

RESEARCH PAPER

# Relationship between asset ownership and women's empowerment? Evidence from DHS data from 18 developing countries

Rafi Amir-ud-Din<sup>1</sup>, Lubna Naz<sup>2\*</sup>  and Hafeez Ali<sup>1</sup>

<sup>1</sup>Department of Economics, COMSATS University Islamabad, Lahore Campus, Lahore, Pakistan and

<sup>2</sup>Department of Economics, Institute of Business Administration Karachi, Karachi, Pakistan

\*Corresponding author. E-mail: [lnaz@iba.edu.pk](mailto:lnaz@iba.edu.pk)

(Received 18 July 2020; revised 23 April 2023; accepted 24 April 2023; first published online 21 June 2023)

## Abstract

This study identifies the link between women's asset ownership and women's empowerment. Women's empowerment is measured by their decision-making role related to their health, large household purchases, and their social interaction. Using Demographic and Health Surveys data for 18 countries from South Asia, the Middle East, and sub-Saharan Africa, we found that the women who owned assets were 14% more likely to be empowered compared with the women who did not own any asset (odds ratio: 1.14, 95% confidence interval: 1.10–1.185). At a disaggregated country level, asset ownership was positively and significantly associated with women's empowerment in nine countries, negatively associated in one country, and had no significant association in the other eight countries. This study provides important insights into the link between women's asset ownership and empowerment and may inform public policy related to gender equality through women's empowerment.

**Keywords:** Asset ownership; gender parity; South Asia; sub-Saharan Africa; women's empowerment

## 1. Introduction

Sustainable development goal (SDG) 5 seeks to achieve gender equality and empower all women and girls [UN Women (2013)]. Elimination of all forms of discrimination and violence against women in public and private spheres and undertaking reforms to give women equal rights to economic resources and access to property are the targets of SDG 5 [UN Women (2013)]. Gender equality is a fundamental human right and a necessary foundation for a peaceful, prosperous, and sustainable world. Ensuring that women and girls have equal access to education, healthcare, decent work, and representation in political and economic decision-making will foster sustainable economies and benefit societies and humanity in general [Mishra (2018)].

While much progress has been made toward achieving women's rights and empowering women in socio-economic domains, this progress is uneven in most countries [Nanda *et al.* (2020)]. In developing countries, gender disparity is

© Université catholique de Louvain 2023

widespread [Kanter and Caballero (2012)]. As a result, the low empowerment of women and a high gender gap still impede the development process of many countries [Silva and Klasen (2021)].

Empowering women requires changing social norms and legislative and regulatory frameworks. Women's asset ownership is considered a critical structural driver of women's empowerment [Grünke-Horton and Dworkin (2016), Pradhan *et al.* (2019)]. Women's equitable share in the household assets is fundamental to their economic security, social and legal status, and often their survival [Töpfer (1999)].

It is observed that women are deprived of the ownership of household assets in several ways: exclusion from inheritance on various pretexts, eviction from their homes by the in-laws if the husband dies, and many other ways sanctioned by religious authority or social norms [Ajayi and Olotuah (2005)]. Discriminatory laws and customs, biased attitudes, and inefficient legal infrastructure are other stumbling blocks to equitable ownership of household assets [Niswade (2015)]. If women try to fight for the ownership of household assets, they are often ostracized as traitors to culture [Holden and Chaudhary (2013)]. Depriving women from the ownership of their household assets keeps women dependent on men, which, in turn, leads to the continuation of abusive relationships in many cases [Jacobson and Gottman (2007)].

## 2. Women's empowerment: some theoretical considerations

Empowerment can be defined as a “multi-dimensional social process that helps people gain control over their own lives. It is a process that fosters power in people, [to be used] in their own lives, their communities, and in their society, by acting on issues that they define as important” [Page and Czuba (1999)]. Women's empowerment refers to “women's ability to make strategic life choices where that ability had been previously denied them” [Malhotra and Schuler (2005)]. Women empowerment is central to maintaining women's benefits at the individual, household, community, and broader levels [Malhotra and Schuler (2005)]. It involves boosting the status of women through literacy, education, training, and raising awareness [Srivastava (2009)]. Hence, women's empowerment is all about allowing and equipping women to make life-determining choices across different issues in the country.

Kabeer (1999) defines women's empowerment as “the ability to make choices” in three interrelated dimensions: resources, agency, and achievement. According to Kabeer's definition, resources include material, human and social resources acquired through family, market, and community. Kabeer (1999) defined a woman's agency as her ability to “define her goals and act upon them,” which may take multiple observable forms such as her decision-making, bargaining, and negotiation. Resources and agency combine to make achievement possible [Kabeer (1999)]. Kabeer's definition of achievement echoes Sen's capability approach in which an individual's “being and doing” are referred to as functioning achievement [Sugden and Sen (1986)].

### 2.1 The intrinsic and instrumental values of women's empowerment

Women's empowerment has both intrinsic and instrumental values. The intrinsic value of empowerment lies in the sense of freedom, irrespective of whether that freedom translates into any perceived or real benefit. The fundamental value of empowerment can be experienced with respect to different tasks—the ability to have a conversation

in the bank, help others, make decisions in one's family, or a general ability to plan effectively [Ibrahim and Alkire (2007)]. Empowerment is about the extent to which some categories of people are able to control their own destinies, even when their interests are opposed by those of the other people with whom they interact [Ibrahim and Alkire (2007)].

The instrumental value of empowerment lies in empowering people to achieve certain desirable objectives such as better health or protection from undesirable outcomes such as illiteracy. Thus “empowering people” might be an effective investment in health, education, governance, pro-poor growth, and psychological well-being [Ibrahim and Alkire (2007)]. Empowerment is essentially well-being enhancing. “Acting freely and being able to choose are ... directly conducive to well-being” [Sen (1992)]. The instrumental value of women's empowerment also lies in such diverse domains as poverty reduction, sustainable development, gender inequalities, governance, and globalization [Fukuda-Parr (2010)].

## **2.2 Adverse consequences of lack of women empowerment**

Lack of women's empowerment leads to a wide range of adverse consequences. A study in India found that teenage pregnancy was strongly linked with a lack of women's empowerment and many associated risk factors such as early marriage, poor knowledge of family planning services, etc. [Bhattacharyya *et al.* (2017)]. It is argued that education and empowerment can safeguard women's right to reproductive health [Cronley *et al.* (2018)]. Lack of empowerment leads women to work in jobs that do not match their training (temporary contracts, part-time jobs), putting them at a disadvantage compared to men [Millan-Vazquez de la Torre *et al.* (2017)].

Violence against women is a growing public health concern, with assault leading to death as the most extreme outcome [Dekel *et al.* (2019)]. Evidence suggests that lack of empowerment and gender inequality, two related life conditions, are important risk factors of violence against women. A study on Swedish female nationals who were born in other countries shows that the women born in countries with low gender equity levels had an increased risk of mortality due to interpersonal violence, thus implicating a lack of empowerment as a contributing factor [Fernbrant *et al.* (2016)]. Empowerment has been measured as a national level indicator of women's share in technical positions, management, and government positions, and parliament and ministerial level positions [Fernbrant *et al.* (2016)].

Adverse effects of women's lack of autonomy may have an intergenerational aspect. Kumera *et al.* (2018) studied Ethiopian children and found that mass media and socio-economic empowerment of women positively contribute to optimal child-feeding practices. Another study based on a systematic review showed that women's lower control or autonomy (e.g., lack of freedom of movement outside the home, lack of authority to access healthcare for sick children) was associated with poorer mental and physical health for women and higher morbidity and mortality for their children, after adjusting for their socio-economic circumstances [Pennington *et al.* (2018)].

The intergenerational effect of woman's lack of autonomy is mediated and moderated by several factors. A study on migrant workers in China shows that a lack of women's empowerment adversely affects maternal and child health outcomes [Seeberg and Luo (2017)]. A study based on a systematic literature review found significant associations between women's empowerment and maternal and child

health outcomes because of women's access to antenatal care, skilled attendance at birth, contraceptive use, complete vaccination, nutritional status, and exposure to violence [Pratley (2016)]. In northern Ghana, lack of empowerment in agriculture-related decision-making, such as production, asset ownership, income, leadership, and work/leisure mix, was associated with poor health for women [Tsiboe *et al.* (2018)], which in turn adversely affected the odds of child's mortality [Zewudie *et al.* (2020)].

### 2.3 Asset ownership and women empowerment

Existing evidence shows that women's assets significantly contribute to their empowerment. A lack of control over the use of income and access to productive resources generally means a lack of women's empowerment [Parveen (2008)]. A study in Honduras constructed women's empowerment in agriculture index based on women's decision-making role in production, asset ownership, income, leadership, and work/leisure mix and showed that strengthening women's control of assets increases their empowerment [Dietz *et al.* (2018)]. Consequently, promoting legal rights to the land has been routinely used as an effective policy to empower women, particularly in the Global South [Goldman *et al.* (2016)].

Various mechanisms have been proposed in the existing literature to link women's asset ownership and their empowerment. A study in Nepal shows that women's land rights promote development by empowering women by increasing their productivity and welfare [Allendorf (2007)].

Baruah (2011) suggested that a more significant share of women in political power plays a critical role in translating women's property ownership into empowerment and gender equality. Wiig (2013) found that Peruvian women who lived in the communities where spouses had joint property ownership were significantly more empowered as measured by their influence in 26 specific household decisions than those who lived in the communities with no such arrangement of joint property ownership. A study in Nepal found that land ownership had a positive and significant impact on women's empowerment, defined as women's decision-making role in their healthcare, household purchases, and visit to the family or relatives, especially where agriculture is the primary source of economy for women [Mishra and Sam (2016)].

Existing evidence highlights the role of enabling circumstances that translate women's property ownership into empowerment. A study in Kottayam district in southern Kerala found that though women's cooperatives showed significant promise of financially empowering women, the scope of empowerment of women through women's cooperatives was severely constrained by the abuse of the whole cooperative systems for personal and political ends and dominance of men in key administrative positions [Nair and Moolakkattu (2015)].

Women's asset ownership also activates several other capabilities that are both instrumentally and fundamentally valuable. Increased women's empowerment achieved through their ownership of household assets expands their productive capacities.

Joint ownership of a house in informal urban settlements in Chandigarh, India, increased women's decision-making participation, access to knowledge and information about public matters, sense of security, self-esteem, and respect from their spouses [Datta (2006)]. Datta (2006) also found that women displayed a higher attachment to their houses than men, especially after getting joint titles, because

houses play a valuable role in fulfilling woman's practical and strategic gender needs. In Malawi, women's land ownership increased women's decision-making in multiple domains in the household, including financial decision-making and decision-making about reproductive health [Behrman (2017)].

However, the relationship between property ownership, inheritance, and women's empowerment may not be uniform across different cultural settings. Women in Turkey do not report having any sense of empowerment from property ownership: they consider their education and career more important for their well-being [Toktas and O'Neil (2013)].

The existing literature has significantly improved our understanding of the drivers of women's empowerment. However, evidence on the relationship between women's asset ownership and their empowerment in cross-country settings is both limited and conflicting. Based on the preceding discussion, this study aims to analyze the association of women's asset ownership with their empowerment. Second, given that we are conducting a cross-country study, we want to see if this link is universal or context specific.

### 3. Methodology

#### 3.1 Data sources

All the data in this study were based on Demographic and Health Surveys (DHS), which are nationally representative and internationally comparable datasets. We used data from the Integrated Public Use Microdata Series Project of Demographic and Health Surveys (IPUMS-DHS) [Boyle *et al.* (2022)]. The advantage of using data from IPUMS-DHS is that all the variables are consistently coded across all the countries and for all the periods. The IPUMS-DHS database includes data on the individual respondents and the household information linked from the household recodes. For this study, we used data for 18 countries from sub-Saharan Africa, the Middle East, and South Asia from 2010 to 2016. We used all the data in IPUMS-DHS surveys in which asset ownership and women's empowerment information existed.

#### 3.2 Participants

This study uses information on ever-married women aged 15–49 from 18 selected countries of sub-Saharan Africa, South Asia, and the Middle East. We included all the available waves for these countries in our analysis because the time-fixed effects captured the country- and time-specific changes in women's empowerment.

#### 3.3 Variables

The outcome variable for this study is women's empowerment. In the previous literature, women's empowerment is defined and operationalized in various ways. Kabeer (1999) considers women's empowerment as her ability to exercise choice, which depends on three dimensions: resources (both material and non-material), agency, and achievements.

Phan (2016) measured women's empowerment as the rate of their participation in the labor force, the extent of their role in the household level decision-making, their access to contraceptive use, and their education using DHS data. However,

operationalizing the concept of women's empowerment is, in practice, more reductionist because the information that is generally available, especially in cross-country study settings, is generally minimal. Consequently, existing literature has extensively used women's decision-making role at the household level to measure their empowerment [Afshar and Alikhan (2002), Allendorf (2007), Jennings *et al.* (2014)].

We did not use the method suggested by Phan (2016) which used a wide number of dimensions from DHS data (women's empowerment measured as the rate of their participation in the labor force, the extent of their role in the household level decision-making, their access to contraceptive use, and their education) because this information is not available for all countries in our sample. Consequently, we followed a more reductionist approach of Allendorf (2007) and measured women's empowerment as their decision-making role about their healthcare, their say in making large household purchases, and their say in visiting their family or relatives.

Following Zafar *et al.* (2021), we developed an index of women's empowerment by aggregating information on these three indicators in two steps. First, we considered women's empowerment as a gradient of "fully empowered," "empowered," and "not empowered" in the three individual dimensions. A woman is "fully empowered" if she makes a decision alone. We consider a woman "empowered" if she makes a decision either herself and her husband or herself and someone else. A woman is considered "not empowered" if a decision is made by only her husband or family elders or relatives, or someone else who is not defined.

In the second step, we aggregated this information from the three domains and considered only those women as "not empowered" who were "not empowered" in *all* of the three dimensions in the first stage.

There is a caveat in the construction of the women empowerment index in our study. Previous literature generally assumes that when both spouses make a joint decision at the household level, it is a measure of a greater degree of women's empowerment relative to the situation where the male makes the decisions alone [Acosta *et al.* (2020)]. However, there is a growing recognition that "joint decision-making" may simplify complex intrahousehold negotiation processes because a subjective opinion of "joint decision-making" can have different connotations for men and women and may crucially depend on the social context of the respondent, including gender roles within the household, and decision domain [Seymour and Peterman (2018), Acosta *et al.* (2020)].

In constructing the women empowerment index for our study, we have followed the traditional approach, which considers sole decision-making as a measure of a greater degree of women empowerment than joint decision-making for two reasons. First, we have restricted our focus to the subjective opinion of women only regarding the type of decision-making (solely or jointly). When a woman solely does the decision-making in domains which are closely linked with her subjective well-being (her say about her healthcare, her say in making large household purchases, and her say in visiting her family or relatives), she enjoys a greater degree of empowerment compared with the woman who makes a joint decision with her spouse or other family members [Zafar *et al.* (2021)].

Second, we are doing a cross-country study which includes diverse cultures from Africa, the Middle East, and South Asia. Developing country-specific definitions of women's empowerment will pose further empirical challenges because country-specific information on women's empowerment is unavailable.

The primary exposure variable of interest in this study is the asset ownership of women. This variable was constructed from the information in the DHS related to the woman's ownership to the land or house. We consider a woman to own land if she owns the land alone, or jointly or both alone and jointly. Similarly, we consider a woman to own a house if she owns the house alone, or jointly or both alone and jointly. In the second stage, we aggregated this information to make an index in which a woman is considered to possess assets if she owns land or a house. The asset ownership is thus a binary variable categorized as "does not possess" (coded as "0") and "possesses" (coded as "1"). In addition, we estimate the association of the ownership of *land alone* as well as ownership of the *house alone* on women's empowerment.

Following Zafar *et al.* (2021), we included several confounding variables including women's occupation (defined as binary variable where the reference category "No" refers to the women who are not engaged in any paid work and "Yes" otherwise), women's childhood experience of witnessing parental violence (defined as a binary variable where "No" refers to the respondents who did not witness their fathers beat their mothers during their childhood, and "Yes" otherwise), their (and their husbands') highest level of education (categorized as a multicategory variable corresponding with three outcomes including "No education," "Primary education," and "Higher education"), household wealth terciles, age of respondent at the time of first marriage/cohabitation (defined as multicategory variable corresponding with "<18," "18–34," and "35+" years), current age of the husband/partner (defined as multicategory variable corresponding with "<21," "21–39," and "40+" years), the total number of children ever born (defined as a multicategory variable corresponding to three outcomes including "No child," "1–4," and "5+"), urban–rural status, and acceptance of violence. The variable acceptance of violence was constructed as a *yes/no* binary variable from the information related to women's justification of spousal violence in five related contexts: if she goes out without telling her husband, neglects the children, argues with husband, refuses to have sex with husband, or she burns food. A woman is believed to accept violence if she justifies spousal violence in one or more dimensions.

### 3.4 Study size

Initially, we selected all 22 countries from IPUMS-DHS database for our analysis which had the information about women's empowerment and asset ownership during the period 2010–2016 ( $N = 365,678$ ). Each country had either a single DHS wave or multiple waves. This sample had a large number of missing values in the covariates. Therefore, we retained the cases which had complete information about women's empowerment, asset ownership, and all the covariates which significantly reduced the sample ( $N = 159,945$ ) and excluded four countries from the analysis including Benin, Ghana, Guinea, and Niger. The 18 countries included in the analysis are given in [Table 1](#).

### 3.5 Statistical methods

The outcome variable for this study is women's empowerment split into "Not empowered" as the reference group and "Empowered" as the alternative category. We first did a bivariate association check to see if the women's asset ownership and other covariates are significantly associated with the outcome variable. Additionally, we used a multivariate logistic regression model with country fixed effects to estimate the association between women's asset



**Table 1.** Women's empowerment and asset ownership

Country	Year	Empowered (%)	Women own (%)			N
			House	Land	House or land	
Burkina Faso	2010	58.4	38.3	38.1	47.7	9,409
Cameroon	2011	71.8	98.3	98.1	98.8	3,132
DRC	2013	73.0	54.3	48.8	65.0	4,396
Cote d'Ivoire	2011	57.8	42.4	36.4	48.7	4,067
Egypt	2014	90.4	3.6	1.7	4.6	5,956
Ethiopia	2016	90.3	68.0	55.1	71.5	4,142
India	2015	85.1	39.4	29.6	40.9	60,027
Kenya	2014	89.8	62.4	56.8	65.7	3,392
Malawi	2010	75.8	75.9	48.5	85.0	4,014
Malawi	2016	85.8	74.5	74.3	83.1	3,687
Mali	2012	25.7	57.4	46.8	59.7	2,253
Mozambique	2011	86.3	83.1	66.7	85.3	4,374
Nigeria	2013	53.8	21.6	17.8	27.3	19,600
Pakistan	2012	67.3	11.1	3.8	13.0	3,433
Rwanda	2014	93.2	79.3	70.5	84.8	1,567
Tanzania	2010	71.3	50.7	50.0	55.9	4,649
Tanzania	2015	81.7	55.7	50.1	62.3	4,979
Uganda	2011	79.6	58.5	52.7	66.3	1,267
Zambia	2013	88.1	63.3	45.4	67.7	7,096
Zimbabwe	2010	95.4	53.6	53.6	62.7	3,985
Zimbabwe	2015	96.7	52.9	44.9	61.7	4,517

Note: A woman is defined to be "empowered" if she makes a decision about her healthcare, large household purchases, and visiting her family or relatives either all by herself, or either herself *and* her husband or herself *and* someone else. A woman is "not empowered" if she has no say in the decision-making in *all* three dimensions.

ownership and empowerment. The analysis was first done by pooling the data for all the countries in the analysis. Then the analysis was repeated at the country level to explore potential context-specific differences. In addition to the effect of asset ownership, we also estimated the effect of ownership of *land alone* and ownership of the *house alone* on women's empowerment. Finally, we estimated the effect of asset ownership on individual dimensions of women's empowerment.

#### 4. Results

Table 1 presents the distribution of women's asset ownership and empowerment. Weighted country and time-specific mean values of women's empowerment and asset ownership are given. Vast differences existed in asset ownership of women and



empowerment in our sample countries. In Egypt, only 4.6% of women possessed assets in 2014, while in Cameroon in 2011, 98.8% of the women possessed assets. Wide disparities also existed with regard to the empowerment of women. Only 25.7% of women were empowered in Mali in 2012, but the ratio of empowered women in Zimbabwe was as high as 96.7% in 2015.

We tested the bivariate association between women's empowerment and a set of selected indicators for inclusion in the multivariate regression model as control variables (Table A1 in the Appendix). Asset ownership is significantly and positively associated with women's empowerment. Other factors positively and significantly associated with women's empowerment were their working status, higher levels of education (both for themselves and their spouses), their higher household wealth status, higher age at the time of first marriage, and their refusal to justify domestic violence. Contrary to our expectation, the women who experienced parental violence in their childhood are also more likely to be empowered in their adult life.

Table 2 presents multivariate logistic regression analysis results using the pooled data from 18 countries. The estimates show that women's assets were a protective factor for their empowerment. The women who possessed assets were 14% more likely to be empowered than women who did not possess any assets [adjusted odds ratio (OR): 1.142; 95% confidence interval (CI): 1.100–1.185]. Models 2 and 3 in Table 2 estimated the effect of women's house ownership and land ownership, respectively, on their empowerment. House ownership was associated with a 7% increase in women's empowerment (adjusted OR: 1.073; 95% CI: 1.034–1.114), and land ownership was associated with a 17% increase in women's empowerment (adjusted OR: 1.168; 95% CI: 1.123–1.215).

Other factors significantly and positively associated with women's empowerment were their working status, their education and spouses' education, their household wealth status, their age, their spouses' age, the number of children ever born, and their urban residential status. The women who accepted domestic violence were around 18% less likely to be empowered than their counterparts who did not accept domestic violence, as shown in models 1–3 in Table 2.

In addition to the regression analysis of pooled data for 18 countries, we repeated the multivariate analysis at the country level (Table 3). The unadjusted logistic regression analysis at the country level showed that asset ownership was significantly associated with women's empowerment in 9 out of 18 countries. Except in Ethiopia and Malawi, asset ownership was associated with women's empowerment.

Estimating the effect of house ownership alone shows that house ownership significantly increased women's empowerment in six countries but decreased their empowerment in four countries, including Democratic Republic of the Congo (DRC), Ethiopia, Malawi, and Zambia. Land ownership alone significantly increased women's empowerment in nine countries but decreased in four countries (DRC, Ethiopia, India, and Mali).

Adjusting the model with selected covariates (the detail of the covariates is given in the footnote of Table 3) shows that in 10 out of 18 countries, asset ownership was significantly associated with women's empowerment. Except in Nigeria, where asset ownership was inversely associated with women's empowerment, asset ownership was positively associated with women's empowerment in nine countries. The adjusted model also showed that house ownership alone was positively associated with women's empowerment in six countries but negatively associated in Nigeria.

**Table 2.** Multivariate logistic regression analysis of pooled sample ( $N = 18$  countries)

Dependent variable: Women's empowerment			
	(1)	(2)	(3)
	House or land	House	Land
The woman owns house or land (Ref: No)			
Possesses	1.142***		
	[1.100, 1.185]		
The woman owns the house (Ref: No)			
Owens		1.073***	
		[1.034, 1.114]	
The woman owns the land (Ref: No)			
Owens			1.168***
			[1.123, 1.215]
Father beat the mother of the respondent (Ref: No)			
Yes	1.080***	1.080***	1.081***
	[1.034, 1.128]	[1.034, 1.128]	[1.035, 1.128]
Woman's working status (Ref: Not working)			
Working	1.854***	1.864***	1.852***
	[1.784, 1.926]	[1.793, 1.937]	[1.782, 1.925]
Woman's education (Ref: No education)			
Primary	1.393***	1.397***	1.392***
	[1.328, 1.462]	[1.331, 1.465]	[1.327, 1.461]
Higher	1.815***	1.820***	1.813***
	[1.717, 1.918]	[1.722, 1.924]	[1.715, 1.916]
Husband's education (Ref: No education)			
Primary	1.218***	1.218***	1.217***
	[1.159, 1.279]	[1.160, 1.280]	[1.158, 1.279]
Higher	1.272***	1.273***	1.269***
	[1.207, 1.340]	[1.209, 1.341]	[1.205, 1.337]

(Continued)

**Table 2.** (Continued.)

Dependent variable: Women's empowerment	(1)	(2)	(3)
	House or land	House	Land
Household wealth terciles (Ref: Poor)			
Middle	1.116***	1.115***	1.117***
	[1.067, 1.167]	[1.066, 1.166]	[1.068, 1.168]
Rich	1.362***	1.358***	1.363***
	[1.294, 1.433]	[1.290, 1.429]	[1.295, 1.435]
Husband's age (Ref: <21)			
21–39	1.244**	1.244**	1.245**
	[1.062, 1.457]	[1.063, 1.457]	[1.063, 1.458]
40+	1.582***	1.588***	1.585***
	[1.347, 1.859]	[1.352, 1.865]	[1.349, 1.862]
Woman's age (Ref: <18)			
18–34	1.174***	1.174***	1.173***
	[1.133, 1.216]	[1.133, 1.216]	[1.132, 1.215]
35+	1.862***	1.866***	1.855***
	[1.299, 2.669]	[1.300, 2.677]	[1.294, 2.658]
Number of children (Ref: No child)			
1–4	1.421***	1.427***	1.423***
	[1.335, 1.512]	[1.341, 1.518]	[1.337, 1.514]
5+	1.337***	1.347***	1.338***
	[1.245, 1.436]	[1.255, 1.446]	[1.246, 1.437]
Woman accepts violence? (Ref: No)			
Yes	0.818***	0.819***	0.818***
	[0.790, 0.847]	[0.791, 0.847]	[0.790, 0.847]
Residence (Ref: Rural)			
Urban	1.218***	1.211***	1.224***
	[1.160, 1.278]	[1.153, 1.271]	[1.166, 1.285]
Country (Ref. Cameroon)			
DRC	1.119	1.102	1.158*
	[0.983, 1.275]	[0.968, 1.256]	[1.015, 1.320]

(Continued)

Table 2. (Continued.)

Dependent variable: Women's empowerment	(1)	(2)	(3)
	House or land	House	Land
Ethiopia	7.047*** [5.821, 8.532]	6.953*** [5.743, 8.417]	7.270*** [5.998, 8.810]
India	3.174*** [2.866, 3.516]	3.072*** [2.773, 3.402]	3.271*** [2.948, 3.629]
Cote d'Ivoire	0.740*** [0.653, 0.838]	0.721*** [0.637, 0.817]	0.763*** [0.673, 0.865]
Kenya	3.488*** [2.923, 4.163]	3.426*** [2.871, 4.088]	3.570*** [2.990, 4.263]
Malawi	1.761*** [1.566, 1.980]	1.754*** [1.559, 1.973]	1.836*** [1.631, 2.067]
Mali	0.263*** [0.227, 0.305]	0.258*** [0.222, 0.299]	0.270*** [0.233, 0.314]
Mozambique	3.580*** [3.082, 4.158]	3.556*** [3.061, 4.130]	3.685*** [3.174, 4.278]
Nigeria	0.555*** [0.502, 0.614]	0.532*** [0.481, 0.589]	0.572*** [0.517, 0.634]
Pakistan	1.369*** [1.188, 1.579]	1.304*** [1.131, 1.503]	1.415*** [1.225, 1.634]
Rwanda	5.052*** [4.019, 6.350]	5.006*** [3.982, 6.293]	5.190*** [4.127, 6.527]
Zimbabwe	10.20*** [8.700, 11.97]	10.04*** [8.559, 11.78]	10.50*** [8.945, 12.32]
Uganda	1.748*** [1.431, 2.136]	1.718*** [1.405, 2.100]	1.802*** [1.474, 2.203]
Egypt	5.464*** [4.735, 6.307]	5.169*** [4.478, 5.966]	5.605*** [4.854, 6.473]
Tanzania	1.439*** [1.290, 1.606]	1.405*** [1.259, 1.568]	1.473*** [1.319, 1.645]
Burkina Faso	0.884* [0.793, 0.985]	0.862** [0.773, 0.961]	0.907 [0.813, 1.012]
Zambia	3.327*** [2.938, 3.768]	3.278*** [2.894, 3.713]	3.479*** [3.068, 3.944]

(Continued)

**Table 2.** (Continued.)

Dependent variable: Women's empowerment	(1)	(2)	(3)
	House or land	House	Land
<i>N</i>	156,729	156,808	156,771
Log-likelihood	-72,173.1	-72,240.3	-72,183.9
$\chi^2$	12,411.1	12,417.8	12,425.4
<i>p</i> -value	0	0	0

Exponentiated coefficients; 95% CIs in brackets.

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

Land ownership alone increased women's empowerment in nine countries but decreased in Ethiopia and India.

We disaggregated women's empowerment into their constituent factors: her decision-making role in the issues related to her healthcare, her say in making large household purchases, and her final say in visiting her family or relatives and estimated the effect of asset ownership on constituent parts of women's empowerment (Table A2 in the Appendix). In relative terms, asset ownership had the most significant effect on women's decision in making large household purchases (adjusted OR: 1.186; 95% CI: 1.147–1.226), followed by her decisions about her healthcare (adjusted OR: 1.128; 95% CI: 1.090–1.168), and her decisions about visits to family or friends (adjusted OR: 1.109; 95% CI: 1.073–1.146).

## 5. Discussion

This study has found a significant association between women's asset ownership and empowerment. Using DHS data for a sample of 18 countries from South Asia, sub-Saharan Africa, and the Middle East, we found that the women who possessed assets were 14% more likely to be empowered compared with the women who had no asset ownership of any type. Regarding the effect of asset ownership on the individual dimensions of women empowerment, a woman who possessed assets was around 19% more likely to make decisions about large household purchases, around 13% more likely to make decisions about her health, and around 11% more likely to make decisions about visits to family or friends.

Women's empowerment and asset ownership link was, however, context specific. Asset ownership and women's empowerment were significantly associated in only 9 out of 18 countries (and only 10 out of 18 countries after adjusting the model with selected confounding factors).

Our study is consistent with previous evidence that asset ownership leads to women's empowerment [Allendorf (2007), Baruah (2011), Peterman (2011), Batool *et al.* (2018), Pennington *et al.* (2018)]. There is evidence that property ownership empowers women by increasing their self-confidence, promoting their ability to contribute to decisions, having better control over their reproductive behavior, a greater ability to borrow, and a higher level of economic independence [Pandey (2010)]. When some woman owns the assets, she feels more assured of her status in

**Table 3.** Multivariate logistic regression analysis: country level analysis

Country	Unadjusted ORs						Adjusted ORs					
	House or land		House		Land		House or land		House		Land	
	OR	[95% CI]	OR	[95% CI]	OR	[95% CI]	Adj. OR <sup>a</sup>	[95% CI]	Adj. OR	[95% CI]	Adj. OR	[95% CI]
Burkina Faso	1.56***	[1.45, 1.68]	1.51***	[1.40, 1.64]	1.46***	[1.35, 1.58]	1.64***	[1.49, 1.80]	1.59***	[1.45, 1.76]	1.6***	[1.45, 1.77]
Cameroon	7.87***	[5.23, 11.84]	3.07***	[2.29, 4.12]	3.86***	[2.88, 5.19]	24.42***	[9.46, 63.06]	7.01***	[3.80, 12.93]	5.6***	[2.90, 10.83]
DRC	0.9	[0.80, 1.00]	0.85***	[0.76, 0.95]	0.81***	[0.73, 0.90]	1	[0.83, 1.22]	0.84	[0.70, 1.01]	0.95	[0.78, 1.14]
Cote d'Ivoire	0.97	[0.85, 1.10]	0.88	[0.78, 1.01]	0.93	[0.81, 1.06]	1.21*	[1.02, 1.45]	1.12	[0.94, 1.33]	1.07	[0.89, 1.29]
Egypt	1.24	[0.94, 1.64]	1.14	[0.84, 1.53]	1.19	[0.75, 1.90]	1.53	[0.86, 2.71]	1.22	[0.66, 2.24]	2.01	[0.78, 5.20]
Ethiopia	0.66***	[0.56, 0.79]	0.7***	[0.59, 0.82]	0.71***	[0.61, 0.81]	0.69	[0.46, 1.03]	0.81	[0.56, 1.19]	0.68*	[0.48, 0.95]
India	0.99	[0.94, 1.05]	0.98	[0.93, 1.03]	0.85***	[0.81, 0.90]	1	[0.93, 1.07]	1	[0.94, 1.07]	0.87***	[0.81, 0.94]
Kenya	1.04	[0.84, 1.28]	0.94	[0.76, 1.15]	1.11	[0.92, 1.34]	1.06	[0.75, 1.51]	0.98	[0.69, 1.39]	1.08	[0.79, 1.49]
Malawi	0.89*	[0.80, 0.99]	0.8***	[0.73, 0.87]	1.19***	[1.11, 1.28]	1.32*	[1.04, 1.67]	1.08	[0.88, 1.32]	1.45***	[1.25, 1.69]
Mali	1.01	[0.91, 1.12]	0.93	[0.84, 1.02]	0.83***	[0.75, 0.92]	0.93	[0.74, 1.17]	0.86	[0.68, 1.07]	0.88	[0.70, 1.11]
Mozambique	0.96	[0.80, 1.14]	0.92	[0.77, 1.09]	2.54***	[2.19, 2.95]	1.14	[0.85, 1.54]	1.11	[0.84, 1.47]	2.54***	[2.00, 3.24]
Nigeria	1.33***	[1.24, 1.41]	1.08*	[1.00, 1.15]	1.86***	[1.73, 2.01]	0.87***	[0.80, 0.95]	0.72***	[0.66, 0.79]	1.25***	[1.13, 1.38]
Pakistan	1.06	[0.94, 1.20]	0.92	[0.81, 1.05]	1.22	[0.99, 1.50]	1.48***	[1.14, 1.91]	1.29	[0.99, 1.69]	1.36	[0.87, 2.13]
Rwanda	1.6***	[1.36, 1.89]	1.48***	[1.28, 1.72]	1.26***	[1.09, 1.45]	1.4	[0.78, 2.52]	1.1	[0.62, 1.93]	1.27	[0.80, 2.03]

(Continued)

**Table 3.** (Continued.)

Country	Unadjusted ORs						Adjusted ORs					
	House or land		House		Land		House or land		House		Land	
	OR	[95% CI]	OR	[95% CI]	OR	[95% CI]	Adj. OR <sup>a</sup>	[95% CI]	Adj. OR	[95% CI]	Adj. OR	[95% CI]
Tanzania	1.74***	[1.63, 1.87]	1.62***	[1.52, 1.74]	1.5***	[1.40, 1.60]	1.68***	[1.49, 1.89]	1.54***	[1.37, 1.74]	1.5***	[1.33, 1.69]
Uganda	2.23***	[1.87, 2.65]	2.02***	[1.70, 2.39]	2.3***	[1.94, 2.73]	2.03***	[1.39, 2.96]	1.85***	[1.27, 2.70]	2.32***	[1.61, 3.35]
Zambia	0.88	[0.75, 1.02]	0.83*	[0.71, 0.97]	1.23***	[1.06, 1.42]	1.79***	[1.42, 2.25]	1.6***	[1.29, 1.98]	1.85***	[1.54, 2.24]
Zimbabwe	1.29*	[1.03, 1.61]	1.19	[0.95, 1.48]	1.13	[0.91, 1.41]	1.6***	[1.21, 2.11]	1.53***	[1.15, 2.04]	1.49***	[1.13, 1.97]

Exponentiated coefficients; 95% CIs in brackets.\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

<sup>a</sup>The adjusted OR adjusted for woman's childhood experience of parental violence, her occupational status, her education, and her husband's education, her household wealth tercile, her age at the time of marriage, and her urban/rural residential status.



the household, giving her a sense of empowerment [Mishra and Sam (2016)]. An increase in women's bargaining power is expected to redirect the resources in line with women's preferences, such as higher investment in the human capital of the household such as education, health, and nutrition [Mishra and Sam (2016)].

Existing literature also suggests that among various types of property, ownership of land is a particularly significant predictor of women's empowerment because land ownership constitutes a significant source and means of wealth creation and women's economic empowerment [Ajala (2017)]. Rwanda has recently registered all legal owners of land and has required spouses to be registered as co-owners of the joint property to empower women [Abbott *et al.* (2018)]. Peterman *et al.* (2017) showed that land and house ownership had differential effects on women's empowerment.

There are some countries in our sample, such as Kenya and Egypt in which asset ownership and women's empowerment do not show any statistically significant relationship.

Though these countries are not much different from other countries in the sample, previous evidence from other developing countries provides some valuable insights. For example, a study in Turkey found that women do not derive the same sense of empowerment from property ownership as they derive from their education and professional career [Toktas and O'Neil (2013)]. In societies where women's political and social rights are not guaranteed, the association of asset ownership and women's empowerment should be expected to be weak [Srivastava (2009)]. Since our sample is primarily from the South Asian and sub-Saharan African countries, which are still predominantly agricultural economies, the derivation of a sense of empowerment from asset ownership in many countries in our sample should be understandable.

As regards the counteractive negative association of asset ownership with women's empowerment in some countries in our sample, including Nigeria, Ethiopia, Mali, Malawi, and DRC, different theoretical explanations exist. The male backlash theory predicts that men resort to violence when they perceive that women are challenging existing family dynamics because of an increase in their bargaining power [Hunnicuttt (2009)]. A study in highly impoverished African markets, also called base-of-the-pyramid markets, shows that when non-governmental organizations extended loans to the women to empower them socio-economically, this led to conflicts in the households. Husbands routinely deprived their wives of loans and physically abused them if they resisted. This had the unintended effect of further disempowering the women. An alternative feminist explanation is that development solutions focus on the economic dimensions of women's lives, such as poverty reduction and income increase, but ignore the relational aspects of gender inequalities [Garikipati (2008), Webb *et al.* (2015)].

Women cannot be empowered unless they challenge and transform discriminatory gender norms and values in addition to getting more control over material resources [Kabeer (2015)]. Women cannot challenge oppressive social structures because of patriarchal norms [Nazneen *et al.* (2019)]. Still another explanation is that social institutions shape individual- and group-level choices, and women cannot become empowered without changing the disempowering context in which individual choices are made [Blankenship *et al.* (2006)]. Women may achieve greater economic autonomy but still fail to have a more significant say in decision-making because of their prior beliefs that men have the fundamental authority in decision-making [Kandiyoti (1988)].

Among the covariates, some factors positively associated with women's empowerment are women's working status, education, household wealth terciles, and urban residence, even if this association is context specific. Paid job, age, income, and the property appeared as positive and significant predictors of women's economic empowerment [Batool *et al.* (2018)].

The positive association between women's paid work and empowerment is consistent with existing evidence [Sadaquat and Shiekh (2011)]. Women's income makes them economically less dependent on their husbands and helps them make autonomous decisions [Stromquist (2015)]. Head *et al.* (2015) showed in their study in the Bangladeshi context that women's wage labor increased their ability to exercise instrumental agency. However, it may be highlighted that the association between women's paid work and their empowerment is highly context specific. Salem *et al.* (2018) showed that women's subsistence and market work in rural Egypt did not consistently predict women's agency in all domains. The reason may be the differential rates at which women's economic resources are converted into their relative power within the household [Miedema *et al.* (2018)].

The positive association between women's education and empowerment is consistent with previous evidence [Yount *et al.* (2018)]. Women's education helps them enter the spaces traditionally reserved for men [Khurshid (2017)]. A formal school curriculum promotes social stability and progress, enables women to obtain better-paid jobs [Stromquist (2015)], and changes women's views about healthcare needs [Yadav and Lal (2018)].

The women who saw in their childhood their fathers abusing their mothers were, counterintuitively, more likely to be empowered as adults. Though the social learning theory [Bandura (1969)] suggests that children internalize the values they see in their close kinship relations, the social learning theory may miss the fact that social norms change over time. Turky *et al.* (2019) applied Greenfield's theory of social change and human development in their study on the Bedouin community in Israel and found that transition from a nomadic lifestyle to a sedentary lifestyle across three generations corresponded with a change in the perceived gender roles across three generations. They also found that women were significantly more likely to espouse change in social values than men. A change in attitude in the younger generation, which generally runs counter to the dominant patriarchal values, manifests the intrinsic agency as postulated by Gammage *et al.* (2016).

The women who justify spousal violence are less likely to be empowered. Murshid (2018) studied the disempowering effect of women's justification of spousal violence in Bangladesh and argued that spousal violence being a violation of human rights, women's justification of spousal violence was an indication of women's "disempowered" realities where men had the "right" to subjugate women, and they exercised this "right" to control women. Women's refusal to justify spousal violence in any circumstances is again a reflection of women's challenging the social norms and makes up a woman's intrinsic agency, as postulated by Kabeer (1999).

The positive association between the number of children ever born and women's empowerment has also been reported in the previous literature, though the negative association is more frequently observed [Upadhyay *et al.* (2014)]. A positive association between women's age and empowerment is consistent with existing evidence [Afshar and Alikhan (2002)]. Afshar and Alikhan (2002) found in their study on older women in India that women's increasing age was a source of empowerment because as women age, they perform important roles and responsibilities in their family lives and their

kinship networks. Greater women's empowerment in the urban area is consistent with previous evidence [Head *et al.* (2015)]. Head *et al.* (2015) argued that increased women's empowerment in the urban area is an international trend and may be explained by greater exposure to contemporary empowerment resources such as mass media. A positive association between women's empowerment and household wealth status is consistent with previous evidence [Afifi (2009)].

Though this study has provided critical insights into women's asset ownership and empowerment, it has limitations. Women's empowerment is a complex theoretical construct and includes several abstract dimensions such as women's agency and social and human resources acquired through family and community, as shown by Kabeer (1999). Therefore, measuring women's empowerment as her decision-making in three dimensions may only partially reflect women's empowerment. Empowerment and asset ownership are not homogenous concepts and are expected to differ widely across countries and cultures.

Various factors shape the relationship between women's asset ownership and how these are translated into empowerment. Social norms, mores, and the gender-specific power equation across countries and within-country social groups determine how the ownership of property or other tangible and intangible resources are converted into adequate power. Another potential source of bias in this study is the wide disparities in per capita income levels, population density, and relative property value. Religious norms about the division of property among men and women are also not uniform. We have tried to partially offset these factors by including the country-fixed effects to find the *net* association between asset ownership and women empowerment. Still another potential source of bias may lie in the fact that we could not estimate time-fixed effects for all the years in the sample because of multicollinearity.

## 6. Conclusion

SDG 5 seeks to achieve gender equality and empower all women and girls. Empowering women requires a change in the social norms and legislative and regulatory frameworks. It is observed that in some contexts, women are systematically deprived of their property rights, including exclusion from the inheritance, eviction from their homes after the death of the spouse, and several other ways sanctioned by religious authority or social norms.

This study has found a significant association between women's asset ownership and empowerment. We used IPUMS-DHS data for a sample of 18 countries from South Asia, sub-Saharan Africa, and the Middle East. Though women's empowerment and asset ownership links were context specific and estimates varied by country, asset type, and model specification, we found that women who possessed assets were generally more likely to be empowered compared with the women who do not own property of any type.

Further studies may identify the exact mechanisms through which asset ownership reduces women's empowerment. Do patriarchal norms play any role in neutralizing the effect of asset ownership? Or is it because of the low marginal returns from property in societies where property value is low relative to other assets or factors of production? Or is the women's ownership of property the price paid by men to perpetuate male dominance in society? Additionally, future studies may explore why asset ownership affects women's empowerment at different rates in different world regions.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/dem.2023.17>.

## References

- Abbott, P., R. Mugisha and R. Sapsford (2018) Women, land and empowerment in Rwanda. *Journal of International Development* 30(6), 1006–1022. doi: 10.1002/jid.3370.
- Acosta, M., M. van Wessel, S. Van Bommel, E. L. Ampaire, J. Twyman, L. Jassogne and P. H. Feindt (2020) What does it mean to make a “joint” decision? Unpacking intra-household decision making in agriculture: implications for policy and practice. *The Journal of Development Studies* 56(6), 1210–1229.
- Affifi, M. (2009) Wealth index association with gender issues and the reproductive health of Egyptian women. *Nursing & Health Sciences* 11(1), 29–36.
- Afshar, H. and F. Alikhan (2002) Age and empowerment amongst slum dwelling women in Hyderabad. *Journal of International Development* 14(8), 1153–1161.
- Ajala, T. (2017) Gender discrimination in land ownership and the alleviation of women’s poverty in Nigeria: a call for new equities. *International Journal of Discrimination and the Law* 17(1), 51–66. doi: 10.1177/1358229117700028.
- Ajayi, M. A. and A. O. Olotuah (2005) Violation of women’s property rights within the family. *Agenda (Durban, South Africa)* 19(66), 58–63. doi: 10.1080/10130950.2005.9674649.
- Allendorf, K. (2007) Do women’s land rights promote empowerment and child health in Nepal? *World Development* 35(11), 1975–1988. doi: 10.1016/j.worlddev.2006.12.005.
- Bandura, A. (1969) Social-learning theory of identificatory processes. In Goslin, D. A. (ed.), *Handbook of Socialization Theory and Research*, pp. 213–262. Chicago, IL: Rand McNally & Company.
- Baruah, B. (2011) Gender and development in South Asia: can practice keep up with theory? *Canadian Journal of Development Studies-Revue Canadienne d Etudes du Developpement* 26, 677–688. doi: 10.1080/02255189.2005.9669106.
- Batool, S. A., H. K. Ahmed and S. N. Qureshi (2018) Impact of demographic variables on women’s economic empowerment: an ordered probit model. *Journal of Women and Aging* 30(1), 6–26. doi: 10.1080/08952841.2016.1256734.
- Behrman, J. A. (2017) Women’s land ownership and participation in decision-making about reproductive health in Malawi. *Population and Environment* 38(4), 327–344. doi: 10.1007/s11111-017-0272-4.
- Bhattacharyya, A., B. Biswas, S. Garg, A. Dey and A. Dasgupta (2017) Perceptions of accredited social health activists regarding teenage pregnancy: a qualitative study in a rural area of West Bengal, India. *Journal of Clinical and Diagnostic Research* 11(12), Lc09–Lc14. doi: 10.7860/Jcdr/2017/31103.10991.
- Blankenship, K. M., S. R. Friedman, S. Dworkin and J. E. Mantell (2006) Structural interventions: concepts, challenges and opportunities for research. *Journal of Urban Health* 83(1), 59–72.
- Boyle, E. H., M. L. King and M. Sobek (2022) IPUMS-Demographic and Health Surveys: Version 9 [dataset]. doi: 10.18128/D080.V9.
- Cronley, C., K. Hohn and S. Nahar (2018) Reproductive health rights and survival: the voices of mothers experiencing homelessness. *Women & Health* 58(3), 320–333. doi: 10.1080/03630242.2017.1296060.
- Datta, N. (2006) Joint titling – a win-win policy? Gender and property rights in urban informal settlements in Chandigarh, India. *Feminist Economics* 12(1–2), 271–298. doi: 10.1080/13545700500508569.
- Dekel, B., N. Abrahams and M. Andipatin (2019) Exploring the intersection between violence against women and children from the perspective of parents convicted of child homicide. *Journal of Family Violence* 34(1), 9.
- Dietz, T., A. E. Chong, P. F. Gilabert and J. Grabs (2018) Women’s empowerment in rural Honduras and its determinants: insights from coffee communities in Ocotepeque and Copan. *Development in Practice* 28(1), 33–50. doi: 10.1080/09614524.2018.1402862.
- Fernbrant, C., B. Essen, A. Esscher, P. O. Ostergren and E. Cantor-Graae (2016) Increased risk of mortality due to interpersonal violence in foreign-born women of reproductive age: a Swedish register-based study. *Violence against Women* 22(11), 1287–1304. doi: 10.1177/1077801215623380.
- Fukuda-Parr, S. (2010) Reducing inequality – the missing MDG: a content review of PRSPs and bilateral donor policy statements. *IDS Bulletin-Institute of Development Studies* 41(1), 26–35. doi: 10.1111/j.1759-5436.2010.00100.x.

- Gammage, S., N. Kabeer and Y. van der Meulen Rodgers (2016) Voice and agency: where are we now? *Feminist Economics* 22(1), 1–29. doi: 10.1080/13545701.2015.1101308.
- Garikipati, S. (2008) The impact of lending to women on household vulnerability and women's empowerment: evidence from India. *World Development* 36(12), 2620–2642. doi: 10.1016/j.worlddev.2007.11.008.
- Goldman, M. J., A. Davis and J. Little (2016) Controlling land they call their own: access and women's empowerment in northern Tanzania. *Journal of Peasant Studies* 43(4), 777–797. doi: 10.1080/03066150.2015.1130701.
- Grünke-Horton, K. and S. L. Dworkin (2016) Impact of a grassroots property rights program on women's empowerment in rural Kenya In S. L. Dworkin, M. Gandhi and P. Passano (eds.), *Women's Empowerment and Global Health*, pp. 267–290. San Francisco, CA: University of California Press.
- Head, S. K., K. M. Yount, M. M. Hennink and C. E. Sterk (2015) Customary and contemporary resources for women's empowerment in Bangladesh. *Development in Practice* 25(3), 360–374.
- Holden, L. and A. Chaudhary (2013) Daughters' inheritance, legal pluralism, and governance in Pakistan. *The Journal of Legal Pluralism and Unofficial Law* 45(1), 104–123. doi: 10.1080/07329113.2013.781447.
- Hunnicut, G. (2009) Varieties of patriarchy and violence against women: resurrecting “patriarchy” as a theoretical tool. *Violence against Women* 15(5), 553–573.
- Ibrahim, S. and S. Alkire (2007) Agency and empowerment: a proposal for internationally comparable indicators. *Oxford Development Studies* 35(4), 379–403.
- Jacobson, N. S. and J. M. Gottman (2007) *When Men Batter Women: New Insights into Ending Abusive Relationships*. New York: Simon & Schuster.
- Jennings, L., M. Na, M. Cherewick, M. Hindin, B. Mullany and S. Ahmed (2014) Women's empowerment and male involvement in antenatal care: analyses of Demographic and Health Surveys (DHS) in selected African countries. *BMC Pregnancy and Childbirth* 14(1), 1–11.
- Kabeer, N. (1999) Resources, agency, achievements: reflections on the measurement of women's empowerment. *Development and Change* 30(3), 435–464.
- Kabeer, N. (2015) Gender, poverty, and inequality: a brief history of feminist contributions in the field of international development. *Gender & Development* 23(2), 189–205.
- Kandiyoti, D. (1988) Bargaining with patriarchy. *Gender & Society* 2(3), 274–290.
- Kanter, R. and B. Caballero (2012) Global gender disparities in obesity: a review. *Advances in Nutrition* 3(4), 491–498.
- Khurshid, A. (2017) Does education empower women? The regulated empowerment of parhi likhi women in Pakistan. *Anthropology & Education Quarterly* 48(3), 252–268.
- Kumera, G., E. Tsedal and M. Ayana (2018) Dietary diversity and associated factors among children of Orthodox Christian mothers/caregivers during the fasting season in Dejen district, north west Ethiopia. *Nutrition & Metabolism* 15, 1–9. doi: 10.1186/s12986-018-0248-0.
- Malhotra, A. and S. R. Schuler (2005) Women's empowerment as a variable in international development. *Measuring Empowerment: Cross-Disciplinary Perspectives* 1(1), 71–88.
- Miedema, S. S., R. Haardörfer, A. W. Girard and K. M. Yount (2018) Women's empowerment in East Africa: development of a cross-country comparable measure. *World Development* 110, 453–464.
- Millan-Vazquez de la Torre, M. G., M. Teresa Velasco-Portero and J. Nicolas Ramirez-Sobrino (2017) The entrepreneurship of Spanish rural women: analysis of the wage gap. A difficult reality to solve. *Papeles de Poblacion* 23(92), 151–183.
- Mishra, S. (2018) Achieving gender equality and women empowerment in India (SDGs-5): opportunities and challenges. *Journal of Social Sciences & Multidisciplinary Management Studies* 2(1), 1–10. <http://management.nrjp.co.in/index.php/JSSMMS/article/view/228/36>.
- Mishra, K. and A. G. Sam (2016) Does women's land ownership promote their empowerment? Empirical evidence from Nepal. *World Development* 78, 360–371. doi: 10.1016/j.worlddev.2015.10.003.
- Murshid, N. S. (2018) Women's participation in microfinance: does it increase their control over resources? *Journal of Human Behavior in the Social Environment* 28(1), 1–11. doi: 10.1080/10911359.2017.1382416.
- Nair, N. V. and J. S. Moolakkattu (2015) Why do women's cooperative societies languish? A study of selected societies in Kottayam, Kerala. *Asian Journal of Women's Studies* 21(2), 105–125. doi: 10.1080/12259276.2015.1062262.
- Nanda, V., M. Nayak and J. Goldstein (2020) Global efforts to realize the essential but elusive goal of gender equality and women's empowerment (SDG 5). *Denver Journal of International Law and Policy* 48, 1.

- Nazneen, S., N. Hossain and D. Chopra (2019) Introduction: contentious women's empowerment in South Asia. *Contemporary South Asia* 27(4), 457–470.
- Niswade, J. (2015) Social neglect and oppression of widows in rural India: need for social, economic and policy implications. In *Enabling Gender Equality: Future Generations of the Global World*, Vol. 23, pp. 113–131. Bingley, West Yorkshire, England: Emerald Group Publishing Limited.
- Page, N. and C. E. Czuba (1999) Empowerment: what is it. *Journal of Extension* 37(5), 1–5.
- Pandey, S. (2010) Rising property ownership among women in Kathmandu, Nepal: an exploration of causes and consequences. *International Journal of Social Welfare* 19(3), 281–292. doi: 10.1111/j.1468-2397.2009.00663.x.
- Parveen, S. (2008) Access of rural women to productive resources in Bangladesh: a pillar for promoting their empowerment. *International Journal of Rural Studies* 15(1), 1–8.
- Pennington, A., L. Orton, S. Nayak, A. Ring, M. Petticrew, A. Sowden, M. White and M. Whitehead (2018) The health impacts of women's low control in their living environment: a theory-based systematic review of observational studies in societies with profound gender discrimination. *Health & Place* 51, 1–10. doi: 10.1016/j.healthplace.2018.02.001.
- Peterman, A. (2011) Women's property rights and gendered policies: implications for women's long-term welfare in rural Tanzania. *Journal of Development Studies* 47(1), 1–30. doi: 10.1080/00220381003600366.
- Peterman, A., A. Pereira, J. Bleck, T. M. Palermo and K. M. Yount (2017) Women's individual asset ownership and experience of intimate partner violence: evidence from 28 international surveys. *American Journal of Public Health* 107(5), 747–755. doi: 10.2105/Ajph.2017.303694.
- Phan, L. (2016) Measuring women's empowerment at household level using DHS data of four southeast Asian countries. *Social Indicators Research* 126(1), 359–378.
- Pradhan, R., R. Meinzen-Dick and S. Theis (2019) Property rights, intersectionality, and women's empowerment in Nepal. *Journal of Rural Studies* 70, 26–35. <https://doi.org/10.1016/j.jrurstud.2019.05.003>.
- Pratley, P. (2016) Associations between quantitative measures of women's empowerment and access to care and health status for mothers and their children: a systematic review of evidence from the developing world. *Social Science & Medicine* 169, 119–131. doi: 10.1016/j.socscimed.2016.08.001.
- Sadaquat, M. B. and A. Q.-T. Shiekh (2011) Employment situation of women in Pakistan. *International Journal of Social Economics* 38(2), 98–113.
- Salem, R., Y. F. Cheong and K. M. Yount (2018) Is women's work a pathway to their agency in rural Minya, Egypt? *Social Indicators Research* 136(2), 807–831.
- Seeberg, V. and S. Luo (2017) Young women rural migrant workers in China's west: benefits of schooling? *Frontiers of Education in China* 12(3), 332–366.
- Sen, A. (1992) *Inequality Reexamined*. New York, NY, USA: Russell Sage Foundation and Clarendon Press.
- Seymour, G. and A. Peterman (2018) Context and measurement: an analysis of the relationship between intrahousehold decision making and autonomy. *World Development* 111, 97–112.
- Silva, M. S. and S. Klasen (2021) Gender inequality as a barrier to economic growth: a review of the theoretical literature. *Review of Economics of the Household* 19, 581–614.
- Srivastava, A. (2009) Women empowerment: an altering expression in the role of Bhil women. *Man in India* 89(4), 591–601.
- Stromquist, N. P. (2015) Women's empowerment and education: linking knowledge to transformative action. *European Journal of Education* 50(3), 307–324.
- Sugden, R. and A. Sen (1986) Commodities and capabilities. *The Economic Journal* 96(383), 820. doi: 10.2307/2232999.
- Toktas, S. and M. L. O'Neil (2013) How do women receive inheritance? The Processes of Turkish Women's Inclusion and Exclusion from Property. *Asian Women* 29(4), 25–50.
- Töpfer, K. (1999) *Women's Rights to Land, Housing and Property in Post-Conflict Situations and during Reconstruction: A Global Overview*. Nairobi, Kenya: United Nations Centre for Human Settlements.
- Tsiboe, F., Y. A. Zereyesus, J. S. Popp and E. Osei (2018) Health effects of women's empowerment in agriculture in northern Ghana: different patterns by body mass index categories. *African Journal of Agricultural and Resource Economics* 13(1), 31–43.
- Turky, A. A., M. Weinstock, A. M. Manago and P. M. Greenfield (2019) Social change and intergenerational value differences in a Bedouin community in Israel. *Journal of Cross-Cultural Psychology* 50(5), 708–727.



- UN Women (2013) A Transformative Stand-Alone Goal on Achieving Gender Equality. Women's Rights and Women's Empowerment: Imperatives and Key Components. New York: UN Women.
- Upadhyay, U. D., J. D. Gipson, M. Withers, S. Lewis, E. J. Ciaraldi, A. Fraser, M. J. Huchko and N. Prata (2014) Women's empowerment and fertility: a review of the literature. *Social Science & Medicine* 115, 111–120.
- Webb, J. W., C. G. Pryor and F. W. Kellermanns (2015) Household enterprise in base-of-the-pyramid markets: the influence of institutions and family embeddedness. *Africa Journal of Management* 1(2), 115–136.
- Wiig, H. (2013) Joint titling in rural Peru: impact on women's participation in household decision-making. *World Development* 52, 104–119. doi: 10.1016/j.worlddev.2013.06.005.
- Yadav, S. S. and R. Lal (2018) Vulnerability of women to climate change in arid and semi-arid regions: the case of India and South Asia. *Journal of Arid Environments* 149, 4–17. doi: 10.1016/j.jaridenv.2017.08.001.
- Yount, K. M., A. Crandall and Y. F. Cheong (2018) Women's age at first marriage and long-term economic empowerment in Egypt. *World Development* 102, 124–134.
- Zafar, S., S. Zia and R. Amir-ud-Din (2021) Troubling trade-offs between women's work and intimate partner violence: evidence from 19 developing countries. *Journal of Interpersonal Violence* 37(17–18), NP16180–NP16205. doi: 10.1177/08862605211021961.
- Zewudie, A. T., A. A. Gelagay and E. F. Enyew (2020) Determinants of under-five child mortality in Ethiopia: analysis using Ethiopian demographic health survey, 2016. *International Journal of Pediatrics* 2020, 1–9. doi: 10.1155/2020/7471545.

---

**Cite this article:** Amir-ud-Din R, Naz L, Ali H (2024). Relationship between asset ownership and women's empowerment? Evidence from DHS data from 18 developing countries. *Journal of Demographic Economics* 90, 154–175. <https://doi.org/10.1017/dem.2023.17>