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WOMEN'S EMPOWERMENT IN WESTERN CHINA: MEASUREMENT, DETERMINANT FACTORS AND ITS CORRELATION WITH POVERTY

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ABSTRACT

Women's empowerment is a key focus of the Sustainable Development Goals. It is also an element in China's national poverty reduction strategies. As most poverty identification, alleviation, and graduation strategies are targeted on households rather than individuals, the status of rural women's empowerment remained insufficiently studied. This paper examines the status of women's empowerment in the formerly poverty-stricken rural areas in western China, using data obtained in 2021 from a questionnaire-based survey on 1027 rural households in seven counties of four provinces. It constructs a women's empowerment index with 10 indicators in five domains – production, resources, income, leadership, and time use – based on women's empowerment theories and practices in agriculture. The study finds that the average level of women's empowerment is 0.654. Women are most empowered in the time use domain while least empowered in the leadership domain. Logistic regression results reveal that women's ages, women's educational years and the decision-making in women's parental families are significant determinants of women's empowerment. Further studies indicate that the role of family legacy is getting weaker in younger generations and stronger among spouses with closer ages. The household relative poverty status has no significant effect on women's empowerment in this study, which implies that in rural areas, sociocultural factors might outweigh economic factors in determining women's empowerment.

Keywords: Women's empowerment, Rural household, Poverty reduction, China.

INTRODUCTION

Women's empowerment is a key focus of the Sustainable Development Goals outlined in the UN 2030 Agenda. It has also become a prominent and widely debated research topic, particularly in the context of policy-making for economic development. The concept and measurement for women's empowerment varies

across difference social and cultural background (Priya *et al*, 2021). The Women's Empowerment Index in Agriculture (WEAI) developed by IFPRI, OPHI and USAID has been widely used to measure women's empowerment, particularly for rural women and in agriculture. Alkire (2013) introduced, among others, its rationale, method and computation.

The demographic characteristics of women, family structure, spousal differences and context-specific features such as travel time to paved road, distance to market, farmland owned (Adekunle et al., 2021; Didana, 2019; Sell & Minot, 2018) are commonly used factors to explain women's empowerment. In most findings, women's age and education were significant determinants for women's empowerment. Women's empowerment is associated with poverty reduction. In developing countries, higher gender equality was more likely to be associated with lower poverty rates (World Bank, 2001). In rural China, Huang et al (2018) found that household poverty was positively associated with women's disempowerment. Household poverty status is also explored as a determinant of women's empowerment. Assaad et al (2014) used per capita expenditure to define household poverty status and found that its significance on women's empowerment was not the same among quantiles and not stable after adding control variables. While per capita consumption was a significant determinant of women's empowerment in the urban areas, it was on the contrary in the rural areas (Khan & Awan, 2011).

Women's empowerment has been an element in China's national poverty reduction strategy. Many projects targeting women and girls, such as skills training, microfinance, reproductive healthcare, and compulsory education for girls, alongside gender-neutral initiatives like rural infrastructure development, relocation programs, and migrant worker support, have significantly improved the living standards and welfare of women and girls (Wang & Jia, 2012). China eliminated extreme poverty in 2021 and published four national poverty alleviation survey bulletins to map its outcome (National Bureau of Statistics, 2021). However, as household was the basic unit for poverty graduation, the status of rural women's empowerment has not been sufficiently measured and remained less reported.

Therefore, this study aims to examine the status of women's empowerment in the formerly poverty-stricken rural areas in western China; what factors determine women's empowerment and whether poverty reduction has an effect on women's empowerment.

MATERIALS AND METHODS

Data source

This paper used the data obtained from the Rural China and Food Security Household Longitudinal Survey conducted by the Agricultural Information Institute of the Chinese Academy of Agricultural Sciences in 2021 in seven counties of four provinces in western China. These counties were among the list of 592 poverty-stricken counties identified by the Chinese government in 2011. Villages were sampled through the Probability Proportion to Size (PPS) method

and households followed the random sampling method. A total of 1556 households were surveyed through a nine-module questionnaire, which included a module on the measurement of women's empowerment in agriculture. For this study, we restricted samples to 1027 households with both male and female adults, and with all the activities asked in the women's empowerment module.

Women's Empowerment Index (WEI)

The index we used in this paper was adapted from WEAI. We adopted identical five domains (production, resources, income, leadership, and time use) with the original WEAI but modified the indicators to fit the conditions of agriculture and rural areas in western China. After defining whether women were empowered or not on each indicator, we could get individual women's inadequacy score *Ci* and define whether a woman was empowered or not at the cut-off value *k,* which was 0.2 in this study. By multiplying the disempowered headcount ratio (Hp) and the average inadequacy score of disempowered individual women (Ap), we could get women's disempowerment index, which was represented by M_0; WEI equaled the value 1-M_0. M_0 allowed us to evaluate women's disempowerment decomposed by indicators, dimensions, or population groups.

Household poverty

In this paper, we adopt the concept of relative poverty. According to Xing (2019), when the per capita household annual income is below 40% of the income median, the household is considered to be in poverty. Here, the household annual income is the total income minus production cost. the total income is the sum of wage income, farm and family business income, transfer income, and property income.

Logistic regression

The dependent variable WE is a binary variable representing women's empowerment status. If women were not empowered at the cut-off value of 0.2, WE = 1; otherwise, WE = 0.

$$ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 \text{Poverty} + \beta_2 \text{Female} + \beta_3 \text{Couple} + \beta_4 \text{Legacy}$$

where p = the probability that WE=1, $1-p$ = the probability that WE= 0. Poverty is a binary value where poverty =1 if the per capita household income is below 40% of the income median and poverty = 0 if it is not. Female is the vector for women's individual characteristics, including women's age, years of education and whether women had wage income for the past 12 months. Couple is the vector for the difference in age and years of education between couples, calculated by wife minus husband, reflecting the relative power of women over men. Legacy is the vector related to parents' family, including the decision-making in women's parental families (the value was 1 if decided solely by men; otherwise, the value was 0) and the relative economic status of women's parental families to their husbands' parental families (1 worse, 2 the same, 3 better).

RESULTS AND DISCUSSION

Women's empowerment status

It is calculated that M_0 for the sample households is 0.346, meaning that WEI is 0.654. This is a moderate gap compared with M_0 reported in previous studies applying the WEAI method (Sraboni et al., 2013; Gupta et al., 2017; Huang et al., 2017). The gap reflects the contextual and flexible nature of the Index, as indicators could be different across studies. By decomposing M_0 by domains and indicators, we find the leadership domain contributes to nearly half to M_0 while the income and time domains add up to less than 20% (see Table 1). The indicator on group leadership contributed most to M_0. The time burden for women in our survey seems to be very low as only 1.64% women in our survey are inadequate on the time burden indicator. The second smallest contribution to M_0 is the indicator on control over daily necessity consumption. These results indicate that women in our survey enjoyed a high level of freedom in time. They are more empowered in domestic and economic affairs than in public affairs.

Table 1. Contribution to M_0 by Domains and Indicators.

Domain	Domain Contribution to M_0	Indicators	Indicator contribution to M_0
Production	16.99%	Input in farm decisions	8.08%
		Input in non-farm decisions	8.91%
Resources	17.91%	Control of productive asset	8.67%
		Decisions on credit	9.24%
Income	11.17%	Control over necessity	3.75%
		Control over use of income	7.41%
Leadership	45.83%	Speaking in public	22.62%
		Group leadership	23.21%
Time	8.10%	Time burden	1.64%
		Freedom of time allocation	6.46%

Determinant factors of women's empowerment

We run 4 regression models successively as shown in Table 2. 28 observations are omitted due to incomplete data, leaving 999 households.

Table 2. Marginal Effects of the Determinant Factors on Women's Empowerment.

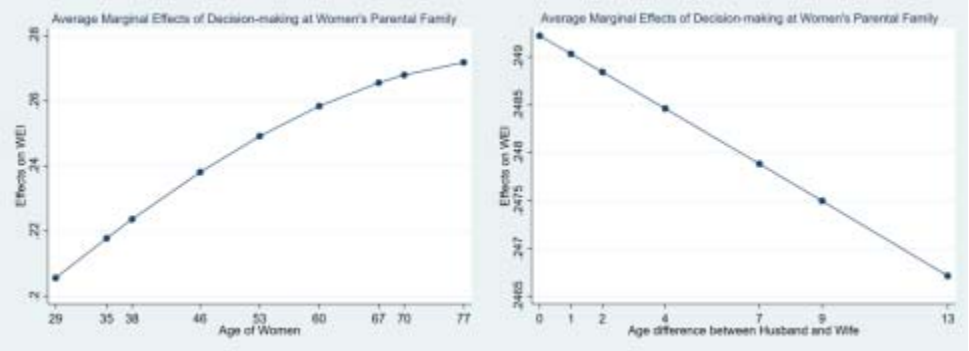
Y=WE	(1)	(2)	(3)	(4)
Poverty	-0.053	-0.050	-0.049	-0.053
	(0.035)	(0.035)	(0.035)	(0.035)
Age female		-0.005***	-0.005***	-0.005***
		(0.002)	(0.002)	(0.002)
Education female (years)		-0.012***	-0.009*	-0.009*

Y=WE	**(1)**	**(2)**	**(3)**	**(4)**
		(0.004)	(0.005)	(0.005)
Wage income female (dummy)		-0.011	-0.008	-0.010
		(0.036)	(0.036)	(0.034)
Age difference			-0.004	-0.003
			(0.004)	(0.004)
Education difference			-0.004	-0.002
			(0.005)	(0.005)
Decision-making of women's parental families				0.248***
				(0.025)
Economic status of parental families				-0.005
				(0.026)
Observations	999	999	999	999

Note: 1. Standard errors in parentheses
2. *** p<0.01, ** p<0.05, * p<0.1

We find that women's ages, women's educational years, and the decision-making power in women's parental families have significant effects on women's empowerment. As shown in column (2)-(4), women's age and their educational years have significant negative effects on women's dispowerment, which suggests that the increase of women's age and education may contribute to women's empowerment. The marginal effect of a given explanatory variable captures the change in the probability of observing an outcome due to a unit change in the explanatory variable. As shown in column (4), the decision-making power in women's parental families has a significant positive marginal effect on women's empowerment, holding other factors fixed, the predicted probability of women's disempowerment is about 24.8% higher for women's parental families whose decisions are made solely by men than for those are not. Such marginal effect become stronger as women's getting older, as shown in Figure 1(a), indicating that the role of family legacy is getting weaker in younger generations.

Although no direct evidence of heterogeneity of marriage is shown from the results of regression, we find that the average marginal effect of women's parental families on WE become stronger as women's ages are getting closer to their husbands' ages, which can be seen in Figure 1(b). Bertocchi et al (2014) had a similar finding that the probability that a wife was responsible for intra-household decision-making had increased as the wife's age became closer to her husband's.



(a) (b)

Figure 1. Average Marginal Effects of Decision-making at Women's Parental Families.

Interestingly, whether women had wage income for the past 12 months seems to have no significant effect on women's empowerment. This is probably because women in our sampled households are mainly engaged in agricultural production. In our survey, less than 27% of women had wage-income and the ratio of women's wage income to the total household income was 10% on average.

Poverty and women's empowerment

In this study, we find that poverty status has no significant effect on women's empowerment. This result could be partially supported by a study on the policy effect of the national poverty alleviation campaign for women, which found the campaign had no significant effect on non-farm employment for rural women in the western regions and for women with primary school education years and lower (Sun & Sun, 2022). In our survey, women in sampled households shared the similar features, that is, they all lived in western regions and 75% of them had less than 6 years of education. In addition, more diversified poverty measurement methods, except the binary poverty status defined solely by an income threshold, are worthy of further studies in order to better analyze the relationship between poverty and women's empowerment.

CONCLUSION

This study finds that rural women in the formerly poverty-stricken areas in western China enjoy an overall moderate level of empowerment. They are more empowered in the domestic domains than in the public domains. Women's ages, women's educational years and the decision-making of women's parental families are found to be significant determinants of women's empowerment. The effect of poverty reduction on women's empowerment needs more exploration. For example, multiple poverty measurement methods should be further studied by discussing different poverty thresholds or by using multi-dimensional variables to define poverty. Sociocultural factor such as the influence of women's parental families on decision-making has a strong effect on women's empowerment in our

study, which implies progress in women's empowerment could be very slow to achieve but changes do happen as the marginal effect of parental-family influence is smaller on younger women.

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