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Measuring Women's Disempowerment in Agriculture in Pakistan

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ABSTRACT

Pakistan performs poorly with respect to gender equality, women's empowerment, and other gender-related indicators. Few studies in Pakistan measure the multiple dimensions of empowerment along which women are marginalized or disenfranchised, particularly in the country's rural areas. Even fewer studies address the gender gaps in empowerment levels of men and women. This paper calculates a Women's Disempowerment Index to examine women's control over production, resources, income, household decisions, and time burden. The index is based on a slightly modified methodology than that used for WEAI calculation by Alkire et al. (2012). The analysis is based on a sample of 2,090 households in the rural areas of Pakistan. Data used for the study were collected in three rounds of the Pakistan Rural Household Panel Survey from 2012–2014 by International Food Policy Research Institute/ Innovative Development Strategies for its Pakistan Strategy Support Program. The results show low empowerment levels of only 17 percent for women in the rural areas of Pakistan. The results also show very low empowerment of women in all indicators and domains except the time burden/workload indicator. We then analyze women's disempowerment by subsamples based on individual and household characteristics. We also calculate disempowerment levels among men and compare it to disempowerment levels among women. Comparison within the household reveals large disparities in empowerment levels among men and women. In a comparative analysis, men are found to be more empowered in domains of production, income, and autonomy. Both men and women were found to be most disempowered in access to and control over resources. The paper provides a baseline for tracking women's empowerment over time and identifies areas that need to be strengthened through policy interventions.

Keywords: women's empowerment, gender gap, Pakistan, agriculture, rural areas, gender

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1. INTRODUCTION

Gender equality, women's empowerment, and the role that men and women play are intricately linked to development in developing countries (World Bank 2010; UN 2009). There are several ways through which gender equality can contribute to greater development outcomes in a country. On a macro level, greater gender equality means a bigger labor force as more women can join in, a more productive labor force with shrinking health and educational disparity between men and women, and potentially higher consumption. On the household level, women's income can help keep poor households out of poverty and malnutrition through higher consumption. Evidence also suggests that increased gender equality changes the allocation of household expenditures, with a larger share of resources devoted to children's education and health. In economic terms, gender inequality is reflected in unequal access to resources like land, livestock, credit, labor markets, and access to new production technologies. Gender inequalities in distribution of household tasks often limit women's ability to work for remuneration and control their fertility decisions. Countries with greater gender equality also tend to have a lower incidence of poverty and rank higher on the UN human development index (World Bank 2007). In most developing countries whose economies are driven by agriculture, there is renewed interest in agriculture as an engine of growth and recognition of the role of women in the sector as they improve both productivity and efficiency. For example, according to the Food and Agriculture Organization of the United Nations, "closing the gender gap in agriculture is essential to increasing agricultural productivity, achieving food security, and reducing hunger" (FAO 2011). The World Bank's *World Development Report 2012: Gender Equality and Development* also emphasizes the significant role of women's empowerment on efficiency and welfare outcomes of policy interventions (World Bank 2012).

Women's empowerment and gender equality are mostly measured at the aggregate level, often through proxy and indirect methods, which do not allow measurement of empowerment at the household and individual level. Also, most of the empowerment measures used do not cover all dimensions of a woman's life (see Alkire and Foster 2011). Monitoring progress toward gender equality at the international level is also done at an aggregate level. International indicators capturing women's empowerment did not cover the agriculture sector specifically until recently, when the Women's Empowerment Agriculture Index (WEAI) was developed (see Alkire et al. 2012). The WEAI is a tool developed by the United States Agency for International Development, the International Food Policy Research Institute, and the Oxford Poverty and Human Development Center. The WEAI was designed to measure women's empowerment and the differences in levels of empowerment between men and women in the agriculture sector. Our work in this paper draws from the WEAI and analyzes women's disempowerment at the household level in the rural areas of Pakistan from a multidimensional perspective.

Women in Pakistan make up 39 percent of the labor force in agriculture compared to 10 percent in nonagriculture employment. Approximately 75 percent of total female employment depends upon agriculture and 84 percent of the women employed in the country are in the rural areas (GOP 2013). But despite their participation, women are far less likely to own income-generating assets such as land, agricultural equipment, and large livestock or have a say in the household's production and other decisions. Studies on women's empowerment in the country are limited by a lack of gender-disaggregated household data, especially in the rural agriculture sector. Most of the research has therefore focused on earnings ability and control over resources and used proxies to measure a few dimensions of women's empowerment. The research on empowerment has not focused on rural areas of the country. This paper adopts a more comprehensive approach to measuring empowerment. We develop a multidimensional disempowerment index for Women in the rural areas of Pakistan based on the Alkire-Foster method for calculating the WEAI, but with modified domains, indicators, and thresholds that are more relevant to the Pakistani context (see Table 3.1 for the domains and indicators used in the measurement of a Disempowerment Index and Table B.1 for details). To our knowledge, this is the first attempt to construct a multidimensional disempowerment index that aims to present a more holistic understanding of women's

disempowerment in rural Pakistan. Data for the analysis come from three rounds of the Pakistan Rural Household Panel Survey undertaken by IFPRI/IDS for its Pakistan Strategy Support Program between 2011 and 2014 (see section 3) undertaken in the provinces of Punjab, Sindh, and Khyber Pakhtunkhwa (KPK).

The paper is divided into seven sections. In the next section, we review relevant literature to define and understand women's empowerment. Data and methodology used in this paper are explained in the third section. In the fourth section, we present the overall disempowerment index value for all the women in our sample and present index contribution made by each domain and indicator. In the next section, we analyze the relationship between women's disempowerment and individual and household characteristics by decomposing the disempowerment index by subgroups. Section 6 presents how gaps in empowerment between women and men in the same household are measured. The final section concludes and outlines the policy implications of the research.

2. REVIEW OF THE LITERATURE

Definitions of Empowerment and Choice of Indicators

Empowerment is a complex term and difficult to define. It is defined in a variety of ways in the literature, often depending upon culture and context. In his seminal work *Development as Freedom*, Sen defined empowerment as "an expansion in an individual's agency, that is, expansion in one's ability to act and bring about change" (Sen 1999). Similarly, Narayan (2002, 2005) in his research defines it as "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives." Kishor (2000) refers to empowerment as "having control over resources, being able to rely on oneself, make decisions, and exercise choice." Kabeer (1999) defines empowerment as the expansion of people's ability to make strategic life choices, particularly in contexts where this ability had been denied to them.[1]

We define empowerment in this paper as *access and control over resources* such as income, assets, and time; and as *ability to influence decisions* such as those relating to production, household expenditure allocations, children's marriages, daughter's education, contraceptive use, and personal freedom of movement. In essence, we define women's empowerment in terms of access and agency.

Past research has explored a wide variety of indicators that influence empowerment, and recent studies on women's empowerment have developed a multidimensional concept of empowerment (Mason and Smith 2003; Kishor and Gupta 2004; Ibrahim and Alkire 2007). For example, Kabeer (1999) shows that the most probable indicators of empowerment are family structure, marital status, financial autonomy, freedom of movement, and lifetime experience of employment in the modern sector. A range of other individual and household characteristics determine constraints on women's empowerment (Ghuman, Lee, and Smith 2004; Ankerbo and Hoyda 2003; Mason and Smith 2003). Decision making with respect to different aspects of life is an important indicator of the power structure within a household, particularly as reflected through the division of gender roles. This indicator is most commonly used in studies of empowerment in the literature. Researchers use different variants of the indicator: participation in domestic decision making, education of children, fertility, and control over income and other resources (Malhotra and Schuler 2005; Kishor 2000; Jejeebhoy 1995; Schuler and Hashemi 1994). In their study of five countries that include Pakistan, Mason and Smith (2003) focus on control over income as an indicator of empowerment. Control over decision making regarding land is particularly central to women's empowerment in households and communities engaged in agricultural production. For example, Mason (1998) shows land ownership in Pakistan to be significantly associated with greater economic empowerment, findings that are consistent with prior theoretical and empirical work done in other countries by Allendorf (2007) and Mutangadura (2004), among others. Control over or access to non-land assets such as finance and credit are also closely linked to women's empowerment in developing countries (see, for example, Mitra and Kundu 2012).

Several research studies investigate the importance of a woman's education and autonomy on fertility control (Jejeebhoy 1995; Saleem and Bobak 2005). Reproductive choice is also a key indicator of women's empowerment in many studies (Khan and Awan 2011; Jejeebhoy and Sathar 2001; Sathar and Kazi 2000; Winkvist and Akhtar 2000). In Pakistan, reproductive choices may even be dictated by family members other than the husband. For instance, Sultana, Nazli, and Malik (1994) showed that in Karachi mother-in-laws have considerable influence over family planning decisions regarding young couples in the family.

Similarly, freedom of movement is also a frequently used indicator of women's empowerment. Mobility gives women increased access to a variety of resources. Many constraints to development, such as women's lack of education, low labor force participation rates, and low rates of entrepreneurship, are intricately linked to restrictions on women's mobility. Mason and Smith (2003) demonstrate that women's freedom of movement may be more limited because of social context rather than individual

[1] See Ibrahim and Alkire (2007) and Alkire and Foster (2011).

characteristics. Malhotra, Schuler, and Boender (2002) also suggest that sociocultural barriers limit women's freedom of movement and access to resources in comparison to men. Sathar and Kazi (2000) also use mobility as an indicator in their analysis for rural Pakistan and find regional differences within Punjab, suggesting that women from northern parts of the province have greater ease of mobility than do those from the south.

The responsibility of domestic chores and care for children and the elderly generally fall disproportionately on women, and may prevent them from participating in work for remuneration. Not surprisingly, women's time burden in domestic tasks has often been discussed as one of many determinants of low female empowerment. Malapit et al. (2014) and Alkire et al. (2012) include time as part of their definition of empowerment in the WEAI calculation. Empowered women are considered to have sufficient time to take care of themselves and their families and are also satisfied with the allocation of time for different tasks. In Pakistan, women experience a dual time burden as they work side by side with men in the fields and fulfill their domestic responsibilities in the household. Prakash (2003) and Tibbo et al. (2009) find that in Pakistani Punjab, seed cleaning, planting, and weeding are mostly done by women, while a considerable proportion of their time is also spent on livestock-related activities. Khan (2008) and Jamali (2009) find that women are actively involved in different livestock activities and supplement family incomes in rural areas of Pakistan.

Women's Empowerment and Health and Nutrition Outcomes

Evidence from developing countries shows that when women have greater control over resources, more resources are allocated to food, children's health, and nutrition (Hoddinott and Haddad 1995; Duflo and Udry 2004). Better nutritional status of mothers is also associated with better child health (Bhagowalia et al. 2012; Thomas and Strauss 1992; Galloway and Anderson 1994). Cross-country evidence also suggests that improvements in food security are often attributable to improvements in the status of women. Smith et al. (2003) show that gender equity alone can result in a 13 percent decrease in the number of malnourished children under the age of three. Similarly, Smith and Haddad (2000) find that the education of women alone explained 43 percent of the reduction of child malnutrition in selected developing countries during the period 1970–1995.

Behind the search for useful indicators is a growing body of evidence that draws a link between the status of women in Pakistan and their health and nutritional outcomes. For example, in a study conducted in rural Pakistan, Alderman and Garcia (1996) show that the incidence of undernourishment in children was reduced by almost half when mothers received even a primary level education. Guha-Khasnobis and Hazarika (2006) find that indicators measuring difference in levels of education between the wife and the household head, and difference in age of the wife and household head, are significantly and negatively related to household expenditure on adults. Other studies from Pakistan confirm that when women have more decision-making power at home, budget shares shift toward their preferred goods, such as children's clothing and education, while children, particularly girls, are more likely to be enrolled in school (Hou 2011). Furthermore, consistent with the theory that women spend more efficiently on food consumption, studies also find that families eat more non-grain food items and consume better calories from food items such as fruits and vegetables when women have decision-making power in the households. (Hou 2011).

Intrahousehold Factors Affecting Women's Disempowerment

Finally, a woman's relative position in the household is closely related to her level of empowerment. Research shows that women's age in absolute terms or in relation to her spouse or other primary household members, whether she has sons, and whether she is part of a large, extended household or joint family structure can influence her relative status within the house. For example, Alkire et al. (2012) in their study for Bangladesh find a larger percentage of women empowered in the age group 26–55 years, reflecting a lack of power of younger and older women. Khan and Awan (2011) find similar results for

Pakistan, where women aged 40–44 years have greater economic decision-making power than younger women do.

Alkire et al. 2012 compare empowerment levels between men and women and present results from pilot data in Bangladesh, Guatemala, and Uganda to show that, generally, men are more empowered than women on almost all indicators of empowerment. Malapit et al. (2014) calculate contributions of each domain and indicator to disempowerment of women in 13 selected countries. Their results show that on average women are twice as disempowered as men and much more disempowered in Tajikistan and Ghana. Their results also show varying regional contributions of different dimensions to disempowerment, with group membership being a major factor in Asia, while lack of access to credit and workload being the main contributors to disempowerment in east and southern Africa.

3. DATA AND METHODOLOGY

Data

Data used for the analysis in this paper are taken from the Pakistan Rural Household Panel Survey (RHPS) (IFPRI/IDS 2010-2014). The RHPS provides comprehensive panel data on multiple dimensions. The data were collected from three rounds of the RHPS, carried out between March 2012 and June 2014[2] (IFPRI/IDS 2012, 2013, 2014). The surveys followed approximately 2,090 households and more than 13,000 individuals in each round. The surveys were conducted in 76 *mouzas*. Four *mouzas* were randomly selected from each of 19 districts in the provinces of Punjab, Sindh, and Khyber Pakhtunkhwa (see Appendix A for distribution of the sample by provinces and districts). Geographically, the data represent Punjab and Sindh comprehensively and KPK partially, as some districts in KPK could not be included in the sample due to the difficult law and order situation. The province of Baluchistan was also excluded from the sample due to security concerns.

The women's module collected data for 3,526 women on decision making, income, mobility, and time use. Results for the disempowerment levels on an overall sample of 2,677 women are presented in this paper. The sample consisted of up to three women from each household, including the head/spouse of the head, the eldest female, and the youngest female over 15 years of age. Therefore, our calculations of the disempowerment levels better represent adult females in rural areas of Pakistan compared to the WEAI calculations (in different countries), which are based only on samples of main female decision makers in the household. In addition to data on the women's module, household- and individual-level data on demographics, consumption, income and employment, assets, education, savings, credit, and other community characteristics were also collected.

The analysis in section 6 on gaps in empowerment is based on a sample of 1,674 households with one male and one female respondent from each of the households. This sample only covers the main male and female respondents in each household irrespective of their relationship to each other. In 82 percent of households they were the husband and wife. Households without a male respondent or without a female respondent were not included in the analysis, so the results reported are only for dual-adult households.

Methodology

Our methodology for measuring disempowerment draws from Alkire and Foster (2011) and Alkire et al. (2012) calculations of the WEAI. The WEAI has been created to bring empowerment in the agriculture sector to the forefront of the policy agenda and is extensively used for measuring women's empowerment in a number of countries (see Alkire et al. 2012; Malapit et al. 2014). The index has been designed to make comparisons across countries, contexts, and time. Since empowerment is multidimensional, five domains and ten indicators are used in computing the WEAI, which allows the index to be broken down and compared across different dimensions. A Gender Parity Index is also included in the WEAI, to compare levels of empowerment between men and women in the same household and estimate the gaps between the two. The WEAI combines these two subindexes to make one final index for measuring women's empowerment. In this paper, we calculate the two indexes, disempowerment index (comparable to inverse of 5DE in WEAI) and intrahousehold parity index (comparable to GPI in WEAI), separately. We first calculate a disempowerment index for women only. Second, in order to understand gender differences and intrahousehold gender parity in empowerment, we calculate the Gender Parity in Empowerment Index (GPEI) using a subpopulation of our original sample. In this paper, we follow the methodology used for the WEAI calculations, but our selection of domains and indicators is not identical. We measure disempowerment through five domains and ten indicators (see Table 3.1). Most of the indicators of disempowerment included here are based on the literature cited. Their inclusion is

[2] This survey period mostly overlapped with harvesting of *rabi* crops and cultivation of *kharif* crops. The exact harvest and cultivation time in Pakistan differ slightly from province to province.

articulated in Ibrahim and Alkire (2007) and Alkire et al. (2012) and in the review of literature section in this paper. Our choice of indicators used for index calculation overlap greatly with the WEAI, but also differ to reflect the local context of empowerment in Pakistan. The choice of indicators and thresholds used for measuring disempowerment is explained in detail in this section. The domains and indicators are described below.

Production

The production domain relates to participation in agricultural decision making. Two separate indicators are used in this domain. The first is the decisions on production outputs. If an individual makes these decisions independently or jointly, he or she is considered to be empowered. The second indicator pertains to the extent to which an individual feels he or she can make his or her own decisions regarding production inputs. If an individual feels he or she can influence the decisions even to a small extent, he or she is considered to be empowered. Inputs into the following production decisions are included for the two indicators: (1) food crops grown for household consumption, (2) cash crops to be grown for sale in the market, (3) livestock to be raised, (4) nonfarm activities to be undertaken, (5) inputs to buy for agriculture production, and (6) taking crops to the market. An individual is considered to be empowered in the production domain only if he or she is empowered in both of the above indicators.

Resources

This domain consists of ownership and control over resources of major assets and decision-making power over them. There are two indicators in this domain. The first indicator relates to ownership of major assets (land, livestock, nonfarm business equipment, and house).[3] The second indicator in the domain is decision-making power over purchase and sale of assets. Empowerment in the domain is defined as sole ownership of at least one major asset and control over its transfer. Disempowerment means no ownership of assets and therefore no say in their purchase or sale by the individual. Access to and power over decisions regarding credit, indicators used in the calculation of WEAI, are not included here as indicators in the resources domain, as not enough observations on use of credit were recorded in the data.

Income

The third domain is the income domain and covers income earned in cash or in kind from both farm and nonfarm activities.[4] The first indicator in the domain is control over the respondent's own earned income. An individual is empowered if he or she has the power to make decisions relating to his or her own income independently. The second indicator consists of the proportion of income kept for oneself. If the individual keeps any proportion of income for his or her own use, he or she is considered to be empowered. The third income indicator relates to control over decisions to allocate money for expenditures out of total household income. The following allocation decisions are considered: (1) food for household, (2) clothing for household, (3) health and medicines for household, (4) education of children, (5) occasional small expenditures, (6) occasional large expenditures, (7) *bisi*,[5] (8) purchase of land/property, and (9) renovation and maintenance of house. An individual is considered empowered if at least one decision is made independently or jointly, excluding decisions on food, clothing, and small occasional expenditures. This indicator captures the power over decision making regarding income for individuals who do not earn any income themselves. It is important to note that only bigger expenditure decisions were taken into account for measuring women's empowerment. In Pakistan, household

[3] Ownership of a house is included in the resources domain although it is not considered as a productive asset in other studies on women's empowerment (Alkire et al. 2012; Malapit et al. 2014) because in the context of Pakistan, ownership of a house asset entails considerable influence and power.

[4] The individual's income instead of the household income is considered here.

[5] A form of group savings where individuals contribute collectively and receive a lump sum in turns.

expenditure decisions are usually divided along gender lines; women may be involved in making day-to-day decisions regarding small expenditures but with no control of overall household income.

Each indicator in this domain itself indicates empowerment. For instance, if a person does not earn any income but controls its allocation (indicator number 3), he or she is considered as empowered as a person who earns income and keeps a proportion of it for him- or herself. Hence, an individual is considered empowered in the income domain if he or she is empowered in any one of the indicators.

Autonomy

Our autonomy domain consists of two separate indicators. The first indicator concerns decisions such as (1) method of contraception used, (2) when girls should be married, (3) how much education female children should receive, and (4) how much education male children should receive. An individual is considered to be empowered if he or she participates in at least two of the above decisions. Since these decisions are household decisions, independent as well as joint decision making is considered empowering. The second indicator relates to mobility and the freedom of movement and the ability to visit places alone. The following movements are considered: (1) visit hospital/doctor within village, (2) visit hospital/doctor outside village, (3) attend ceremonies and weddings within village, (4) visit bank, (5) participate in political/social meetings, (6) visit market to sell produce, and (7) visit farms/fields for work. The individual is considered to be empowered if he or she has the freedom to visit at least one place alone, excluding all visits within the village.[6] The indicator of mobility relates to the ability to be mobile without seeking permission from others, rather than accessibility to different places.

The WEAI calculations use a leadership domain consisting of group participation and public speaking indicators. We use the autonomy domain instead of the leadership domain because it is more relevant to Pakistan for two reasons. First, data show very little participation in groups and community organization by both men and women in the rural areas of Pakistan. Second, public speaking in the context of Pakistan is not relevant to individuals because there are very few avenues for public speaking. Hence, the leadership and influence in the community domain is not used.

Workload/Time Burden

The final domain is that of workload/time burden. This domain has only one indicator, which is based on allocation of time to productive (both farm and nonfarm) and domestic tasks. Respondents were asked to recall the time spent on each activity during the past 24 hours. An individual is considered to be empowered if he or she does not have an excessive workload of more than 10.5 hours in the previous 24 hours. This indicator is used in a number of studies of empowerment in the literature (Alkire et al. 2012; Malapit et al. 2014; Sraboni, Quisumbing, and Ahmed 2013). These studies also use the satisfaction with the time available for leisure as an additional indicator in this domain, but because data were not collected on this variable in the survey, it is not included in the analysis for Pakistan.

Based on the above, each individual is given a binary score of 1 or 0 in each of the indicators to calculate a disempowerment score. The disempowerment is the weighted sum of all the indicators (see Table 3.1). The score increases as the number of inadequacies/disempowerment indicators increases and reaches the maximum of 1 when an individual is disempowered in all of the indicators. A cutoff of 0.40[7] is used to identify the disempowered individuals. The disempowered headcount is calculated as a proportion of those who are disempowered in the sample population (see Appendix B for details). The disempowerment score is also decomposed by subgroups (age, education, relationship with household head, presence of son, joint family, and province) in section 5. Disempowerment scores are also used to

[6] In rural Pakistan, seclusion norms are generally stricter for women from higher socioeconomic families. However, we look at individual empowerment irrespective of social status of the family. Therefore, if social status restricts women's mobility, it still reflects low personal autonomy.

[7] Various cutoff levels were tried. At 0.20 (used by Alkire et al. 2012), the disempowerment levels were very high and more than 99 percent of the women were disempowered. We use a cutoff of 0.40 on the basis that an individual is empowered in at least three out of the five domains. Also, in Pakistan both men and women are severely deprived in the resources domain.

calculate gender parity in each dual-adult household. Households are considered to lack parity if the female is disempowered and her disempowerment score is higher than the disempowerment score of her male counterpart (see Appendix B for details).

Table 3.1 Domains, indicators, and weights for calculation of disempowerment index

Domain	Indicator	Indicator weights	Domain weights
Production	Input into productive decisions	1/10	
	Autonomy in production	1/10	1/5
Resources	Ownership of major assets	1/10	
	Purchase, sale, or transfer of assets	1/10	1/5
Income	Control over income earned	1/20	
	Control over use of income	1/20	
	Decisions regarding expenditures	1/10	1/5
Autonomy	Household decisions	1/10	
	Freedom of movement	1/10	1/5
Time	Workload/time burden	1/5	1/5

Source: Authors' calculations.

4. THE LEVELS OF WOMEN'S DISEMPOWERMENT IN PAKISTAN

This section presents overall and decomposed levels of disempowerment among women in rural Pakistan. Table 4.1 presents the overall disempowerment score for the sample and Table 4.2 presents the breakdown of the disempowerment score by domains and indicators. The headcount ratio in Table 4.1 shows that, overall, 83 percent of the women in our sample are disempowered. The percentage of disempowered women in Pakistan is much higher than those cited in the literature for a number of other countries like Bangladesh (Alkire et al. 2012; Malapit et al. 2014). The overall disempowerment index (M_o) is 0.57 for the rural areas of Pakistan (Table 4.1)[8] and is much higher than the comparable measure of disempowerment reported for countries like Bangladesh, Guatemala, and Uganda (Alkire et al. 2012).[9] The high average disempowerment score of the disempowered women shows that they are disempowered in 68 percent of the domains. Our disempowerment levels may also be higher because we use different—and in some cases, stricter—criteria for measuring some of the empowerment indicators, as these are more relevant to the Pakistani context. For example, we use the ownership of assets by the individual rather than the household ownership of assets as used in the WEAI calculation. Using household ownership of assets as an indicator for empowerment tends to overstate individual empowerment. An individual may live in a household that owns many assets but he or she may not always have control over them. Therefore, we cannot directly compare our results with those for the WEAI.

Table 4.1 Levels of women's disempowerment

Indexes	Women
Disempowered headcount (H_p)	0.83
Average disempowerment score (A_p)[10]	0.69
Disempowerment index (M_0)	0.57
Empowerment in five domains ($1 - M_0$)	0.43
Number of observations	2677

Source: Authors' calculations.

Table 4.2 presents the disempowerment headcounts and the contribution of each domain and indicator to women's disempowerment. The censored headcount ratios in Table 4.2 (see Appendix B for calculations) show that women are particularly more disempowered in the following indicators: ownership of assets, control over assets, control over income earned, and control over use of income earned. More than 87 percent of the women are disempowered in these indicators. It is interesting to note that comparatively fewer women are disempowered in the inputs into production decision making (68 percent) and autonomy in production (64 percent) indicators. Only half of the women are disempowered in the indicators of autonomy over household decision making and mobility, showing comparatively less disempowerment in these indicators, but still very high absolute levels of disempowerment.

[8] Looked at another way, an overall measure ($1 - M_0$) calculates the extent of empowerment in the five domains. A higher number on this measure reflects greater empowerment. The index of 0.43 reported in Table 4.1 shows low empowerment in the five domains in Pakistan.

[9] They use different domains and indicators for measuring empowerment than in our study.

[10] This is the average score of women who are disempowered.

Table 4.2 Women's disempowerment decomposed by domains and indicators

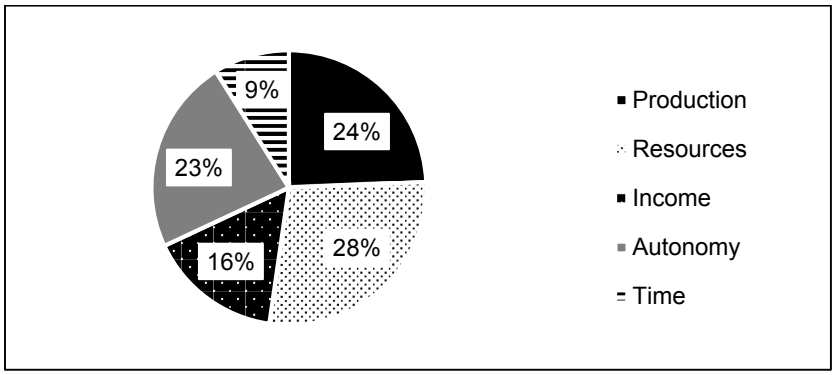
Variable	Censored headcount	% Contribution	Contribution	Weight
Domain				
Production	0.804	24.34	0.138	1/5
Resources	0.923	27.94	0.159	1/5
Income	0.521	15.78	23.04	1/5
Autonomy	0.694	23.04	0.131	1/5
Time	0.294	8.91	0.051	1/5
Indicator				
Input in productive decisions	0.682	10.85	0.062	1/10
Autonomy in production	0.641	10.20	0.058	1/10
Ownership of assets	0.871	13.87	0.079	1/10
Control over purchase, sale of assets	0.932	14.84	0.085	1/10
Control over income earned	0.934	7.43	0.042	1/20
Control over use of income	0.879	6.99	0.040	1/20
Decision regarding expenditures	0.591	9.42	0.054	1/10
Decision making	0.511	8.13	0.046	1/10
Mobility	0.555	8.84	0.050	1/10
Work load –time burden	0.294	9.37	0.053	1/5

Source: Authors' calculations.

Results for decomposition by domains (Figure 4.1) show that the resources (28 percent), production (24 percent), and autonomy (23 percent) domains contribute the most to disempowerment of women in the rural areas of Pakistan. All three contribute more to disempowerment than their respective shares of 20 percent in the calculations of the index of disempowerment, suggesting relatively high disempowerment in these domains. The share of income domain to disempowerment is lower than its share in the calculation of the overall index. Only 9 percent of the women are disempowered in the workload/time burden domain. This is in contrast to results for other developing countries that experience higher levels of disempowerment in the time burden indicator (see Malapit et al. 2014).[11] This may be because of the way time burden is calculated here. It is based on recall of time use during the last 24 hours and may not fully reflect the seasonality in agriculture employment in the country, as also highlighted by Alkire et al. (2012) in their research on other countries.

[11] They use different domains and indicators for measuring empowerment than in our study.

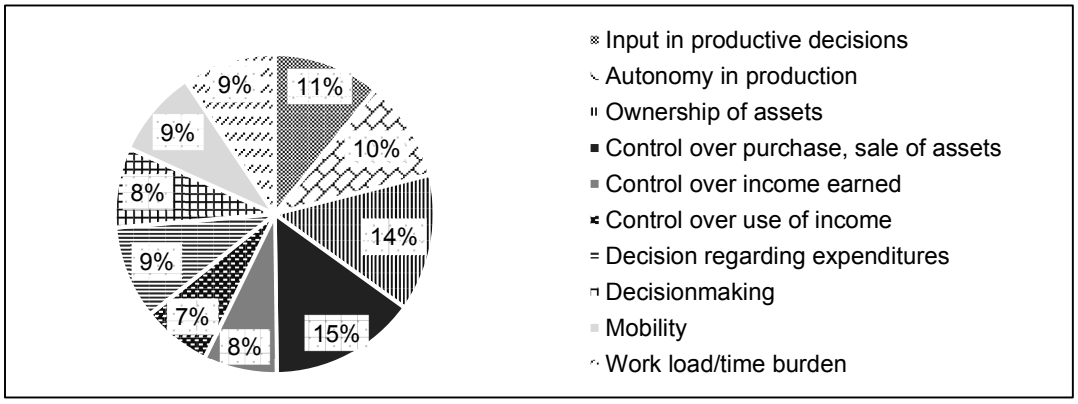
Figure 4.1 Contribution of domains to women's disempowerment (%)



Source: Authors' calculations.
Note: Percentages have been rounded off.

When results are decomposed by indicators, the two indicators that contribute most to women's disempowerment are ownership of assets (14 percent) and control over purchase and sale of assets (15 percent). Both these indicators contribute more to levels of disempowerment than their share in the calculation of the index. Other indicators show lower contributions to levels of disempowerment (see Figure 4.2).

Figure 4.2 Contribution of indicators to women's disempowerment (%)



Source: Authors' calculations.
Note: Percentages have been rounded off.

5. DECOMPOSING WOMEN'S DISEMPOWERMENT INDEX BY INDIVIDUAL AND HOUSEHOLD CHARACTERISTICS

In this section, we explore how individual and household characteristics affect women's empowerment in rural Pakistan and calculate the index by different subgroups. We first reconstruct the disempowerment index by age, education levels, and relationship with head of the household, followed by decomposition by other household characteristics such as presence of son(s), joint family, and location of residence of the household.

Disempowerment of Women Decomposed by Age

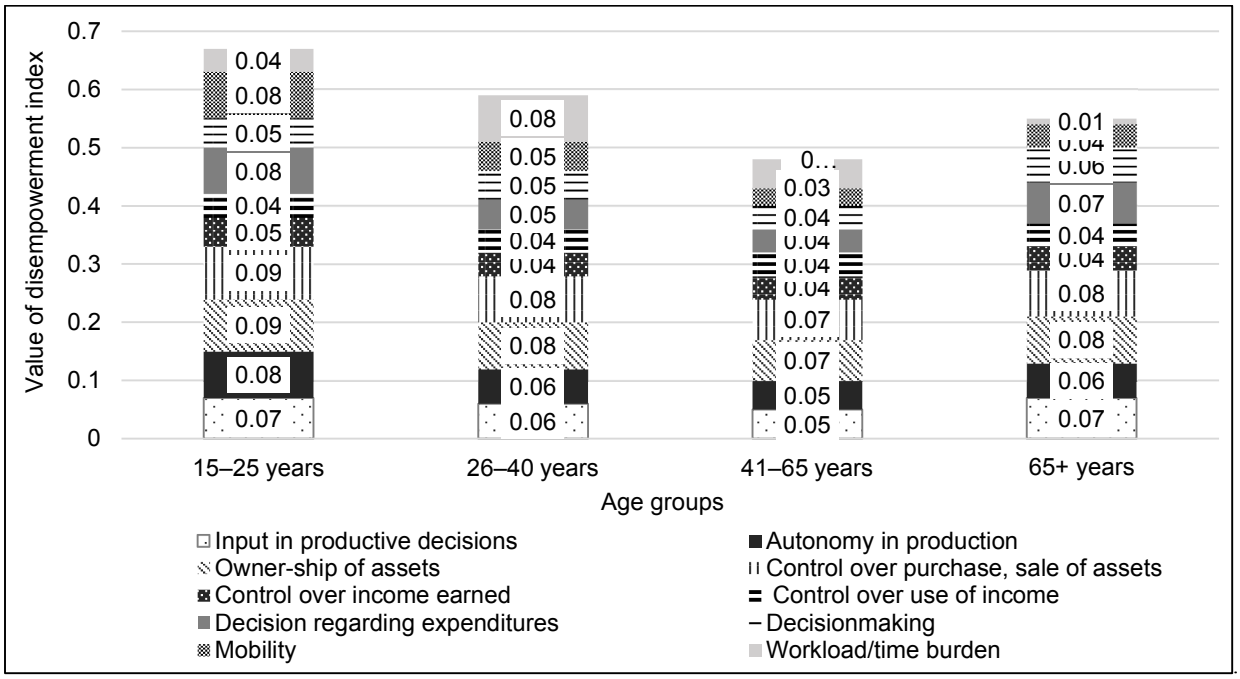
We divide our sample into four age categories to analyze how empowerment differs among women in different age groups. In the context of Pakistan, age is a major determinant of the status of a woman in the household and in turn, the level of empowerment she enjoys. To understand the relationship between age and women's empowerment, it is important to highlight some important social norms that dictate changes in the role of women in the family with age. There are several pathways that can explain this phenomenon. First, in Pakistan, marriage is considered a rite of passage to adulthood. Decision making and autonomy are closely associated with age and marriage, particularly for women. Adult family members, especially males, are considered to be the guardians of young unmarried women. The disempowerment scores decomposed by age also suggest this phenomenon. Younger women, the majority of whom are unmarried, are less autonomous and have lower input in decisions made in the house (Figure 5.1). According to the Pakistan Demographic and Health Survey (2012–13) (NIPS 2013), the median age at first marriage was 19.5 years in 2012–2013. Our categories reflect a similar demographic. In our sample, the mean age of women in age category 15–25 years is 20.6 years, and 62 percent of the women are unmarried, while in the age category 26–40 years, the mean age is 32.6 years and only 8 percent of women are never married. Not surprisingly, Figure 5.1 shows a higher disempowerment score (0.67) among younger women (15–25 years) than any other age group. The disempowerment score is almost 40 percent higher than that in the age group of 41–65 years. The breakdown of the contribution by each domain (Figure 5.1) highlights that younger women are particularly more disempowered in the autonomy and income domains. The high disempowerment score in these two domains can be explained by low input into household expenditure decisions and higher restrictions on mobility faced by younger women.

Figure 5.1 Contribution of each domain to women's disempowerment by age

Source: Authors' calculations.

Second, the family setup of Pakistani households can also explain the changing status of women in the household with age. In a patrilocal society like Pakistan, the status of women in the household, especially those who live in a joint family system (see below for more details), improves with the number of years in marriage. We find support for this phenomenon when we compare the disempowerment scores of women in age groups 26–40 years and 41–65 years.[12] Figure 5.2 shows that older married women (41–60 years) are more empowered in every indicator compared to younger married women in the age group 26–40 years. It is also interesting to note that women aged 26–40 years, presumably the primary caretakers in the house, are much more time burdened than women in all other age groups.

Figure 5.2 Contribution of each indicator to women's disempowerment by age



Source: Authors' calculations.

The findings in Figure 5.2 also correspond with another related cultural phenomena. In Pakistani households, elder members of the family, mothers and fathers in particular, have a significant say in the decisions made within the household. It is possible that as women get older, their decision-making power increases by virtue of their adult children, who may be the breadwinners of the family. Comparable research on Pakistan also shows similar results. Mason and Smith (2003) analyze women's empowerment among married women within the domestic sphere in Pakistan and find that age is positively and significantly correlated with economic decision making, input in family size decisions, and the freedom of movement. Our decomposition of disempowerment by age groups supports these findings. Two of the domains used in the disempowerment index calculation correspond with the empowerment measures analyzed by Mason and Smith (2003). For instance, the autonomy domain in this paper is composed of variables measuring restrictions on mobility and autonomy in household decision making, including use of contraceptives, and the income domain measures the control over income as well as decision making regarding household expenditures. Similar to Mason and Smith's (2003) findings, we observe that women below the age of 65 years and above the age of 25 years are less disempowered in autonomy and income domains, and the level of disempowerment decreases with age (see Figure 5.1). However, in addition we

[12] In both these age groups, we are essentially comparing married women as over 90 percent of the women aged 26–40 years, and 88 percent of women aged 41–60 years were married at the time of the survey.

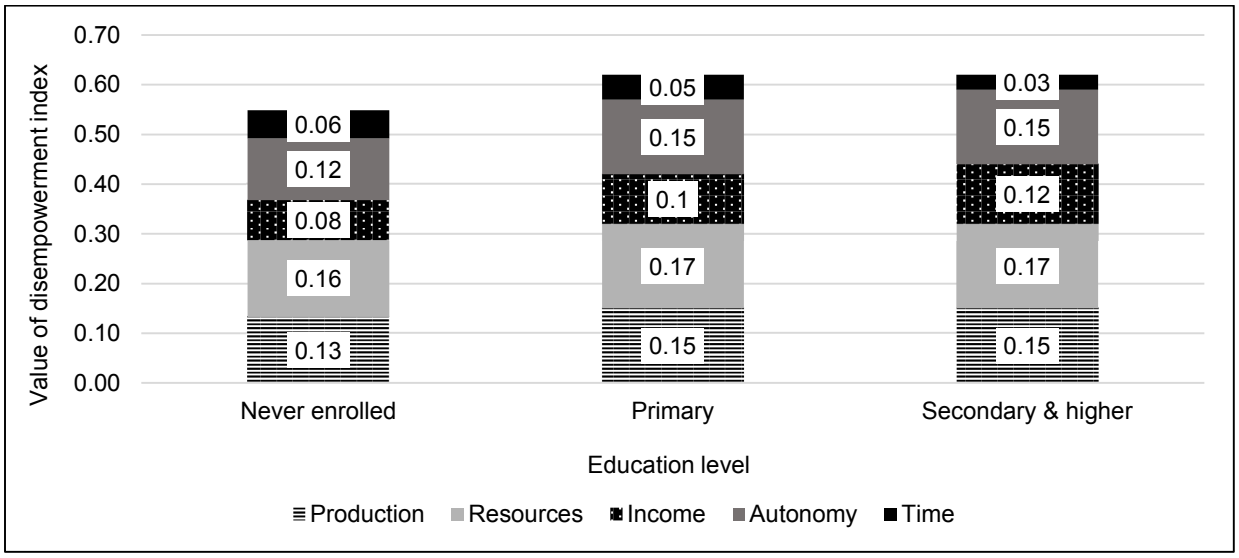
also find that this trend does not hold true for women over the age of 65 years. There is a sharp rise in the proportion of women disempowered in the age category 65 and above, as compared to the age category 41–65 years, with higher disempowerment scores in all indicators except control over own income and time burden. Hence, while our results corroborate some of Mason and Smith's (2003) findings, we also learn that the inverse relationship between age and disempowerment among women holds during most of their productive years.

Disempowerment of Women Decomposed by Education Level

The linkages between economic development and education have been long established in the literature. For example, women's education has been found to negatively affect fertility and child mortality rates, and lead to higher productivity and economic growth (World Bank 2001). The United Nations has also set reducing gender disparity in education as one of its Millennium Development Goal (MDG) targets for reducing gender inequality and empowering women (UN 2005). Intuitively, higher education level would be expected to translate into higher empowerment, as education enhances cognitive skills and opens up greater economic opportunities. However, recent literature suggests that while education is necessary in improving the status of women, it may not be a sufficient investment in achieving empowerment. The effect of education on improved opportunities and outcomes depends upon availability of economic choices for women and the constraints imposed upon them by social norms (ICRW 2005). Aslam, Kingdon, and Söderbom's (2008) study of 1999 and 2007 data from Pakistan finds that due to the cultural attitudes against women's participation in wage labor, the effect of education on economic outcomes is dampened for women in Pakistan. Hence, Aslam, Kingdon, and Söderbom (2008) suggest that while education plays an important role in choices of occupation for men, the effect only begins at higher levels of education for women, that is, after about ten years of schooling. Looking more closely into how education affects agricultural choices and outcomes for women, Quisumbing (1996) finds that while studies from Kenya and the Philippines report that women's education is associated with better choice of inputs and crops, in India, education level did not affect adoption of high-yield rice varieties by women. Sraboni, Quisumbing, and Ahmed (2013) also did not find a conclusive relationship between education levels and empowerment in their analysis of the WEAI for Bangladesh.

Our results from decomposing the disempowerment index by education level (Figure 5.3) suggest that in the context of rural Pakistan, female education is not an impetus for women's empowerment. Only 3 percent of the women in our sample have more than ten years of education. Therefore, we are essentially comparing women with no education and women with some education (primary or secondary). Our analysis suggests that the disempowerment level among women with no education is lower than for women with some education. This presents a very unique situation. According to Figure 5.3, women with little or no education are more empowered in production, resources, income, and autonomy domains. To understand this phenomenon, let us look at each factor separately. First, to understand the production and income domain, it is important to look into the labor market dynamics and economic opportunities in rural Pakistan. For educated women, the channel of economic empowerment through education may not be available in rural Pakistan, as there are few nonfarm wage employment opportunities in the countryside. To make the situation worse, strong restraints on mobility may restrict women from seeking wage employment elsewhere, outside of their villages. Therefore, educated women have very few economic opportunities outside agriculture. Within agriculture, educated women, presumably from wealthier families, may also not be able to work in the fields due to class-based segregation norms (see more details below). On the contrary, illiterate women are more likely to work on farms and seek farm employment and, therefore, be more engaged in production decision making in the household.

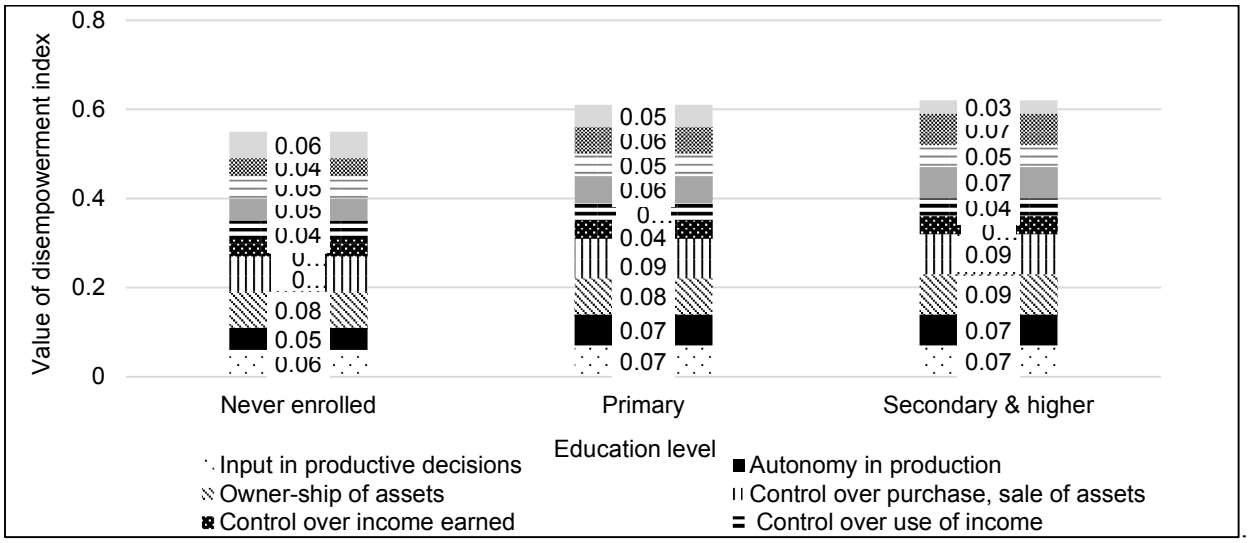
Figure 5.3 Contribution of domains to women's disempowerment by education level



Source: Authors' calculations.

Figure 5.4 sheds more light on the inverse relationship between education and women's empowerment in our sample. Women with some education (primary and secondary and higher categories) have a notably higher disempowerment score in autonomy domain, compared to women with no education. Decomposing disempowerment by indicators reveals that the difference in autonomy empowerment score between women with no education and women with some education is primarily being driven by disempowerment scores on mobility. Supporting our discussion above, this finding reveals a unique cultural dynamic in Pakistan, that is, higher educated women (presumably wealthier) are less autonomous in freedom to visit places outside their village. This finding reflects the class-based gender segregation norms generally found in rural Pakistan. In Pakistan, and especially in the villages, women of wealthier families are expected to observe stricter gender segregation norms. It is considered a matter of honor and prestige to ensure that the women in the family are kept away from the public eye. On the other hand, women from lower economic strata usually work in the farms and have lower restrictions on their mobility. To establish that education level is indeed correlated with household income, we looked at the average per capita expenditure (proxy for average per capita income) in the three education categories. The average per capita expenditure of families of women in the "Never enrolled" category is 2,714 PKR, women in the "Primary" category is 2,891 PKR, and women in the "Secondary and higher" category is 3,264 PKR. The average per capita expenditure in the three educational categories indicates a high probability that education level and income level are correlated in rural Pakistan. Therefore, higher restrictions on mobility may be correlated with education by virtue of its correlation with income. The inverse relationship between income (and hence, education level) and women's freedom of movement in rural Pakistan presents a unique aspect of women's empowerment that is tied directly to class structure, and highlights the need for more research.

Figure 5.4 Contribution of indicators to women's disempowerment by education level

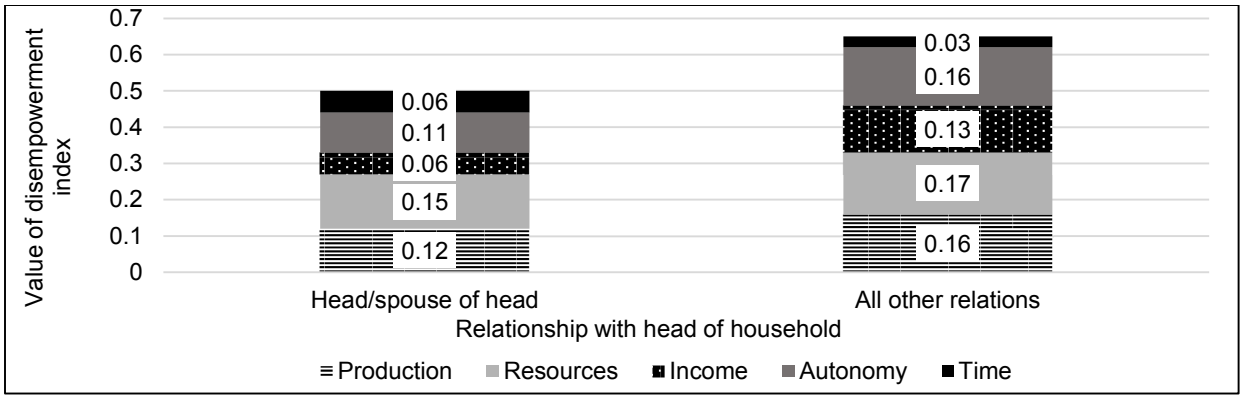


Source: Authors' calculations.

Disempowerment of Women Decomposed by Relationship with Household Head

The relationship with the head of the household can highly influence the status of women within the house. It is expected that women who are the head of the household or spouse of the head will wield more power in the house and have a greater say in personal and family decisions. Our analysis confirms the above hypothesis. Women who are the head of the household or spouse of the head have a 30 percent lower disempowerment score than women who share any other familial relationship with the household head. The disempowerment score of women in the position of head of household or spouse was 0.50, whereas other women have a disempowerment score of 0.65. Since less than 2 percent of the women in our sample reported themselves as the head of their household, our analysis is primarily driven by the differences in empowerment levels of women who are spouses of the household head versus women who are not. Our analysis indicates that relationship with the head of the household is a key determinant of women's position in the house and hence her individual empowerment level. However, it is possible that some of the difference in disempowerment levels in Figure 5.5 may be caused by the effect of age rather than relationship with the household head.

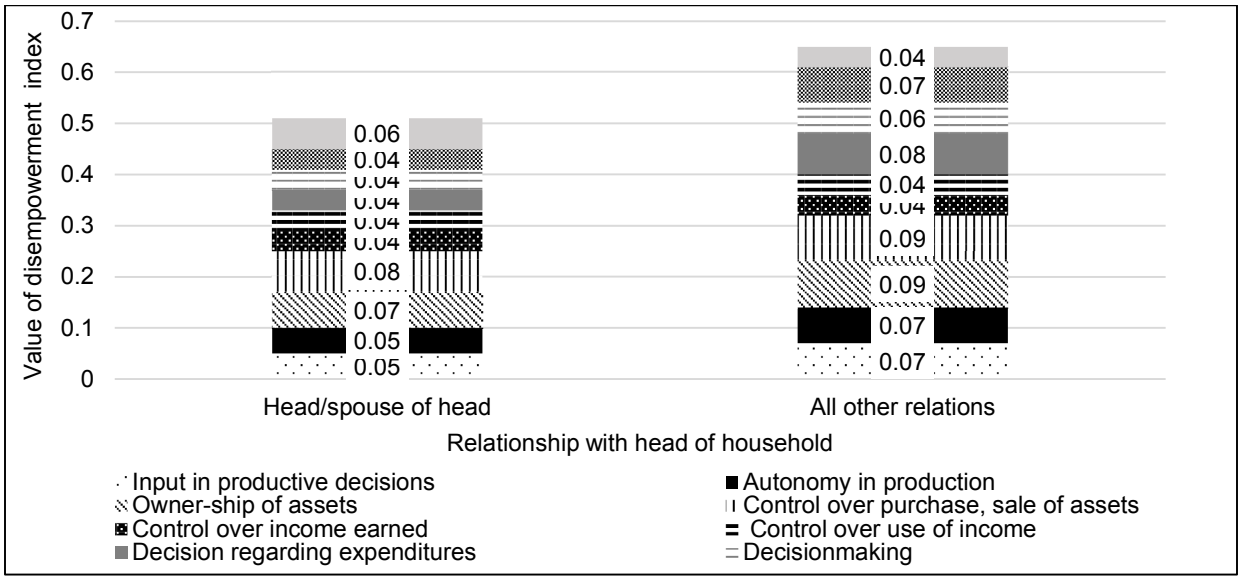
Figure 5.5 Contribution of domains to women's empowerment by relationship with household head



Source: Authors' calculations.

Decompensation of disempowerment scores by indicators shows that women in their position as head of household or spouse of head enjoy higher empowerment levels in all indicators except time burden. It is expected that the head of household or the spouse of head will take on greater responsibilities, and therefore women in these positions may dedicate more time to domestic chores or productive activities for the welfare of the household. It is also interesting to note that there is a considerable difference in the disempowerment contribution of "Decisions regarding expenditure" (0.04 for head/spouse versus 0.08 for other relatives) and "Mobility" (0.04 for head/spouse versus 0.07 for other relatives) in the two categories shown in Figure 5.6.

Figure 5.6 Contribution of indicators to women's disempowerment by relationship with household head



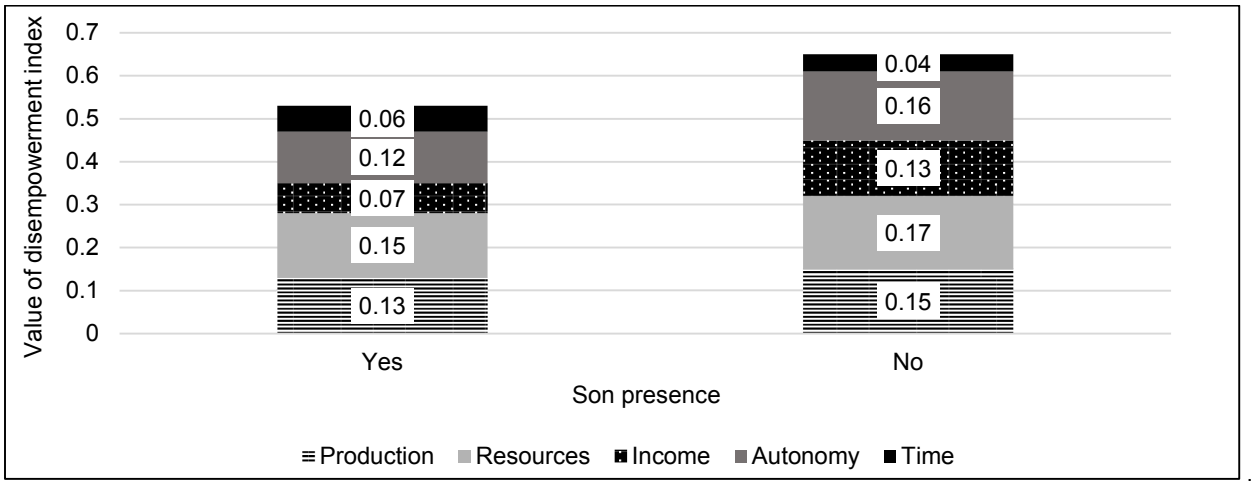
Source: Authors' calculations.

Disempowerment of Women Decomposed by Presence of Son(s)

The roles of sons and daughters are rigidly defined along gender roles in Pakistani society. In accordance with the strict patrilocal cultural norms, elder parents are expected to live with their male offspring. Parents consider sons as an insurance against old age, while daughters are considered primarily as members of the family they are married into. Inheritance laws and norms are also highly skewed toward favoring sons. Legally, the share of inheritance of a son is twice that of daughters, in accordance with Islamic law (NCSW 2008). In practice, most women do not even receive their legal share of inheritance. Hence, the presence of son(s) has a strong economic implication for parents, and mothers in particular.

In our decomposition of disempowerment among women by the presence of son(s), it is evident that women with at least one son present have a lower incidence of disempowerment when compared to women without sons (Figure 5.7). The disempowerment levels among women with sons are lower in all domains except time burden. The disparity in empowerment between women with and without son(s) seems to be highest in the income domain (Figure 5.7).

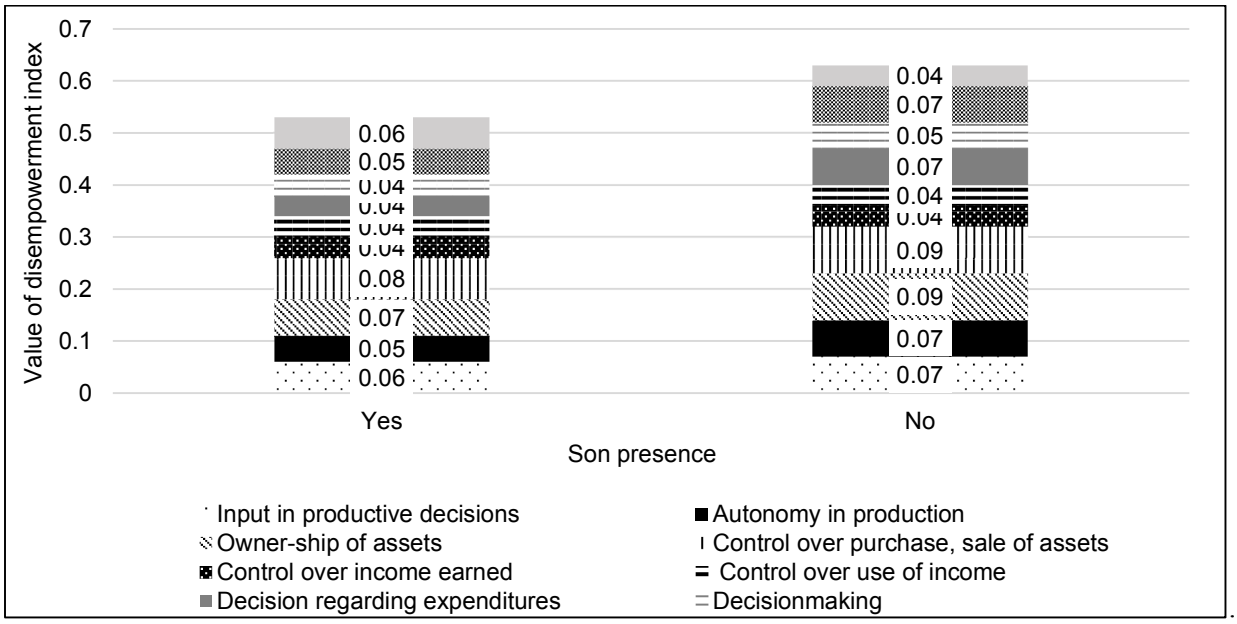
Figure 5.7 Contribution of domains to women's disempowerment by presence of son(s)



Source: Authors' calculations.

Decomposing disempowerment indicators of women with and without sons can give us a more refined picture of the potential pathways to differences in empowerment associated with the presence of a son. Figure 5.8 shows that a higher proportion of mothers with sons reported an adequate level of empowerment in input in production decisions and also reported higher levels of autonomy in production decisions. Women with sons also report greater ownership and control of resources. Perhaps the biggest disparity in empowerment between women with and without a son is in input in expenditure decisions. Figure 5.8 shows that the disempowerment score in decision making regarding expenditures is 75 percent higher among women with son(s) when compared to women without a son. Women with son(s) also appear to have a greater autonomy in visiting places outside the village. The findings confirm that women with son(s) are more autonomous and participatory in their actions and decisions. This autonomy is translated into greater decision-making power in areas such as production expenditures, control over resources owned, and decisions pertaining to family and children, as well as personal mobility. The disempowerment score disparity suggests that women with son(s) enjoy a higher social status in the household as compared to women without son(s). This differential in status may be due to a perception of social prestige associated with sons or by the increased access to current or future streams of income that the sons can potentially generate. More research is needed to isolate the causal relationship between empowerment and presence of a son.

Figure 5.8 Contribution of indicators to women's disempowerment by presence of son(s)



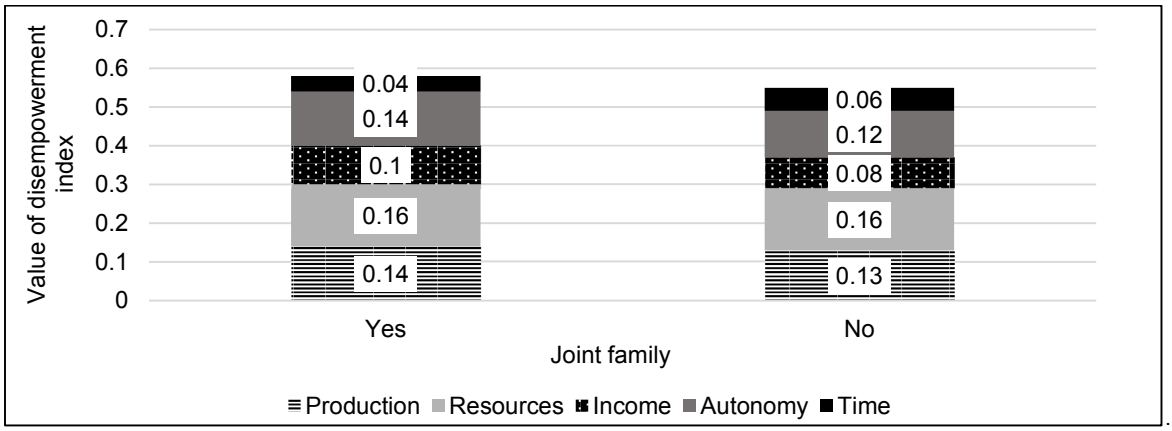
Source: Authors' calculations.

Disempowerment of Women Decomposed by Family Structure

The literature usually identifies three main categories of family structures: joint family, stem family, and nuclear family. Joint family is defined as multigenerational families with more than one married child living within the same dwelling and stem families refer to multigenerational families with only one married child living together (Ruggles 2010). In our analysis, we have divided families into two groups by combining joint and stem families into a single category. Therefore, households with parent/parent-in-law, daughter/son-in-law, aunt/uncle, or married sister/brother are all grouped together as joint family. This grouping is more pertinent for our analysis because it is difficult to isolate the differences in power dynamics in joint families versus stem families.

In our sample of married women, 1,321 women were living in joint families, while 1,349 women were living in nuclear families at the time of the survey. The disempowerment score among women from joint families in our sample was slightly higher (0.58) versus women who were not living in joint families (0.55). Figure 5.9 shows that women living in joint families are more disempowered in all domains, except time burden. This result is expected because in a joint family other adult family members living in the house may also participate in productive and domestic activities, and share the time burden of chores.

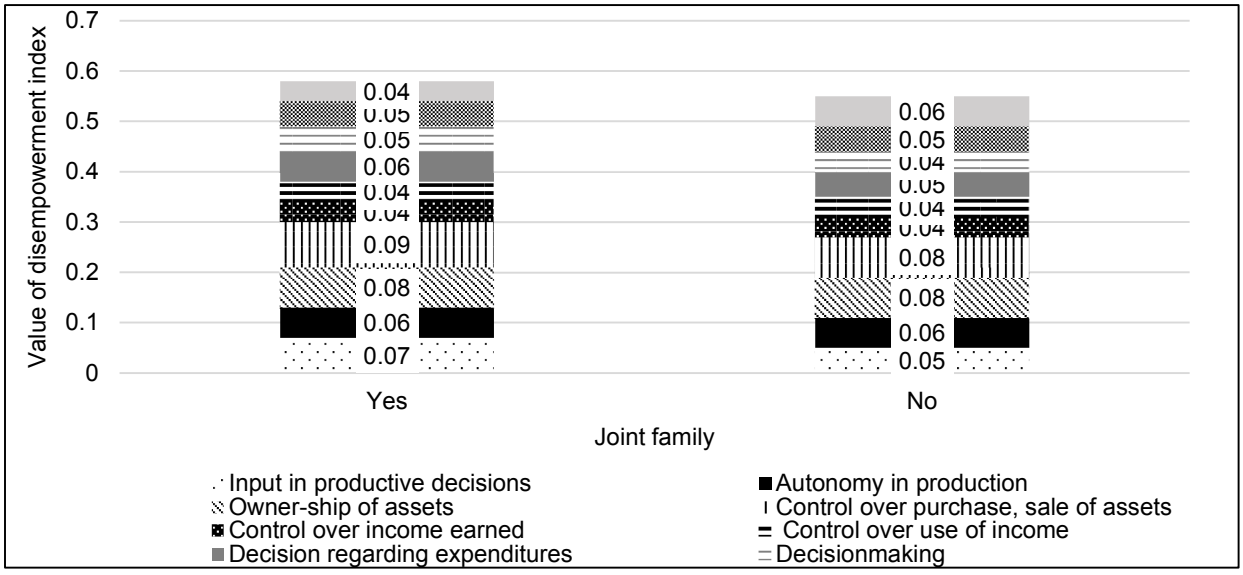
Figure 5.9 Contribution of domains to women's disempowerment by family structure



Source: Authors' calculations.

Figure 5.10 decomposes disempowerment scores of women living in joint families and nuclear families by each of the indicators. The increase in disempowerment score of women living in a joint family as compared to women not living in a joint family can be attributed to the following indicators: input in productive decisions, control over purchase and sale of assets, decisions regarding expenditures, and decision making in the house. Sengupta and Johnson (2006) study of joint family system's effect on selected indicators of women's empowerment supports this finding. They analyzed women's ability to: 1) set aside money for one's own discretionary usage; 2) make an individual or a joint decision to seek health care for oneself; and 3) leave the residence to go to market without permission, in their study in India. Sengupta and Johnson (2006) find that even when region, urbanization, and religion are controlled for, a woman living with her mother-in-law is less autonomous in all three indicators than a woman who does not live with her in-laws. Similarly, in Pakistan, in-laws exercise considerable authority over daughters-in-law. Some of the differences in the disempowerment levels in our sample are driven by the family structure in which the woman lives.

Figure 5.10 Contribution of indicators to women's disempowerment by family structure

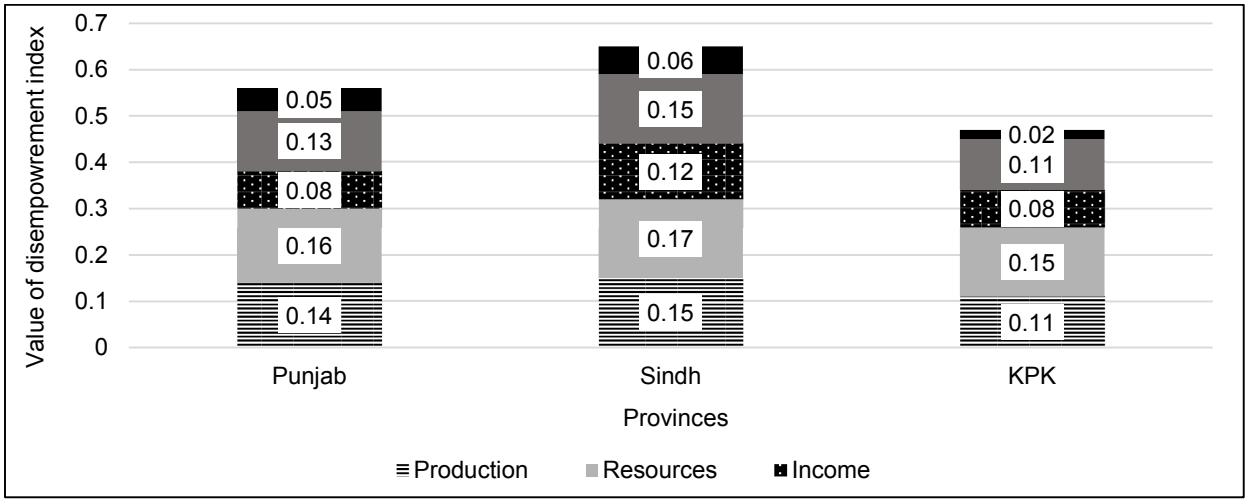


Source: Authors' calculations.

Disempowerment of Women Decomposed by Provinces

In Pakistan, it is generally assumed that women are more disempowered in Khyber Pakhtunkhwa (KPK) and Balochistan, the socially conservative provinces, both of which border Afghanistan. Our results, however, suggest that women are less disempowered in KPK than in other provinces, particularly in autonomy, production, and time burden domains (Figure 5.11). These results need to be looked at in the context of our data, as our sample for KPK covers only the districts in which the survey could be undertaken and is not truly representative of the province. Due to security concerns, Balochistan was also not included in the sample and therefore excluded from the analysis. Although our results (Figure 5.11) suggest that in some districts of KPK women are less disempowered than their counterparts in Sindh and Punjab, more research, based on representative samples, is needed before concluding whether or not this phenomenon exists throughout the province.

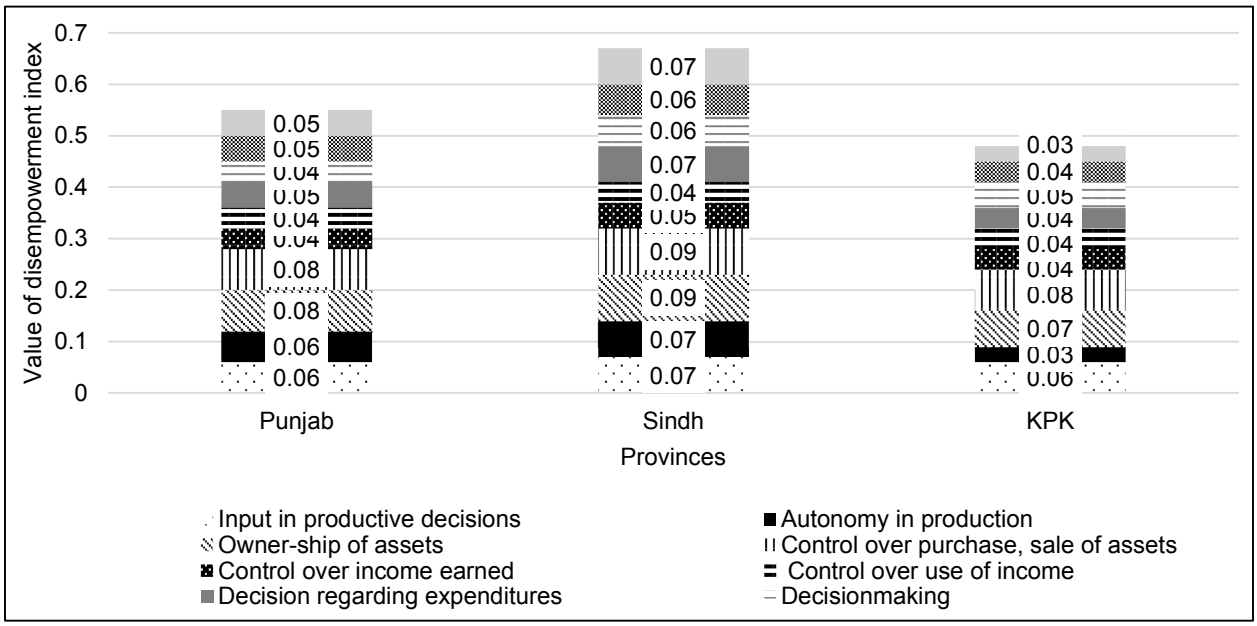
Figure 5.11 Contribution of domains to women's disempowerment by province



Source: Authors' calculations.

Our results from the decomposition of the disempowerment index are more comparable across Punjab and Sindh. Figure 5.11 shows women in Sindh, with an overall disempowerment score of 0.65, are more disempowered than those in Punjab (overall disempowerment score of 0.56). Figure 5.12 suggests that the primary difference in disempowerment score between women in Sindh and women in Punjab stem from income and autonomy domains (Figure 5.12). Decomposing results by indicators shows that women in Sindh are more disempowered than women in Punjab in every indicator. The women in Sindh are much worse off regarding expenditure, family, and household decision making. This finding highlights the need for more in-depth research into province-specific socioeconomic challenges and cultural practices that may contribute to disparity in women's empowerment across provinces.

Figure 5.12 Contribution of indicators to women's disempowerment by province



Source: Authors' calculations.

6. MEASURING GAPS IN DISEMPOWERMENT

Gaps in Disempowerment

Next we calculate the disempowerment gaps between empowerment levels of men and women within the same household. The analysis is based on disempowerment scores of a sample of 1,674 households with one male and one female respondent from each household. Disempowerment headcounts, the Gender Parity in Empowerment Index (GPEI), average disempowerment scores, and the empowerment gaps are presented in Table 6.1 (see Appendix B on methodology for calculations). The disempowerment headcounts show huge disparities in the levels of disempowerment among women and men in rural areas of Pakistan. Eighty-one percent of women and only 10 percent of men are disempowered. The disempowerment index is much higher for women (0.55 for women compared to 0.05 for men), reflecting huge disparities in the empowerment levels for men and women in the same household. Even the disempowered women have a higher average disempowerment score of 0.67, compared to the average disempowerment score of disempowered men of 0.53. The GPEI measures the inequality between empowerment levels of the male and female within the household. Households are considered to lack gender parity if the female is disempowered and her disempowerment score is higher than the disempowerment score of her male counterpart. A higher number reflects higher parity. The GPEI index is 0.64, reflecting low gender parity in levels of empowerment in rural Pakistan compared to other countries.[13] The H_{gpi}, which is the headcount (the proportion of households with gender parity to the total households in the sample), reflects that 78 percent of households have no gender parity and that women have higher disempowerment scores than the men in their households. For women who do not have parity, the average percentage shortfall, or the empowerment gap between them and the men in their households, is 45.7 percent.

Table 6.1 Levels of disempowerment by gender

Statistics	Women	Men
Disempowered headcount (H_p)	0.81	0.10
Average disempowerment score (A_p)[14]	0.67	0.53
Disempowerment index (M_0)	0.55	0.05
Empowerment in five domains ($1 - M_0$)	0.45	0.95
Number of observations	1,674	1,674
Percentage of women with no gender parity (H_{gpi})	0.79	-
Average empowerment gap (A_{gpi})	0.46	-
Gender Parity in Empowerment Index	0.64	-

Source: Authors' calculations.

When headcounts are compared across domains and indicators (Table 6.2), they show significant differences in the disempowerment levels of women and men, with a much higher headcount for women in all domains. A comparison of disempowerment headcounts across indicators shows similar results. Further, for women, the lowest headcount is for the workload or time indicator, while for men the two autonomy indicators of household decision making and mobility contribute more to their disempowerment levels. Again, the highest disempowerment headcounts, for both men and women, are for the indicators of ownership of assets and the control over purchase and sale of assets (Table 6.2).

[13] These studies use different domains and indicators for their calculations.
[14] This is the average score of men and women who are disempowered.

Table 6.2 Women's and men's disempowerment decomposed by domain and indicator

Variable	Censored headcount	% Contribution	Contribution	Censored headcount	% Contribution	Contribution	Weight
Domain		**Women**			**Men**		
Production	0.761	24.19	0.132	0.266	22.15	0.012	1/5
Resources	0.956	30.38	0.166	0.594	49.57	0.03	1/5
Income	0.403	12.82	0.070	0.054	4.57	0.002	1/5
Autonomy	0.668	21.22	0.116	0.076	6.37	0.003	1/5
Time	0.358	11.37	0.062	0.208	17.32	0.009	1/5
Indicator		**Women**			**Men**		
Input in productive decisions	0.652	10.66	0.058	0.193	7.55	0.004	1/10
Autonomy in production	0.588	9.62	15.55	0.115	4.51	0.003	1/10
Ownership of assets	0.951	0.053	0.085	0.595	23.19	0.012	1/10
Control over purchase, sale of assets	0.956	15.63	0.085	0.595	23.19	0.012	1/10
Control over income earned	0.937	7.65	0.042	0.462	9.02	0.005	1/20
Control over use of income	0.864	7.07	0.039	0.462	9.02	0.005	1/20
Decision regarding expenditures	0.464	7.59	0.042	0.092	3.58	0.002	1/10
Decision making	0.48	7.85	0.043	0.077	2.98	0.002	1/10
Mobility	0.408	6.67	0.036	0.0	0.0	0	1/10
Work load – time burden	0.358	11.7	0.064	0.208	16.21	0.009	1/5

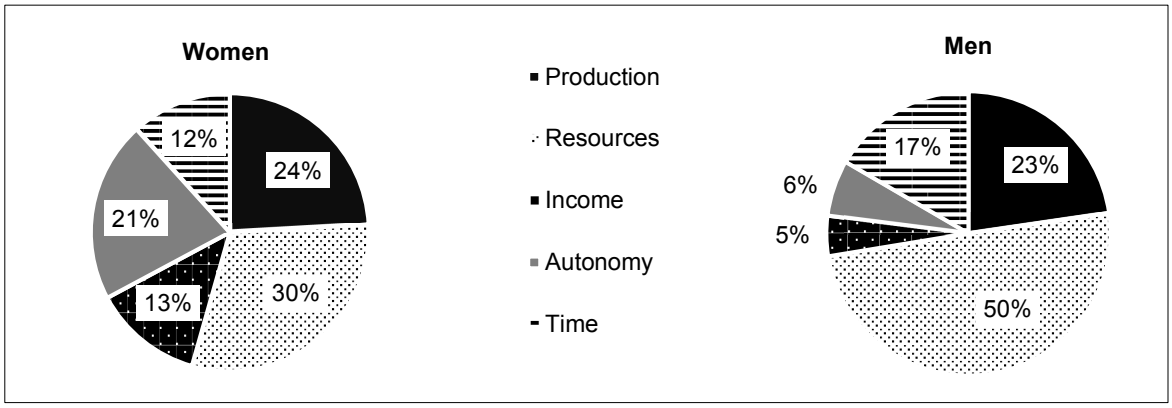
Source: Authors' calculations.

Note: All men in the sample are assumed to be empowered in mobility indicator as males generally face no restrictions on their mobility in Pakistan, especially to places used in our indicator.

Contribution of Domains and Indicators to Men's and Women's Disempowerment

When results are decomposed by domain (Figure 6.1), they show that the resource domain is the only domain that contributes more to disempowerment of men (50 percent) than women (30 percent). It has a much higher share in disempowerment of both men and women than their shares in the calculations of the disempowerment index of 20 percent. The second largest difference in the contributions of domains between men and women is in the autonomy domain, where the share for women is 21 percent for men it is only 6 percent (see Table 6.2). Disempowerment headcounts for men (0.595) and women (0.956) are also the highest in the resources domain. Headcounts for all other domains are substantially lower for men than for women.

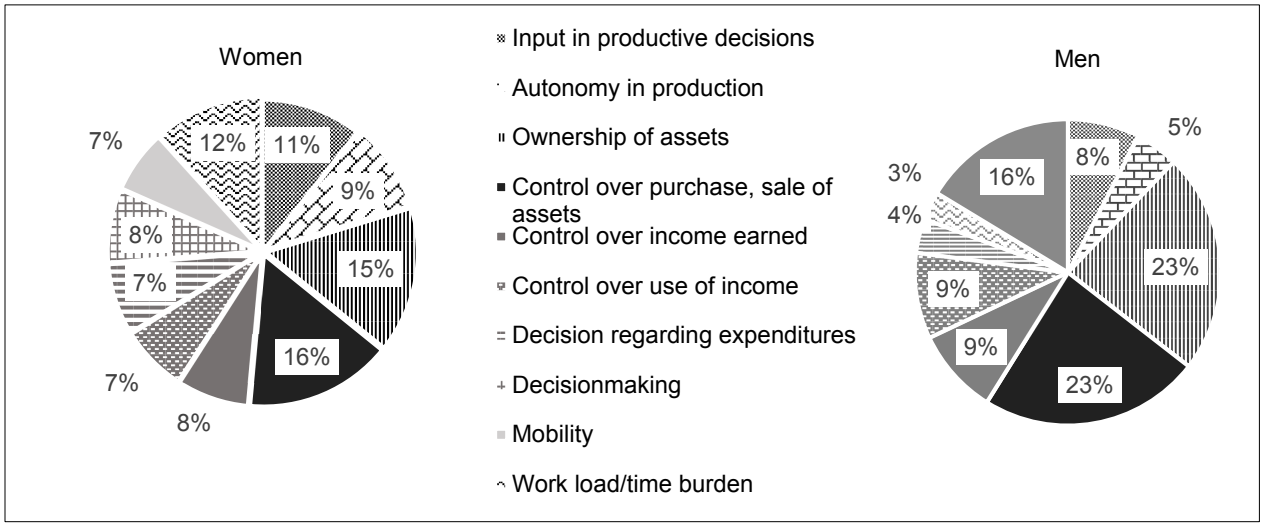
Figure 6.1 Contribution of domains to women's and men's disempowerment (%)



Source: Authors' calculations.
Note: Percentages have been rounded off.

The indicators that contribute more to both women's and men's disempowerment are also the two indicators on resources, namely ownership of land and control over the purchase and sale of land.[15] Each of these contributes much more to the disempowerment of men (23 percent) than women (15 and 16 percent, respectively) than their share of 10 percent in the calculation of the disempowerment index (Figure 6.2). However, the percentage contribution on indicators (and domains) is relative to other indicators (and domains). Therefore, a higher contribution of resource indicators in men signifies that men are relatively less disempowered in other indicators of empowerment. The absolute proportion of women disempowered in resource indicators is still higher than the proportion of men disempowered in the same indicators. The time burden indicator also contributes slightly more to men's deprivation compared to women's. For men, the time indicator also contributes more to disempowerment levels than its share in the index.

Figure 6.2 Contribution of indicators to women's and men's disempowerment (%)



Source: Authors' calculations.
Note: Percentages have been rounded off.

[15] Only ownership of land is included here, as no data were available for ownership of other assets for men.

Next, we examine patterns of disempowerment of households by comparing the disempowerment score of the principle male and female respondents within the same household. In the majority of households (72.7 percent), the man is empowered but the woman is disempowered (Table 6.3). In a smaller proportion of the households (16.7 percent), both the man and the woman are empowered. Both the man and the woman are disempowered in 8 percent of the households. Only in 2 percent of the households does a woman fare better than her male counterpart. The results, therefore, show low gender parity in empowerment in the rural areas of Pakistan.

Table 6.3 Household empowerment patterns

Household characteristic	Number of households	Percentage of households
Both woman and man are empowered	280	16.7
Both woman and man are disempowered	131	7.8
Woman disempowered; man empowered	1,228	73.4
Man disempowered; woman empowered	35	2.1
Total	1674	100

Source: Authors' calculations.

7. CONCLUSIONS AND POLICY IMPLICATIONS

In this paper we develop and calculate a multidimensional index to measure the levels and types of disempowerment among women in rural Pakistan. The disempowerment index is based on the methodology used by Alkire et al. (2012), modified to include different domains and indicators to take into account cultural relevance for Pakistan. Gaps in disempowerment between principal male and principal female within the same household are also presented. Results of the analysis show that 83 percent of the women in rural Pakistan are disempowered. The disempowered levels among women in the rural areas of Pakistan reported in this paper are much higher than those reported for other developing countries using the WEAI methodology, though care should be taken when making this comparison, as we use different domains and indicators for calculating the disempowerment index. Headcounts of disempowerment show that over 80 percent of the women are disempowered in indicators for ownership of assets, control over assets, control over income earned, and control over use of income earned. Fewer women are disempowered in the indicators relating to inputs into production decision making (68 percent) and autonomy in production (64 percent). Half of the women are disempowered in the indicators measuring autonomy over household decision making and mobility. Women are less disempowered (29 percent) in the time burden indicator, measured by time spent on productive and domestic activities. Overall, the results indicate that ownership of assets and control over purchase and sale of assets contribute most to women's disempowerment.

When we decompose our results by individual and household characteristics they indicate younger women to be more disempowered than older women, particularly in the income and autonomy domains. Within the autonomy domain, lack of decision-making power and restrictions on mobility contribute the highest to younger women's disempowerment. Overall, older women are more empowered than their younger counterparts in all of the indicators. We find that female education is not an impetus for women's empowerment in rural Pakistan. Uneducated women are more likely to work on farms and, as a result, engage in farm-level production decision making, giving them higher empowerment in production than their educated counterparts. We also find that women who are the head of their household or spouses of the head are more empowered and are more likely to participate in income-related decisions and other decision making in the household, such as education and marriage of children and use of contraceptives. The disempowerment level of women with sons is lower in all domains except time burden when compared to women without a son. The disparity in empowerment between women with and without son(s) seems to be highest in the income domain. Women with sons also report greater ownership and control over resources. Women living in joint families are more disempowered; this can be attributed to lower level of input in productive decision making, control over purchase and sale of assets, decisions regarding expenditures, and decision making in the house.

We also calculate disempowerment scores for men and compare it to the scores of women in order to analyze gaps in disempowerment levels within the same household. The analysis gives us a richer understanding of the intrahousehold gender power relations in rural Pakistan. The results show that men are more empowered in the domains of production, income, and autonomy. Lack of resources measured by ownership of land and control over its purchase and sale contribute to the disempowerment of both men and women. Overall, in 73 percent of the households, men are empowered and women are not. In only 2 percent of the households, women are empowered while the men in the house are disempowered.

Our paper provides the only estimates of women's disempowerment at the individual level and the gaps in disempowerment between men and women at the household level for rural areas of Pakistan.

The high levels of women's disempowerment and large differences in empowerment levels of men and women within the same household present daunting challenges for policy makers in the country. The paper also identifies marginalized groups among women, implying untapped human resources, and pinpoints areas for targeted policies. Women's status, in the society as well as home, can be significantly improved by changing material conditions that sustain the gender-specific norms and changing the perception surrounding gender identities. The change will be twofold: material and social. For effective

policy targeting, it is important to realize that policies should also have a component targeting social mind-set and practices. For example, providing greater access to assets, such as farm animals and production tools, can significantly improve empowerment among both men and women. But, in the case of women, it is important to ensure that the assets owned are directly under her control, as cultural norms dictate otherwise. Hence, providing physical access to resources might not be sufficient. Such interventions must be combined with media campaigns to raise awareness among women. Similarly, job creation will be crucial in ensuring that women have a means for breaking the cycle of disempowerment, that is, by education-led economic empowerment.

Empirical evidence on the subject supports the hypothesis that when women have more decision-making power in the household, the household spends more on the welfare of children in the forms of education and health. The household also tends to spend more efficiently on food. Our findings that women have little decision-making power, have restricted mobility, and have to seek permission from male members to visit doctors and hospitals in the rural areas indicate a need to empower them and put more resources into their hands. Our analysis suggests that lack of autonomy, especially restrictions on mobility fueled by gender segregation norms, also creates a significant gap between men's and women's empowerment levels. While it is challenging to directly target cultural norms surrounding gender segregation, ensuring physical security and improving the rule of law can lower the perceived threat to women in public places. There is also a need to invest in women's access to affordable transport to facilitate their participation in economic activities. Access to improved technology and communication will also improve women's knowledge and their participation in the economy. This paper can also be used to direct targeted policies for specific groups in case a blanket policy for all women is not feasible. For instance, youth can benefit from greater perceived security, educated women can benefit from greater nonfarm employment availability, and elderly women above the age of 65 years and women with no children (especially no sons) can be supported by social protection programs. Policy interventions also need to take into account the intrahousehold disparities between men and women and ensure that policies narrow and not increase these gender gaps.

APPENDIX A: DISTRIBUTION OF SAMPLE FOR RURAL HOUSEHOLD PANEL SURVEY

Table A.1 Geographical distribution of Rural Household Panel Survey sample

District Name	Households	Percentage
Punjab		
Attock	112	5.36
Bahawalnagar	111	5.31
Bhakkar	112	5.36
Dera Ghazi Khan	108	5.17
Faisalabad	102	4.88
Jhang	111	5.31
Kasur	106	5.07
Khanewal	106	5.07
Multan	111	5.31
Rahim Yar Khan	107	5.12
Sargodha	111	5.31
Vehari	112	5.36
Total Punjab	**1309**	**62.63**
Khyber Pakhtunkhwa (KPK)		
Mansehra	112	5.36
Nowshera	112	5.36
Total KPK	**224**	**10.72**
Sindh		
Dadu	112	5.36
Hyderabad	112	5.36
Jacobabad	110	5.26
Sanghar	111	5.31
Thatta	112	5.36
Total Sindh	**557**	**26.65**
Total Sample	**2090**	**100**

Source: Authors.

APPENDIX B: METHODOLOGY FOR CALCULATING DISEMPOWERMENT INDEX AND GENDER PARITY[16]

Coding Disempowerment Indictors

The first step is to code all disempowerment in indicators described in Table 3.1 so that they assume the values of 1 if an individual is disempowered in that indicator. A person who has no disempowerment in any indicator receives C_1 score equal to 0:

$$C_i = W_i I_i + W_2 I_i + \ldots\ldots\ldots W_d I_d, \quad (1)$$

where $I_i = 1$ if a person is disempowered in indicator *i*. I_i is equal to 0 otherwise, and W_i is the weight attached to indicator I, $\sum^{d}_{i} = 1$ and $W_i = 1$.

Identifying the Disempowered

A cutoff of 0.40 is used to identify the disempowered. Cutoff is the share of weighted disempowerment an individual must have to be considered disempowered and is denoted by *(k)*. For all individuals whose disempowerment score is less than or equal to the cutoff, scores are replaced by zero. This step is called censoring of the scores. C_i denotes the non-censored score, and $C_i\ (k)$ denotes the censored score.

If $C_i > k$, then $C_i\ (k) = Ci$ and
if $C_i \leq k$, then $C_i\ (k) = 0$.
$C_i\ (k)$ is the disempowerment score of the disempowered.

Calculating the Disempowered Headcount and Average Disempowerment

The disempowerment headcount H_p is calculated as:

$$H_p = q/n, \quad (2)$$

where *q* is the number of individuals disempowered and *n* = population.

The average disempowerment score of the disempowered (A_p) is calculated as

$$A_p = {}^{n}\sum_{i=1} C_i\ (k)/q, \quad (3)$$

where $C_i\ (k)$ is the censored inadequacy score of individual *i* and *q* is the number of disempowered individuals.

Calculating the Disempowerment Score for the Whole Population

$$M_o = H_p\ .A_p \text{ is the product of Hp and Ap} \quad (4)$$

Breaking Down M_0 by Domains and Indicators

Censored headcount in each of the indicators is calculated by adding up the number of disempowered people who are deprived in the indicator and dividing by the total population.

Overall, M_{oc} can be calculated as

$$M_{oc} = w_1 CH_1 + w_2 CH_2 + \cdots + w_{10} CH_{10}, \quad (5)$$

[16] This methodology is based on Alkire et al. 2012.

where w_1 is the weight of indicator 1 and CH_1 is the censored headcount ratio of indicator 1 and so on for all the indicators as:

$$\Sigma^{d}_{i=1} w_i = 1. \quad (6)$$

Contribution of indicator $_i$ to $M_{0c} = (w_i CH_i / M_{0c}) \times 100$.

The contributions of all indicators will sum to 100 percent. Whenever the contribution to disempowerment of a certain indicator greatly exceeds its weight, it suggests relatively high disempowerment in that indicator.

Decomposing M_0 by Subgroups

The disempowerment score (M_0) can be decomposed by population subgroups, such as age, provinces, or ethnic groups, depending on the sample design. The disempowerment score can be recalculated for each subsample of the population and can compared across different subpopulations.

Calculating the Gender Parity in Empowerment Index

For the purpose of constructing the GPEI, the score of those whose disempowerment score is less than or equal to the disempowerment cutoff of k is replaced by the value of k, which is 40 percent. To differentiate this censored inadequacy score from the censored score used to compute EMP, we use the notation $c'(k)$ for the new censored inadequacy score. When $ci > k$, then $c'(k) = ci$, but if $ci \leq k$, then $c'i(k) = k$.

Each dual-adult household is classified on gender parity basis. Households are considered to lack parity if the female is disempowered and her censored disempowerment score is higher than the censored disempowerment score of her male counterpart. Put differently, a household enjoys parity if the woman is empowered or, if she is not empowered, her adequacy score is greater than or equal to that of the male in her household.

Proportion of gender parity is calculated as

$$H_{GPI} = h/m, \quad (7)$$

where h is the number of households classified as not achieving gender parity (percentage of women who have not achieved empowerment or gender parity relative to their male counterparts) and m is the total of dual-adult households in the population.

For the extent of inequality between those women who lack parity and the men with whom they live, the average empowerment gap is defined as

$$I_{GPI} = 1/_{h} \Sigma^{h}_{j=1} (c'(k)^{W} - c'_j(k)^{M})/1 - c'_j(k)^{M}, \quad (8)$$

where

$(c'(k)^{W}$ = censored scores of the principal woman living in household j,

$c'(k)^{M}$ = censored scores of the principal man living in household j, and

h is the number of households that do not have gender parity.

GPEI is computed as

$$1 - (H_{GPI.} I_{GPI}). \quad (9)$$

Table B.1 Domains and indicators used for disempowerment index calculation

Domain	Indicators	Questions	Empowerment in Indicator	Empowerment in Domain	Indicator Weight
Production	Input into production decision making	Who normally takes the decision regarding food crop, cash crop, buying agricultural inputs, taking crops to market, livestock raising, nonfarm business?	Empowered if respondent takes at least one decision independently or jointly	Empowered in both indicators, that is, respondent currently takes at least one production decision independently and feels he or she can influence production decisions to a small extent	1/10
	Extent of autonomy in production decision making	To what extent do you feel you can make your own personal decisions regarding, food crop, cash crop, buying agricultural inputs, taking crops to market, livestock raising, nonfarm business?	Empowered if respondent feels he or she can influence production decisions to a small extent		1/10
Resources	Ownership of assets	Do you yourself own land, large livestock, small livestock, nonfarm business equipment, and house?	Empowered if respondent owns at least one major asset	Empowered in both indicators if respondent owns asset and has control over its transfer	1/10
	Control of asset owned	Who decides on the sale and purchase of assets owned?	Empowered if respondent participates and has control over decision		1/10
Income	Control over income	Who usually decides how to spend the money/in kind item you earn?	Empowered if the respondent earns income and decides himself /herself	Empowered if respondent either controls the income earned or makes major decision regarding income allocation	1/20
		What do you do with the money/in kind item you earn, i.e. give it all to husband/family, keep some for yourself, keep all for yourself?	Empowered if respondent keeps at least some of the income earned for self		1/20
	Decision making in income allocation	Who decides to allocate money for healthcare/medicine for household, education of children, large expenditures such as marriage, death, *bisi*, purchase of property, house renovation?	Empowered if respondent takes at least one major income allocation decision		1/10

Table B.1 Continued

Domain	Indicators	Questions	Empowerment in Indicator	Empowerment in Domain	Indicator Weight
Autonomy and mobility	Autonomy	Who in your household decides on methods of contraception, daughter's marriage, education of son, education of daughter?	Empowered if respondent participates in at least two of the major household decisions	Empowered in both indicators, that is, autonomy and mobility	1/10
	Mobility	Can you go alone to sell produce in market, hospital outside the village, bank, to participate in social/political gathering, fields/farm for work?	Empowered if respondent can go alone to at least one place outside the village		1/10
Time burden	Time burden	Number of hours spent in the last 24 hours on domestic (including care) and productive work	Respondent is empowered if he/she spends less than 10.5 hours per day on domestic and productive activities	Respondent is empowered if he/she spends less than 10.5 hours per day on domestic and productive activities	1/5

Source: Author's compilation.

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