludes that early marriage and low educational level are significant predictors of Abakaliki women's entry into hard labour. Consequently, the Ebonyi State Government should strengthen programmes that will promote the girl child enrolment, retention, and completion of both secondary and higher education.*

**Keywords:** Early Marriage, Educational Attainment, Women, Hard labour, Predictive influence, Abakaliki.

## **Introduction**

Women's participation in physically demanding labour remains a defining feature of livelihoods in many rural and urban communities across Nigeria. In Abakaliki, the capital of Ebonyi State, women are actively engaged in strenuous economic activities such as those found in the construction industry, stone breaking, manual farming, sand loading, rice processing, carrying heavy loads, petty trading involving manual transportation of goods, and other forms of physically intensive work. These occupations are often characterized by low education levels, low social status, a transient nature, and a lack of a sense of belonging (Marphatia AA et al. 2020; Anderson et al., 2015). It also has attributes of prolonged working hours, low earnings, exposure to occupational hazards, and limited social protection.

Although hard labour contributes significantly to household survival and local economic development, the factors that predispose women to such demanding occupations have not received adequate scholarly attention. Among these factors, early marriage (marriage before age 18) and low educational attainment are increasingly recognized as important determinants of women's socioeconomic opportunities (Singh S, Samara R., 1996). Little, low, or limited schooling strongly correlates with being married at a young age (Ben-Kalio et al., 2024; Oguche et al., 2025).

Low educational attainment refers to a person who is barely literate or has attempted primary school. Attending school and having higher levels of education protect girls from the possibility of early marriage. Education is widely recognized as a fundamental human right and a key catalyst for socio-economic advancement and individual development. For girls, access to education is particularly significant, as it can help break the cycle of poverty, promote better health outcomes, and contribute to the well-being and empowerment of future generations. Despite these benefits, educational opportunities for girls in Nigeria are frequently constrained by early marriage, which refers to the formal or informal union of a girl before attaining the age of 18 (Ben-Kalio et al., 2024; Oguche et al., 2025).

Women who marry early often discontinue their education, assume family responsibilities prematurely, and have limited opportunities to acquire employable skills. Consequently, many become economically dependent and resort to physically demanding occupations to support themselves and their households. Existing evidence (Fall CHD et al., 2016; Wodon QT et al., 2017; Aryal et al., 1991; Male C et al., 2016) indicates that early marriage reduces educational opportunities and long-term economic prospects for women, thereby increasing their vulnerability to poverty and low-paying work.



Educational attainment similarly plays a significant role in determining women's occupational outcomes. Education enhances human capital, increases employability, improves access to formal-sector employment, and equips women with skills necessary for entrepreneurship and income diversification. An analysis of data from the Multiple Indicator Cluster Survey of Nepal 2014 found that married young girls aged 15–17 years were 10 times more likely to have left school than their unmarried peers (Marphatia A.A et al., 2020; Sekine K, Hodgkin ME (2017). Thus, the more education women have, the more likely they are to marry at a later age.

An analysis of 2011 Demographic Health Survey (DHS) data from Nepal of women aged 18–22 years found that 73% of uneducated women were married before 18 years of age, compared to 15% of those with secondary education and 4% with higher education (Male C, Wodon Q. (2016). Conversely, women with little or no formal education often have limited employment opportunities and are more likely to engage in informal occupations requiring physical strength rather than specialized skills. Studies have consistently demonstrated that higher educational attainment delays marriage, reduces fertility, and improves women's labour market outcomes. There is inconclusive evidence on how many years of schooling are required to delay marriage to the universal minimum age of 18 (Mensch J, 2017; Pandey S, 2017).

### **Abakaliki Women and Hard Labour**

Abakaliki is the capital of Ebonyi State, one of the states in Nigeria's South-East region. The state's major economic activities include agriculture, particularly the cultivation of rice, yam, and cassava. Ebonyi is also endowed with mineral resources, including industrial salt at Okposi and Uburu, as well as limestone and gravel deposits at Nkalagu. With a population of approximately four million people and a GDP (PPP) estimated at \$12.2 billion, the state's economy depends significantly on agriculture and other labour-intensive activities. Within this socioeconomic context, many women, particularly those from the Izzi and Ezza communities, engage in physically demanding forms of labour to support themselves and their families.

The marital and family structures prevalent in some communities are often characterized by polygamy, a system in which a man may have more than one wife. In some cases, such family structures may limit the attention and resources available to women and the girl-child, including access to education. Education enables both men and women to understand and claim their rights and to realize their potential in economic, political, and social spheres. It is also widely recognized as one of the most effective means of reducing poverty and improving social mobility. However, in many parts of south-eastern Nigeria, including Ebonyi State, cultural expectations require women to contribute substantially to household livelihoods through agricultural and manual labour. Although such participation demonstrates resilience, determination, and industriousness, it may also expose women to physical exhaustion, sexual abuse, reproductive health challenges, and economic insecurity.

The interaction between early marriage, limited educational attainment, and the need to engage in hard labour can create a cycle of disadvantage that affects women's health, productivity, and overall well-being, as well as that of their families and communities. Despite improvements in



educational opportunities in Ebonyi State, many women in the Izzi and Ezza communities remain excluded from formal education. Some of these women travel daily from remote villages to Abakaliki, where they gather at locations such as Mile 50 Junction, Vanco Junction, opposite Zenith Bank along Ogoja Road, Presco Junction, Sperandoe Junction, Ogbaga Road, and opposite the Township Stadium. These locations serve as informal meeting points where prospective clients recruit casual labourers.

At these locations, women can be seen carrying plastic buckets, shovels, and headpans while waiting for people who require their services. Some engage in construction-related activities, particularly mixing cement, sand, and chippings. Payment is commonly based on the quantity of work completed. For example, a woman may receive ₦600 for successfully mixing and delivering the contents of one bag of cement with the required sand and chippings. Consequently, the more cement they mix, the greater their earnings. Although this arrangement provides an important source of income, the physically demanding nature of the work raises concerns about occupational safety, health, and the long-term welfare of these women.

Abakaliki therefore provides an important setting for examining the relationship between early marriage, educational attainment, and women's involvement in hard labour. Despite improvements in educational access, including the presence of five universities in Ebonyi State—Alex Ekwueme Federal University, Ndufu; David Umahi Federal University; and three state universities—Ebonyi State University, Ebonyi State University of ICT, and Ebonyi State University of Aeronautical Engineering- and various women's empowerment initiatives, many women continue to participate in physically demanding occupations. This suggests that socioeconomic, cultural, and demographic factors continue to influence women's occupational choices.

### **Statement of Problem**

Early marriage has been identified as a factor capable of interrupting girls' education, reducing opportunities for skill acquisition, and limiting future employment prospects. Likewise, low educational attainment restricts access to formal employment, leaving many women with few alternatives other than physically demanding informal occupations. Although these relationships are theoretically plausible, empirical evidence specific to Abakaliki is limited. Previous Nigerian studies have largely examined early marriage in relation to reproductive health, fertility, school completion, or gender inequality, while studies on educational attainment have concentrated on income, fertility, or labour force participation. Little attention has been devoted to understanding how early marriage and educational attainment together influence women's involvement in hard labour, particularly in Ebonyi State.

This knowledge gap limits the development of evidence-based interventions aimed at improving women's economic opportunities and reducing dependence on physically strenuous occupations. It is against this background that this study investigates early marriage and educational attainment as predictors of women's involvement in hard labour in Abakaliki.



### Empirical Literature

As a way of capturing the theoretical framework, this study is anchored on **Human Capital Theory** developed by Theodore W. Schultz (1961) and Gary S. Becker (1964); and supported by **Gender Role Theory**, popularized by Alice H. Eagly (1987) because the two theories collectively explain why women with limited education and early marriage are more likely to engage in physically demanding occupations.

Delprato, Akyeampong, Sabates, and Hernandez-Fernandez (2015) investigated the effect of early marriage on women's educational outcomes using demographic survey data from 36 countries in sub-Saharan Africa and South West Asia. The study adopted an instrumental variable approach to address endogeneity between early marriage and educational attainment. The findings revealed that delaying marriage by one-year increased women's years of schooling by approximately half a year in sub-Saharan Africa and significantly reduced school dropout. The authors concluded that poverty, weak female empowerment, and sociocultural norms mediate the relationship between early marriage and educational attainment. The study recommended stronger legal frameworks and expanded educational opportunities for girls.

Using data from the 2018 Nigeria Demographic and Health Survey, Saha et al. (2024) reported that women who married early had lower educational attainment and that this disadvantage extended to their children's educational outcomes. The authors recommended policies that delay age at first marriage through increased access to education and girls' empowerment programmes. Through structured questionnaires and statistical analysis, William-Nwaoba and Onyemachi (2025) discovered that age, education level, and gender were significantly associated with safety knowledge scores among workers. Younger workers with higher levels of formal education demonstrated greater awareness of occupational hazards and preventive measures. This suggests that socio-demographic variables directly affect workers' understanding of risks in hard labour environments, which in turn can influence their participation choices and health outcomes (William-Nwaoba and Onyemachi 2025).

Another quantitative contribution comes from the panel data analysis of female labour force participation across 48 Sub-Saharan African countries. Umar, Seraj, and Ozdeser (2025) employed econometric models to identify how institutional quality, fertility rates, and economic growth influence women's overall engagement in formal and informal work. The findings demonstrate that higher institutional quality correlates with increased female participation, while high fertility burdens and a large informal sector are associated with lower participation rates. Although this study does not isolate physically demanding occupations, its robust statistical results highlight **structural drivers** that indirectly shape women's likelihood of engaging in hard labour, especially in economies with weak labour protections (Umar, Seraj, and Ozdeser 2025).

Asagba et al. (2025) also examined Hausa/Fulani migrant communities in Lagos and Oyo States using interviews and focus group discussions. Their findings demonstrated that educational attainment delays early marriage by changing parental attitudes, expanding girls' aspirations, and increasing access to schooling. The authors concluded that uninterrupted education is one of the most effective strategies for reducing early marriage. Although these studies provide good



evidence on the relationship between early marriage and education, they pay little attention to how early marriage subsequently influences women's engagement in physically demanding occupations. This gap provides further justification for the present study.

### **Gap in the Literature and relevant of this study**

1. Most studies focus on the relationship between early marriage and reproductive health rather than occupational outcomes.
2. Existing Nigerian studies largely investigate educational attainment in relation to school completion, fertility, or labour force participation without considering hard labour specifically.
3. Few studies have simultaneously examined early marriage and educational attainment as joint predictors of women's involvement in physically demanding occupations.
4. There is a scarcity of empirical studies conducted in Abakaliki, despite the prominence of women in labour-intensive occupations such as farming, rice processing, stone crushing, and manual transportation.
5. The present study addresses these gaps by examining the independent and joint predictive effects of early marriage and educational attainment on women's involvement in hard labour in Abakaliki, thereby contributing context-specific evidence that can inform policies on girls' education, women's empowerment, and labour welfare.

### **Objective of the Study**

1. To ascertain the distribution of women according to age at first marriage and hard labour involvement.
2. To examine the kind of association that exists between women's age at first marriage and hard labour involvement
3. To ascertain the distribution of women according to educational attainment and hard labour involvement.
4. To evaluate the kind of association that exists between women's educational attainment and hard labour involvement.
5. To assess the predictive power of early marriage on women's entry into hard labour
6. To assess the predictive power of women's educational attainment on hard labour involvement.
7. To evaluate the joint influence of early marriage and lower educational attainment on women's entry into hard labour in Abakaliki.

### **Research Questions**

- (a) What is the distribution of women according to age at first marriage and hard labour involvement in Abakaliki?
- (b) Is there any significant association between women's age at first marriage and hard labour involvement?
- (c) What is the distribution of women according to educational attainment and hard labour involvement in Abakaliki?
- (d) Is there any significant association between women's educational attainment and hard labour involvement?



### Research Hypotheses

- (a)  $H_{01}$ : Early marriage does not significantly predict women's entry into hard labour in Abakaliki.
- (b)  $H_{02}$ : Lower educational attainment does not significantly predict women's entry into hard labour in Abakaliki.
- (c)  $H_{03}$ : Early marriage and lower educational attainment do not jointly and significantly predict women's entry into hard labour in Abakaliki.

### Research Methods

The study adopted a correlational survey research design with the use of a structured questionnaire which elicited information on the age at first marriage and educational status of Abakaliki women. A total sample of four hundred and seventy-four (474) women who met the criteria for inclusion in the research were purposively selected to participate in this research. All respondents to the questionnaires are married women working at different quarry and building sites of Abakaliki, women selling at the Abakaliki International Market, street shop owners, primary and secondary school female teachers, and women in different workplaces in Abakaliki.

Women who married at an age less than eighteen years were categorized as early marriage, while those who married at age 18 and above were categorized as not early marriage. On educational status, women were also categorized as having high education or low education. All the women with qualifications lower than NCE or OND were grouped as having low education, while those with NCE, OND, and higher degrees were categorized as having higher education.

Women involved in hard labour and those not involved in hard labour were also identified through the nature of the work they do. For example, participants at the quarry sites and building sites are in a natural habitat of hard labour. However, the participants who met in their shops and offices were considered as not being involved in hard labour. So, participants were considered as being involved or not involved in hard labour during the data collection process. Data were analyzed using descriptive statistics, Pearson Chi-Square, and Binary Logistic Regression models.

### Presentation of Results

#### What is the distribution of women according to age at first marriage and hard labour involvement in Abakaliki?

Table 1: Distribution of women by age at first marriage and hard labour involvement

| Early marriage status                | Not involved in hard labour | Involved in hard labour | Total |
|--------------------------------------|-----------------------------|-------------------------|-------|
| $\geq 18$ years (Not early marriage) | 211                         | 33                      | 244   |
| $< 18$ years (Early marriage)        | 12                          | 218                     | 230   |



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Table 1 above shows that 211(86.5%) out of the 244 women who married at age 18 or older were not involved in hard labour while 33 (13.5%) were involved in hard labour. Also, considering the 230 women who married before age 18, 12 (5.2%) were not involved in hard labour while 218 (94.8%) were involved in hard labour. So, the proportion of women who did not marry early but involved in hard labour was 13.5%, and 94.8% among women who married early.

**Is there any significant association between women's age at first marriage and hard labour involvement?**

Table 2: Cross-Tabulation and Chi-Square Tests of Hard Labour Involvement and Early Marriage Status.

|                                                |              |                                                | EARLY MARRIAGE STATUS                    |                          |                             |
|------------------------------------------------|--------------|------------------------------------------------|------------------------------------------|--------------------------|-----------------------------|
|                                                |              |                                                | = OR> 18 (NOT<br>EARLY<br>MARRIAGE)      | <18 ( EARLY<br>MARRIAGE) | Total                       |
| CURRENT HARD<br>LABOUR<br>INVOLVEMENT          | NOT INVOLVED | Count                                          | 211                                      | 12                       | 223                         |
|                                                |              | Expected Count                                 | 114.8                                    | 108.2                    | 223.0                       |
|                                                |              | % within CURRENT<br>HARD LABOUR<br>INVOLVEMENT | 94.6%                                    | 5.4%                     | 100.0%                      |
|                                                | INVOLVED     | Count                                          | 33                                       | 218                      | 251                         |
|                                                |              | Expected Count                                 | 129.2                                    | 121.8                    | 251.0                       |
|                                                |              | % within CURRENT<br>HARD LABOUR<br>INVOLVEMENT | 13.1%                                    | 86.9%                    | 100.0%                      |
|                                                |              |                                                |                                          |                          |                             |
|                                                | Total        | Count                                          | 244                                      | 230                      | 474                         |
| Expected Count                                 |              | 244.0                                          | 230.0                                    | 474.0                    |                             |
| % within CURRENT<br>HARD LABOUR<br>INVOLVEMENT |              | 51.5%                                          | 48.5%                                    | 100.0%                   |                             |
|                                                |              |                                                |                                          |                          |                             |
|                                                |              |                                                | Asymptotic<br>Significance (2-<br>sided) | Exact Sig. (2-<br>sided) | Exact<br>Sig. (1-<br>sided) |
|                                                | Value        | df                                             |                                          |                          |                             |
| <b>Pearson Chi-Square</b>                      |              | 313.798 <sup>a</sup>                           | 1                                        | .000                     |                             |
| Continuity Correction <sup>b</sup>             |              | 310.545                                        | 1                                        | .000                     |                             |
| Likelihood Ratio                               |              | 367.845                                        | 1                                        | .000                     |                             |
| Fisher's Exact Test                            |              |                                                |                                          | .000                     | .000                        |
| Linear-by-Linear<br>Association                |              | 313.136                                        | 1                                        | .000                     |                             |
| N of Valid Cases                               |              | 474                                            |                                          |                          |                             |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 108.21.

b. Computed only for a 2x2 table

From table 2 above, the Pearson Chi-square result is  $\chi^2 (1) = 313.798, p < 0.01$ . This indicates a statistically significant association between early marriage status and hard-labour involvement. Consequently, the distribution of hard-labour involvement differs significantly among women who married before age 18, and those who married at age 18 or older.



### What is the distribution of women according to educational attainment and hard labour involvement in Abakaliki?

Table 3: Distribution of women by Education and hard labour involvement

| Educational status                 | Not involved | Involved | Total |
|------------------------------------|--------------|----------|-------|
| <b>High educational attainment</b> | 179          | 3        | 182   |
| <b>Low educational attainment</b>  | 44           | 248      | 292   |

Statistics from table 3 shows that 474 (182 with high education and 292 with low education) women participated in this research. Out of the 182 women with high educational attainment, 179 (98.4%) were not involved in hard labour while 3(1.6%) were involved in hard labour. Again, out of the 292 women with low educational attainment, 44 (15.1%) were not involved in hard labour whereas 248 (84.9%) were involved in hard labour.

### Is there any significant association between women's educational attainment and hard labour involvement?

Table 4: Cross-Tabulation and Chi-Square Tests of Hard Labour Involvement and Educational Status

|                                       |                      |                                                   | EDUCATIONAL STATUS                                |                                  | Total  |        |
|---------------------------------------|----------------------|---------------------------------------------------|---------------------------------------------------|----------------------------------|--------|--------|
|                                       |                      |                                                   | HIGH<br>EDUCATIONAL<br>ATTAINMENT                 | LOW<br>EDUCATIONAL<br>ATTAINMENT |        |        |
| CURRENT HARD<br>LABOUR<br>INVOLVEMENT | NOT<br>INVOLVED      | Count                                             | 179                                               | 44                               | 223    |        |
|                                       |                      | Expected Count                                    | 85.6                                              | 137.4                            | 223.0  |        |
|                                       |                      | % within<br>CURRENT HARD<br>LABOUR<br>INVOLVEMENT | 80.3%                                             | 19.7%                            | 100.0% |        |
|                                       | INVOLVED             | Count                                             | 3                                                 | 248                              | 251    |        |
|                                       |                      | Expected Count                                    | 96.4                                              | 154.6                            | 251.0  |        |
|                                       |                      | % within<br>CURRENT HARD<br>LABOUR<br>INVOLVEMENT | 1.2%                                              | 98.8%                            | 100.0% |        |
|                                       |                      | Total                                             | Count                                             | 182                              | 292    | 474    |
|                                       |                      |                                                   | Expected Count                                    | 182.0                            | 292.0  | 474.0  |
|                                       |                      |                                                   | % within<br>CURRENT HARD<br>LABOUR<br>INVOLVEMENT | 38.4%                            | 61.6%  | 100.0% |
|                                       |                      |                                                   |                                                   |                                  |        |        |
|                                       |                      | Asymptotic Significance<br>(2-sided)              | Exact Sig. (2-<br>sided)                          | Exact Sig. (1-<br>sided)         |        |        |
| Pearson Chi-Square                    | 312.154 <sup>a</sup> | 1                                                 | .000                                              |                                  |        |        |



|                                    |         |   |      |      |      |
|------------------------------------|---------|---|------|------|------|
| Continuity Correction <sup>b</sup> | 308.820 | 1 | .000 |      |      |
| Likelihood Ratio                   | 377.311 | 1 | .000 |      |      |
| Fisher's Exact Test                |         |   |      | .000 | .000 |
| Linear-by-Linear Association       | 311.495 | 1 | .000 |      |      |
| N of Valid Cases                   | 474     |   |      |      |      |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 85.62.  
b. Computed only for a 2x2 table

Table 4 presents the cross-tabulation and Chi-square analysis of women's educational attainment and hard labour involvement. The Pearson chi-square result was  $\chi^2(1) = 312.154, p < .001$ . Since the significance value is less than 0.05, there is a **statistically significant association between educational attainment and women's involvement in hard labour**. The expected frequencies were also adequate because **no cell had an expected count below 5**; the minimum expected count was 85.62. The observed distribution of hard-labour involvement differs significantly according to educational attainment. Therefore, women with low educational attainment are significantly more likely to be involved in hard labour than women with high educational attainment.

### Research Hypothesis

**H<sub>0</sub>1: Early marriage does not significantly predict women's entry into hard labour in Abakaliki.**

Table 5: Binary Logistic Regression Predicting Abakaliki Women's Involvement in hard labour from Early Marriage

### Model Summary

-2 Log likelihood: 287.603; Cox & Snell R Square: 0.540  
Nagelkerke R Square: 0.721; Chi-square: 313.798

|                     |             | B      | S.E. | Wald    | df | Sig. | Exp(B)  | 95% C.I. for EXP(B) |         |
|---------------------|-------------|--------|------|---------|----|------|---------|---------------------|---------|
|                     |             |        |      |         |    |      |         | Lower               | Upper   |
| Step 1 <sup>a</sup> | MARRIAGE(1) | 4.755  | .351 | 183.872 | 1  | .000 | 116.157 | 58.420              | 230.955 |
|                     | Constant    | -1.855 | .187 | 98.233  | 1  | .000 | .156    |                     |         |

The cross-tabulation and chi-square table on table 2 revealed a clear association between hard-labour involvement and age at first marriage which indicates that women who married before age 18 were substantially more likely to be involved in hard labour than those who married at age 18 or older. A binary logistic regression was subsequently conducted to determine whether early marriage significantly predicted women's involvement in hard labour. The model was statistically significant,  $\chi^2(1) = 367.845, p < .001$ . Early marriage was a significant predictor of hard-labour involvement,  $B = 4.755, SE = 0.351, Wald = 183.872, p < .001$ . The odds ratio,  $Exp(B) = 116.157$  (95% CI: 58.420–230.955), indicates that women who married before the age of 18 had approximately 116 times the odds of being involved in hard labour compared with women who married at age 18 or older. The **Nagelkerke R<sup>2</sup> of .721** indicates that the model provides a very strong explanatory/predictive contribution, with approximately 72.1% of the variation in women's hard-labour involvement accounted for by early marriage status. Thus, the model demonstrated substantial explanatory/predictive strength. Therefore, the null hypothesis that early marriage does not significantly predict women's entry into hard labour was rejected.



**H<sub>02</sub>: Lower educational attainment does not significantly predict women's entry into hard labour in Abakaliki.**

Table 6: Binary Logistic Regression Predicting Abakaliki Women's Involvement in hard labour from Low Educational Attainment

**Model Summary**

-2 Log likelihood: 278.138; Cox & Snell R Square: 0.549

Nagelkerke R Square: 0.733; Chi-square: 377.311

|                     |            | B      | S.E. | Wald   | df | Sig. | Exp(B)  | 95% C.I. for EXP(B) |          |
|---------------------|------------|--------|------|--------|----|------|---------|---------------------|----------|
|                     |            |        |      |        |    |      |         | Lower               | Upper    |
| Step 1 <sup>a</sup> | EDU STATUS | 5.818  | .605 | 92.565 | 1  | .000 | 336.303 | 102.801             | 1100.182 |
|                     | Constant   | -4.089 | .582 | 49.327 | 1  | .000 | .017    |                     |          |

The binary logistic regression analysis in Table 6 was conducted to determine whether educational attainment significantly predicted women's involvement in hard labour in Abakaliki. The model was statistically significant,  $\chi^2(1, N = 474) = 377.311$ ,  $p < .001$ , indicating that educational attainment significantly improved the prediction of women's involvement in hard labour. The model yielded a Cox and Snell  $R^2$  of .549 and a Nagelkerke  $R^2$  of .733, indicating substantial predictive strength. Also,  $B = 5.818$ ,  $SE = .605$ ,  $Wald = 92.565$ ,  $p < .001$ . The odds ratio,  $Exp(B) = 336.303$  (95% CI = 102.801–1100.182), indicates that women with low educational attainment had approximately 336 times the odds of being involved in hard labour compared with women with high educational attainment. Therefore, the null hypothesis that lower educational attainment does not significantly predict women's entry into hard labour was rejected.

Table 7: Binary Logistic Regression Predicting Abakaliki Women's Involvement in hard labour from Early Marriage and Low Educational Attainment

**Model Summary**

-2 Log likelihood: 154.869; Cox & Snell R Square: 0.652

Nagelkerke R Square: 0.871; Chi-square: 500.579

|                     |                | B      | S.E. | Wald   | df | Sig. | Exp(B)  | 95% C.I. for EXP(B) |         |
|---------------------|----------------|--------|------|--------|----|------|---------|---------------------|---------|
|                     |                |        |      |        |    |      |         | Lower               | Upper   |
| Step 1 <sup>a</sup> | MARRIAGE (1)   | 4.375  | .552 | 62.710 | 1  | .000 | 79.432  | 26.899              | 234.557 |
|                     | EDU STATUS (1) | 5.425  | .749 | 52.402 | 1  | .000 | 227.035 | 52.261              | 986.306 |
|                     | Constant       | -5.651 | .762 | 55.059 | 1  | .000 | .004    |                     |         |

The binary logistic regression analysis in Table 7 above was conducted to determine whether early marriage and educational attainment jointly predicted women's involvement in hard labour in Abakaliki. The logistic regression model was statistically significant,  $\chi^2(2, N = 474) = 500.579$ ,  $p < .001$ , indicating that early marriage and educational attainment jointly significantly predicted women's involvement in hard labour. The model demonstrated substantial predictive strength, with a Cox and Snell  $R^2$  of .652 and a Nagelkerke  $R^2$  of .871. The Hosmer–Lemeshow goodness-of-fit test was not significant,  $\chi^2(2) = .919$ ,  $p = .631$ , indicating that the model provided an adequate fit to the observed data.



Both predictors independently made significant contributions to the prediction of hard-labour involvement. Early marriage was a significant predictor,  $B = 4.375$ ,  $SE = .552$ ,  $Wald = 62.710$ ,  $p < .001$ , with an odds ratio of 79.432 (95% CI = 26.899–234.557). This indicates that, holding educational attainment constant, women who married before the age of 18 had approximately 79 times the odds of being involved in hard labour compared with women who married at age 18 or older. Similarly, low educational attainment was a significant predictor,  $B = 5.425$ ,  $SE = .749$ ,  $Wald = 52.402$ ,  $p < .001$ , with an odds ratio of 227.035 (95% CI = 52.261–986.306). This indicates that, holding early marriage status constant, women with low educational attainment had approximately 227 times the odds of being involved in hard labour compared with women with high educational attainment. Therefore, the null hypotheses that early marriage and lower educational attainment do not significantly predict women's involvement in hard labour jointly were rejected.

### **Discussion of Findings**

The findings of the study revealed that early marriage significantly predicted women's involvement in hard labour in Abakaliki. Consequently, women who got married at an early age were more likely to be involved in physically demanding forms of labour than women who married at a later age. One possible explanation is that early marriage can interrupt the educational and human-capital development of girls, thereby limiting their opportunities to acquire the qualifications and skills required for less physically demanding and better-paid occupations. Early marriage may also result in early childbearing and increased household and caregiving responsibilities, which can constrain women's occupational choices and push them toward informal, low-skilled, and physically demanding work.

This finding is consistent with evidence from a study of 42,000 households from the 2018 Nigeria Demographic and Health Survey. Findings indicated that child marriage was associated with lower educational attainment and reduced the likelihood of completing secondary or higher education by about 23%. These findings provide an important explanation for the present result because limited education may restrict women's access to formal employment and increase their dependence on informal and physically demanding livelihoods.

Similarly, Enfield (2019) and Ben-Kalio et al. (2024); reported that early marriage is particularly important in shaping women's access to employment in Nigeria. Girls who marry early may discontinue their education because of marital responsibilities, pregnancy, childcare and domestic obligations. Once formal education is interrupted, their opportunities to obtain professional qualifications and compete for skilled employment become limited. The resulting occupational choices may be concentrated in activities that require physical strength rather than formal educational credentials. This provides support for the present finding that early marriage is a significant predictor of women's involvement in hard labour.

The finding is further supported by Wodon et al. (2017) and Male C. et al., (2016), who argued that child marriage has important economic consequences because it reduces girls' educational attainment and subsequently affects their productivity and earnings. Their analysis showed that



eliminating child marriage could generate substantial gains in education and women's earnings. The authors therefore conceptualised child marriage not merely as a social or cultural issue but also as an economic and human-capital issue.

The findings also agree with the World Bank (2018) evidence on girls' education and women's economic opportunities. The World Bank reports that women with greater educational attainment generally have better employment and earning prospects, while inadequate educational opportunities limit women's lifetime productivity and earnings. Its analysis estimated that women with secondary education earn more, on average, than women with no education.

The present finding is also consistent with Bolarinwa et al. (2022), who analysed data from the 2018 Nigeria Demographic and Health Survey. Their study found that educational attainment was strongly associated with the likelihood of female child marriage. Nigerian young women with secondary education or higher had substantially lower odds of having experienced child marriage. An important implication of the present finding is that early marriage and low education may reinforce one another and jointly contribute to women's vulnerability to hard labour. Early marriage can contribute to school discontinuation, while low educational attainment can increase vulnerability to early marriage. This assertion is consistent with Wodon et al (2017) research work which described the relationship as bidirectional. The researchers asserted that limited education can increase the likelihood of early marriage, while early marriage can itself reduce educational attainment. Consequently, women who experience both early marriage and low educational attainment may face a cumulative disadvantage in accessing decent and less physically demanding employment.

Where educational qualifications and specialized skills are limited, economic necessity may leave women with few alternatives to physically demanding work. Thus, hard labour may not necessarily represent a preference for women but may reflect constrained economic choices resulting from limited education and early family formation. Interventions aimed at preventing early marriage and improving girls' and women's educational attainment may expand women's opportunities to acquire skills, obtain decent employment and move away from occupations that depend heavily on physical labour.

## **Conclusion**

This research investigated the predictive influence of early marriage and low education on women's involvement in hard labour in Abakaliki. Findings indicated that both predictors individually and collectively made significant contributions to Abakaliki women's hard labour involvement. The cross-tabulation showed descriptive evidence while the logistic regression showed predictive evidence. Individual variable prediction in the joint model showed that women who had early marriage and those with low education respectively had 79 and 227 times the odds of being involved in hard labour when compared to their counterparts who did not marry early and had higher education. It can therefore be concluded that early marriage and low education influences Abakaliki women's entry into hard labour.



### Recommendations

Based on findings of this research, it is recommended that the Ebonyi State Government should strengthen programmes that will promote the girl child enrolment, retention, and completion of higher education through relevant agencies, particularly for girls from economically disadvantaged household. Besides, sensitization programmes that will promote the importance of the girl child education before marriage should be organized. Also, employment and skills-development programmes should be organized to equip women with marketable skills that can provide sustainable sources of income rather than physically demanding occupations. Finally, Government agencies should provide support for women already engaged in hard labour through occupational safety education, skills upgrading, and opportunities for transition to less physically demanding forms of employment.

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