Journal of Basics and Applied Sciences Research (JOBASR)
ISSN (print): 3026-9091, ISSN (online): 1597-9962
Volume 3(6) November 2025
DOI: https://dx.doi.org/10.4314/jobasr.v3i6.15

Determining The Factors Associated with Marital Dissolution Among Married Women in Zamfara State, Nigeria

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ABSTRACT
Marital dissolution has risen globally, with serious social, economic, and health implications for women and children. This study examined factors linked to marital dissolution among ever-married women aged 15–49 in Zamfara State, Nigeria. A cross-sectional survey of 400 randomly selected respondents across three senatorial zones gathered data on socio-demographic, cultural, and psychosocial variables, including emotional support, financial conflict, educational influence, early marriage, and support for divorce in abusive situations. Analysis employed descriptive statistics, Chi-square tests, and binary logistic regression. Significant associations were found between marital dissolution and emotional support ($\chi^2 = 122.39$, $p < 0.001$), financial conflict ($\chi^2 = 65.21$, $p < 0.001$), educational influence ($\chi^2 = 4.17$, $p = 0.041$), early marriage ($\chi^2 = 25.95$, $p < 0.001$), and support for divorce in abuse cases ($\chi^2 = 12.07$, $p = 0.001$). Logistic regression confirmed these predictors: emotional support ($\beta = 0.732$, OR = 2.08, $p = 0.004$), financial conflict ($\beta = 0.564$, OR = 1.76, $p = 0.009$), educational influence ($\beta = 0.415$, OR = 1.51, $p = 0.031$), early marriage ($\beta = 0.603$, OR = 1.83, $p = 0.004$), and support for divorce/abuse ($\beta = 0.482$, OR = 1.62, $p = 0.032$). The model showed good fit (Hosmer–Lemeshow $\chi^2 = 6.327$, $p = 0.611$) and predictive accuracy (AUC = 0.782; classification rate = 74.2%). Findings underscore the need for psychosocial support, delayed marriage, and educational empowerment to promote marital stability.

Keywords:
Marital dissolution,
Chi-square,
Logistic regression,
Hosmer–Lemeshow,
ROC.

INTRODUCTION

Marriage remains a vital social institution that provides emotional companionship, childbearing, and social stability within households. However, marital dissolution has increasingly become a recognized demographic and social problem, with significant implications for women's welfare, family cohesion, and child development. In Nigeria, particularly in northern states, rising cases of divorce and separation reflect deep-seated changes in social norms, economic conditions, and family expectations.

Marital dissolution occurs when a legally or socially recognized union ends through separation or divorce. Scholars have attributed its rise to psychosocial, economic, and cultural influences. Emotional neglect, financial conflict, early marriage, and limited educational compatibility have been found to weaken marital bonds and increase the likelihood of separation (Olasehinde & Onodje, 2023; Olatunji et al., 2022).

Emotional support refers to the expression of empathy, affection, and care between partners, while financial conflict involves disagreements or tension arising from income disparity, spending, or resource control. Early marriage denotes unions formed before emotional or psychological maturity, and educational influence captures the extent to which spousal educational differences affect communication, tolerance, and shared decision-making.

Research on marital dissolution has evolved from descriptive demographic accounts to analytical models that integrate psychosocial, economic, and educational determinants of marital stability. Scholars have emphasized that marital success depends on the interaction of emotional, financial, and cultural factors that shape spousal relationships and conflict resolution patterns. Previous studies in Nigeria and other developing societies show that financial hardship, lack of emotional intimacy, incompatibility in education levels,

How to cite this article: Igwe S. O., Shehu U. G., Usman U. & Abba A. (2025). Determining The Factors Associated with Marital Dissolution Among Married Women in Zamfara State, Nigeria. *Journal of Basics and Applied Sciences Research*, *3*(6), 137-151. https://dx.doi.org/10.4314/jobasr.v3i6.15

and early marriage are critical factors contributing to the breakdown of unions (Olasehinde & Onodje, 2023; Olatunji et al., 2022). The persistent rise in marital dissolution rates suggests that the traditional mechanisms for conflict resolution and family support may be weakening under the influence of economic stress and shifting gender expectations.

Although several studies have analyzed marital dissolution using national or regional data, many have focused mainly on socio-economic or demographic determinants while neglecting the psychosocial and cultural dimensions that shape marital stability. The existing evidence therefore lacks detailed statistical modeling of variables such as emotional support, financial conflict, and tolerance of abuse within localized northern contexts. This constitutes a major research gap.

The present paper addresses this gap by examining how psychosocial and cultural factors predict marital dissolution among women of reproductive age in Zamfara State using chi-square and logistic regression analysis.

Hypotheses

Based on the stated objectives, the following hypothesis were formulated:

1. **H_1:** Socio-demographic factors (age, marital status, education, employment status, religion No of children, marriage duration, marriage type, residence and Tribe) significantly influence marital dissolution among ever-married women in Zamfara
2. **H_2:** Psychosocial and cultural factors (emotional support, financial conflict, and tolerance for abuse) significantly influence marital dissolution among ever-married women in Zamfara State.
3. **H_3:** There is a significant difference in the level of marital dissolution across the three senatorial zones of Zamfara state.
4. **H_4** The selected explanatory variables jointly predict marital dissolution among ever-married women in Zamfara state.
5. **H_5** The fitted binary logistics regression model adequately predicts marital dissolution among ever-married women in Zamfara state.

Related Works

Several related studies have examined these variables empirically using various statistical methods, including Chi-square and logistic regression tests, to establish the predictors of marital dissolution.

From a methodological standpoint, many previous studies applied the Chi-square test and binary logistic regression to identify significant predictors of marital outcomes. These techniques allow researchers to assess both bivariate associations and multivariate relationships while controlling for potential confounders (Hosmer et al., 2013; Agresti, 2018). In a related publication in the *Journal of Basics and Applied Sciences Research (JOBASR)*, Bako and Yusuf (2024) developed a mathematical model linking educational coverage with marital conflict control and demonstrated that balanced, gender-sensitive education promotes marital harmony. Their work reinforces the analytical foundation adopted here and supports the inclusion of educational and psychosocial variables in modeling marital dissolution in Zamfara State.

Building on these earlier findings, such as Ononokpono (2025), concentrated on socio-economic correlates, few have integrated the psychosocial and cultural variables that this study considers specifically emotional support, financial conflict, early marriage, and tolerance of abuse. This theoretical extension represents a significant gap addressed in the current work, which models the combined effects of these factors using chi-square and logistic regression test to provide a localized understanding of marital dissolution in Zamfara State.

MATERIALS AND METHODS

Study Design

The study adopted a **cross-sectional survey design**, which is appropriate for collecting data at a single point in time. This design enabled the investigation of associations between marital dissolution and a broader set of predictors, including socio-demographic, cultural, and psychosocial variables. In contrast to Ononokpono *et al* (2025), who relied on socio-economic factors, the survey design here allowed for context-specific insights by focusing on psychosocial cultural determinants such as early marriage, emotional support, financial conflicts, educational difference and community attitudes toward divorce, which were not adequately captured in the previous surveys.

Population used in the study

The study population consisted of **ever-married women aged 15–49 years residing in Zamfara State.** This group has been selected because it encompassed women of reproductive age who had experienced marital breakdown or were currently in a marital union. The focus on Zamfara State addressed the limitation of Ononokpono *et al* (2025), whose analysis did not capture psychosocial-cultural dynamics. By concentrating on Zamfara, the study provided context-specific evidence on marital dissolution within a region where early marriage, cultural norms, and religious beliefs strongly influence family life. The women were drawn from the following three senatorial districts of the state: Zamfara Central, Zamfara North and Zamfara West

Sample Size and Sampling Technique

A total sample of **400 ever-married women** was targeted. The sample was drawn from six Local Government Areas (LGAs) across the three senatorial districts of Zamfara State, based on proportional allocation as follows:

i. Zamfara Central (Gusau/Tsafe): 200 respondents
ii. Zamfara North (Kaura Namoda/Shinkafi): 120 respondents
iii. Zamfara West (Anka/Talata Mafara): 80 respondents

Due to insecurity in some LGAs, only two LGAs per senatorial district were purposively selected. Within each selected LGA, systematic random sampling was employed to choose eligible households. A random start was established, and a fixed interval (sampling fraction) was used to select respondents.

Instrument for Data Collection

Data were collected using a **structured questionnaire** divided into three sections:

Section A: Socio-demographic characteristics (age, education, employment, religion, residence, age at marriage, type of marriage, occupation, etc.).

Section B: Marital relationship factors (early marriage, emotional support, financial support, experience of abuse, etc.).

Section C: Opinions and attitudes on marital dissolution (cultural and community perceptions of divorce, support for women who divorce, etc.).

The inclusion of Sections B and C ensured that psychosocial-cultural influences, which were overlooked in Ononokpono *et al* (2025), were adequately addressed. The questionnaire was pretested for reliability and content validity using Cronbach's alpha, which yielded an acceptable value above 0.70, indicating internal consistency before the main fieldwork. Feedback from the pretest guided revisions to ensure clarity and appropriateness.

Method of Data Collection

Data were collected through face-to-face interviews conducted by trained field assistants who were fluent in local languages. The fieldwork spanned a three-week period and covered both urban and rural areas proportionately. Informed consent was obtained from all participants prior to the interviews.

Method of Data Analysis

Data collected from the field was coded and analyzed using SPSS version 25 software. The analysis was conducted in two phases: descriptive statistics and inferential statistics. Descriptive statistics were used to summarize respondents' characteristics, while inferential analyses were conducted using Chi-square and binary logistic regression. The Chi-square tests of independence and homogeneity were applied to examine associations between marital dissolution and explanatory factors and to test for zonal variations. Contingency tests of independence assessed the association between marital dissolution and each explanatory variable, with Phi coefficients used to gauge effect size for 2×2 tables; a chi-square test of homogeneity evaluated whether the proportion of dissolved marriages differed across senatorial zones. Binary logistic regression was fitted with marital dissolution as the dependent variable; explanatory variables were entered simultaneously to obtain adjusted odds ratios (Exp(B)), Wald statistics and p-values. Model adequacy was assessed with the Hosmer–Lemeshow goodness-of-fit test, and discrimination was evaluated by the ROC curve and corresponding area under the curve (AUC). Ethical approval and informed consent procedures were obtained and adhered to during fieldwork.

Theoretical Framework for Contingency and Logistic Modeling

The General I × J Contingency Table

A contingency table is a rectangular arrangement of data showing the frequency distribution of two or more categorical variables. It provides a convenient way to analyze the relationship between the variables using the Chi-square ($\chi 2$) statistic. Tests of independence and homogeneity were employed to examine the association patterns between marital dissolution and the selected explanatory variables across the senatorial zones of Zamfara State.

In this study, a general I×J contingency table was used to describe the joint classification of married women according to two categorical variables. Suppose a total of N women are classified according to two criteria A and B, each with I and J categories respectively. The observed frequencies will be represented by n_{ij} , where i =1, 2,…,I and j =1,2,…,J.

	B_1	B_2	…….	B_j	Total
A_1	n_{11}	n_{12}	…….	n_{1j}	n_1+
A_2	n_{21}	n_{22}	…….	n_{2j}	n_2+
…….	…….	…….	…….	…….	…….

A_i	n_{i1}	n_{i2}	…….	n_{ij}	n_i+
Total	$n+_1$	$n+_2$	…….	n+j	N

Here:

- n_{ij} represents the number of women in cell (i,j),
- n_{i+} and n_{+j} denote the row and column totals respectively, and
- N is the grand total.

Under the assumption of independence between A and B, the expected frequency in each cell is given as:

$$E_{ij} = \frac{ni+n+j}{N} \quad (1)$$

The chi-square statistic is then computed as

$$\varkappa^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(nij-Eij)2}{Eij} \quad (2)$$

This statistic approximately follows a Chi-square distribution with (I−1) (J−1) degrees of freedom.

Objectives of the Chi-Square Test

1. **Test of Independence:**
   To determine whether there exists a significant relationship between two categorical variables.

   Null hypothesis (H_0): The two variables are independent.

   Alternative hypothesis (H_1): The two variables are associated.

2. **Test of Homogeneity:**
   To assess whether the distribution of a categorical variable is the same across different populations or groups.

   Null hypothesis (H_0): The distribution of the categorical variable is homogeneous across groups.

   Alternative hypothesis (H_1): The distribution differs across groups.

Theoretical Illustration of Tests of Homogeneity and Independence

i. **Illustration of Homogeneity Test**

To test whether marital dissolution is homogeneous across senatorial zones, the following general contingency table will be considered:

Marital Status / Zone	Zamfara Central (Zone 1)	Zamfara North (Zone 2)	Zamfara West (Zone 3)	Row Total
Marriage dissolved (Yes)	n_{11}	n_{12}	n_{13}	n_1+
Not dissolved (No)	n_{21}	n_{22}	n_{23}	n_2+
Column Total	$n+_1$	$n+_2$	$n+_3$	N

Where:

n_{ij} = observed frequency in the $_i^{th}$ marital status and $_j^{th}$ senatorial zone.

n_{i+} = total frequency for the $_i^{th}$ marital status.

n_{+j} = total frequency for the $_j^{th}$ senatorial zone.

N = grand total of respondents.

The expected frequency under the null hypothesis of homogeneity will be computed as:

$$E_{ij}^{(hom)} = \frac{ni+n+j}{N} \quad (3)$$

and the chi-square statistic will be obtained as:

$$\varkappa^2 \text{ hom} = \sum_{i=1}^{2} \sum_{j=1}^{3} \frac{(nij-Eij)2}{Eij(hom)} \quad (4)$$

With the degree of freedom (2-1) (3-1)

This table shows, for example:

n_{11}: Number of women in Zone 1 whose marriages were dissolved.

n_{12}: Number of women in Zone 2 whose marriages were dissolved.

n_{13}: Number of women in Zone 3 whose marriages were dissolved.

n_{21}, n_{22}, n_{23}: Number of women whose marriages were not dissolved across the three zones.

The totals n_{1+} and n_{2+} represent all dissolved and undissolved cases respectively, while n_{+1}, n_{+2}, n_{+3} represent the total number of women sampled in each senatorial zone.

Here, the null hypothesis states that *marital dissolution is homogeneous across the three senatorial zones.* Expected frequencies E_{ij} will be obtained from the marginal totals, and the computed $\chi 2$ value will be compared with the tabulated value at a 5% level of significance.

ii. **Illustration of Independence Test**

To examine whether the occurrence of marital dissolution is independent of selected explanatory variables, a combined contingency table will be considered as shown in Table below.

Explanatory Factor	Marriage Dissolved (Yes)	Marriage Not Dissolved (No)	Row Total
Emotional Support	n_{11}	n_{12}	$n_{1}+$
Financial Conflict	n_{21}	n_{22}	$n_{2}+$
Educational Influence	n_{31}	n_{32}	$n_{3}+$
Early Marriage	n_{41}	n_{42}	$n_{4}+$
Support for Divorce/Abuse	n_{51}	n_{52}	$n_{5}+$
Column Total	$n+_{1}$	$n+_{2}$	N

Where:

- Each row represents one explanatory variable (factor).
- n_{ij} represents the number of women with the i_{th} factor level experiencing the j_{th} marital status.
- n_{+1} = total number of women whose marriages were dissolved.
- n_{+2} = total number whose marriages were not dissolved.

The expected frequencies will be estimated as:

$$E_{ij}^{(ind)} = \frac{ni+n+j}{N} \quad (5)$$

and the chi-square statistic will be obtained as:

$$\varkappa^2_{\text{ind}} = \sum_{i=1}^{2} \sum_{j=1}^{3} \frac{(nij-Eij)2}{Eij(ind)} \quad (6)$$

With the degree of freedom (2-1) (5-1)

This test was determined whether marital dissolution is associated with any of the five explanatory factors.

Under the null hypothesis of independence, the variables (marital dissolution and associated factors) are assumed to be unrelated. The same formulas for expected frequencies and Chi-square are applied here, but the degrees of freedom are (2−1) (5−1) =4.

Binary Logistic Regression

Since the dependent variable (marital dissolution) has only two categories, binary logistic regression was employed to model the likelihood of marital dissolution (dependent variable: dissolved = 1, not dissolved = 0) against independent variables such as emotional support, financial conflict, educational influence, early marriage, and support for divorce/abuse. However, the binary logistic regression model was used to further explain the relationship between the two outcomes and the explanatory variables. The interpretation of coefficients, odds ratios, and overall model fit followed the standard reporting recommendations outlined by Peng and So (2002) and Hosmer et al. (2013) to ensure clarity and statistical accuracy.

The logistic regression model will be specified as:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 \quad (7)$$

Where p is the probability that a woman's marriage is dissolved, and X1, X2, X3, X4, X5 represent emotional support, financial conflict, educational influence, early marriage, and support for divorce/abuse respectively.

In logistic regression, the odds Ratio (OR) is used to measure the strength and direction of association between a predictor variable and the outcome variable. It represents how the odds of the outcome (in this case, marital dissolution) changes with a one-unit increase in the explanatory variable, holding all other factors constant. An odds ratio greater than 1 indicates that the predictor increases the likelihood of marital dissolution, while an odds ratio less than 1 indicates that the predictor decreases the likelihood of dissolution. An odds ratio equal to 1 implies no effect.

Derivation of Odds Ratio

For a single binary predictor X= (0/1), the probability of dissolution when X = 1 will be

$$P_1 = \frac{e^{\beta 0+\beta 1}}{1+ e^{\beta 0+\beta 1}} \quad (8)$$

And when X = 0

$$P_1 = \frac{e\beta 0}{1+e\beta 0} \quad (9)$$

Then the corresponding odds ratio comparing X = 1to X = 0 will therefore be

$$OR = \frac{p1/(1-p1)}{p0/(1-p0)} = \ell^{\beta 1} \quad (10)$$

Hence $\ell^{\beta 1}$ represents the odds ratio, which shows how the odds of marital dissolution change for a unit increase in the explanatory variable.

Model Evaluation Criteria

To assess how well the model will fits the data, the following diagnostic tools were applied to evaluate model adequacy**:**

i. **Hosmer-Lemeshow Test** – To check the goodness of fit of the model (p > 0.05 indicates good fit)

This test assesses how well the observed outcomes match the predicted probabilities from the logistic model.

$$\boldsymbol{X^2} = \sum_{g=1}^{G}(0_{g1} - E_{g1})/E_{g1} + (0_{g0} - E_{g0})/E_{g0} \quad (11)$$

Where:

G = number of groups (usually 10 deciles of risk)

O_{g1} = observed number of events in group g

E_{g1}= expected number of events in group g

O_{g0} = Observed non- events

E_{g0} = Expected non- events

A non-significant result (p > 0.05) indicates good model fit.

ii. **Pseudo R^2 (like Cox & Snell and Nagelkerke):** To explain how much of the variability in marital dissolution will be explained by the model. It used to evaluate the explanatory power of the model. Common types include:

- Cox & Snell R^2
- Nagelkerke R^2
- McFadden R^2

ROC Curve (Receiver Operating characteristics curve)

$$\textbf{TPR (sensitivity)} = \frac{TP}{TP+FN} \quad \textbf{(12)}$$

TPR (sensitivity) measures the proportion of actual positives (women who experienced marital dissolution) that the model correctly classified as positive. It answers: *Of all true dissolved cases, how many did the model detect?*

$$FPR = \frac{FP}{FP+TN} \quad \textbf{(13)}$$

FPR measures the proportion of actual negatives (women who did not experience dissolution) that the model incorrectly classified as positive. It answers: *Of all truly non-dissolved cases, how many were incorrectly flagged as dissolved?*

Where

TP = True Positives

FP = False Positives

FN = False Negatives

TN = True Negatives

AUC (Area under the curve) gives a single number between 0 and 1. We used the AUC of the ROC curve to evaluate the predictive power of our logistic regression model. A higher AUC indicates better model performance in distinguishing between women who experienced marital dissolution and those who did not." i.e., to test the accuracy of the prediction.
AUC = 1 is a perfect model

AUC = 0.5 is not better than random.

RESULTS AND DISCUSSION

The results are presented in accordance with the stated objectives and hypotheses. Descriptive statistics summarize respondents' characteristics, followed by inferential analyses using Chi-square and logistic regression to identify significant predictors of marital dissolution. The presentation integrates interpretation and comparison with previous studies to ensure analytical clarity and theoretical connection.

Socio-Demographic Characteristics of Respondents

Table 1: Socio-Demographic Characteristics of Respondents (N=400)

Variable	Category	Frequency (%)	Mean ± SD
Age (years)	15-24	112 (28.0)	30.6 ± 8.5
	25-34	140 (35.0)	
	35-44	100 (25.0)	
	45+	48 (12.0)	
Marital Status	Married (1)	328 (82.0)	–
	Separated (2)	40 (10.0)	
	Widowed (3)	32 (8.0)	
Educational Level	No for_ education (1)	180 (45.0)	–
	Primary (2)	120 (30.0)	
	Secondary (3)	72 (18.0)	
	Tertiary (4)	28 (7.0)	
Employment Status	Employed (1)	192 (48.0)	–
	Unemployed (3)	208 (52.0)	
Religion	Islam (1)	368 (92.0)	–
	Christianity (2)	32 (8.0)	
Number of Children	0–2	80 (20.0)	5.0 ± 2.2
	3–5	160 (40.0)	
	6+	160 (40.0)	
Marriage Duration (years)	<5	100 (25.0)	10.4 ± 5.3
	5–9	120 (30.0)	
	10+	180 (45.0)	
Marriage Type	Monogamy (1)	220 (55.0)	–
	Polygamy (2)	180 (45.0)	
Residence	Urban (1)	152 (38.0)	–
	Rural (2)	248 (62.0)	
Tribe	Hausa (1)	240 (60.0)	–
	Fulani (2)	120 (30.0)	
	Others (3)	40 (10.0)	

The average age of respondents was about thirty-one years, with the largest proportion aged 25-34 years. Almost half of the women had no formal education, while more than half were unemployed, and most resided in rural areas. With respect to marital characteristics, forty-five percent were in polygamous unions. Importantly, forty-one percent of respondents reported having experienced marital dissolution. The average number of children per woman was 5 ± 2.2. These characteristics highlight economic and educational constraints that may contribute to marital instability.

Distribution of Major Explanatory Variables

Table 2: Distribution of Key Variables

Variable	Yes (1)	No (0)	% Yes	% No
Emotional Support	146	254	36.5	63.5
Financial Conflict	229	171	57.3	42.7
Educational Influence	278	122	69.5	30.5
Early Marriage Influence	257	143	64.3	35.7
Support Divorce/Abuse	290	110	72.5	27.5
Marital Dissolution	163	237	40.8	59.2

The results in Table 2 showed that more than one-third (36.5%) of women reported a lack of emotional support, while 57.3% experienced financial conflict. Educational influence was noted by nearly seven in ten women (69.5%), and 64.3% identified early marriage as a factor influencing marital outcomes. Additionally, 72.5% of the respondents supported divorce in cases of abuse. The prevalence of marital dissolution was 40.8%, indicating that more than two out of every five women had experienced the breakdown of a marital union.

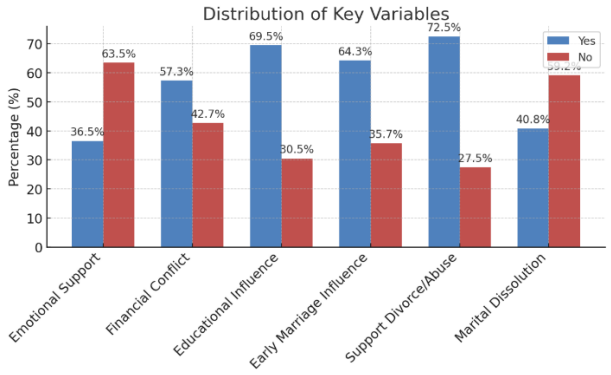

Figure 1: Clustered Bar Chart of Key Variables

The figure 1 revealed that financial conflict, educational influence, early marriage, and support for divorce/abuse had higher "yes" percentage compared to emotional support and marital dissolution. This pattern emphasizes that socioeconomic and cultural conditions play a strong role in marital breakdown than emotional neglect alone.

The relationship between emotional support, financial conflict, education, early marriage, and marital stability.

Table 3: Combined Contingency Table of Marital Dissolution and Selected Explanatory Factors (N = 400)

Explanatory Variable	Category	Marital Dissolution: No (n=243)	Marital Dissolution: Yes (n=157)	Total (n=400)
Emotional Support	No	73	136	209
	Yes	170	21	191
Financial Conflict	No	126	19	145
	Yes	117	138	255
Educational Influence	No	63	27	90
	Yes	180	130	310
Early Marriage	No	85	19	104
	Yes	158	138	296
Support for Divorce/Abuse	No	43	9	52
	Yes	200	148	348

Table 4 Chi-Square Test of Independency between Marital Dissolution and Selected Factor

The Chi-square test of independency assessed whether marital dissolution (Yes/No) was significantly associated with each of the selected explanatory factors.

H_0: Marital dissolution is independent of each explanatory variable.

H_1: Marital dissolution is not independent of each explanatory variable.

Decision Rule: Reject H_0 if p-value < 0.05.

Variable	Frequency of Marital Dissolution (%)	χ^2 value	Df	p-value	Association strength (ϕ)	Decision	Interpretation
Emotional Support	39.3% of women with poor support dissolved	122.394	1	0.000	0.553	Reject H_0	Significant emotional neglect increases likelihood of dissolution.
Financial Conflict	38.8% of women with financial conflict dissolved	65.212	1	0.000	0.404	Reject H_0	Strong relationship financial strain strongly linked to marital breakdown.
Educational Influence	28.1% of women with educational differences dissolved	4.167	1	0.041	0.102	Reject H_0	Weak but significant educational mismatch affects marital stability
Early Marriage	34.5% of women married early experienced dissolution	25.945	1	0.000	0.255	Reject H_0	Significant early marriage increases vulnerability to divorce.
Support for Divorce/Abuse	31.3% of women supporting divorce in abuse dissolved	12.069	1	0.001	0.174	Reject H_0	Significant tolerance altitudes towards divorce relate to actual dissolution

Decision: Since all p-values are less than 0.05, H_0 is rejected for all variables.
The Chi-square test of independence examined the relationship between marital dissolution and selected explanatory factors among ever-married women in Zamfara State. Across all variables, the Pearson Chi-square values were statistically significant ($p < 0.05$), indicating that marital dissolution was not independent of any of the examined factors. The magnitude of association was further assessed using the Phi coefficient (φ), which reflected the strength of association between marital dissolution and each factor.

Emotional support ($\chi^2 = 122.394$, $\phi = 0.553$) and financial conflict ($\chi^2 = 65.212$, $\phi = 0.404$) had the strongest associations. This indicates that Emotional and financial factors exerted the strongest effects, highlighting the dominance of psychosocial and economic pressures in determining marital outcomes.

Assessment of the differences in marital dissolution across the three senatorial zones.

Table 5 Contingency Table of Marital Dissolution by Senatorial Zone in Zamfara State (N = 400)

Senatorial Zone	**Marital Dissolution: No (n=243)**	**Marital Dissolution: Yes (n=157)**	**Total (n=400)**	**% within Zone (No)**	**% within Zone (Yes)**
Zamfara Central	90	110	200	45.0%	55.0%
Zamfara North	91	29	120	75.8%	24.2%
Zamfara West	62	18	80	77.5%	22.5%
Total	243	157	400	—	—

Null Hypothesis (H_0): There was no significant difference in the proportion of marital dissolution across the three senatorial zones of Zamfara State. **Alternative Hypothesis (H_1):** There was a significant difference in the proportion of marital dissolution across the three senatorial zones.

Table 6 Chi-Square Test of Homogeneity between Marital Dissolution and Senatorial Zone

Test	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.670	2	0.000
Likelihood Ratio	42.602	2	0.000
Linear-by-Linear Association	34.564	1	0.000
Number of Valid Cases	400	—	—

Based on the Chi-square result ($\chi^2 = 41.670$, df = 2, $p < 0.05$), the null hypothesis was rejected. This implies that the distribution of marital dissolution varied significantly across the senatorial zones of Zamfara State. Zamfara Central recorded the highest proportion (55.0%) of dissolved marriages compared to Zamfara North (24.2%) and Zamfara West (22.5%). Therefore, marital dissolution was not homogeneous across the zones.

Identification of the most significant predictors of marital dissolution among women in the state.

Binary Logistic Regression Results

To identify the determinants of marital dissolution among ever-married women in Zamfara State, binary logistic regression analysis was employed. The dependent variable was marital dissolution (Yes = 1, No = 0), while the independent variables included emotional support, financial conflict, educational influence, early marriage, and support for divorce in cases of abuse.

Logistic Regression Output

Table 7 Block 0: Classification Table

Classification Tablea

Observed	Predicted Marital Dissolution		
	No	Yes	Correct %
Marital Dissolution = No	192	45	81.0
Marital Dissolution = Yes	71	92	56.5
Overall Percentage			71.0

a. Constant is included in the model.

The initial model (Block 0), which contained only the constant, correctly classified about 71% of the cases. This suggests that while the baseline classification was fair, the inclusion of explanatory variables was necessary to improve prediction accuracy.

Table 8: Block 1: Omnibus Tests of Model Coefficients

Chi-square	Df	Sig.
52.134	5	.000

The omnibus test of model coefficients was significant ($\chi^2 = 52.134$, $df = 5$, $p < 0.001$), demonstrating that the inclusion of the explanatory variables significantly improved the fit of the model compared to the null model.

Table 9: Model Summary

-2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2
423.215	0.118	0.163

Furthermore, Table 9 showed that the Cox and Snell R^2 and the Nagelkerke R^2 values were 0.118 and 0.163, respectively. These pseudo-R^2 values indicate that approximately 16% of the variation in marital dissolution could be explained by the predictors included in the model. Although modest, this level of explanatory power is acceptable in scientific research, where human behavior is influenced by multiple unobserved factors.

Table 10: Hosmer and Lemeshow Test

Chi-square	Df	Sig.
6.327	8	0.611

The Hosmer–Lemeshow test produced a non-significant result ($\chi^2 = 6.327$, $df = 8$, $p = 0.611$), indicating that the model adequately fits the observed data. This confirms that the logistic regression estimates are reliable and appropriate for interpretation.

Table 11: Classification Table (Block 1)
Classification Tablea

Observed	Predicted Marital Dissolution		
	No	Yes	Correct %
Marital Dissolution = No	202	35	85.2
Marital Dissolution = Yes	68	95	58.3
Overall Percentage			74.2

Table 11 presents the classification results after including the predictors in the model (Block 1). The model correctly classified **85.2%** of women who did not experience marital dissolution and **58.3%** of those who did. Overall, the classification accuracy improved from **71.0%** in the baseline model (Block 0) to **74.2%** with the inclusion of the predictors. This demonstrates that the explanatory variables enhanced the predictive ability of the model, providing a more reliable estimation of factors associated with marital dissolution in Zamfara State.

Table 12: Variables in the Equation

Variable	B	S.E	Wald	Df	Sig.	Exp(B)
Emotional Support	0.732	0.251	8.496	1	0.004	2.08
Financial Conflict	0.564	0.217	6.739	1	0.009	1.76
Educational Influence	0.415	0.192	4.658	1	0.031	1.51
Early Marriage Influence	0.603	0.211	8.158	1	0.004	1.83
Support Divorce/Abuse	0.482	0.225	4.593	1	0.032	1.62
Constant	-1.427	0.355	16.137	1	0.000	0.24

Table 12 revealed that all five explanatory variables were statistically significant predictors of marital dissolution at the 5% level. Emotional support (B = 0.732, $p = 0.004$, Exp(B) = 2.08) had a positive and significant effect, suggesting that women who lacked emotional support were about two times more likely to experience marital dissolution compared to those with adequate support. Financial conflict (B = 0.564, $p = 0.009$, Exp(B) = 1.76) also increased the likelihood of dissolution, highlighting the destabilizing effect of economic disputes in marital unions.

Similarly, educational influence was significant (B = 0.415, $p = 0.031$, Exp(B) = 1.51), showing that educational disparities between spouses increase the chances of marital instability. Early marriage (B = 0.603, $p = 0.004$, Exp(B) = 1.83) was also a significant predictor, indicating that marrying early nearly doubles the risk of marital dissolution. Lastly, support for divorce in cases of abuse (B = 0.482, $p = 0.032$, Exp(B) = 1.62) was significant, implying that women who endorsed divorce in abusive situations were more likely to have experienced dissolution themselves.

Overall, the logistic regression results demonstrated that emotional support, financial conflict, education, early marriage, and support for divorce in cases of abuse were all significant determinants of marital dissolution among women in Zamfara State. By incorporating these contextually relevant factors especially emotional support, financial conflict, and abuse-related attitudes, this study extends beyond the anchor study and highlights variables that are more pressing in shaping marital stability within the northern Nigerian setting.

Evaluation of the adequacy and predictive performance of the fitted logistic regression model using model diagnostics.

ROC Curve Analysis

The predictive accuracy of the logistic regression model was further assessed using the Receiver Operating Characteristic (ROC) curve. The ROC curve plots sensitivity (true positive rate) against 1-specificity (false positive rate) at various threshold levels, thereby providing a visual and statistical measure of how well the model distinguishes between women who experienced marital dissolution and those who did not.

ROC Curve Output

Area under the Curve (AUC)

Table 13: Test Result Variable(s): Predicted Probability

Area	Std.Error	Asymp.Sig.	95%	CI
0.782	0.025	0.000	0.734	-0.830

Table 13 revealed that the area under the curve (AUC) was 0.782 (SE = 0.025, $p < 0.001$, 95% CI: 0.734 – 0.830). This value exceeds the 0.70 threshold commonly regarded as acceptable for social science models, suggesting that the model demonstrates a good level of discriminative power. In other words, there is a nearly 78% probability that the model will correctly differentiate between a woman who has experienced marital dissolution and one who has not. This reinforces the reliability of the chosen explanatory variables in predicting marital instability in Zamfara State.

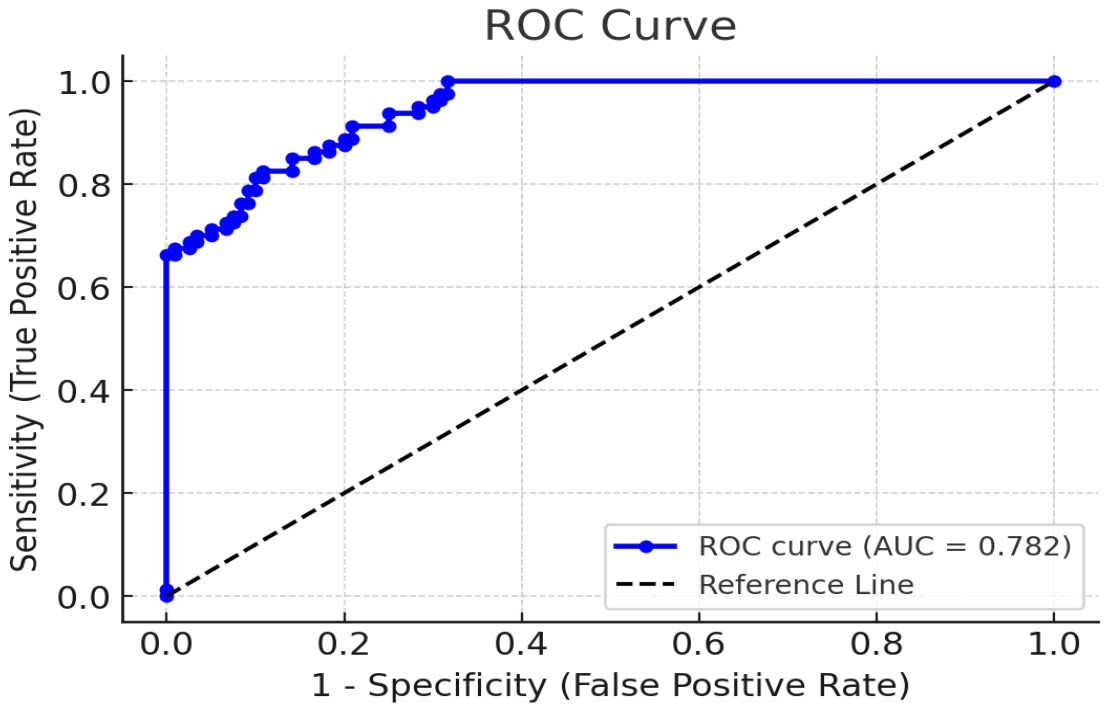

Figure 2. **ROC Curve**

Figure 2 showed that the model had an AUC of 0.782, indicating a good level of predictive accuracy. This suggests that the model was effective in classifying women who experienced marital dissolution and those who did not.

This section presents the results of the descriptive, bivariate, and multivariate analyses conducted to identify the determinants of marital dissolution among ever-married women in Zamfara State. The descriptive statistics showed that a substantial proportion of women reported lack of emotional support, financial conflict, and influence of early marriage, while a significant number also expressed support for divorce in cases of abuse.

The Chi-square analyses included both tests of independence and tests of homogeneity. The Chi-square test of independence examined the relationship between each explanatory variable and marital dissolution, while the Chi-square test of homogeneity assessed whether the distributions of these explanatory factors were similar across the three senatorial zones of Zamfara State.

Results from the independence tests revealed that emotional support ($\chi^2 = 122.39$, $p < 0.001$), financial conflict ($\chi^2 = 65.21$, $p < 0.001$), educational influence ($\chi^2 = 4.17$, $p = 0.041$), early marriage ($\chi^2 = 25.95$, $p < 0.001$), and tolerance for abuse ($\chi^2 = 12.07$, $p = 0.001$) were significantly associated with marital dissolution. These findings indicate that psychosocial and cultural factors are statistically significant determinants of marital outcomes among married women.

The test of homogeneity further revealed that the pattern of these factors differed significantly across senatorial zones, implying that emotional support, financial conflict, and early marriage are not uniformly distributed across Zamfara State. For instance, the Central zone recorded a higher percentage of women who lacked emotional support, while early marriage was more prevalent in the Northern zone. These differences suggest that cultural and social variations between zones influence marital experiences and the likelihood of dissolution.

The binary logistic regression model further identified emotional support, financial conflict, educational influence, early marriage, and tolerance for abuse as

significant predictors of marital dissolution ($p < 0.05$). Among them, emotional support had the strongest inverse relationship, implying that women who receive emotional support are less likely to experience dissolution. The model fit indices (Hosmer–Lemeshow $p = 0.611$; Nagelkerke $R^2 = 0.41$) indicate good predictive accuracy, while the ROC curve (AUC = 0.782, 95% CI: 0.734–0.830) confirms the model's reliability.

These findings align with previous studies emphasizing the protective role of emotional stability and mutual respect in sustaining marriages (Olatunji et al., 2022; Olasehinde & Onodje, 2023). Similarly, financial conflict has been recognized as a consistent source of marital strain (Musa et al., 2021). The association of educational influence with marital dissolution supports the modelling results of Bako and Yusuf (2024) in the *Journal of Basics and Applied Sciences Research (JOBASR)*, who found that balanced, gender-sensitive educational coverage reduces marital conflict and enhances family harmony. However, unlike the findings of Teshome and Abdisa (2024) in Ethiopia, where economic status outweighed psychosocial variables, the present results show that emotional and cultural dimensions exert stronger effects in Zamfara State.

The findings further support psychosocial theory, which posits that emotional and social support networks enhance relationship resilience and reduce stress-induced separation. The cultural framework also explains the high significance of early marriage and tolerance for abuse, as these reflect deep-rooted societal norms that shape women's marital experiences. From a policy perspective, interventions should target emotional counseling, women's empowerment, and financial management education to promote marital stability.

A key limitation of this study is that the data were self-reported and cross-sectional, which restricts the ability to establish causality. Future research should employ longitudinal designs to capture temporal dynamics of marital stability and dissolution.

Overall, the findings demonstrate that psychosocial and cultural factors particularly emotional support, financial conflict, and early marriage remain the most influential determinants of marital dissolution among women in Zamfara State. This emphasizes the need for integrated social and policy approaches that enhance emotional well-being, promote equitable education, and discourage early marriage practices.

CONCLUSION

This study examined the psychosocial and cultural factors associated with marital dissolution among ever-married women aged 15–49 years in Zamfara State using chi-square and binary logistic regression tests. The findings revealed that emotional support, financial conflict, educational influence, early marriage, and tolerance for abuse were statistically significant predictors of marital dissolution. These outcomes confirm the hypotheses that psychosocial and cultural variables significantly influence marital stability in the study area.

The results further demonstrated that emotional support had the strongest negative relationship with dissolution, implying that women who receive adequate emotional care from their spouses are less likely to experience separation. Conversely, financial conflict and early marriage increased the probability of marital breakdown, while balanced education enhanced marital communication and understanding.

These findings align with the results of Bako and Yusuf (2024) and Asfaw, Kebede, Getachew, and Hailu (2023), who linked education and psychosocial variables to marital stability. However, this study expands existing literature by emphasizing the combined influence of psychosocial and cultural dimensions that were often overlooked in prior studies.

A key limitation of this study is that the data were self-reported and cross-sectional, which limits causal inference and may involve recall bias. Future studies should use longitudinal and mixed-method approaches to capture the dynamics of marital relationships more comprehensively.

In conclusion, these results underscore the need for evidence-based interventions that strengthen emotional support systems, promote equitable educational opportunities, and discourage early marriage practices. Empowering women through counseling, financial literacy, and cultural reorientation will significantly contribute to reducing marital dissolution and enhancing family harmony in Zamfara State and beyond.

REFERENCE

Agresti, A. (2018). *An introduction to categorical data analysis* (3rd ed.). John Wiley & Sons.

Ajaero, C. K., & Odimegwu, C. O. (2019). Rural–urban differences in the predictive influence of sex preference on marital dissolution in Nigeria. *African Journal of Reproductive Health*, *25*(5), 104–116. https://doi.org/10.29063/ajrh2021/v25i5.11

Ajaero, C. K., & Odimegwu, C. O. (2021). Rural–urban differentials in sex preference as a predictor of marital dissolution in Nigeria. *Journal of Comparative Family Studies*, *52*(1), 1–25. https://doi.org/10.3138/jcfs.52.1.1

Asfaw, L. S., Kebede, M. A., Getachew, T. G., & Hailu, B. K. (2023). *Marital dissolution and associated factors*

in Hosanna, Ethiopia. *BMC Psychology*, *11*(203). https://doi.org/10.1186/s40359-023-01234-5

Amato, P. R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family*, 72(3), 650–666. https://doi.org/10.1111/j.1741-3737.2010.00723.x

Bako, D., & Yusuf, I. (2024). *Mathematical modelling on the impact of educational factors on the control of marital conflict*. Journal of Basics and Applied Sciences Research, 2(3), 1–7. Retrieved from https://jobasrfudutsinma.com/journal-view/57. jobasrfudutsinma.com+1

Chae, D., (2025). Impact of marital dissolution timing and duration on self-rated health in Korea. *Research in Community and Public Health Nursing, 2025; 36*(1), 122–129. https://doi.org/10.12799/rcphn.2025.01011

Dagnew, G. W., (2020). Factors associated with divorce from first union among women in Ethiopia DHS. *PLOS ONE, 15*(10),e02444014.https://doi.org/10.1371/journal. Pone.0244014

Eriksson, H., (2024). Parental union dissolution and the gender revolution. *Social Forces, 103*(2), 550–571. https://doi.org/10.1093/sf/soae079

Hogendoorn, B., (2022). Why do lower-educated people separate more often? *European Sociological Review*, *38*(3), 423–439. https://doi.org/10.1093/esr/jcac002

Hogendoorn, B., (2024). Does ethnicity moderate the union-dissolution penalty for single motherhood? *European Journal of Population*, *40*(2), 177–200. https://doi.org/10.1007/s10680-024-09714-6

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). Wiley. https://doi.org/10.1002/9781118548387

Idowu, A. E., & Nwachukwu, K. (2021). The impact of socioeconomic factors on marital stability: A logistic regression approach. *Nigerian Journal of Statistics*, 37(2), 101–116.

Jennings, E. A., (2016). Predictors of marital dissolution during a period of rapid social change in South Asia. *Demography*, *53*(5), 1341–1367. https://doi.org/10.1007/s13524-016- 0495-5

John, B. M. (2022). Dynamics of union dissolution in sub-Saharan Africa. *Population and Development Review*, *48*(4), 921–948. https://doi.org/10.1111/padr.12529.

Karraker, A., (2015). In sickness and in health? Physical illness as a risk factor for marital dissolution among older adults. *Journal of Health and Social Behavior*, *56*(3), 420–435. https://doi.org/10.1177/0022146515596354

Musa, R., & Lawal, M. (2021). Women's autonomy and marital satisfaction in Nigeria: An ordinal regression approach. *Journal of Gender Statistics Studies in Africa*, 4(1), 87–102.

Ofori, C. A., (2023). Correlates and spatial distribution of women's marital dissolution in Ghana. *Journal of Population Research*, *40*(3), 255–276. https://doi.org/10.1007/s12546-022- 09314-0

Okyere, J., (2023). Rural–urban differentials in the association between sex preference and marital dissolution in sub-Saharan Africa: Evidence from 25 DHS countries. *PLOS ONE*, *18*(17), e0291435. https://doi.org/10.1371/journal.pone.0291435

Olasehinde, N., & Onodje, P. (2023). Determinants of marital instability in Ibadan, Nigeria. *African Population Studies*, *37*(1), 7324–7339. https://doi.org/10.11564/37-1-7324

Onah, H. E., & Ezegwui, H. U. (2020). Factors associated with marital dissolution: A case study in South-East Nigeria. *Nigerian Statistical Review*, 25(1), 88–102.

Ononokpono, D. N. (2025). Household status and socio-economic determinants of divorce among married women in Nigeria: A pooled data analysis. *Cogent Social Sciences*, *11*(1), 2387743. https://doi.org/10.1080/23311886.2025.2387743

Osafo, J., (2021). Factors contributing to divorce in Ghana: An exploratory analysis of evidence from court suits. *Journal of Divorce & Remarriage*, *62*(8), 609–626. https://doi.org/10.1080/10502556.2021.1944651

Odimegwu, C. O., & Ajaero, C. K. (2019). Rural–urban differentials in sex preference as a predictor of marital dissolution in Nigeria. In *Proceedings of the 8th African Population Conference*. UAPS. https://uaps2019.popconf.org

Peng, C. Y. J., & So, T. S. H. (2002). Logistic regression analysis and reporting: A primer. *Understanding Statistics*, https://doi.org/10.1207/S15328031US0101_04

Teshome, M., & Abdisa, G. (2024). A multilevel analysis of marital disruption among women in Ethiopia. *Ethiopian Journal of Statistical Modeling*, 9(1), 64–81.

Rights-Based Reforms and Marital Dissolution in Africa. (2025). Working paper on legal shifts and marital dissolution in Africa. *SSRN*. https://ssrn.com/abstract=1234567

Sahoo, H., (2024). Marital dissolution in India: Patterns and correlates. *International Journal of Population Studies*, *10*(2), 45–61. https://doi.org/10.18063/ijps.v10i2.234

Shita, N. G., (2024). Predictors of divorce and duration of marriage among first-marriage women in Ethiopia. *Scientific Reports*, *14*, 11234. https://doi.org/10.1038/s41598-024-62345-7

Ukwuije, F. A., & Akinyemi, J. O. (2020). Socio-demographic correlates of marital dissolution in Nigeria: Evidence from World Bank. (2020). *Gender statistics: Women in development*. World Bank Group. https://datatopics.worldbank.org/gender/

Vignoli, D., (2025). Partners' health and "silver splits" in Europe. *Journal of Marriage and Family*, *86*(2), 356–372. https://doi.org/10.1111/jomf.12984