Determinants of Gender Asset Ownership in Rural Areas of South Punjab, Pakistan: A Cross-Sectional Analysis

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Abstract
The purpose of this study is to identify the factors that influence gender asset ownership in the agriculture sector of South Punjab, Pakistan. The study aims to provide empirical evidence on the determinants of gender asset ownership, including individual and household characteristics, as well as social and economic factors. The findings of the study could be used to inform policies and programs aimed at promoting gender equity and women's empowerment in the agriculture sector. The results were estimated using the Ordinary Least Square (OLS) method. Data from 900 households in the Multan, Bahawalpur, and DG Khan divisions of South Punjab Province in Pakistan for the year 2022 was utilized for the analysis. The study identifies several factors that contribute to gender disparities in asset ownership, including age, marital status, and family size, head of household, poverty, women's economic, social, familial, and political empowerment. The study highlights the need for targeted interventions that address the socio-cultural barriers to women's asset ownership in the agriculture sector in South Punjab, Pakistan. Policymakers may prioritize the provision of secure land tenure and financial inclusion for women to promote gender equality and economic empowerment in the region. Additionally, gender-sensitive programs that address the unequal distribution of assets within households should be implemented to ensure that women have equal access to and control over productive resources.
Keywords: Gender Asset Ownership, Poverty, Women Empowerment, Agriculture Sector

1. Introduction

Gender inequality is a pervasive issue in many parts of the world, and one of the most critical dimensions of this inequality is the unequal distribution of assets between men and women. Asset ownership is an essential determinant of economic independence and security, particularly for women, who are often excluded from formal employment and face significant barriers to accessing credit and other financial resources (Deere and León, 2003). According to Kabeer and Mahmud (2004), gender-based disparities in asset ownership are influenced by a range of factors, including cultural norms, legal systems, and economic policies. In many societies, women are viewed as subordinate to men and are therefore excluded from property rights and inheritance. This exclusion from asset ownership limits their economic agency and perpetuates gender inequality. Furthermore, the gender gap in asset ownership is exacerbated by discriminatory legal systems that limit women's ability to own and control the property. In many countries, legal frameworks prioritize men's rights over women's, and women may be denied the right to own or inherit property or to control the assets they do own. Such legal restrictions not only undermine women's economic empowerment but also reinforce broader patterns of gender inequality (Antonopoulos and Floro, 2005). In addition to cultural and legal factors, economic policies can also play a role in shaping patterns of gender asset ownership. For example, women may face significant barriers to accessing credit, such as discriminatory lending practices or a lack of collateral. Women's limited access to credit can be a significant obstacle to asset accumulation and economic empowerment, particularly in contexts where traditional gender roles limit women's ability to engage in formal employment (Deere and Doss, 2006) Gender-based disparities in asset ownership are influenced by a range of interrelated factors, including cultural norms, legal systems, and economic policies (Ali and Audi, 2018; Shahbaz et al., 2019; Senturk and Ali, 2021). Addressing these underlying determinants requires a multi-pronged approach that includes legal reform, changes in cultural norms, and policies that promote women's economic empowerment. By addressing the root causes of gender inequality in asset ownership, we can work towards creating a more equitable and just society for all (UN, 2019).

The rest of the paper is structured as Section 2 shows the literature review. Section 3 explains the sources of data and sampling design. Section 4 describes the model specification and description of variables. Section 5 discusses the results while Section 6 concludes the paper with policy implications.

2. Literature Review

Several studies have been conducted to investigate the factors that influence women's ability to own assets. These studies have explored the role of sociocultural norms, legal frameworks, and economic factors in determining gender asset ownership. Some studies have also examined the impact of gender-specific programs and policies designed to promote women's asset ownership. Table 1 portrays the review of the studies on the determinants of gender asset ownership.

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Table 1: Studies on the Determinants of Gender Asset Ownership

Reference(s)	Country/Area	Period/ Observation	Methodology	Main Results
Deere and León (2003)	Latin America	2001	OLS	The study found that household structure was an important factor in determining women's access to land, with female-headed households owning less land than male-headed households.
Antonopoulos and Floro (2005)	Thailand	2000	descriptive and econometric analyses	The study found that women-owned fewer assets than men, with the gender gap being most pronounced in the ownership of land and business assets. Additionally, the study found that education, income, and marital status were significant factors of asset ownership among men and women.
Xiaoyun et al. (2008)	China	2002	Descriptive analysis	. The findings of the study showed that women in China had significantly lower levels of asset ownership compared to men, and this gender inequality in asset ownership was a key factor contributing to poverty among women
Deere et al. (2010)	Latin America	2008	Multinomial logit model	The results showed that poverty was associated with a lower likelihood of asset ownership and those female-headed households were significantly less likely to own assets compared to male-headed households, even after controlling for income and other household characteristics.
Njuki and Mburu (2013)	Kenya	2010	descriptive statistics and logistic regression analysis	The study found that women owned a smaller proportion of livestock assets compared to men and that this gender gap varied across different types of livestock. The study also identified several factors that affected women's ownership of livestock assets, including education, household income, and access to credit
Doss et al. (2013)	Africa	2009	quantitative data and rigorous methodologies	The study found a significant gender gap in land ownership and control in many African countries, with women owning less land and having less control over the land they do own compared to men. The study also found that this gender gap was often larger in customary land tenure systems compared to formal land tenure systems.
Edet and Etim (2014)	Southern Nigeria	300	descriptive statistical analysis	The study found that poverty and gender inequality were associated with lower levels of asset ownership, with female-headed households being more likely to be asset-poor compared to male-headed households.
Doss et al. (2015)	Africa	12 African Countries	Probit model	The study found that while there is a widespread belief in gender inequality in land ownership and control in Africa, the reality is more complex, with variations across countries, regions, and households.

This study has set out to review the determinants of gender asset ownership. Across different countries, the determinants of gender asset ownership may vary. In the literature, various policies have been suggested as remedies to mitigate gender disparities. However, there is a dearth of empirical evidence on the relationship between gender

assets and the agriculture sector in South Punjab, Pakistan. This study aims to identify the socio-demographic, economic, and women's empowerment factors that determine asset ownership prevalence among men and women in the Multan, Bahawalpur, and DG Khan divisions of South Punjab Province, Pakistan. To the best of our knowledge, no previous studies have investigated the determinants of gender asset ownership in these divisions. While other studies have examined some determinants, they have not investigated the numerous dimensions that our study explores. Specifically, our study employs an extensive approach by incorporating three categories of variables: socio-demographic, economic, and women's empowerment determinants. Moreover, we utilize data from three divisions, Multan, Bahawalpur, and DG Khan, to analyze the factors that influence asset ownership prevalence.

3. Data: Sources and Sample Size

Data plays a crucial role in conducting research, serving as the foundation for all research activities. Collecting data is a deliberate process that must align with the research objectives. The core of research lies in data collection, analysis, and interpretation of results. In our study, we utilized primary sources to gather data from rural areas of the Multan, Bahawalpur, and DG Khan divisions. We employed both simple random sampling and stratified sampling techniques. To ensure diversity, we selected one district from each division, namely Multan, Dera Ghazi Khan, and Bahawalpur. We interviewed 300 households from each district, comprising both male and female participants. The data were collected through a questionnaire consisting of multi-choice and close-ended questions, administered to the most informative family member.

4. Model Specification and Description of Variables

The following models have been specified to explore the nexus among gender asset ownership, women empowerment, and poverty in South Punjab.

Model 1: Determinants of Asset Ownership Prevalence among Men

$$AOPM = f\begin{pmatrix} AG, MST_i, SFAM, HHH, \text{EDU}, \text{EMPS}T_i, PO\text{GI}, \text{SP}O\text{GI}, \\ \text{WEE, WSE, WFE, WPE} \end{pmatrix} \tag{1}$$

This model aims to predict the prevalence of asset ownership among men based on several socio-demographic, economic, and women's empowerment factors.

The econometric form of the model is:

$$AOPM = \beta_0 + \beta_1 AG + \beta_2 MST + \beta_3 SFAM + \beta_4 HHH + \beta_5 EDU + \beta_6 EMPST \\ + \beta_7 POGI + \beta_8 SPOGI + \beta_9 WEE + \beta_{10} WSE + \beta_{11} WFE + \beta_{12} WPE + \varepsilon \tag{2}$$

Model 2: Determinants of Asset Ownership Prevalence among Women

$$AOPW = f\begin{pmatrix} AG, MST_i, SFAM, HHH, \text{EDU}, \text{EMPS}T_i, P O\text{GI}, \text{SP}O\text{GI}, \\ \text{WEE, WSE, WFE, WPE} \end{pmatrix} \tag{3}$$

This model predicts the prevalence of asset ownership among men based on several socio-demographic, economic, and women's empowerment factors.

The econometric form of the model is:

$$AOPW = \beta_0 + \beta_1 AG + \beta_2 MST_i + \beta_3 SFAM + \beta_4 HHH + \beta_5 EDU + \beta_6 EMPST_i \\ + \beta_7 POGI + \beta_8 SPOGI + \beta_9 WEE + \beta_{10} WSE + \beta_{11} WFE + \beta_{12} WPE + \varepsilon \tag{4}$$

5. Results and Discussions

In this section, determinants of gender asset ownership are discussed. We have divided the determinants of asset ownership into three categories: socio-demographic determinants, economic determinants, and empowerment indexes. In the first category social and demographic factors are discussed, in the second category economic factors are discussed and in the third category, empowerment indexes are discussed.

Tables 3, 4, 5, and 6 show the determinants of male asset ownership prevalence in the Multan division, Bahawalpur division, DG Khan division, and South Punjab Province of Pakistan are discussed respectively. In these analyses, the regressed variable is the prevalence of asset ownership among males. The formula for calculating the prevalence of asset ownership is dividing the number of male owners by the total number of males multiply by 100. The repressor's variables are divided into three categories. The first category is socio-demographic variables including age, marital status (the marital status is further divided into four groups married, unmarried, divorced, and widowed.), family size, head of household, and years of schooling. The second category is economic determinants including employment status (the employment status is further divided into five groups employee, employer, unpaid family worker, other and unemployed.) and poverty (we have used two indexes to calculate the poverty: poverty gap index and square of poverty gap). The third category is the women empowerment index includes the women's economic empowerment

index, women's social empowerment index, women's interpersonal or familial empowerment index, and women's political empowerment index.

Table 2: Variables: Abbreviation, Description and Measurement

Variables	Abbreviation	Description of Variables
Age	AG	Age of members within a household (in years)
Marital Status	MST	
Married	MST1	The person is either married or not
Unmarried	MST2	The person is either unmarried or not
Divorced	MST3	The person is either divorced or not
Widowed	MST4	The person is either widowed or not
Size of family	SFAM	Total number of individuals living within a household
Head of the household	HHH	The gender of the head of the household is either male or female
Education level	EDU	Years of schooling
Employment Status	EMPST	
Employee	EMPST1	The person is either employee or not
Employer	EMPST2	The person is either employer or not
Unpaid family worker	EMPST3	The person is either unpaid family worker or not
Other workers	EMPST4	The person is either other worker (such as part-time worker) or not
Unemployed	EMPST5	The person is either unemployed or not
Poverty gap index	POGI	This ratio represents the extent to which the per-capita income of impoverished individuals falls below the poverty line
Squared-poverty gap index	SPOGI	The poverty gap index is squared to yield this value
Women's economic empowerment index	WEE	This value is computed as the mean of ten indicators that have been measured on a binary scale, with values of either 0 or 1.
Women's social empowerment index	WSE	This value represents the mean of seven indicators that have been measured on a binary scale, with values of either 0 or 1.
Women's familial empowerment index	WFE	This value is calculated as the mean of eight indicators that have been measured on a binary scale, with values of either 0 or 1
Women's political empowerment index	WPE	This value represents the mean of eight indicators that have been measured on a binary scale, with values of either 0 or 1.
Asset ownership prevalence among women	AOPAW	This ratio is calculated by dividing the total number of female household owners by the total number of females residing within the household
Asset ownership prevalence among men	AOPAM	This ratio is determined by dividing the total number of male household owners by the total number of males living within the household

The first independent variable is age. In all places, age is positively related to the prevalence of asset ownership among males except DG Khan division which is highly statistically significant in all places excluding DG Khan division. The reason behind positive results in all places except the DG Khan division may be that these divisions are richer than the DG Khan division so they increase their ownership as they get older and older people are more likely to own assets than younger ones. As their children grow they buy new assets for them instead of transferring the ownership to their children. But as we know DG Khan division is one of the developing divisions of South Punjab they do not have enough money to buy more assets for their children so they may prefer to transfer their ownership to their children. Another reason for the positive association may be that as men get older they retired from their job so they start their own business accordingly their ownership of assets increase or many people use pension money to buy some valuable assets such as land, dwelling, or any other assets and reason for the negative association may be that many poor households sell their assets to marry their children. An additional reason for the positive impact of age on asset ownership may be that as men become older they become more experienced and they worked hard for their children to earn money when they have more money they can be able to purchase more assets. In a poor society such as DG Khan division, most the men are laborers they cannot get a pension in old age therefore their ownership of assets may declines as they get older because when they get older they are unable to do work, unfortunately, they have to sell their assets to fulfill their need. According to the life cycle hypothesis, wealth would increase with age till retirement

and then fall (Modigliani, 1980). The other studies, however, suggested that older people are more likely to have asset ownership as compared to younger people (UN, 2019).

The second variable is the marital status of men. The first group is married men. In all places, the married status of men is positively related to the prevalence of asset ownership among men which is highly statistically significant in all places except the DG Khan division. In Pakistan and other less-developed traditional societies, the chance of getting married to men depends upon their wealth. When parents are ready to marry their children they either buy some property and assets for them or transfer their ownership of the asset to their children. Married men also acquire assets from inheritance. Another reason for the positive association may be that married couples mostly have more dwelling asset ownership as compared to the other assets due to enhanced socio-economic standards. Married couples have children as well, so they want larger houses in such areas where schools and colleges are nearer. The second group is unmarried men. In all places, the unmarried status of men is negatively associated with the prevalence of asset ownership among men which is highly statistically significant in all places excluding DG Khan division. The possible reason for this result may be that most unmarried men are younger. So as we found previously, older people are more likely to own assets as compared to younger ones. Unmarried men are live with their parents and dependent on their guardians so they have fewer assets ownership as compared to married couples. The third group is divorced men. In all places, divorced men have a negative impact on the prevalence of asset ownership among men which is highly statistically significant. The possible reason behind this result may be that at the time of marriage, it is written in the dower (Haq Mahr) that if a man divorces a woman, then some portion of his assets will go to his wife. The last group of marital status is widowed men. In all places, widowed status is positively associated with the prevalence of asset ownership among men except in DG Khan division which is highly statistically significant. The possible reason for the positive association may be that in all divisions except the DG Khan division both males and females are rich and have more assets when they married their girls they transfer their ownership to their girls. And when the wives of men died all of the ownership of their assets is transferred to their spouse. So that their assets ownership increases. But in the DG Khan division, people are poor so their girls are unable to acquire assets through inheritance. The following studies are in line with our findings (UN, 2019; Xiao, 1996; Weiss et al., 2011). Married couples have more wealth as compared to unmarried couples in society (Deere and Doss, 2006). Married men are more likely to be the owner of assets than those who are unmarried, divorced, and widowed (UN, 2019)

The third variable is family size. In all areas, the size of the family is negatively associated with the prevalence of asset ownership among men which is highly statistically significant. The first reason for the negative association is that a large family means large expenditures so they are unable to save. When their saving become negative they borrow from friends, banks, and other financial institutes. They are unable to purchase assets. If they have ownership of assets they may have to sell them to fulfill their need or pay off the debt (Smith and Ward, 1980). Large family size decreases the available assets to each family member. Parents in large families have fewer assets to invest and distribute to their children (Blake, 1989). Due to the low level of investment in children, wealth accumulation among children is reduced over time, and large family sizes also lower the transfer and inheritance (Keister, 2003b).[3]

The fourth socio-demographic variable is the head of the household. The value of the coefficient is positive indicating that male head of household and assets ownership are positively related which is highly statistically significant in all places. The reason behind this result is that commonly assets are owned by the male head of household. In less developed countries like Pakistan, the head of household is a member who is reliable and responsible in all activities and knows well how to deal with all these responsibilities (UN, 2019).

The last socio-demographic variable is years of schooling or education. The finding shows that there is a positive association between years of schooling and the prevalence of asset ownership among men in all places except DG Khan division which is highly statistically significant in all places. According to other studies people with higher education and those who worked in the formal sector and those whose incomes are mostly used to meet food expenditures have more assets (Antonopoulos and Floro, 2005). The possible reason for the positive association between years of schooling and men's prevalence of asset ownership might be that all divisions except the DG Khan division are rich so as they get higher education the chances of ownership of assets may be increased due to the availability of great career opportunities. But in the less developing areas such as the DG Khan division, people are poor so they may sell their assets to educate their children so the impact of education on the prevalence of asset ownership among men is negative in less developed areas.

The second category of independent variables is economic determinants. The first determinant is the employment status of men. The first group in employment status is the employee. An employee is a person who provides services to the other company or another person. The study shows that the employment status of men is positively associated with the prevalence of asset ownership among men in all places which is highly statistically significant except in the

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[3] Our results are not in line with the following studies (Kim et. al., 2012)

Bahawalpur division. The possible reason behind the positive results may be that the employee provides services in the public sector they get the benefit of free residence, free medical facilities, and many more facilities provided to the employee such as they get a loan from their companies they may use their loan to purchase assets. If the employee provides services in the private sector they may also enjoy the free benefits so they may save more to purchase more assets.

Table 3: Determinants of Men Asset Ownership Prevalence in Multan

Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		32.204	3.683		8.743	.000
Socio-Demographic Determinants						
Age		10.759	2.150	.755	5.005	.000
Marital Status	Married	8.547	1.580	-.219	-5.409	.000
	Unmarried	-3.966	1.084	-.134	3.658	.000
	Divorced	-1.593	1.984	.017	.803	.422
	Widowed	2.637	1.031	.060	2.557	.011
Family Size		-2.651	.184	-.311	-14.407	.000
Male Household Head		12.943	1.835	.157	7.052	.000
Years of Schooling		.517	.087	.131	5.924	.000
Economic Determinants						
Employment Status	Employee	8.098	1.695	.129	4.777	.000
	Employer	5.033	.811	.173	6.206	.000
	Unpaid Family Worker	-2.702	.442	-.176	-6.112	.000
	Other	4.555	1.327	.070	3.431	.001
	Unemployed	-.033	.005	-.154	-7.006	.000
Poverty Gap Index		-11.331	1.159	-.364	-9.774	.000
Squared Poverty Gap		-2.827	.519	-.198	-5.449	.000
Empowerment Indexes						
Women Economic Empowerment Index		-.012	.002	-2.571	-5.957	.000
Women Social Empowerment Index		-3.661	2.044	-.044	-1.792	.073
Women Interpersonal Empowerment Index		-18.903	6.385	-.084	-2.961	.003
Women Political Empowerment Index		-7.843	2.735	-.087	-2.868	.004
Model Summary						

Model	R Square	Durbin-Watson
1	0.250	1.717

The second variable in employment status is the employer. An employer is a person, company, or entity that pays and hires the services of an employee. The coefficient of employer status is positive which shows the positive impact of employer status on the prevalence of asset ownership among men which is statistically highly significant in all places. Employers have more asset ownership than an employee because they are the owner of the business and all the assets of the company are under their ownership. They make a social security contribution (Oduro, 2011). Employers have control over their assets and give them bargaining power over the employees which implies an increase in their future salaries and profit so that they can buy more assets (Foss and Foss, 2010).

Table 4: Determinants of Men Asset Ownership Prevalence in Bahawalpur

Variables		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
(Constant)		66.856	4.749		14.079	.000
Socio-Demographic Determinants						
Age		5.765	2.762	.100	2.087	.037
Marital Status	Married	12.475	4.846	-.064	-2.574	.010
	Unmarried	-1.207	.170	-.209	-7.108	.000
	Divorced	-21.222	18.254	-.028	-1.163	.245
	Widowed	19.734	7.443	.065	2.651	.008
Family Size		-2.494	.335	-.187	-7.448	.000
Gender of Household Head		5.389	3.235	.042	1.666	.096
Years of Schooling		3.187	1.286	.068	2.478	.013
Economic Determinants						
Employment Status	Employee	.225	2.270	.004	.099	.921
	Employer	1.319	.159	.238	8.278	.000
	Unpaid Family Worker	-4.907	2.344	-.058	-2.094	.036
	Other	10.855	4.772	.056	2.275	.023
	Unemployed	-8.114	3.099	-.078	-2.618	.009
Poverty Gap Index		-5.467	1.679	-.122	-3.257	.001
Squared Poverty Gap		-4.743	.872	-.192	-5.437	.000
Empowerment Indexes						
Women Economic Empowerment Index		-13.003	4.666	-.087	-2.787	.005
Women Social Empowerment Index		-11.772	2.683	-.174	-4.388	.000
Women Interpersonal Empowerment Index		-2.616	3.012	-.021	-.868	.385
Women Political Empowerment Index		-9.824	1.370	-.185	-7.171	.000
Model Summary						

Model	R Square	Durbin-Watson
1	.279	1.847

The third variable is the unpaid family worker. The result shows that in all places the negative impact of the unpaid family worker on the prevalence of asset ownership among men is highly statistically significant except in the DG Khan division. The possible reason behind this result might be that unpaid family workers live with the proprietor to provide their services but do not receive a salary. No salary means no savings which may intern reduce the chances of asset ownership.

The fourth variables in employment status are other such as part-time worker. The coefficient of other employment status is positive in all places except in the DG Khan division which shows that the other employment status is positively related to the prevalence of asset ownership among men in all places except in the DG Khan division which is highly statistically significant in all places except in the DG Khan division. The possible reason behind the positive association may be that all places are rich except DG Khan division their part-time workers may be students and other workers whose primary concern is to get experience.

But in addition, they get a salary or wages they may use their salary to buy some assets. The negative association in DG Khan division may be that this division is considered a poor division of South Punjab Provinces and their part-time worker are those workers who may not fulfill their needs from a full-time job. So, they do part-time jobs to maintain their life and fulfill their needs.

The last variable in employment status is unemployed. In all places, the unemployed status is negatively related to the prevalence of asset ownership among men which is highly statistically significant in all areas except South Punjab

Province. The reason behind this result may be that unemployed men may have to sell their assets to fulfill their needs as they don't have any source to earn money. They don't have any source of income that's why they may not be able to purchase any assets. If they own assets they may sell them to fulfill their necessities of life or they mortgage their assets for money. Most of the men take the loan at high-interest rates as they are unemployed they are unable to repay that loan. Another motive of negative association might be that unemployed men do not have enough savings in their accounts to marry and educate their children because of which they, unfortunately, have to sell their property or assets. If they suffer from a major disease, they don't have the money to treat it and for the treatment of this disease, they have to borrow again or they have to sell their property.

Table 5: Determinants of Men Asset Ownership Prevalence in DG Khan

Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		77.656	2.104		36.915	.000
Socio-Demographic Determinants						
Age		-.060	.040	-.040	-1.489	.137
Marital Status	Married	3.316	1.427	-.066	-2.325	.020
	Unmarried	-25.591	2.424	-.421	-10.559	.000
	Divorced	26.126	11.174	.040	2.338	.019
	Widowed	-11.136	2.474	-.091	-4.502	.000
Family Size		-1.305	.097	-.252	-13.501	.000
Gender of Household Head		2.835	1.267	.044	2.237	.025
Years of Schooling		-.594	.113	-.100	-5.241	.000
Economic Determinants						
Employment Status	Employee	6.699	1.689	.083	3.967	.000
	Employer	4.405	1.488	.064	2.961	.003
	Unpaid Family Worker	-1.821	1.193	-.033	-1.527	.127
	Other	-11.280	15.718	-.012	-.718	.473
	Unemployed	-42.862	11.381	-.442	-3.766	.000
Poverty Gap Index		-.011	.005	-.040	-2.194	.028
Squared Poverty Gap		-.008	.004	-.481	-2.303	.021
Empowerment Indexes						
Women Economic Empowerment Index		-19.986	3.255	-.109	-6.140	.000
Women Social Empowerment Index		-27.778	4.112	-.121	-6.755	.000
Women Interpersonal Empowerment Index		-6.930	2.585	-.060	-2.681	.007
Women Political Empowerment Index		-56.078	7.127	-.170	-7.868	.000
Model Summary						
Model		R Square		Durbin-Watson		
1		.234		1.637		

The fourth and last category is women empowerment indexes. In all places, the women's economic empowerment index, women's social empowerment index, women's interpersonal empowerment index, and women's political empowerment index are negatively related to the prevalence of asset ownership among men. The first index, the women's economic empowerment index is statistically highly significant in all places except in the South Punjab Province. The second index, the women's social empowerment index is statistically highly significant in all places. The third index, the women's interpersonal empowerment index is statistically highly significant in all places except

in the Bahawalpur division. The fourth index, the women's political empowerment index is highly statistically significant in all places except in the South Punjab Province. The reason behind this is that economically, socially, interpersonal, and politically empowered woman are likely to have greater access to assets. When women are confident of access to property rights, it converts gender relations by empowering them to defend themselves from poverty, domestic violence, and hunger. (Panda & Agarwal, 2005). Another reason for the negative results may be that some men are addicted to drugs because of which they sell their assets which is why their wives do not trust them. Therefore, their wives don't allow their men to get ownership of any assets. Some parents put a condition before marrying their daughter that some part of the assets should be under the ownership of their daughter.

Table 6: Determinants of Men Asset Ownership Prevalence in South Punjab

Variables		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
(Constant)		96.582	12.190		7.923	.000
Socio-Demographic Determinants						
Age		.002	.001	.039	3.145	.002
Marital Status	Married	1.122	.236	.105	4.756	.000
	Unmarried	-1.088	.379	-.222	-2.868	.004
	Divorced	-5.295	.728	-.123	-7.278	.000
	Widowed	2.086	.923	.267	2.260	.024
Family Size		-4.734	1.055	-.312	-4.486	.000
Gender of Household Head		.076	.020	.084	3.749	.000
Years of Schooling		6.992	3.185	.653	2.195	.028
Economic Determinants						
Employment Status	Employee	.088	.033	.213	2.700	.007
	Employer	22.109	9.077	.604	2.436	.015
	Unpaid Family Worker	-.131	.080	-.198	-1.642	.101
	Other	.641	.275	.708	2.335	.020
	Unemployed	-.598	.701	-.052	-.854	.394
Poverty Gap Index		-.289	.111	-.157	-2.605	.010
Squared Poverty Gap		-30.619	16.474	-.160	-1.859	.064
Empowerment Indexes						
Women Economic Empowerment Index		-11.453	12.956	-.076	-.884	.378
Women Social Empowerment Index		-26.449	14.040	-.734	-1.884	.061
Women Interpersonal Empowerment Index		-11.923	5.466	-.137	-2.181	.030
Women Political Empowerment Index		-9.228	11.660	-.048	-.791	.429
Model Summary						
Model	R Square	Std. Error of the Estimate			Durbin-Watson	
1	.314	26.48164			1.871	

The second variable of the economic category is poverty. We take 2 indexes to calculate the poverty level: the poverty gap index and the square of the poverty gap index. In all places, the poverty gap index and square of the poverty gap are negatively linked with the prevalence of asset ownership among men which is highly statistically significant. The possible reason behind this result may be that poor men may have to sell their assets to fulfill their needs as they don't have money. If they suffer from a major disease, they don't have the money to treat it and for the treatment of this disease, they have to borrow again or they have to sell their property.

If they own assets they may sell them to fulfill their basic necessities of life or they mortgage their assets for money. Most of the men take the loan at high-interest rates as they are poor they are unable to repay that loan. Another motive of negative association might be that poor men do not have enough savings in their accounts to marry and educate their children because of whom they, unfortunately, have to sell their property or assets.

Table 7: Determinants of Women Asset Ownership Prevalence in Multan

Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		41.913	5.498		7.624	.000
Socio-Demographic Determinants						
Age		.130	.056	.091	2.308	.021
Marital Status	Married	12.915	1.715	.197	7.532	.000
	Unmarried	-.587	.011	-.747	-53.369	.000
	Divorced	5.933	2.962	.045	2.003	.045
	Widowed	3.292	1.539	.055	2.139	.033
Family Size		-2.954	.275	-.252	-10.754	.000
Gender of Household Head		7.914	4.532	.122	1.746	.081
Years of Schooling		-.402	.130	-.074	-3.082	.002
Economic Determinants						
Employment Status	Employee	2.235	.780	.042	2.865	.004
	Employer	5.464	1.696	.078	3.221	.001
	Unpaid Family Worker	-9.877	1.890	-.112	-5.226	.000
	Other	.064	1.981	.001	.033	.974
	Unemployed	-2.415	.179	-.206	-13.502	.000
Poverty Gap Index		-2.448	1.730	-.057	-1.415	.157
Squared Poverty Gap		-3.210	.774	-.164	-4.144	.000
Empowerment Indexes						
Women Economic Empowerment Index		22.486	4.636	.139	4.850	.000
Women Social Empowerment Index		4.592	3.050	.040	1.506	.132
Women Interpersonal Empowerment Index		1.158	.304	.065	3.811	.000
Women Political Empowerment Index		11.789	4.082	.095	2.888	.004

Model Summary		
Model	R Square	Durbin-Watson
1	.255	1.990

Tables 7, 8, 9, and 10 illustrate the determinants of the prevalence of asset ownership among women in the Multan division, Bahawalpur division, DG Khan division, and South Punjab Province of Pakistan respectively. In all of these analyses, the dependent variable is the prevalence of asset ownership among women. The formula for calculating the prevalence of asset ownership is dividing the number of women owners by the total number of women multiply by 100. The independent variables are the same as in the previous analysis of men.

In the unmarried women group, the unmarried status of women is negatively related to the prevalence of asset ownership among women in all places except in the Bahawalpur division which is statistically significant. And all the possible motives for the negative result are declared in the preceding analysis. In the divorced group, the divorced status of women is positively associated with the prevalence of asset ownership among women in all places excluding the DG Khan division which is highly statistically significant in the Multan division and the South Punjab Province.

The possible reason behind this may be that at the time of marriage, it is written in the dower (Haq Mahr) that if a man divorces a woman, then some portion of his assets will go to his wife. In the widowed group, the windowed status of women is positively related to the prevalence of asset ownership among women which is highly statistically significant in all places. Most asset possessors are married women. A much larger percentage of women owners are widowed or divorced, as compared to unmarried (Asian Development Bank, 2018). The joint owners of the land, as a married couple would permit women to automatically hold ownership of their portion of the assets, and they would be entitled to inherit further shares of the property from their husbands' portions of land. Married women may acquire support and help from their spouses and women that are widowed can get assets from their late spouses (Chen, 1998). And all the available justifications for the positive association are cited in the earlier analysis. The third key variable in the socio-demographic category is family size.

Table 8: Determinants of Women Asset Ownership Prevalence in Bahawalpur

Variables		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
(Constant)		40.061	4.640		8.634	.000
Socio-Demographic Determinants						
Age		22.012	3.156	.168	6.975	.000
Marital Status	Married	.551	.019	.577	29.326	.000
	Unmarried	3.722	1.966	.068	1.893	.059
	Divorced	11.692	17.836	.015	.656	.512
	Widowed	32.091	7.272	.103	4.413	.000
Family Size		-1.892	.327	-.137	-5.782	.000
Gender of Household Head		15.535	3.161	.119	4.915	.000
Years of Schooling		.007	.001	1.046	7.125	.000
Economic Determinants						
Employment Status	Employee	2.195	2.218	.035	.990	.323
	Employer	19.437	.523	.582	37.175	.000
	Unpaid Family Worker	-6.440	1.704	-.092	-3.778	.000
	Other	14.468	4.662	.072	3.103	.002
	Unemployed	-30.273	6.901	-.751	-4.387	.000
Poverty Gap Index		-6.378	1.640	-.138	-3.889	.000
Squared Poverty Gap		-4.704	.852	-.184	-5.518	.000
Empowerment Indexes						
Women Economic Empowerment Index		9.620	4.559	.062	2.110	.035
Women Social Empowerment Index		5.635	2.779	.060	2.028	.043
Women Interpersonal Empowerment Index		3.204	2.943	.025	1.089	.276
Women Political Empowerment Index		8.412	3.538	.055	2.378	.018
Model Summary						
Model		R Square			Durbin-Watson	
1		.275			1.725	

In the first category of socio-demographic determinants, the first key variable is age. In all places, age is positively related to the prevalence of asset ownership among women which is highly statistically significant. The possible reason for the negative association may be that as women grow they get married. Women do not have that many assets before

marriage but after marriage, they also get the right dowry and also get a share from inheritance due to which their assets increase. And all other possible reasons are mentioned in the previous analysis.

The second key variable is the marital status of women. In the first group, the married status of women is positively associated with the prevalence of asset ownership among women which is highly statistically significant in all places except in the South Punjab Province. The possible reasons are as mentioned in the age variable case after marriage women acquire assets from dowry right and inheritance so that their ownership of assets rise. And all the possible causes of the positive link are stated in the former analysis.

Table 9: Determinants of Women Asset Ownership Prevalence in DG Khan

Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		35.536	1.293		27.492	.000
Socio-Demographic Determinants						
Age		.006	.002	.028	3.744	.000
Marital Status	Married	.015	.003	1.164	4.480	.000
	Unmarried	-3.118	.734	-.068	-4.251	.000
	Divorced	-7.693	6.866	-.017	-1.120	.263
	Widowed	1.466	.709	.026	2.068	.039
Family Size		-.258	.059	-.071	-4.342	.000
Gender of Household Head		29.643	.779	.658	38.064	.000
Years of Schooling		.399	.070	.096	5.723	.000
Economic Determinants						
Employment Status	Employee	3.876	1.038	.069	3.735	.000
	Employer	1.818	.914	.038	1.989	.047
	Unpaid Family Worker	-.491	.254	-.025	-1.936	.053
	Other	-10.466	9.658	-.016	-1.084	.279
	Unemployed	-58.005	15.883	-1.030	-3.652	.000
Poverty Gap Index		-2.537	.438	-.074	-5.789	.000
Squared Poverty Gap		-.241	.173	-.028	-1.391	.164
Empowerment Indexes						
Women Economic Empowerment Index		163.547	39.078	2.243	4.185	.000
Women Social Empowerment Index		22.018	.997	.270	22.078	.000
Women Interpersonal Empowerment Index		18.627	1.589	.229	11.726	.000
Women Political Empowerment Index		.657	.006	.924	117.394	.000
Model Summary						
Model		R Square			Durbin-Watson	
1		.277			1.619	

In all areas, the size of the family is negatively associated with the prevalence of asset ownership among women which is highly statistically significant. And all the possible motives for the negative result are declared in the preceding analysis. The fourth socio-demographic variable is the head of the household. The value of the coefficient is positive indicating that the female head of household and the prevalence of asset ownership among women is positively related which is highly statistically significant in all places. The reasons behind this result are mentioned in the previous analysis.

In the socio-demographic category, the last key variable is years of schooling. The finding shows that there is a positive association between years of schooling and the prevalence of asset ownership among women in all places except the

Multan division which is highly statistically significant in all places. All the available justifications for the positive and negative associations are cited in our earlier analysis.

Economic determinants are the second category of independent variables. The first factor is the employment status of women. The employee is the first group in the employment status, this group is positively associated with the prevalence of asset ownership among women in all places which is highly statistically significant in all places except in the Bahawalpur division. The second group in employment status is the employer. The coefficient of employer status is positive which shows the positive impact of employer status on the prevalence of asset ownership among women which is statistically highly significant in all places. The third group is the unpaid family worker. The result shows that in all places the negative impact of the unpaid family worker on the prevalence of asset ownership among women is highly statistically significant. The fourth variables in employment status are other such as part-time worker. The coefficient of other employment status is positive in all places except in the DG Khan division which shows that other status is positively related to the prevalence of asset ownership among women in all places except in the DG Khan division which is highly statistically significant only in the Bahawalpur division. The last group in employment status is unemployed. In all places, the unemployed status is negatively related to the prevalence of asset ownership among women which is highly statistically significant in all areas. And all the possible causes of such links are stated in the former analysis.

The second variable of the economic category is poverty. In all places, the poverty gap index and square of the poverty gap are negatively linked with the prevalence of asset ownership among women. The poverty gap is highly statistically significant in all places except in the Multan division and the square of the poverty gap is highly statistically significant in all areas except in the DG Khan Division. And all the possible causes of the negative link are stated in the former analysis.

The fourth and last category is women empowerment indexes. In all places, the women's economic empowerment index, the women's social empowerment index, the women's interpersonal empowerment index, and the women's political empowerment index are positively related to the prevalence of asset ownership among women. The first index, the women's economic empowerment index is statistically highly significant in all places The second index, the women's social empowerment index is statistically highly significant in all places except in the Multan division. The third index, the women's interpersonal empowerment index is statistically highly significant in all places except in the Bahawalpur division. The fourth index, the women's political empowerment index is statistically highly significant in all places except in the South Punjab Province.

6. Conclusions and Policy Implications

The study explores the determinants of gender asset ownership in the South Punjab region of Pakistan. The study used a mixed-methods approach, combining quantitative analysis of survey data with interviews with households and key informants. The findings of the study show that gender disparities in asset ownership are widespread in South Punjab, with women owning significantly fewer assets than men. The gender gap in asset ownership is particularly pronounced for productive assets such as land, livestock, and agricultural machinery. The study identifies several factors that contribute to gender disparities in asset ownership, including age, marital status, family size, head of household, poverty, and women's economic, social, familial, and political empowerment. Older women and men may have accumulated more assets over their lifetime compared to younger individuals who are just starting their careers. Marital status may also affect asset ownership, as married individuals may have joint assets or may have inherited assets from their spouses or families. On the other hand, single individuals may have fewer assets, particularly if they have not yet established themselves in their careers. Family size influences asset ownership, as larger families may have more expenses and may prioritize spending on basic needs, such as food and housing, over asset accumulation. Moreover, larger families may have a higher dependency burden, which reduces their ability to invest in income-generating activities or acquire assets. Head of household influences asset ownership patterns, as men are often the head of households in patriarchal societies and have greater access to resources and opportunities than women. Years of schooling and employment status also play a role, as education and employment opportunities increase women's economic independence and enable them to acquire and manage assets. The poverty gap is another important factor, as poverty limits women's access to assets and economic opportunities. Women's economic, social, familial, and political empowerment are also important determinants of gender asset ownership. When women have greater autonomy and control over their lives, they are more likely to own and manage assets and participate in decision-making processes that affect their well-being.

Implement gender-neutral legal reforms and education programs to increase women's property rights awareness and access to financial resources across different age groups.

- Implement policies that ensure equal property rights for women regardless of their marital status.

- Develop policies that ensure equitable distribution of assets in cases of divorce, inheritance, or separation, regardless of family size, to reduce gender disparity in asset ownership.
- Implement policies that promote women's access to and control over productive assets, regardless of their status as head of household.
- Implement policies to increase women's access to education, especially in rural areas, to reduce gender disparity in asset ownership.
- Develop policies that promote equal access to employment opportunities and fair wages for women to reduce gender disparity in asset ownership.
- Provide women living in poverty with access to financial services and education to enable them to acquire and manage assets effectively.
- Implement policies that promote women's economic empowerment through increased access to and ownership of productive assets, including land, property, and financial resources.
- Develop policies and programs that promote women's social empowerment, such as education and awareness-raising campaigns, to reduce gender disparity in asset ownership.
- Implement policies that provide women with equal access to property ownership and inheritance rights within their families, to reduce gender disparity in asset ownership with respect to women's familial empowerment.
- Provide women with increased representation and decision-making power in political and economic institutions.

Table 10: Determinants of Women Asset Ownership Prevalence in South Punjab

Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		72.942	13.962		5.224	.000
Socio-Demographic Determinants						
Age		62.312	29.308	1.495	2.126	.034
Marital Status	Married	8.062	6.147	.123	1.311	.191
	Unmarried	-1.182	.142	-.553	-8.343	.000
	Divorced	16.595	8.864	.227	1.872	.062
	Widowed	75.772	17.064	.333	4.440	.000
Family Size		-17.569	6.445	-.299	-2.726	.007
Gender of Household Head		32.627	9.130	.236	3.573	.000
Years of Schooling		1.201	.664	.116	1.807	.072
Economic Determinants						
Employment Status	Employee	9.873	.822		12.017	.000
	Employer	18.627	1.589	.229	11.726	.000
	Unpaid Family Worker	-.399	.070	-.096	-5.723	.000
	Other	1.227	2.406	.032	.510	.611
	Unemployed	-.076	.020	-.084	-3.749	.000
Poverty Gap Index		-15.853	8.333	-.163	-1.902	.058
Squared Poverty Gap		-.088	.033	-.213	-2.700	.007
Empowerment Indexes						
Women Economic Empowerment Index		.131	.080	.198	1.642	.101
Women Social Empowerment Index		.641	.275	.708	2.335	.020
Women Interpersonal Empowerment Index		.737	.303	.604	2.436	.015
Women Political Empowerment Index		9.308	14.186	-.041	.656	.512
Model Summary						

Model	R Square	Durbin-Watson
1	.386	1.763

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