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Factors That Influence Married Women's Decision at Rokan River Coast to Work

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Abstract. *The extreme economic pressure on coastal communities encourages the exploitation of children and women. The poor's poverty status results in the establishment of intergenerational inheritance of poverty. Particularly in rural and coastal areas, women are vital in building the family economy. The purpose of this study was to better understand the motivations of married women who work. In this research, a logistic regression model was the method used. If a married woman decides to work, the dependent variable assumes Y=1 and Y=0 if she decides not to work. Age, the number of children under five who are owned, and the number of dependents had no impact on married women's desire to work. But, education level and husband's income are factors that affect women's decision to work. The variables education level and husband's income have odds ratio values of 2.102 and 0.937, respectively, indicating that increasing the education level by one level increases the chances of women working by 2.102 times, and increasing the husband's income by IDR 100,000 increases the chances of the woman deciding to work by 0.937 times.*
Keywords. *Household; Women; Logistics; Coastal; Rokan River.*

INTRODUCTION

Economic activity is an aspect of people's daily life that cannot be separated. This occurs because the community's requirements will always expand over time. Responding to ever-increasing economic conditions and demands, people who contribute to home income include both men and women (De Hauw & Greenhaus, 2015). As a result, all household members play an active role in the family's survival, particularly in economic operations (Caldwell, 1979). At the moment, women outweigh men in economic activity, and one of the metrics used to assess a country's progress is the growing influence of women in the economy (Fukuda-Parr, 2003). Women's participation is critical in managing family finances, particularly in coastal areas where poverty rates remain high (Lawson et al., 2012).

The coastal area has its unique characteristics. Every day, women and children dominate the coastal area because husbands and young men often go to look for sea or river products (Di Ciommo & Schiavetti, 2012). Women are being prioritized in efforts to improve the well-being of fishermen's families. Women in coastal locations can become a driving force for productive economic activity in coastal communities, elevating their role from that of ordinary housewives to that of earners (Sondakh et al., 2021) (Parven et al., 2022).

Rokan Hilir Regency is one of the regions in Riau Province traversed by rivers. The Rokan River is the primary river, stretching 350 kilometers and reaching depths of 6 to 8 meters as it passes through the sub-districts of Bangko, Rimba Melintang, and Tanah Putih. Since this river drains into the ocean, it is affected by tidal currents of seawater that reach as far as the Rimba Melintang Sub District. Two tributary branches, Rokan Kanan and Rokan Kiri, contribute to the formation of the Rokan River. These tributaries are located in

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the Bukit Barisan highlands, which are located in the east of South Tapanuli Regency (North Sumatra) and the west of Rokan Hulu Regency. (Suryani et al., 2019).

Economic pressures on coastal communities that are too high often encourage the exploitation of children and women workers (Mahoney, 2010). Poverty is passed down through generations as a result of the poor's living conditions (Lewis, 2017). According to population and data on poor families from the Riau Province's Central Statistical Agency (BPS) in 2020, Rokan Hilir has 51.97 million poor individuals, making it the province with the third-largest poor population overall.

From an economical perspective, women still play a relatively small role in enhancing the welfare of residents in coastal areas; men and women have potential, but the potential of women is not fully realized; and the community's weak participation in decision-making, particularly that of women, because, generally speaking, the poor are difficult to involve in various decisions and patterns of employment relationships. From a gender perspective, the management of coastal areas is still gender-biased (still not involving women), which results in women not playing a role in the management of coastal areas (Denton, 2002) (Hackett & Betz, 1981).

METHOD

Sedinginan Village, located beside the Rokan River, was chosen as the site for this study. The study took time for four months, from April to July 2022. The type of data sought was primary data gathered directly from the research object. Direct surveys into the field were used for primary data collection. The technique utilized was the distribution of questionnaires to the research object following the study's objectives. The sample size was 77 respondents, and the sample was chosen using the purposive sampling approach. The data and information gathered in the field were tabulated and analyzed following the research objectives.

This study used data analysis techniques and a binary logistic regression model. The binary logistic regression model analysis seeks to identify the elements that have a major impact on women's participation in strengthening family economics during the pandemic on the Rokan River shore, Tanah Putih Sub District. Because the conventional analytical procedure utilized produces a dichotomous result variable, this method was chosen (Hosmer & Lemeshow, 2000). The dependent variable is either 1 or 0, with 1 indicating that it has a role in the economy and 0 indicating that it does not.

Hosmer & Lemeshow (2000) explained that the form of the logistic regression model with $P(Y = 1) = \pi(x)$ is:

$$\pi(x) = \frac{\exp\left(g(x)\right)}{1 + \exp\left(g(x)\right)}$$

With $g(x) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p$

where,

$\pi(x)$ = The probability of occurrence is 1
β_0 = Constant
β_i = Logistic regression coefficient $(i = 1,2, \dots, p)$
p = Number of predictor variables

The function in the above equation is non-linear, therefore to make it a linear function, the logit transformation will be carried out as follows:

$$logit\ [\pi(x)] = \ln\left[\frac{\pi(x)}{1 - \pi(x)}\right] = g(x)$$

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$$g(x) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p$$

$g(x)$ is a logit estimate which is a linear function of the predictor variable, with the largest probability value being 1. The dependent variable assumes a binary value of (D = 1) if a married woman decides to work and (D = 0) if the woman decides not to work. Independent research relies on theory, prior research, and data availability. According to reports, a married woman's choice is affected by a variety of elements, including her age, the number of children under the age of five, the number of dependents, her degree of education, and the income of her husband.

RESULTS AND DISCUSSION

Overall Model Fit

The whole model fit will be evaluated using the Log-Likelihood Value value, which will be compared between the Log Likelihood Valueblock numbers = 0 and = 1. The test is performed by determining the difference between a value of -2 log likelihood block number = 0 and a value of -2 log likelihood block number = 1.

There is a reduction in outcomes, which indicates a better regression model, if the value of -2 log Likelihood in block number = 0 is greater than the value of Log Likelihood Value at block number = 1; on the other hand, if the value increases, the regression model is getting worse. (Ghozali, 2018)

The hypothesis to assess the overall model fit is as follows:

H_0: The hypothesized model fits the data

H_1: The hypothesized model does not fit the data

Table 1. Model Fit Test *(Overall Model Fit)*

Description	Value
-2Log Likelihood *block number* = 0	106,628
-2Log Likelihood *block number* = 1	84,316

Source: Processed Primary Data (2022)

When the independent variables are incorporated into the regression model, Table 1 demonstrates that the values of the -2 Log Likelihood block numbers = 0 and 1 are 106.628 and 84,316, respectively. According to the regression results, the value between -2 Log Likelihood block number = 0 and block number = 1 of 22,312 decreases.

According to the justification given, H_0 is accepted, meaning that the model's hypothesis is consistent with the observed value because the value of the -2 Log likelihood block number = 0 is greater than the value of the -2 Log likelihood block number = 1, which results in a decline. It implies that the regression model will be improved by including independent variables.

Regression Model Feasibility Test

The viability of the regression model will be examined using Hosmer and Lemeshow's Goodness of Fit Test, which measures the chi-square value.

The hypothesis in this test is as follows:

H_0: Observation data fit or fit the model, which means that there is no substantial discrepancy between the model and the data, indicating that the model is fit.

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H_1: The observation data does not match or fit the model, indicating that there is a considerable disparity between the model and the data, indicating that the model is unsuitable.

The Hosmer and Lemeshow test has a decision rule that states that if the probability value (P-value) is less than 0.05, there is a large discrepancy between the model and the observation data, making it impossible to use the model to estimate the observed value. On the other hand, if in the Hosmer and Lemeshow test the P-value≥ 0.05, it signifies that there is no significant difference between the model and the observed value, hence it may be stated that the model is useful for estimating the observation value.

Table 2. Hosmer and Lemeshow Test

Chi-Square	*Df*	*Sig.*
14,009	8	0,082

Source: Processed Primary Data (2022)

The Hosmer and Lemeshow Goodness of Fit Test, shown in Table 2, reveals that the chi-square number is 14.009, with a significance of 0.082. This means there is no statistically significant difference between the model and the actual data.

Coefficient of Determination (The Value of *Nagelkerke's R Square)*

The coefficient of determination is useful for explaining the variability of the independent variable as seen from the Nagelkerke RSquare value.

Table 3. Model Summary

-2 Log Likelihood	*Cox & Snell R Square*	*Nagelkerke R Square*
84,316	0,252	0,336

Source: Processed Primary Data (2022)

Table 3 shows that the value of Nagelkerke R Square is 0.336. This shows that the independent factors, namely age, educational status, number of children under five, number of dependents, and husband's salary, have a 33.6% capacity to explain the dependent variable, namely the decision of married women to work in the Rokan river's coastal area. Other variables outside of this research model explain 66.4% of the variance.

Classification Matrix

To estimate the accuracy of the model, a classification matrix can also be used. Calculating the true and false values present in the dependent variable yields the classification matrix. The classification matrix can show the estimated power of the logistic regression model used to predict women's decisions on the Rokan River coast to work.

Table 4. Table of Classification Matrix

Observed		*Predicted* **Work Decision**		*Percentage Correct*
		Unemployed	Employed	
Work	Unemployed	29	11	72,5

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Decision	Employed	11	26	70,3
Overall Percentage				71,4

Source: Processed Primary Data (2022)

Table 4 reveals that the model's ability to predict whether or not to work is 71.4%. According to the table, married women on the Rokan river's coast who choose to work account for 70.3% of the entire sample of 77 data. While married women on the Rokan river's shore who choose not to work account for 72.5% of the whole sample of 77 data.

Logistic Regression Model

Table 5. The Result of Logistic Regression Model

	B	S.E.	Wald	Df	Sig.	Exp(B)
X_1	0,047	0,041	1,321	1	0,250	1,048
X_2	0,743	0,243	9,335	1	0,002*	2,102
X_3	-0,511	0,570	0,804	1	0,370	0,600
X_4	0,137	0,225	0,370	1	0,543	1,147
X_5	-0.065	0,022	9,121	1	0,003*	0,937
Constant	-1,887	1,997	0,893	1	0,929	0,152

*Significance Level 5% (0,05)
Source: Processed Primary Data (2022)

A logistic regression equation may be written using the parameter values (B) in table 5 above, which are the results of logistic regression:

$$\ln\left[\frac{\pi(x)}{1-\pi(x)}\right] = -1{,}887 + 0{,}047X_1 + 0{,}743\,X_2 - 0{,}511X_3 - 0{,}137X_4 - 0{,}065X_5$$

Alternatively, the derivative formula from the above equation can be used so that it becomes:

$$\pi(x) = \frac{\exp\left(-1{,}887 + 0{,}047X_1 + 0{,}743\,X_2 - 0{,}511X_3 - 0{,}137X_4 - 0{,}065X_5\right)}{1 + \exp(-1{,}887 + 0{,}047X_1 + 0{,}743\,X_2 - 0{,}511X_3 - 0{,}137X_4 - 0{,}065X_5)}$$

To see the influence of the independent variable on the dependent variable in the logistic regression equation, look at the value of Exp (B), commonly known as the odds ratio. The size of the difference in the tendency of each dependent variable is as follows, based on the odds ratio value of the output results in table 5:

Age

The value of exp (B) or the odds ratio in the X_1 variable is 1.048 and the value in column B is positive, meaning that if the age of the woman on the Rokan river coast increases by 1 year, the tendency of the woman to decide to work increases by 1.048 times. The age variable does not affect women's employment decisions. This indicates that age has no bearing on married women on the Rokan river coast's desire to work, and it can be observed that many older women on the Rokan river coast are still working to assist boost

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their family income. According to the report, there are 100% of respondents are older women who are still working.

Level of education

The value of exp (B) or the odds ratio on the variable X_2 is 2.102 and the value in column B is positive, meaning that if the education level of women on the Rokan river coast increases by 1 level, the tendency of these women to decide to work increases by 2.102 times. The education level variable has a positive and significant influence on the decision of married women to work on the coast of the Rokan river. This means that the education level variable affects the decision of married women on the Rokan river coast to decide whether to work or not. The higher the education level of the woman, the more likely she is to decide to participate in the family economy by working.

These results are in line with those of (Majid & Handayani, 2012), (Rantau & Zain, 2013),(Christoper et al., 2019)), and (Kaarib et al., 2019), who discovered that women's employment decisions are influenced by their level of education. With higher levels of education, women are more eager to find employment.

Number of Toddlers in the family

The value of exp (B) or the odds ratio on the variable X_3 is 0.600 and the value in column B is negative, meaning that if the number of under-fives ownership in women on the Rokan river coast increases by 1 person, the tendency of these women to decide to work decreases by 0.600 times. The varied number of children under the age of five does not affect married women's desire to work. This suggests that women who do not have toddlers or have a small number of toddlers do not affect a woman's decision to work. This is because the majority of respondents are women who do not have children under the age of five, hence the number of children under the age of five does not affect their employment decisions.

The number of dependents

The value of exp (B), or the odds ratio on the X_4 variable, is 1.147, and the value in column B is positive, indicating that if a woman's family on the Rokan river coast has one more dependant, her proclivity to labor rises by 1.147 times. The varied number of dependents has no substantial impact on married women's decision to work on the Rokan river's shore. This is because women on the Rokan River's coast do not have enough dependents. The respondents had an average of two dependents, thus the amount of dependents they have is not a burden for them.

Income earned by Husband

The value of exp (B), or the odds ratio on the X_5 variable, is 0.937, and the value in column B is negative, indicating that if the husband's income from the lady on the Rokan river shore grows by IDR 100,000,- the woman's proclivity to work falls by 0.937. The husband's income has a negative and considerable influence on married women's decision to work on the Rokan river's coast. This suggests that the husband's income variable affects married women on the Rokan river's decision to work or not. The lower the husband's income or no husband's income at all, the more likely the woman is to decide to participate in the family economy by working.

The results of this study are in line with the studies conducted by (Juita et al., 2020) which results in the conclusion that the husband's low income makes women decide to work, to help fulfill their household economy.

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CONCLUSION

The education level and the income of the husband are two factors that affect the role of women and the strengthening of the family economy in coastal areas. The degree of education has a positive effect of 2.102, which means that if women's education level rises by one level, the chance for these women to participate in the home economy by working rises by 2.102 times. Meanwhile, if a woman's husband's salary on the Rokan River shore rises by IDR 100,000, the chance for the woman to contribute to the home economy rises by 0.937 times.

Age, the number of children under the age of five, and the number of dependents have no effect on women on the Rokan river coast's decision to participate in improving their family economy. This implies that while opting to work on the Rokan River's coast, women do not consider their marital status, age, number of children under the age of five, or the number of dependents in their family.

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