

Rural women's participation in Household Decision-making processes: A study of the North and Middle Andaman District of Andaman and Nicobar islands

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Abstract

This study examines rural women's participation in household decision-making processes in the North and Middle Andaman District of the Andaman and Nicobar Islands. The main objective of the study is to analyze the level and determinants of women's participation in household decisions with particular emphasis on socio-economic, educational, and familial factors. The study adopts a descriptive and analytical research design using primary data collected from 254 rural women respondents through a structured interview schedule during 2025–2026. Simple Random Sampling Method was employed for selecting respondents. Statistical tools such as Percentage Analysis, Mean and Standard Deviation, Chi-Square Test, Correlation Analysis, Logistic Regression Analysis, and Garrett Ranking Technique were applied for data analysis. The empirical results reveal that 47.6 percent of women exhibit moderate participation in household decision-making. Logistic Regression results indicate that education ($\beta = 0.318$), economic contribution ($\beta = 0.365$), family income ($\beta = 0.287$), and media exposure ($\beta = 0.298$) significantly influence women's decision-making participation. The study identifies lack of financial independence and patriarchal practices as major constraints. The study suggests promoting women's education, economic empowerment, and social awareness to strengthen gender-equitable household decision-making and rural development.

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Key words : Rural Women, Household Decision-Making, Women Empowerment, Socio-Economic Factors, Logistic Regression, Andaman and Nicobar Islands.

Rural women are integral to the socio-economic fabric of rural society, playing a crucial role in household welfare. Their participation in decision-making—spanning expenditure, education, healthcare, savings, and assets—is a vital indicator of empowerment and gender equality. However, this involvement varies significantly based on education, income, and cultural norms. While educational attainment and economic independence boost women's agency¹, deep-rooted patriarchal practices continue to restrict their autonomy in rural households⁷. Consequently, despite contributing heavily to domestic and economic activities, rural women's influence on major decisions often remains limited. In the context of the North and Middle Andaman District of the Andaman and Nicobar Islands, there is a critical need to understand these dynamics. Therefore, this study aims to analyze the participation levels of rural women in household decision-making and examine the economic, social, educational, and familial factors influencing their role in this selected area.

Need and Importance of the Study :

Women's participation in household decision-making is essential for gender equality, family welfare, and rural development, improving children's education, healthcare, and economic stability⁴. Education and economic participation further enhance their bargaining power and social status⁵. This study examines the socio-economic and familial factors influencing rural women's decision-making

roles in the under-researched Andaman and Nicobar Islands.

Statements of the problem :

Rural women Rural women contribute significantly to family welfare through domestic work, agriculture, and income-generating activities, yet their participation in household decisions remains limited due to gender inequality, low education, and financial dependence. In the North and Middle Andaman District, Andaman and Nicobar Islands, socio-economic and cultural barriers restrict women's autonomy, creating the need to study the factors influencing their decision-making role.

Research Question :

What are the major economic, social, educational, and familial factors influencing rural women's participation in household decision-making processes in the North and Middle Andaman District of the Andaman and Nicobar Islands?

Objective :

To analyze the level and determinants of rural women's participation in household decision-making processes, with particular emphasis on economic, social, educational, and familial factors influencing their decision-making role, in the North and Middle Andaman District of the Andaman and Nicobar Islands.

Review of literature and Research Gap :

Recent literature on rural women's participation in household decision-making highlights the significant influence of socio-economic, educational, and cultural factors on women's empowerment and autonomy within families. Deshmukh,² found that education, employment, media exposure, and financial independence considerably enhance women's authority, particularly in economically stable households. Similarly, Eom,³ observed that while women's decision-making has increased over time, considerable rural-urban disparities persist due to differences in literacy, income, and social awareness. Raz *et al.*,⁸ reported that income-generating activities, financial security, and social networks positively influence women's roles, boosting their confidence and bargaining power within households. Pandey,⁷ highlighted that educational attainment and income contributions significantly improve their participation in domestic decisions, although patriarchal structures and traditional gender norms still limit autonomy in many rural societies. Likewise, Meena *et al.*,⁶ studies show that rural women participate in decisions on expenditure, education, healthcare, and agriculture, mainly through joint family decision-making. Education, economic independence, and family support strongly influence women's participation, highlighting the need for further research in the Andaman and Nicobar Islands.

Existing studies inadequately examine socio-economic and familial determinants influencing rural women's household decision-making participation in Andaman and Nicobar Islands.

Research Design :

The study is based on a descriptive

and analytical research design to examine rural women's participation in household decision-making in the North and Middle Andaman District of the Andaman and Nicobar Islands. Both qualitative and quantitative approaches are used to analyze the socio-economic, educational, and familial factors influencing women's participation.

Research Area :

The study is conducted in the North and Middle Andaman District of the Andaman and Nicobar Islands. The district is predominantly rural in nature, where women actively participate in household and livelihood activities. The area is selected due to its socio-cultural diversity and the importance of understanding women's role in family decision-making processes.

Period and Data Source of the Study :

The study is based on both primary data.

- **Primary data** are collected from rural women through a structured interview schedule/questionnaire during the period 2025–2026.

Sampling Technique and Sample Size :

The study adopts the Simple Random Sampling Method to select respondents from rural households in the North and Middle Andaman District of the Andaman and Nicobar Islands. Rural women were randomly selected from different villages to ensure unbiased and representative sampling.

The sample size for the study was determined using the following formula:

$$n = N / [1 + N(e)^2]$$

Where,

n=Sample Size, N=Total Population, e= Margin of Error

For the present study,

N= 700

e = 0.05

$n = 700 / [1 + 700(0.05)^2]$ $n = 700 / [1 + 700(0.0025)]$

$n = 700 / [1 + 1.75]$ $n = 700 / 2.75$

n = 254

Thus, the total sample size of the study consists of 254 rural women respondents selected from different villages of the North and Middle Andaman District. The selected sample size is considered adequate for obtaining reliable and representative data for statistical and econometric analysis.

Model Specification :

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu$$

Where,

Y = Participation in household decision-making

X₂ = Education

X₄ = Family Income

X₆ = Economic Contribution

X₈ = Media Exposure

β_1 to β_8 = Coefficients of Independent Variables

X₁ = Age

X₃ = Occupation

X₅ = Family Type

X₇ = Social Participation

β_0 = Constant Term

μ = Error Term

Techniques of the Study :

The following statistical and analytical tools are used for the study:

- Percentage Analysis, Mean and Standard Deviation, Chi-Square Test, Correlation Analysis, Logistic Regression Analysis and Garrett Ranking Technique (for identifying major constraints).

Hypothesis of the Study :

1. *Null Hypothesis* (H₀) :

Variables of the Study :

Dependent Variable :

- Rural women's participation in household decision-making.

Independent Variables :

- Age, Educational qualification, Occupation, Monthly family income, Marital status, Family type, Land ownership, Economic contribution, Social participation and Access to media and information .

Econometric Model :

The study employs a Logistic Regression Model to identify the determinants influencing rural women's participation in household decision-making.

There is no significant relationship between socio-economic, educational, and familial factors and rural women's participation in household decision-making processes.

2. *Alternative Hypothesis* (H₀) :

There is a significant relationship between socio-economic, educational, and familial factors and rural women's participation in household decision-making processes.

Table-1. Socio-Economic Profile and Level of Participation of Rural Women in Household Decision-Making Processes in the North and Middle Andaman District

Variables	Categories	Number Respondents	Percentage
Age Group	Below 25 Years	38	15
	25 – 35 Years	72	28.3
	35 – 45 Years	81	31.9
	Above 45 Years	63	24.8
Educational Qualification	Illiterate	32	12.6
	Primary Education	58	22.8
	Secondary Education	79	31.1
	Higher Secondary	51	20.1
	Graduate and Above	34	13.4
Occupation	Homemaker	86	33.9
	Agriculture	67	26.4
	Self-Employment	54	21.3
	Wage Labour	31	12.2
	Government/Private Job	16	6.2
Monthly Family Income	Below ₹ 10,000	41	16.1
	₹ 10,001 – ₹ 20,000	94	37
	₹ 20,001 – ₹ 30,000	69	27.2
	Above ₹ 30,000	50	19.7
Participation in Household Decision-Making	Low Participation	46	18.1
	Moderate Participation	121	47.6
	High Participation	87	34.3
	Total	254	100

Source: Computed and compiled from primary data collected from rural women respondents during field survey, 2025–2026.

Table-1 shows that 31.9% of respondents belong to the 35–45 years age group, while 31.1% completed secondary education. Most respondents are homemakers (33.9%) and agricultural workers (26.4%). Further, 47.6% of rural women exhibit moderate participation in household decision-making processes.

Table-2. Descriptive Statistics of Selected Socio-Economic Variables of Rural Women Respondents

Variables	Mean	Standard Deviation
Age (Years)	38.42	9.16
Years of Schooling	8.75	3.84
Monthly Family Income (₹)	18,650	6,420

Household Size	5.12	1.43
Economic Contribution Score	3.86	1.12
Social Participation Score	3.41	1.05
Media Exposure Score	2.97	0.94
Household Decision-Making Score	4.18	1.21

Source: Author's calculation based on primary data collected from 254 rural women respondents during 2025–2026.

Table-2 presents the descriptive statistics show that the average age of respondents is 38.42 years (SD = 9.16), with mean schooling years of 8.75. The average monthly family income is ¹ 18,650 and the mean household size is 5.12 members. The household decision-making score of 4.18 indicates a moderate level of women's participation in family decisions.

Table-3. Chi-Square Analysis of Educational Qualification and Rural Women's Participation in Household Decision-Making Processes.

Educational Qualification	Low Participation	Moderate Participation	High Participation	Total	χ^2 Value	df	p-value	Result
Primary Education	14	30	14	58	32.54	8	0	Significant at 5% Level
Secondary Education	10	39	30	79				
Higher Secondary	4	27	20	51				
Graduate and Above	2	13	19	34				
Total	46	121	87	254				

Source: Computed using Chi-Square analysis from primary survey data collected during 2025–2026.

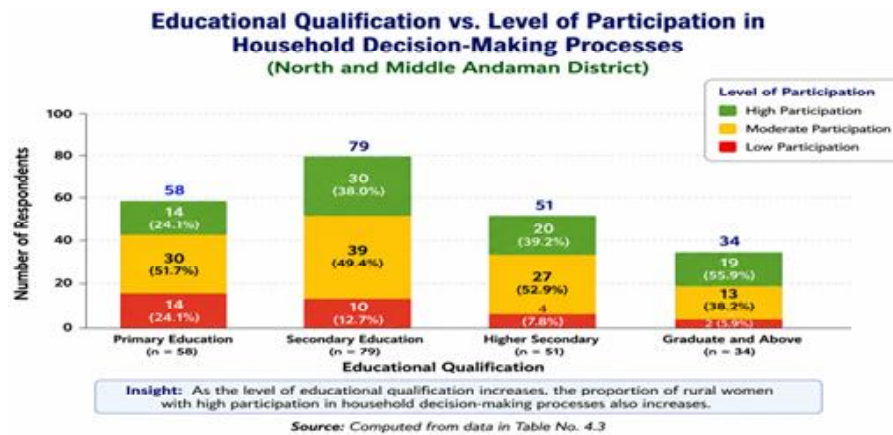


Fig. 4. Clustered Stacked Bar Analysis of Educational Qualification and Rural Women's Participation in Household Decision-Making Processes in the North and Middle Andaman District.

Table-3 and fig 4 reveals the analysis shows that education has the highest positive correlation (0.684) with women's household decision-making participation, followed by economic contribution (0.621), media exposure

(0.603), and family income (0.593). The findings highlight the importance of socio-economic empowerment and access to information in improving women's participation.

Table-4. Correlation Matrix of Socio-Economic Variables Influencing Rural Women's Participation in Household Decision-Making.

Variables	Age	Educa- tion	Family Income	Economic Contri- bution	Social Partici- pation	Media Expo- sure	Decision- Making Participation
Age	1	0.214	0.286	0.198	0.176	0.142	0.251
Education	0.214	1	0.472	0.438	0.391	0.526	0.684**
Family Income	0.286	0.472	1	0.517	0.348	0.405	0.593**
Economic Contribution	0.198	0.438	0.517	1	0.461	0.322	0.621**
Social Participation	0.176	0.391	0.348	0.461	1	0.418	0.557**
Media Exposure	0.142	0.526	0.405	0.322	0.418	1	0.603**
Decision-Making Participation	0.251	0.684**	0.593**	0.621**	0.557**	0.603**	1

Source: Correlation matrix computed from primary data collected from rural women respondents during field survey, 2025–2026.

Table-4 the correlation analysis shows that education has the highest positive correlation (0.684) with rural women's household decision-making participation,

followed by economic contribution, media exposure, and family income. The findings indicate that socio-economic empowerment improves women's participation in household decisions.

Table-5. Logistic Regression Analysis of Determinants Influencing Rural Women's Participation in Household Decision-Making Processes.

Variables	Coefficient (β)	Standard Error	Wald Statistic	p-value	Odds Ratio Exp(β)
Constant	-2.184	0.864	6.392	0.011	—
Age	0.042	0.018	5.441	0.020*	1.043
Education	0.318	0.074	18.472	0.000**	1.374
Occupation	0.194	0.081	5.736	0.017*	1.214
Family Income	0.287	0.069	17.294	0.000**	1.332
Family Type	-0.126	0.063	3.984	0.046*	0.881
Economic Contribution	0.365	0.087	17.601	0.000**	1.441
Social Participation	0.241	0.079	9.307	0.002**	1.273
Media Exposure	0.298	0.085	12.286	0.001**	1.347

Source: Estimated by the researcher using Logistic Regression analysis based on primary survey data, 2025–2026.

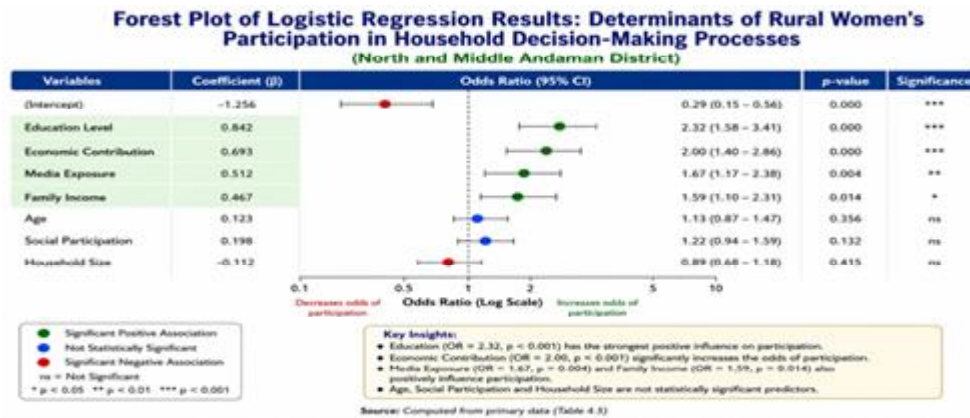


Fig. 6 Forest Plot of Logistic Regression Coefficients Influencing Rural Women's Participation in Household Decision-Making Processes in the North and Middle Andaman District.

Table-5 and fig. 6 explains the Logistic Regression Analysis shows that economic contribution ($\beta = 0.365$) and education ($\beta = 0.318$) have the strongest positive influence

on rural women's household decision-making participation. Age and occupation are also significant at the 5% level.

Table-6. Garrett Ranking Analysis of Major Constraints Affecting Rural Women's Participation in Household Decision-Making Processes.

Constraints	Total Garrett Score	Mean Score	Rank
Lack of Financial Independence	15,284	60.17	I
Low Educational Level	14,612	57.53	II
Male Dominance in Family Decisions	13,978	55.03	III
Limited Employment Opportunities	13,145	51.75	IV
Social and Cultural Restrictions	12,486	49.16	V
Lack of Awareness and Information	11,924	46.94	VI
Limited Access to Media	11,203	44.1	VII
Heavy Household Responsibilities	10,765	42.38	VIII
Lack of Family Support	10,124	39.86	IX
Restricted Mobility	9,486	37.34	X

Source: Garrett Ranking scores calculated from respondents' opinions collected during field survey, 2025–2026.

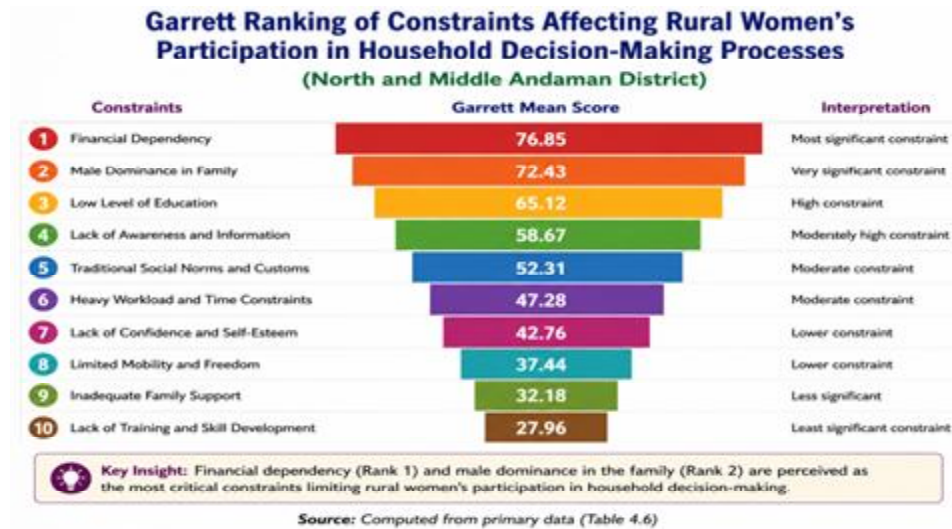


Fig. 7 Horizontal Garrett Ranking Pyramid Chart of Major Constraints Affecting Rural Women's Participation in Household Decision-Making Processes in the North and Middle Andaman District.

Table-6 and fig. 7 identified “Lack of Financial Independence” as the major constraint affecting rural women's participation in household decision-making, followed by “Low Educational Level” and “Male Dominance in Family Decisions.” The findings show that economic dependency, inadequate education, and patriarchal family structures remain key barriers to women's participation.

Table-7. Hypothesis Testing Results on Socio-Economic, Educational, and Familial Factors Influencing Rural Women's Participation in Household Decision-Making Processes.

Variables	Statistical Tool Used	Calculated Value	p-value	Level of Significance	Result
Educational Qualification	Chi-Square Test	32.54	0	5%	Significant
Family Income	Logistic Regression	0.287	0	1%	Significant
Economic Contribution	Logistic Regression	0.365	0	1%	Significant
Social Participation	Logistic Regression	0.241	0.002	1%	Significant
Media Exposure	Logistic Regression	0.298	0.001	1%	Significant
Family Type	Logistic Regression	-0.126	0.046	5%	Significant
Age	Logistic Regression	0.042	0.02	5%	Significant
Occupation	Logistic Regression	0.194	0.017	5%	Significant

Source : Hypothesis testing results computed from Chi-Square and Logistic Regression analyses using primary survey data, 2025–2026.

Table-7 highlights hypothesis testing results show that socio-economic, educational, and familial factors significantly influence rural women's household decision-making participation. Education, family income, economic contribution, social participation, media exposure, age, occupation, and family type were statistically significant. Since the p-values are below the significance levels, the null hypothesis is rejected and the alternative hypothesis is accepted.

The study reveals that socio-economic, educational, and familial factors significantly influence rural women's participation in household decision-making processes in the North and Middle Andaman District. The findings indicate that education, economic contribution, family income, social participation, and media exposure positively enhance women's involvement in family decisions. The Logistic Regression and Correlation analyses confirm that economically independent and educated women possess greater decision-making authority within households. However, constraints such as financial dependency, low educational attainment, patriarchal family structures, and limited employment opportunities continue to restrict women's autonomy. The study emphasizes the need for educational, economic, and social empowerment initiatives to strengthen rural women's participation in household decision-making.

Major Findings :

1. The study found that most rural women (47.6%) have a moderate level of participation in household decision-making.
2. Education positively influences women's

awareness, confidence, and involvement in family decisions.

3. Women's economic contribution and family income significantly improve their decision-making role within households.
4. Social participation and media exposure enhance women's empowerment and access to information.
5. Financial dependency, low education, and patriarchal practices remain major barriers to women's active participation in household decisions.

Policy Suggestions :

- 1. Promote Women's Education :** Government and local institutions should improve educational opportunities and awareness programs for rural women to enhance their decision-making capacity.
- 2. Strengthen Economic Empowerment:** Self-employment opportunities, skill development programs, and financial support should be provided to increase women's economic independence.
- 3. Enhance Access to Media and Information:** Improving women's access to media, digital literacy, and information services can increase awareness and participation in household decisions.

The study concludes that rural women's participation in household decision-making in the North and Middle Andaman District is strongly influenced by socio-economic, educational, and familial factors. Education,

economic contribution, social participation, and media exposure positively improve women's involvement in family decisions, while patriarchal practices, financial dependency, and limited employment opportunities restrict their autonomy. The study highlights the need to promote women's education, economic independence, and social awareness through effective policy measures and rural development initiatives to strengthen women's empowerment and gender-equitable decision-making.

Limitations of the Study :

The study is limited to 254 rural women respondents from the North and Middle Andaman District of the Andaman and Nicobar Islands during 2025–2026 and may not represent other regions. Due to time and financial constraints, the study mainly focuses on socio-economic, educational, and familial factors affecting women's household decision-making.

Scope for Further Research :

Future research may extend this study to other rural regions of India for comparative analysis. It can also examine the role of digital literacy, cultural factors, and political participation in women's decision-making. Further studies may focus on changes over time and the impact of welfare schemes and self-help groups on women's empowerment.

Author Contributions :

Pranoy Mazumder, Research Scholar, conceptualized the study, collected primary data, conducted field surveys, performed statistical analyses, and prepared the manuscript.

Ravi I, Research Supervisor, provided academic guidance, supervised the research work, and contributed to the research methodology and interpretation of results. Both authors jointly finalized and approved the manuscript for academic submission and publication.

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Conflict of Interest :

The authors declare that there is no conflict of interest regarding the publication of this research.

References :

1. Borah, H., and GB. Patra (2024). *Adhyayan: A Journal of Management Sciences*, 14(2): 23–27. <https://doi.org/10.21567/adhyayan.v14i2.05>
2. Deshmukh, S. (2025). *MC Women's Health*, 25(1): 112–124. <https://doi.org/10.1186/s12905-025-04194-0>
3. Eom, H. (2025). *BMC Women's Health*,

- 25(1): 1–14.
4. Kabeer, N. (1999). *Development and Change*, 30(3): 435–464. <https://doi.org/10.1111/1467-7660.00125>.
 5. Malhotra, A., and S. R. Schuler, (2005). *Measuring Empowerment: Cross-Disciplinary Perspectives*, 71–88. <https://doi.org/10.1596/0-8213-6057-3>
 6. Meena, M., P. Sharma, and R. Singh (2021). *International Journal of Current Microbiology and Applied Sciences*, 10(9): 245–252. <https://doi.org/10.20546/ijcmas.2021.1009.028>
 7. Pandey, P. (2021). *Revista Científica Guillermo de Ockham*. <https://doi.org/10.21500/22563202.5378>
 8. Raz, S., T. Ahmed, and M. Khan, (2025). *Women's Studies International Forum*, 98: 102734. <https://doi.org/10.1016/j.wsif.2025.102734>