

Individual and Household Factors Associated with Women's Sectoral Employment in Aceh Province, Indonesia

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ABSTRACT

Women's distribution across agricultural and non-agricultural employment reflects differences in human capital, household conditions, and access to productive resources. This study analyzes the individual and household factors associated with women's employment sectors in Aceh Province, Indonesia. The analysis uses cross-sectional data from the March 2024 National Socio-Economic Survey (Susenas), covering 8,025 employed women aged 15 years and above. Binary logistic regression is used to estimate the likelihood of women being employed in the non-agricultural sector rather than agriculture. The results show that junior secondary, senior secondary, and tertiary education, never-married and divorced status, larger household size, and access to credit are positively associated with non-agricultural employment. In contrast, age and the number of children under five are negatively associated with employment outside agriculture. Primary education and widowed status are not statistically significant. Overall, women's sectoral employment in Aceh is associated with a combination of human capital, demographic characteristics, household circumstances, and access to financial resources. The findings emphasize the importance of women's education, skills development, and financial access in supporting broader participation in non-agricultural employment.

Keywords: : Agricultural sector, Binary logistic regression, Household characteristics, Women's employment, Non-agricultural sector

INTRODUCTION

Women's participation in productive employment is important for inclusive economic growth, household resilience, poverty reduction, and gender equality. The global development agenda emphasizes women's equal access to economic resources, decent work, and productive employment opportunities, particularly through Sustainable Development Goals 5 and 8 (Kameri-Mbote & Kabira, 2022; Novitz, 2022). Nevertheless, substantial gender inequalities remain in labour markets. Women continue to be disproportionately concentrated in informal employment, unpaid family work, vulnerable employment, and relatively low-productivity activities, especially in rural and agricultural economies (FAO, 2023; Rachmawati et al., 2025, World bank, 2023). These patterns suggest that women's employment outcomes are influenced not only by labour demand but also by education, household responsibilities, access to financial resources, social norms, and institutional support.

Women's sectoral employment is closely related to structural transformation. Economic development is generally accompanied by the movement of labour from relatively low-productivity agriculture to more productive non-agricultural sectors (Lewis, 2024; Timmer, 2009). However, rural households in developing economies often continue to combine agricultural and non-agricultural activities as part of livelihood diversification strategies. Participation outside agriculture is therefore shaped by

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education, household resources, access to credit, livelihood assets, and local economic opportunities (Onyeyirichi & Deepika, 2025; Sen et al., 2021; Van den Broeck & Kilic, 2019).

For women, employment across agricultural and non-agricultural sectors is also influenced by human capital and household conditions. Human Capital Theory suggests that education enhances skills, productivity, and labour market competitiveness, thereby expanding access to employment opportunities that require literacy, communication skills, technical ability, and adaptability (Caire & Becker, 1967). Previous studies consistently show that higher educational attainment is positively associated with women's participation in non-farm and non-agricultural activities (Endiris et al., 2021), (Anang & Apedo, 2023; Chekol, 2024; Shabri Mulyawan & Moh. Athoillah, 2024).

New Household Economics further explains that labour allocation is determined jointly with household production and family responsibilities (Becker, 1992). Women often combine productive employment with childcare, cooking, household management, and care for other family members. Consequently, marital status, household size, and the presence of young children may influence women's employment sector by affecting time allocation and employment flexibility (Chu & Zhang, 2023; Kuma & Godana, 2023; Mulugeta, 2021). Access to credit is also important because it can reduce financial constraints and support women's participation in trade, services, micro-enterprises, and other non-agricultural activities (Chekol, 2024; Endiris et al., 2021; Tesgera et al., 2024).

Empirical evidence from developing countries generally indicates that education, household composition, childcare responsibilities, productive assets, and financial access are associated with women's participation in non-agricultural activities. However, the direction and magnitude of these associations vary according to regional labour markets, household characteristics, and the availability of economic opportunities (Abdurezak & Ahmed, 2020; Endiris et al., 2021; Gansonre, 2021; Tesfaye & Nayak, 2022; Tesgera et al., 2024). In Papua New Guinea, rural households with small non-farm businesses were found to afford better diets (Schmidt et al., 2020). Similarly, studies in Bangladesh and India indicate that livelihood diversification and movement out of agriculture can support economic mobility and poverty reduction, although the transition depends on access to human, financial, and social capital (Onyeyirichi & Deepika, 2025; Sen et al., 2021). These findings suggest that non-agricultural employment may offer broader economic opportunities, but access to such employment is not evenly distributed among women.

Indonesia provides an important setting for such analysis because structural transformation and the expansion of non-agricultural sectors have occurred alongside persistent gender differences in labour market participation. Women's labour force participation remains lower than men's, and many women continue to face barriers to entering more productive employment opportunities (Masbar & Nazamuddin, 2024; World bank, 2023). These conditions also vary substantially across provinces because of differences in economic structure, labour demand, infrastructure, and household conditions.

Aceh Province is particularly relevant because agricultural and non-agricultural activities remain important sources of women's employment. Based on SAKERNAS 2024, agriculture, forestry, and fisheries accounted for 31.36 percent of female employment, making agriculture the largest employment sector for women in the province. At the same time, substantial proportions of women worked in wholesale and retail trade, education, manufacturing, accommodation and food services, public administration, health-related activities, and other services (Badan Pusat Statistik Provinsi Aceh, 2025).

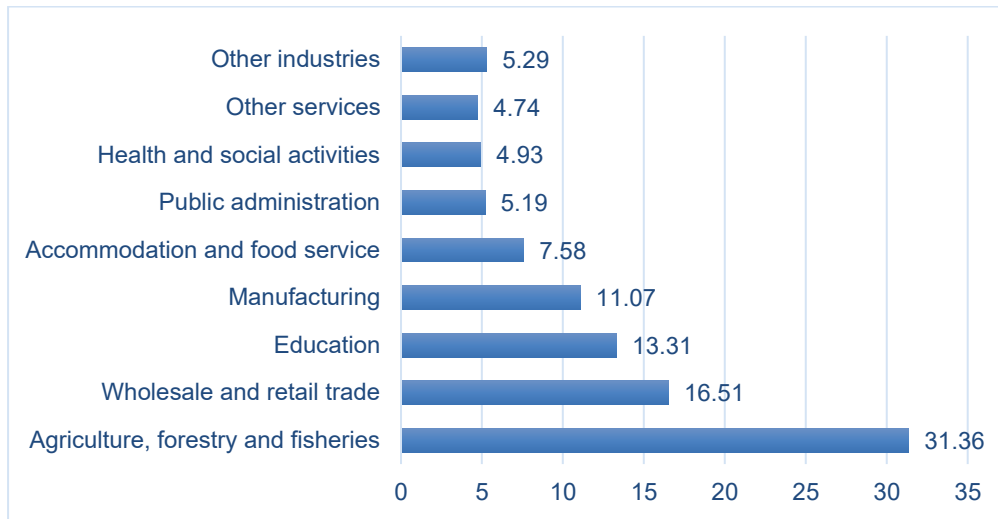


Figure 1. Distribution of female employment by main industry in Aceh Province, 2024 (Source: Statistics Indonesia (Badan Pusat Statistik Provinsi Aceh, 2025))

The employment structure shown in Figure 1 highlights the importance of examining women's employment not only in terms of whether they work, but also in which sector they are employed. Agricultural and non-agricultural employment may differ in terms of productivity, required skills, income opportunities, working conditions, and long-term mobility. While agriculture remains important for women's livelihoods in Aceh, the presence of many women in non-agricultural sectors suggests that opportunities outside agriculture are also significant. This condition raises an important question: what characteristics are associated with women's employment in agricultural and non-agricultural sectors?

Previous studies have examined women's labour force participation, rural non-farm employment, livelihood diversification, and household welfare in various contexts (Alobo Loison, 2015; Barrett et al., 2001, (Chekol, 2024). However, several gaps remain. First, many studies focus on women's labour force participation in general rather than comparing women's employment between agricultural and non-agricultural sectors. Second, studies on non-farm employment often use households as the unit of analysis and do not specifically examine employed women as the main analytical unit. Third, empirical evidence using household survey microdata at the provincial level in Indonesia remains limited. Therefore, further research is needed to understand how women's individual characteristics and household characteristics are jointly associated with employment sector choices, particularly in provinces where agriculture and non-agricultural sectors coexist as major sources of women's employment.

Against this background, this study examines the association between women's and household characteristics and women's employment in agricultural and non-agricultural sectors in Aceh Province, Indonesia. Using microdata from the March 2024 National Socio-Economic Survey (Susenas), this study analyzes 8,025 employed women aged 15 years and above. The explanatory variables include age, educational attainment, marital status, household size, access to credit, and the number of children under five. While Figure 1 uses SAKERNAS 2024 to describe the broader employment structure of women in Aceh, the empirical analysis in this study uses Susenas March 2024 microdata. This study contributes to the literature by providing updated provincial-level evidence based on household survey microdata and by shifting the focus from general labour force participation to sectoral employment among employed women. The findings are expected to provide evidence for policies aimed at improving women's education, expanding access to productive credit, reducing childcare-related constraints, and

supporting women's participation in more productive employment opportunities in Aceh Province.

METHODS

Data

This study employed a quantitative approach using cross-sectional microdata from the March 2024 National Socio-Economic Survey (Susenas) conducted by Statistics Indonesia (BPS). Susenas is a microdata from a large-scale national household survey that provides detailed information on demographic, social, economic, and household characteristics. The use of Susenas microdata allows this study to examine women's employment sector at the individual and household levels.

The study focused on employed women aged 15 years and above residing in Aceh Province. The unit of analysis was employed women, not households. Women who were not working, had incomplete information on employment sector, or had missing values in the variables used in the model were excluded from the analysis. After data selection and cleaning, the final analytical sample consisted of 8,025 employed women.

Although Susenas is based on a stratified multistage sampling design, the binary logistic regression was estimated using the unweighted analytical sample. The analysis therefore did not incorporate sampling weights, stratification, or clustering. Accordingly, the estimated coefficients describe associations within the analytical sample and should not be interpreted as design-adjusted population estimates. This consideration is taken into account when interpreting and generalizing the findings.

The dependent variable in this study is women's employment sector, classified into non-agricultural employment and agricultural employment. The classification follows the main industry classification used by Statistics Indonesia. Non-agricultural employment was coded as 1, while agricultural employment was coded as 0. The independent variables include age, educational attainment, marital status, household size, access to credit, and the number of children under five years old. The explanatory variables were selected a priori based on Human Capital Theory, New Household Economics, and previous empirical evidence on women's employment. Age and educational attainment represent individual demographic characteristics and human capital that may influence women's skills, productivity, and access to different employment opportunities. Marital status, household size, and the number of children under five capture household composition, family responsibilities, and potential time constraints affecting women's employment. Access to credit represents the availability of financial resources that may facilitate women's participation in trade, services, self-employment, and other non-agricultural activities. The selection of these variables was therefore guided by their theoretical relevance and their consistent use in previous studies of women's sectoral employment and non-farm participation.

Variable Measurement

Table 1 presents the operational definitions of the variables used in this study.

Table 1. Definition of Variables

Variable	Definition	Measurement
EMP	Women's employment sector	1 = Non-agricultural; 0 = Agricultural
AGE	Age of employed women	Years
EDU	Educational attainment	0 = No schooling (reference); 1 = Primary; 2 = Junior secondary; 3 = Senior secondary; 4 = Tertiary

MAR	Marital status	1 = Married (reference); 2 = Never married; 3 = Divorced; 4 = Widowed
HHS	Number of household members	Persons
CRD	Access to credit	1 = The household reported receiving or using credit from the sources covered by Susenas during the specified reference period; 0 = Otherwise (reference);
CHD	Number of children under five	Persons

Educational attainment and marital status were treated as categorical variables. No schooling was used as the reference category for education, while married women were used as the reference category for marital status. Access to credit was measured as a binary variable, with women from households without credit access used as the reference group. Age, household size, and the number of children under five were treated as numerical variables.

Analytical Method

A binary logistic regression model was applied because the dependent variable has two categories: non-agricultural employment and agricultural employment. This method is appropriate for estimating the probability that an employed woman works in the non-agricultural sector relative to the agricultural sector. The model estimates the association between women's and household characteristics and the likelihood of working in non-agricultural employment.

The binary logistic regression model can be expressed as follows:

$$\ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 AGE_i + \beta_2 EDU_i + \beta_3 MAR_i + \beta_4 HHS_i + \beta_5 CRD_i + \beta_6 CHD_i + \varepsilon_i \quad (1)$$

where P_i represents the probability that an employed woman i works in the non-agricultural sector. AGE_i represents age, EDU_i represents educational attainment, MAR_i represents marital status, HHS_i represents household size, CRD_i represents access to credit, and CHD_i represents the number of children under five. The term ε_i denotes the error term.

The estimated coefficients were interpreted using odds ratios, expressed as $\text{Exp}(B)$. An odds ratio greater than one indicates that the variable increases the likelihood of women working in the non-agricultural sector, while an odds ratio less than one indicates a lower likelihood. Since this study uses cross-sectional data, the results are interpreted as associations rather than causal effects.

Model Evaluation

Several diagnostic and model evaluation procedures were conducted to ensure the appropriateness of the binary logistic regression model. First, multicollinearity among the independent variables was examined using tolerance and Variance Inflation Factor (VIF) values. Second, the overall significance of the model was evaluated using the Omnibus Test of Model Coefficients. Third, the explanatory power of the model was assessed using Cox and Snell R Square and Nagelkerke R Square. Fourth, the Hosmer and Lemeshow test was used to evaluate model goodness of fit (Hosmer & Lemeshow, 2000).

Finally, classification accuracy was examined to assess the model's ability to correctly classify women's employment sector.

All statistical analyses were conducted using SPSS. The significance levels used in this study were 1 percent and 5 percent.

RESULTS AND DISCUSSION

Characteristics of Respondents

Table 2 presents the demographic and household characteristics of the 8,025 employed women included in this study. The descriptive statistics provide an overview of the analytical sample before estimating the binary logistic regression model and help describe the distribution of the variables used in the analysis.

Table 2. Descriptive Statistics of Respondents

Variable	Category/Statistics	Value
Employment Sector	Agricultural	62.60%
	Non-agricultural	37.40%
Age (years)	Mean $\pm$ SD	42.65 $\pm$ 12.74
Education	No schooling	12.40%
	Primary	20.00%
	Junior secondary	17.20%
	Senior secondary	27.10%
	Tertiary	23.30%
Marital Status	Married	64.80%
	Never married	14.30%
	Divorced	4.80%
	Widowed	16.00%
Household Size	Mean $\pm$ SD	3.81 $\pm$ 1.63
Access to Credit	No	85.90%
	Yes	14.10%
Children Under Five	Mean $\pm$ SD	0.25 $\pm$ 0.50
Variable	Category/Statistics	Value

As shown in Table 2, most employed women in Aceh Province were engaged in the agricultural sector. Women working in agriculture accounted for 62.60 percent of the sample, while 37.40 percent worked in non-agricultural sectors. This distribution indicates that agriculture remains an important source of employment for women in Aceh, although non-agricultural activities also absorb a considerable proportion of female workers. The descriptive pattern is consistent with the broader employment structure of Aceh, where agricultural work and non-agricultural employment opportunities coexist as important sources of livelihood.

The average age of employed women in the sample was 42.65 years, with a standard deviation of 12.74 years. This shows that the respondents were generally within the productive age group, although there was considerable variation in age across the sample. The average household size was 3.81 members, indicating that most women lived in households with approximately four members. Meanwhile, the average number of children under five was 0.25, suggesting that most employed women did not have young children in the household, although childcare responsibilities still remain relevant for women who do.

In terms of education, the largest proportion of respondents had completed senior secondary education, followed by tertiary education and primary education. This

indicates that employed women in Aceh have relatively diverse educational backgrounds. The relatively high share of women with senior secondary and tertiary education suggests that education may play an important role in shaping access to employment opportunities outside agriculture. However, a considerable proportion of women still had primary education or no schooling, which may limit their access to more skill-intensive non-agricultural employment.

Most respondents were married, accounting for 64.80 percent of the sample. Never-married women accounted for 14.30 percent, while divorced and widowed women accounted for 4.80 percent and 16.00 percent, respectively. These figures suggest that women's employment sector may also be related to household roles and family responsibilities. The descriptive statistics also show that only 14.10 percent of respondents had access to credit, while 85.90 percent did not. This indicates that access to formal or productive financial resources among employed women remains limited. Overall, the descriptive results suggest that women's employment sector in Aceh may be associated with differences in age, education, marital status, household composition, childcare responsibilities, and access to financial resources.

Multicollinearity Diagnostic

Before estimating the binary logistic regression model, a multicollinearity diagnostic was conducted using tolerance and Variance Inflation Factor (VIF) values. The results are presented in Table 3.

Table 3. Multicollinearity Diagnostic

Variable	Tolerance	VIF
AGE	0.729	1.372
EDU	0.770	1.299
MAR	0.867	1.153
HHS	0.778	1.285
CRD	0.993	1.007
CHD	0.811	1.233

Table 3 shows that all tolerance values are greater than 0.10 and all VIF values are below 10. The VIF values range from 1.007 to 1.372, indicating that the independent variables included in the model do not suffer from serious multicollinearity. The lowest tolerance value is 0.729 for age, which is still far above the commonly used threshold of 0.10. These results indicate that age, education, marital status, household size, access to credit, and children under five can be included simultaneously in the binary logistic regression model. The absence of serious multicollinearity also suggests that each explanatory variable provides distinct information in explaining women's employment sector. Therefore, the estimated coefficients can be interpreted more reliably, and the relationship between each independent variable and women's likelihood of working in the non-agricultural sector can be examined while controlling for other variables in the model.

Model Fit and Predictive Performance

The overall significance of the binary logistic regression model was evaluated using the Omnibus Test of Model Coefficients. The result shows a Chi-square value of 2,080.794 with 11 degrees of freedom and a significance value of 0.000. This indicates that the model with independent variables provides a significantly better fit than the model without predictors.

Table 4. Omnibus Test of Model Coefficients

Test	Chi-square	df	Sig.
Omnibus Test of Model Coefficients	2,080.794	11	0.000

The result shows a Chi-square value of 2,080.794 with 11 degrees of freedom and a significance value of 0.000. Since the significance value is below 0.01, the model is statistically significant. This means that the set of independent variables included in the model provides a better fit than the intercept-only model. In other words, women's age, educational attainment, marital status, household size, access to credit, and the number of children under five jointly contribute to explaining whether employed women work in the agricultural or non-agricultural sector.

Table 5. Pseudo R-Square

Cox & Snell R Square	Nagelkerke R Square
0.228	0.311

As shown in Table 5, the Cox and Snell R Square value is 0.228, while the Nagelkerke R Square value is 0.311. The Nagelkerke R Square indicates that approximately 31.1 percent of the variation in women's employment sector can be explained by the independent variables included in the model. Although pseudo R-square in logistic regression cannot be interpreted in exactly the same way as R-square in ordinary least squares regression, this value suggests that the model has reasonable explanatory power for cross-sectional microdata.

Table 6. Hosmer and Lemeshow Test

Chi- Square	df	Sig.
0.228	8	0.643

The Hosmer and Lemeshow test produces a Chi-square value of 0.228 with 8 degrees of freedom and a significance value of 0.643. Since the significance value is greater than 0.05, the null hypothesis that the model fits the data is not rejected. This indicates that the predicted probabilities are not significantly different from the observed outcomes. Therefore, the model can be considered adequate in fitting the observed data.

Table 7. Classification Accuracy

Observed	Predicted Agricultural	Predicted Non-Agricultural	Percentage Correct (%)
Agricultural	2,058	943	68.60
Non-agricultural	1,306	3,718	74.00
Overall Percentage			72.00

Table 7 shows that the model correctly classified 68.60 percent of women working in the agricultural sector and 74.00 percent of women working in the non-agricultural sector. Overall, the model correctly classified 72.00 percent of observations. This level of classification accuracy indicates that the model has acceptable predictive performance in distinguishing women's employment sector. The relatively higher classification accuracy for non-agricultural employment suggests that the model is slightly better at identifying women working outside agriculture than those working in agriculture.

Overall, the model evaluation results show that the binary logistic regression model is statistically significant, has no serious multicollinearity problem, fits the observed data adequately, and provides acceptable classification accuracy. These results support the use of the model to examine the association between women's and household

characteristics and women's employment sector in Aceh Province.

Determinants of Women's Employment Sector

Table 8 presents the results of the binary logistic regression model. The dependent variable is women's employment sector, coded as 1 for non-agricultural employment and 0 for agricultural employment. Therefore, positive coefficients indicate a higher likelihood of working in the non-agricultural sector, while negative coefficients indicate a lower likelihood.

Table 8. Binary Logistic Regression Result

Variable	Coefficient (B)	Odds Ratio Exp(B)	p-value
Constant	-0.266	0.767	0.150
Age	-0.010	0.990	0.000***
Primary Education	0.094	1.099	0.267
Junior Secondary	0.373	1.452	0.000***
Senior Secondary	1.314	3.723	0.000***
Tertiary Education	3.234	25.382	0.000***
Never Married	0.585	1.795	0.000***
Divorced	0.251	1.286	0.037**
Widowed	0.008	1.009	0.915
Household Size	0.046	1.047	0.018**
Access to Credit	0.520	1.683	0.000***
Children Under Five	-0.193	0.825	0.002***

Notes: Dependent variable = women's employment sector (1 = non-agricultural; 0 = agricultural). Reference categories: no schooling, married, and no access to credit. *** p < 0.01, ** p < 0.05.

The results show that age has a negative and statistically significant association with women's employment in the non-agricultural sector. The coefficient of age is -0.010 with an odds ratio of 0.990 and a p-value of 0.000. This indicates that each additional year of age reduces the odds of working in the non-agricultural sector by approximately 1.0 percent, holding other variables constant. This finding suggests that younger women are more likely to work in non-agricultural employment than older women.

Educational attainment shows a strong positive association with women's employment in the non-agricultural sector. Compared with women with no schooling, women with junior secondary education have higher odds of working in non-agricultural employment, with an odds ratio of 1.452. Women with senior secondary education have an odds ratio of 3.723, meaning that their odds of working in the non-agricultural sector are approximately 3.7 times higher than those of women with no schooling. The strongest association is found among women with tertiary education, with an odds ratio of 25.382. This indicates that women with tertiary education have substantially higher odds of working in the non-agricultural sector compared with women without formal schooling.

However, primary education does not show a statistically significant association with non-agricultural employment. The coefficient of primary education is positive, but its p-value is 0.267, which is above the conventional significance level. This suggests that completing primary education alone may not be sufficient to significantly differentiate women's likelihood of working in the non-agricultural sector from those without formal schooling. The results indicate that secondary and higher education are more relevant in supporting women's transition into non-agricultural employment.

Marital status also shows varying associations with women's employment sector. Compared with married women, never-married women have significantly higher odds of working in the non-agricultural sector, with an odds ratio of 1.795. Divorced women also have a higher likelihood of working in the non-agricultural sector, with an odds ratio of 1.286 and a p-value of 0.037. These results indicate that never-married and divorced

women are more likely to work outside agriculture than married women, after controlling for age, education, household size, credit access, and children under five.

In contrast, widowed status is not statistically significant. The odds ratio for widowed women is 1.009 with a p-value of 0.915, indicating that widowed women are not significantly different from married women in terms of their likelihood of working in the non-agricultural sector. This result suggests that the employment sector of widowed women may be more strongly explained by other characteristics, such as age, education, household size, or financial access, rather than widowhood itself.

Household size has a positive and statistically significant association with non-agricultural employment. The coefficient is 0.046 with an odds ratio of 1.047. This means that each additional household member increases the odds of women working in the non-agricultural sector by approximately 4.7 percent, holding other variables constant. This finding suggests that larger households may provide additional support or create stronger economic incentives for women to participate in non-agricultural work.

Access to credit is also positively and significantly associated with women's employment in the non-agricultural sector. The coefficient of access to credit is 0.520 with an odds ratio of 1.683 and a p-value of 0.000. This means that women with access to credit have approximately 68.3 percent higher odds of working in the non-agricultural sector than women without access to credit, holding other variables constant. This finding suggests that access to financial resources may support women's entry into non-agricultural activities, including trade, services, self-employment, and micro-enterprises.

The number of children under five has a negative and statistically significant association with women's employment in the non-agricultural sector. The coefficient is -0.193 with an odds ratio of 0.825 and a p-value of 0.002. This indicates that each additional child under five reduces the odds of women working in the non-agricultural sector by approximately 17.5 percent. This result suggests that childcare responsibilities may constrain women's mobility and reduce their likelihood of working outside agriculture.

Overall, the regression results show that women's employment sector in Aceh Province is associated with both individual and household characteristics. Higher education, never-married and divorced status, larger household size, and access to credit increase women's likelihood of working in the non-agricultural sector. In contrast, age and the number of children under five reduce this likelihood. Meanwhile, primary education and widowed status do not show statistically significant associations. These findings indicate that women's sectoral employment is shaped by the interaction between human capital, household context, and access to productive resources.

Discussion

Age and Women's Employment Sector

The results show that age has a negative and significant association with women's employment in the non-agricultural sector. This finding indicates that older women are less likely to work outside agriculture, while younger women tend to have a greater likelihood of entering non-agricultural employment. This pattern may reflect differences in education, mobility, adaptability, and exposure to changing labour market opportunities. Younger women may be more familiar with non-agricultural work environments, particularly in trade, services, education, and other activities that require greater flexibility and formal skills.

This finding is consistent with previous studies showing that age is an important factor in explaining participation in off-farm and non-farm employment. Abdurezak and Ahmed found that age influences rural household participation in non-farm activities,

while Endiris et al. and Tesfaye and Nayak also showed that demographic characteristics, including age, are associated with off-farm employment decisions and rural household livelihood strategies (Abdurezak & Ahmed, 2020; Endiris et al., 2021; Tesfaye & Nayak, 2022). In the Aceh context, older women may have stronger attachment to agricultural work due to farming experience, family-based agricultural activities, and limited occupational mobility. Therefore, age can be understood not only as a demographic factor, but also as an indicator of life-cycle position and labour market adaptability.

Education and Women's Employment Sector

Educational attainment appears to be one of the strongest factors associated with women's employment sector. The results show that junior secondary, senior secondary, and tertiary education significantly increase women's likelihood of working in the non-agricultural sector, while primary education is not statistically significant. This suggests that basic education alone may not be sufficient to move women from agricultural work to non-agricultural employment. Instead, secondary and higher education seem to provide stronger advantages in accessing employment outside agriculture.

This finding supports Human Capital Theory, which emphasizes that education improves skills, productivity, and labour market competitiveness (Caire & Becker, 1967). Women with higher education are more likely to meet the requirements of non-agricultural sectors, which often demand literacy, communication skills, technical knowledge, and adaptability. The finding is also consistent with Chekol, who found that education significantly increases rural women's participation in non-farm economic activities (Chekol, 2024). Similar evidence is provided by Endiris et al., Anang and Apedo, and Mulyawan and Athoillah, who show that education is closely related to participation in off-farm employment, non-farm work, and sectoral employment choices (Anang & Apedo, 2023; Endiris et al., 2021; Shabri Mulyawan & Moh. Athoillah, 2024).

The non-significant effect of primary education indicates that women with only primary education may still face limited access to non-agricultural jobs. Many non-agricultural sectors require not only basic literacy but also broader skills and confidence to participate in more formal or semi-formal employment. Therefore, the findings highlight the importance of expanding women's access to secondary education, higher education, and vocational training. In Aceh Province, strengthening women's education may become a key strategy to support their transition into more diverse and productive employment opportunities.

Marital Status and Women's Employment Sector

The results show that never-married and divorced women are more likely to work in the non-agricultural sector compared with married women. Meanwhile, widowed status is not statistically significant. Since married women are used as the reference category, this finding suggests that differences in family roles and domestic responsibilities may influence women's employment choices across sectors.

This result is consistent with the New Household Economics framework, which explains that labour allocation within households is shaped by market work, household production, and family responsibilities (Becker, 1992). Married women may face stronger domestic obligations, including childcare, household management, and care responsibilities, which can limit their time and mobility. In contrast, never-married women may have fewer household responsibilities and greater flexibility to work outside agriculture. Divorced women may also have stronger economic incentives to participate in income-generating activities because they may need to support themselves or their households independently.

Previous studies also support the relevance of marital status in explaining women's

labour participation and economic activities. Mulugeta found that women's labour force participation is influenced by household and demographic characteristics, including marital status (Mulugeta, 2021). Kuma and Godana also showed that socio-demographic characteristics are associated with rural women's economic empowerment (Kuma & Godana, 2023). The non-significant result for widowed women may indicate that widowhood does not independently distinguish women's employment sector after controlling for age, education, household size, credit access, and the presence of young children.

Household Size and Women's Employment Sector

Household size has a positive and significant association with women's employment in the non-agricultural sector. This means that women from larger households have higher odds of working outside agriculture. One possible explanation is that larger households may have greater consumption needs, encouraging women to participate in income-generating activities with broader earning opportunities. At the same time, larger households may provide additional family members who can share domestic responsibilities, allowing women to allocate more time to non-agricultural employment.

This finding is consistent with the view that household composition influences labour allocation and livelihood strategies (Becker, 1992). Previous empirical studies also show that household size is related to participation in non-farm and off-farm activities. Endiris et al. found that household characteristics influence participation in off-farm employment, while Tesfaye and Nayak showed that household size is associated with non-farm activities and food security outcomes (Endiris et al., 2021; Tesfaye & Nayak, 2022). Anang and Apedo also emphasized that household characteristics affect off-farm work and income among rural households (Anang & Apedo, 2023).

In Aceh Province, the positive relationship between household size and non-agricultural employment may reflect both economic pressure and family support. Larger households may encourage women to seek additional income outside agriculture, while the presence of other household members may reduce the burden of domestic work. However, the effect of household size may depend on the composition of household members. If larger households consist mostly of dependents, the effect could be different. Therefore, household size should be understood as a proxy for both economic needs and potential family support.

Access to Credit and Women's Employment Sector

Access to credit is positively and significantly associated with women's employment in the non-agricultural sector. This finding indicates that women with access to credit are more likely to work outside agriculture than women without credit access. Credit may help women overcome financial constraints, start small businesses, expand trading activities, or participate in service-based employment. This is particularly important because non-agricultural employment in rural and semi-rural areas often includes self-employment, micro-enterprises, small trade, food processing, and service activities.

The finding is consistent with Chekol, who found that access to productive resources increases rural women's engagement in non-farm economic activities (Chekol, 2024). Endiris et al. also showed that credit access is associated with household participation in off-farm activities (Endiris et al., 2021). Similarly, Tesgera et al. found that non-farm employment is linked to higher household consumption, suggesting that income diversification and access to productive resources can improve household economic outcomes (Tesgera et al., 2024).

In the context of Aceh, access to credit may provide women with an opportunity to

move beyond agricultural work by supporting small-scale businesses and non-agricultural income-generating activities. However, credit access alone may not be sufficient if it is not accompanied by business skills, market access, and institutional support. Therefore, policies aimed at expanding women's access to credit should also be integrated with training, mentoring, and support for women's micro-enterprises.

Children Under Five and Women's Employment Sector

The number of children under five has a negative and significant association with women's employment in the non-agricultural sector. This finding suggests that childcare responsibilities reduce women's likelihood of working outside agriculture. Young children require intensive care, supervision, and time, which may limit women's mobility and reduce their ability to engage in employment with fixed schedules, commuting requirements, or more continuous work commitments.

This result is consistent with New Household Economics, which explains that women's labour supply is influenced by the allocation of time between market work and household production (Becker, 1992). Chu and Zhang also emphasize that women's working time is closely connected to household responsibilities and household welfare (Chu & Zhang, 2023). In this context, the presence of young children can reduce women's flexibility to participate in non-agricultural employment, especially when childcare support is limited.

Agricultural work may be more compatible with childcare responsibilities because it is often family-based, located near the household, or more flexible in terms of working time. In contrast, non-agricultural employment may require stricter working hours, mobility, and continuous presence at the workplace. This finding is also consistent with global evidence showing that unpaid care work remains one of the major constraints to women's economic participation (FAO, 2023; World bank, 2023). Therefore, improving childcare support is important for expanding women's access to non-agricultural employment.

CONCLUSIONS

This study examines the association between women's and household characteristics and women's employment in agricultural and non-agricultural sectors in Aceh Province, Indonesia. Using microdata from the March 2024 National Socio-Economic Survey (Susenas), this study applies binary logistic regression to 8,025 employed women aged 15 years and above. The findings show that women's employment sector is associated with both individual and household characteristics.

The results indicate that age and the number of children under five are negatively associated with women's likelihood of working in the non-agricultural sector. This suggests that older women and women with young children are more likely to remain in agricultural employment. In contrast, higher educational attainment, never-married and divorced status, household size, and access to credit are positively associated with women's employment in the non-agricultural sector. However, primary education and widowed status do not show statistically significant associations. These findings suggest that secondary and higher education play a more important role than primary education alone in supporting women's transition into non-agricultural employment.

Overall, this study confirms that women's sectoral employment in Aceh is shaped by the interaction between human capital, household context, and access to productive resources. Education strengthens women's ability to enter more diverse employment sectors, while household responsibilities, particularly childcare, may limit women's mobility and employment flexibility. Access to credit also plays an important role in

supporting women's participation in non-agricultural activities, especially through self-employment, trade, services, and micro-enterprises.

The findings provide several policy implications. First, improving women's access to secondary and higher education, vocational training, and skills development is essential to expand their employment opportunities outside agriculture. Second, access to productive credit should be strengthened to support women's participation in non-agricultural economic activities. Third, childcare support and family-friendly employment policies are needed to reduce the constraints faced by women with young children. These efforts may help promote women's participation in more productive employment while supporting inclusive economic development in Aceh Province.

This study has several limitations. Since it uses cross-sectional data, the analysis identifies associations rather than causal relationships. In addition, the study is limited to variables available in Susenas, so other factors such as work experience, wage level, distance to workplace, transportation access, digital skills, and local labour market conditions could not be included. Future research may use longitudinal data or additional variables to better understand changes in women's employment patterns over time and the mechanisms influencing women's movement between agricultural and non-agricultural sectors.

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