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### POVERTY, WOMEN EMPOWERMENT AND ROLE OF AGRICULTURE SECTOR IN PAKISTAN: ESTIMATION OF WOMEN EMPOWERMENT INDEX

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#### ABSTRACT

Women's empowerment is crucial for sustainable economic progress and poverty reduction in developing nations. The study interviewed 1000 households in Punjab Province, Pakistan, using Shoaib et al.'s (2012) sampling methodology and dividing the province into four regions. The index was calculated using Alkire and Foster's (2007) methodology. The study reveals that leadership and income are the most significant factors contributing to female disempowerment in the Punjab province. The Women Empowerment in Agriculture Index score is 0.70, with 21% of women empowered and 79% disempowered. The study found that 7% of women's disempowerment contributes to autonomy in production, 23% to income control, 19% to organizational membership, and 10% to public speaking. Males' insufficient accomplishment differs from girls, with leadership contributing at 35% and time allocation at 25%. Male disempowerment is 7% in wealth control, while males face similar disempowerment in production and resource access. Men contribute 5% to asset ownership, 6% to purchase and sale, and 11% to credit access and control. Men's disempowerment index includes 22% group participation, 13% public speaking, 13% workload, and 12% leisure. The gender parity index shows that 51.7% of women experience gender disparity, with an average empowerment difference of 45.7%.

**Keywords:** Women empowerment; Agriculture sector growth; Pakistan.

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#### INTRODUCTION

The MDGs and SDGs emphasize gender equality, and governments prioritize women's economic and social empowerment. The positive link between poverty and disempowerment makes this trend gaining traction. Failure to provide basic requirements often prevents crucial decisions. Women make up 43% of the agricultural labor force in emerging nations, with South Asia employing 40% of males and 70% of women (FAO, 1995). The 17 SDGs encompass various aspects, including money, income, employment, freedom of speech, social resources, political expression, mobility, body control, reproductive choices, and sexuality (Kabeer & Natali, 2013). Women's empowerment aims to create choices for women, addressing gender discrepancies in bargaining power and resource access.

The agricultural industry in Pakistan is crucial for economic progress and poverty eradication. Rural women play a significant role in animal production, crop production, and cottage industries. The farming sector employs around 45% of Pakistan's labor force, with challenges varying by province. Balochistan faces poverty rates of 52% and 72% of rural households. Balochistan's women dominate agriculture, performing tasks like weeding, seed washing, and animal farming, contributing 40% of the province's GDP in livestock and fisheries (GOP, 2018). Khyber Pakhtunkhwa (KP) has a rural population of 83%, with

agriculture accounting for 50% of the labor force and 40% of the province's GDP. Women work in agriculture, husking and storing goods and caring for livestock. In Sindh province, women contribute 24.7 percent to the provincial GDP. Cotton production in Sindh has the highest female involvement, with nearly 60% participating in pre-harvest, 76% in post-harvest, and 33% in marketing. Rural women's roles have not been recognized (LFS, 2012). Pakistan Labour Force Survey 2012-2013 shows that 73% of women work in stall-feeding, milking, shed cleaning, grazing, and watering animals.

Literature employs indices to assess women's empowerment trends, including GEM and GGI, which evaluate economic participation and gender imbalance. These indices compare male and female educational achievement, political empowerment, and economic engagement. National-level quantification excludes variations based on age, geography, socioeconomic position, marital status, and customs.

The Women Empowerment Agriculture Index (WEAI) is a comprehensive index measuring women's empowerment, agency, and participation in agriculture. It is a multidimensional index consisting of two sub-indices: the percentage of empowered women in the farming industry and the Gender Parity Index (GPI). The WEAI measures productivity, income use, productive resources, community leadership, and time allocation, while the GPI shows the proportion of women who have achieved parity and the empowerment gap for families without gender equality (Alkire et al., 2013).

WEAI is a complete tool for policymakers, rural advancement organizations, and database stakeholders to promote women's autonomy and gender parity in agriculture. WEAI is based on the Alkire and Foster Methodology (2007), which analyses poverty on several dimensions. These indices are expressed at the resident and population levels, using data collected independently as well as interviews conducted by men and women from comparable families (Alkire et al., 2013). However, resolving the issue of disempowerment and providing proper examples to women in agriculture will decrease poverty in rural regions, pointing the path to the goal of economic progress.

This indicator helps identify weak zones of empowerment for policy action and highlights areas where women are disempowered and have less representation in agriculture. Addressing disempowerment and providing adequate representation for women can eliminate rural poverty and contribute to economic progress. The study measured the women empowerment index in Punjab, Pakistan.

## **LITERATURE REVIEW**

Agenor and Canuto (2013) discovered gender disparities in certain locations because of smaller salary inequalities, while the Northeast had the biggest gaps. The study came to the conclusion that women's time allocation, childrearing, and negotiating power in Brazil were strongly influenced by long-term policies of gender-based inequality. In a study of women's economic participation and empowerment in rural Pakistan, Spriggs et al. (2017) discovered that empowering women improved their propensity to participate in a range of household tasks.

According to research by Amin et al. (2006), 53% of rural Pakistani women work and invest 20% more time than males in post-harvest labour. Hasan and Uddin (2016) looked at Bangladeshi female empowerment trends in order to emphasise the significance of female empowerment for long-term development. According to the survey, 66% of women were active in childcare. Due to their financial independence and capacity for decision-making, women's empowerment was increasingly crucial. Women's empowerment in Egypt was explored by Assaad et al. (2014), who found that it rose with age before falling with time. Age, employment, poverty, and the number of children a person has also had a distinct influence on women's empowerment.

According to Hossain (2011), early marriage is a significant factor in excluding women from the empowerment process, and women's education and empowerment levels in rural regions are lower than those in metropolitan areas. Ishaq and Memon (2016) conducted research on the position of rural women

in Pakistan, indicating barriers to women's empowerment, with women mostly engaged in livestock and agricultural production. The empowerment of women at the family level is positively correlated with education, according to Shoaib et al. (2012). Using information from three villages, Islam (2020) investigated the position of rural women in household decision-making authority in the Patuakhali area of Bangladesh. Results showed active involvement in family life's educational, social, and developmental phases but less so in economic pursuits.

In West Bengal, India, Paul (2015) investigated the influence of self-help groups (SHGs), which have been shown to be beneficial for social empowerment, women's development, and poverty reduction. The study employed open-ended interviews and data from small and marginal farm households to demonstrate the participation of women in farming operations. In their 2010 study on rural Pakistani women's participation in livestock management, Arshad et al. discovered that women's involvement in livestock goes beyond animal ownership and food production. The vast majority of responders are in favour of men predominating in decision-making. Using data from eleven public institutions, Malik and Courtney (2012) investigated whether women who pursue higher education have the power to influence unfair practices and bring about positive change. Overall, higher education has been a crucial tool for social transformation and the empowerment of women.

In rural Bangladesh, Chowdhry and Chowdhry (2011) investigated the relationship between women's autonomy and microcredit at both the individual and family levels. They discovered that women with higher levels of education had fewer credit demands and that women's engagement had a substantial impact on both family and individual levels. Microfinance did, however, have brief effects on empowerment in terms of wealth accumulation and income generation. Chant (2016) investigated how much women worked in agriculture in the province of Limpopo and discovered that it increased food security and decreased poverty. She also gave women the authority to decide how to spend agricultural income and other farming-related issues. Singh (2015) looked at how women used natural resources in the western Himalaya and discovered that they had a stronger connection to them than males did. These resources are essential to the majority of household tasks in the Himalaya, emphasizing the value of women's participation in these fields.

According to research by Akter et al. (2017) on regional disparities in women's empowerment in Southeast Asian areas, women play a significant role but are less successful because of male territory in Indonesia and Myanmar. ICT indices triggered by gender and education have a substantial impact on women's empowerment, according to Badran's (2007) investigation on the role of ICT in empowering women in Egypt. The empowerment of women in family planning and household decision-making was found to be severely hampered at the home level by Khan and Awan's (2011) investigation. Women's decision-making and empowerment in family planning improved with increased educational levels.

Kim et al. (2016) created a model to examine the impact of gender disparity on long-term economic growth, concentrating on female labour participation and the building of human capital. The model was used to analyse micro-level data from Asian countries and policy trials, and the results showed that removing gender raised the per capita income's annual growth rate by 1% and 0.2%. In their 2017 investigation of gender stereotypes and views on mothers who work, Kleven & Landais discovered that perceptions shifted as GDP per capita rose. When Chaudhry et al. (2012) looked at gender roles in socio-economic activities in rural Punjab, they discovered that while females were more involved in household problems, male members had the largest engagement in decision-making authority over children's schooling and weddings.

## **METHODOLOGY**

### **Sampling Frame**

The study used the sampling strategy proposed by Shoaib et al. (2012) to analyse the population of the Punjab Province of Pakistan. Table 1 reports the sampling strategy, the province was split into the North,

South, West, and Central geographic areas. Using a probability-proportional to size sampling approach, five districts from the center area, two from the west region, and two each from the south and north regions were chosen. Following random selection, two villages and one rural union council were chosen from each district. Following the selection of the villages, fifty households were further questioned, totaling 1,000 Punjabi households.

Table 1. Sampling strategy.

Regions	Selected Districts	Selected Union Councils	Selected Villages	Region wise HHs (50 per village)
North	1	1	2	100
South	2	2	4	200
West	2	2	4	200
Central	5	5	10	500
Total	10	10	20	1000

### Questionnaire Design

The study uses an OPHI questionnaire designed for household research, consisting of six sections. The first section focuses on family structure, while the second section collects information on decision-making in agriculture production activities, autonomy, and motivation. The third section questions about asset purchases, sales, and transfers, while the fourth section explores income usage, and the last section includes questions about group membership, public speaking, and time-consuming activities.

### Variable Description

This section discussed the indicators used for the estimation of 5DE and WEAI. There are five domains in WEAI, agriculture production, resources, income, leadership, and time. Each domain has two indicators. Each indicator has different weights. The domain of agriculture production has two indicators: input in productive decisions and autonomy in production. Both indicators have 0.10 weight. The domain of resources has two indicators: ownership of assets and buy, sale & transfer of assets. Each indicator has 0.07 weight. Similarly, the domain of income has two indicators: access and decision about credit and control over the use of income. The first indicator has 0.02 weight, while the second indicator has 0.02 weight. The fourth domain is leadership, which has two indicators: group members and speaking in public. Both indicators have 0.10 weight. The last domain is time, which has two indicators: workload and leisure. Both indicators have 0.10 weight.

## RESULTS AND DISCUSSION

### Descriptive Analysis

As discussed in the methodology section, the study interviewed 1000 rural households from Punjab province through an appropriate sampling technique. The Punjab has been divided into four geographical regions, and through a multistage sampling technique, the sample was allocated to each region. Table 2 shows that the central region covers 50 percent of the respondents, the south and west covers 20 percent each, while the north covers 10 percent of overall respondents.

Table 2. Regional distribution of survey.

Region	Percent
Central	50
South	20
North	10
West	20
Total	100

Source: Author's calculation.

Figure 1 shows the educational status of the respondent as one of the important indicators, which basically shows and confirms the accuracy of the data collected. This question has been categorized into two indicators: those who never attended school (illiterate) and those who attended school in the past (literate). There is a huge gap between male and female regarding this dimension, where female educational status is lower than that of male respondents.

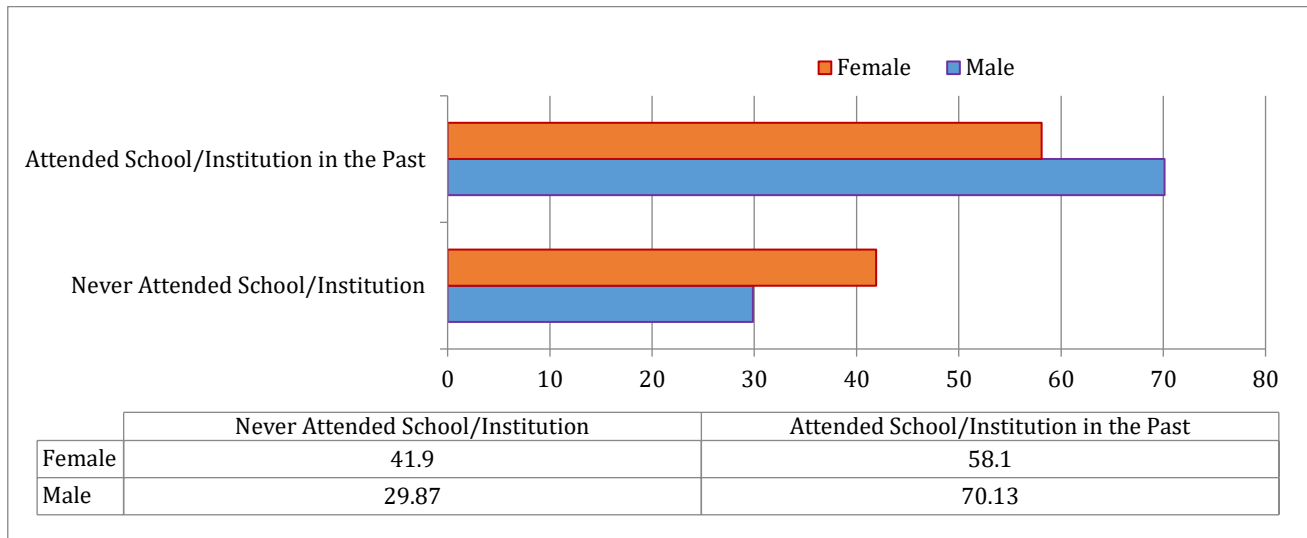


Figure 1. Educational status of the respondents by gender; Source: Author's calculation.

Figure 2 shows the regional segregation of the educational status of the respondents, where the educational indicator is better in the central region of Punjab province. Among all regions, the central region has the lowest percentage while the south region shows the highest percentage. This segregation shows that educational attainment is better in the central region, followed by the north and west regions of Punjab province.

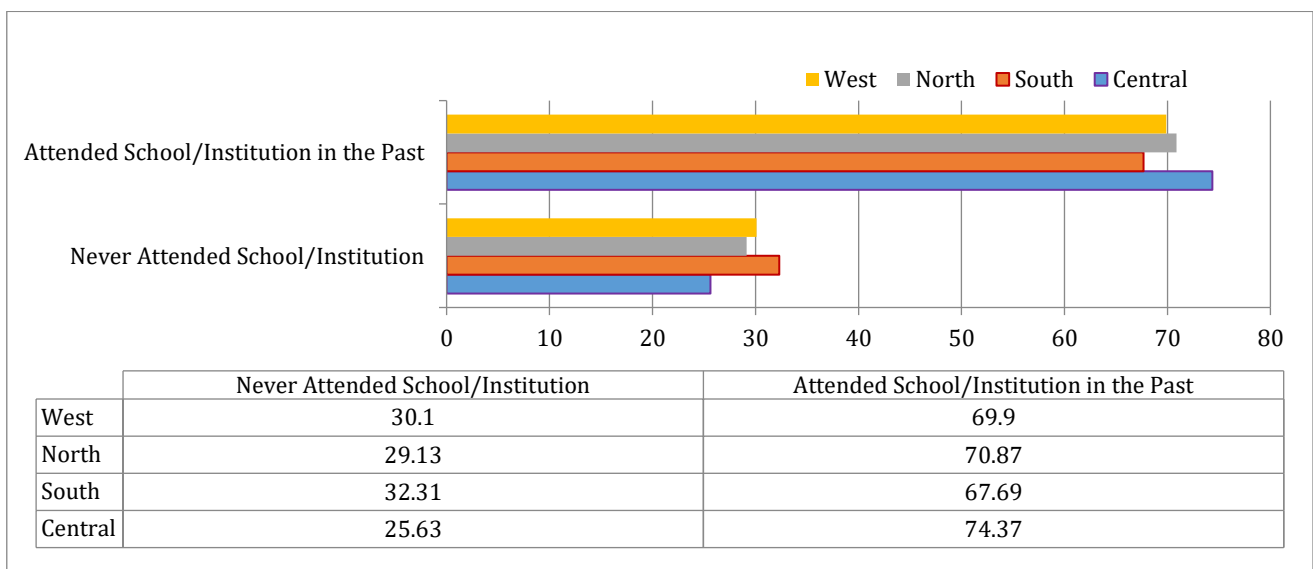


Figure 2. Educational status of the respondents by region; Source: Author's calculation.

### Empirical Analysis

Table 3 explains that the Punjab province has a Women Empowerment Agriculture Index value of 0.70, as shown in the table below. It is estimated by taking 90% of the 5DE sub-index value of 0.69 and adding 10% of the GPI value of 0.76.

Table 3. The 5DE at K=0.2.

$5^{DE} = 1 - M^0$	Women	Men	Regional
Observations	100	100	200
Ratio of Disempowered Headcount ( $H^d$ )	79.0%	65.1%	72.1%
Score of Average Inadequacy ( $A^d$ )	36.2%	35.7%	36.1%
( $M^0 = H^d \times A^d$ )			
Index of Disempowered	0.306	0.195	0.280
( $5DE = 1 - M^0$ )			
Five Domains of Empowerment	0.690	0.719	0.700
Percentage of Parity in Dual HHs			
$GP^{INDEX} = 1 - (HGPI \times IGPI)$			
Women in Percentage with Gender Disparity ( $H^{GPI}$ )	51.7 %		
Average Gap of Empowerment ( $I^{GPI}$ )	45.7 %		
Gender Parity Index ( $GP^{INDEX}$ )	0.761		
WEAINDEX	0.709		

The first subindex 5DE for the sample region reveals that 21% of women are empowered, and 79% are disempowered. Women have an average insufficiency score of 36.2%. This suggests that 36.2% of these women have poor achievements in fields. Thus, women's  $M^0$  is computed by multiplying the disempowerment headcount ratio by the average insufficiency score ( $79\% \times 36.2\% = 0.25$ ), and 5DE equals  $1 - 0.25 = 0.75$ .

Similarly, 65.1% of males are disempowered, and they have inadequate accomplishment in 35.7% of aspects on average. Men's  $M^0$  is derived by multiplying the disempowerment headcount by the average insufficiency score ( $65.1\% \times 35.7\% = 0.23$ ); the 5DE is thus  $1 - 0.23 = 0.76$ .

### ***Women's Disempowerment Decomposed by Domains***

Figure 3 shows that leadership (28%) and income (24%) are the most significant domains contributing to women's disempowerment. Malapit et al. (2014) found similar results where community leadership and income control are also significant factors. Production (12%) has a slight disempowerment for women, consistent with the findings of Alkire et al. (2013).

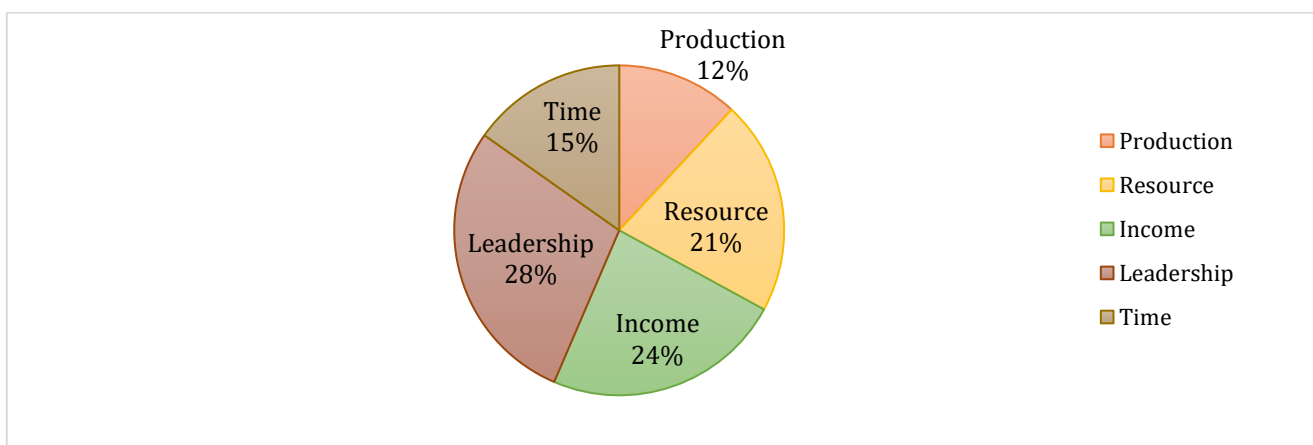


Figure 3. Dimension wise disempowerment of female.

### ***Women Disempowerment Decomposed by Indicator***

Figure 4 explains that 7% of women's disempowerment contributes to autonomy in production, 23% to income control, 19% to organizational membership, and 10% to public speaking. Workload and leisure indicators reveal female contributions.

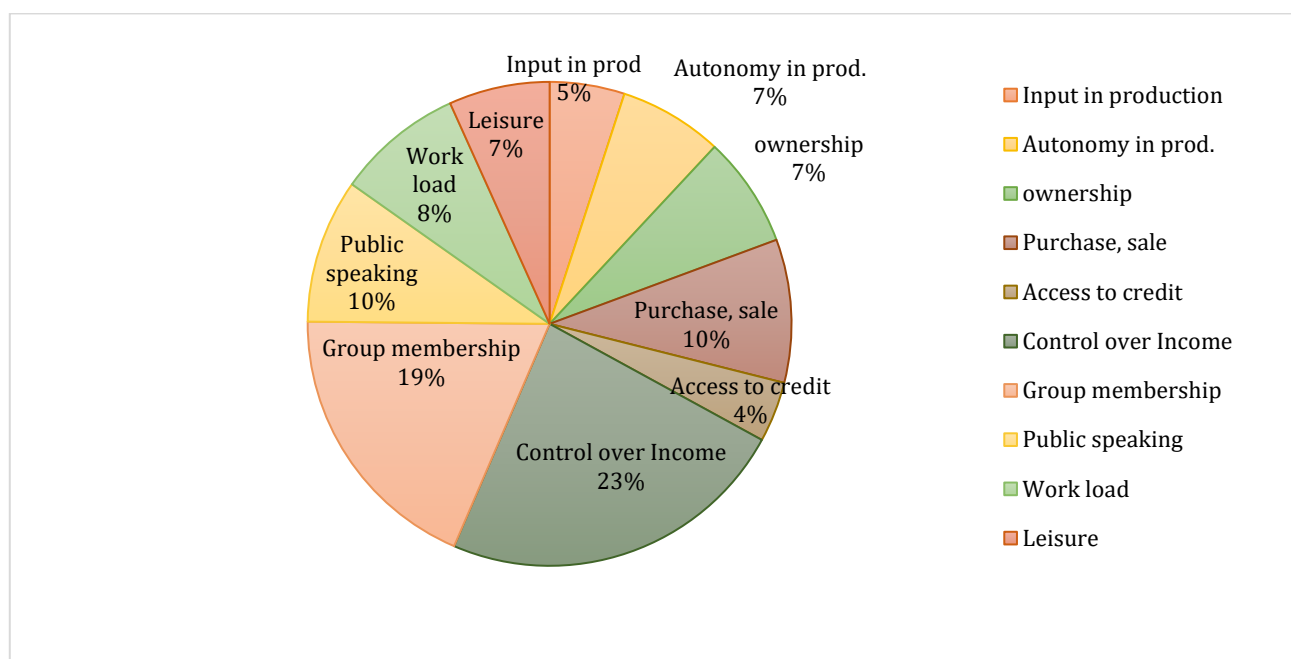


Figure 4. Indicator wise contribution to disempowerment of women.

### ***Man Disempowerment Decomposed by Domain***

Figure 5 shows that the males face insufficient accomplishment patterns differently from girls, with leadership contributing at 35%, time allocation at 25%, and wealth control at 7%. Both face similar levels of autonomy in production and resource access.

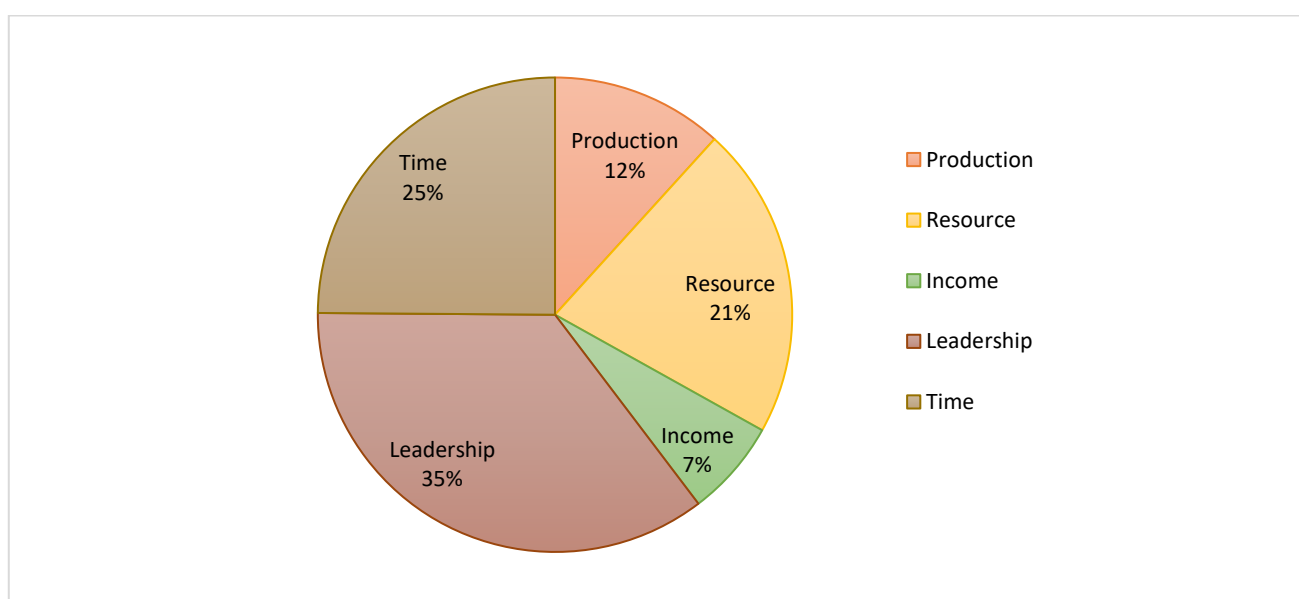


Figure 5. Dimension wise disempowerment of male.

### ***Man Disempowerment Decomposed by Indicator***

Figure 6 shows that male input in productive decisions is 5%, while autonomy in production is 7%. Men contribute 4% to asset ownership, 6% to purchase and sale, and 11% to credit access and control. They contribute 22% to group participation and 13% to public speaking, while male workload and leisure contribute 12% and 12%, respectively. The Gender Parity Index (GPI) shows an average empowerment difference of 45.7% between male and female families, with a 0.76 GPI.

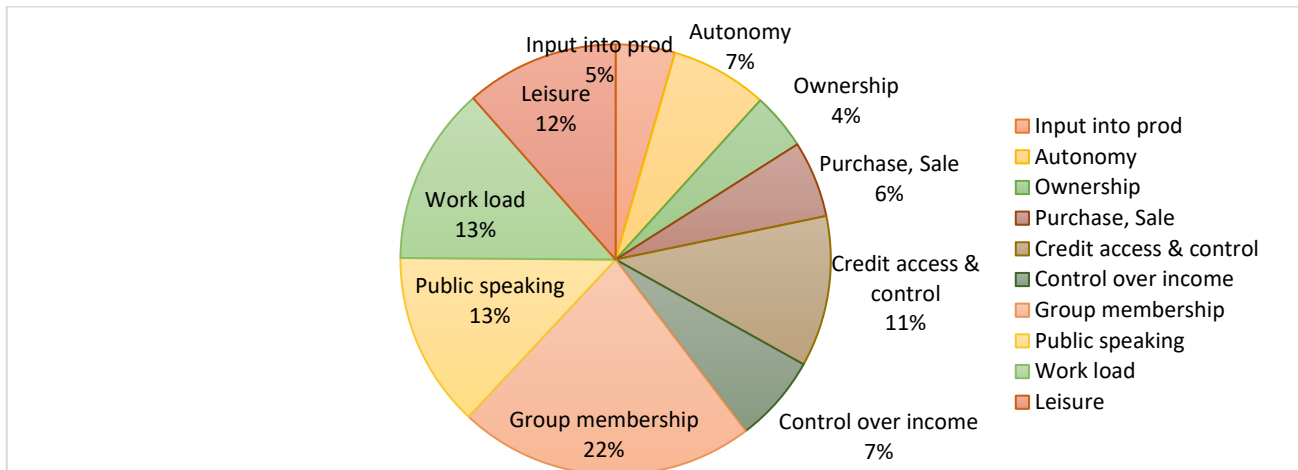


Figure 6. Indicators of disempowerment of men.

## CONCLUSIONS AND RECOMMENDATIONS

This study assesses women's empowerment using the Women Empowerment Agriculture Index (WEAI), which compares the five domains of empowerment of rural women to the gender parity index (GPI) of males. The study used the Punjab Province of Pakistan, which has a Women Empowerment in Agriculture Index rating of 0.70. The study found that 21% of women are empowered, while 79% are disempowered. Women have an average insufficiency score of 36.2%, indicating poor achievements in fields. The most significant dimensions contributing to women's disempowerment were leadership (28%) and income (24%). Women make up about 19% of organization membership and 10% of public speaking. Male workload contributes 13% to the measure, while leisure contributes 12%. The Gender Parity Index shows that 51.7% of women have gender disparity, with an average empowerment difference of 45.7% between male and female families. There is a need to develop group-based programmes where females are trained and educated about public transactions. Relevant agricultural education should be provided to women so that they may easily promote their own farms and positively contribute to agriculture. It also demonstrates that educational content has a favourable relationship with factors of women's empowerment (Bushra & Wajiha, 2013). Microfinance projects can be strong operators of social change and have a positive impact on women's empowerment (Cheston & Kuhn, 2002). So, equal microcredit facilities should be provided to women because it is the main platform where women can share their experiences and information concerning different aspects of life, and empowered through microfinance loans and savings services had a great impact on women (Kato & Kratzer, 2013).

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